FINAL
REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT
IRVINGTON RUGS AND CLEANERS
SITE NO. 360175

WORK ASSIGNMENT NO. D009809-28

Prepared for:

New York State Department of Environmental Conservation
Albany, New York

Prepared by:

Earth Environment Engineering and Geology, P.C.
Portland, Maine

EEEG: No. 3616216144

JULY 2025
(REVISION 1 - NOVEMBER 2025)
(REVISION 2 – MARCH 2026)

FINAL
REMEDIAL INVESTIGATION
FEASIBILITY STUDY REPORT
IRVINGTON RUGS AND CLEANERS
SITE # 360175
WORK ASSIGNMENT NO. D009809-28

Prepared for:

New York State Department of Environmental Conservation
Albany, New York

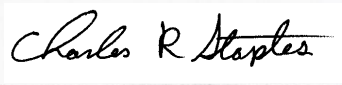
Prepared by:
Earth Environment Engineering and Geology, P.C.
Portland, Maine

EEEG: 3616216144

July 2025
(Revision 1 - November 2025)
(Revision 2 March 2026)

REVIEWED AND APPROVED BY:

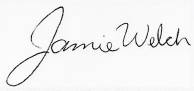
Remedial Investigation:



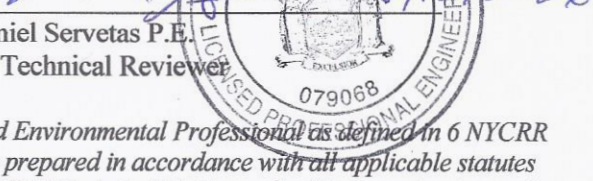
Charles Staples, P.G.
Project Manager

Jean Firth, P.G.
Program Manager/RI Technical Reviewer

Feasibility Study:



Jamie Welch
FS Technical Reviewer



3/12/2026

Daniel Servetas P.E.
FS Technical Reviewer

I, Charles R. Staples, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

I, Daniel Servetas, certify that I am currently a NYS licensed professional engineer and that this Feasibility Study Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved scope of work and any DER-approved modifications.

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 REPORT ORGANIZTION 2
1.2 PURPOSE OF RI/FS 3
1.3 SITE BACKGROUND 3
1.3.1 Site Location and Description 3
1.3.2 Site History 4
1.3.3 Previous Field Investigations 5

2.0 SCOPE OF WORK 2-1

2.1 GENERAL FIELD ACTIVITIES 2-2
2.1.1 Health and Safety 2-3
2.1.2 Investigation Derived Wastes 2-3
2.1.3 Community Air Monitoring Plan 2-3
2.1.4 Well and Sample Point Survey 2-3
2.1.5 DER-31 2-4
2.1.6 Laboratory Analysis 2-4
2.1.7 Mobilization 2-5
2.1.8 Access and Clearance 2-5
2.1.9 Decontamination 2-6
2.2 FIELD PROGRAM SAMPLING 2-6
2.2.1 Temporary Direct Push Microwell Installation and Sampling 2-6
2.2.2 Water Level Measurements 2-7
2.2.3 Existing Well Groundwater Sampling 2-7
2.2.4 Bedrock Well Installation and Sampling 2-8
2.2.5 Exterior Soil Vapor Sampling 2-8
2.2.6 Sump Water Sampling 2-8
2.2.7 PFAS Soil Sampling 2-9
2.2.8 Indoor Air and Sub-Slab Soil Vapor Intrusion Sampling 2-9
2.3 INTERIM REMEDIAL MEASURES 2-10
2.4 ADDITIONAL POST RI SAMPLING CONDUCTED 2-12

3.0 PHYSICAL SETTING 3-1

3.1 TOPOGRAPHY 3-1
3.2 CLIMATE 3-1
3.3 GEOLOGY 3-1
3.4 SURFACE WATER HYDROLOGY 3-2
3.5 GROUNDWATER HYDROLOGY 3-2

4.0 NATURE AND EXTENT OF CONTAMINATION 4-1

4.1 SOIL 4-1
4.2 GROUNDWATER 4-5
4.3 EXTERIOR SOIL VAPOR 4-6
4.4 SOIL VAPOR/INDOOR AIR 4-6

5.0 CONCEPTUAL SITE MODEL 5-1

5.1 SITE BACKGROUND 5-1

5.2 CONTAMINANTS OF CONCERN (COCS) 5-1
5.3 SOURCE AREAS AND POINTS OF ENTRY 5-3
5.4 HYDROGEOLOGY AND CONTAMINANT DISTRIBUTION 5-4
5.5 CONTAMINANT MIGRATION 5-5
5.6 SITE RECEPTORS 5-6

6.0 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT 6-1

7.0 RI SUMMARY AND CONCLUSIONS 7-1

8.0 DEVELOPMENT OF REMEDIAL ACTION GOALS AND OBJECTIVES, AND GENERAL RESPONSE ACTIONS FOR CONTAMINATION REQUIRING REMEDIATION 8-1

8.1 IDENTIFICATION OF REMEDIAL ACTION OBJECTIVES 8-1
8.1.1 Remedial Action Objectives for Soil 8-1
8.1.2 Remedial Action Objectives for Groundwater 8-2
8.1.3 Remedial Action Objectives for Soil Vapor/Indoor Air 8-3
8.1.4 Remediation Goals 8-3
8.2 IDENTIFICATION OF GENERAL RESPONSE ACTIONS AND EXTENT OF CONTAMINATION REQUIRING REMEDIAL ACTION 8-3
8.2.1 General Response Actions – Soil 8-3
8.2.2 General Response Actions – Groundwater 8-4
8.2.3 General Response Actions – Soil Vapor/Indoor Air 8-4

9.0 IDENTIFICATION AND SCREENING OF TECHNOLOGIES AND DEVELOPMENT OF ALTERNATIVES 9-1

9.1 IDENTIFICATION AND INITIAL SCREENING OF TREATMENT TECHNOLOGIES 9-1
9.2 DETAILED SCREENING OF TECHNOLOGIES 9-1
9.3 DEVELOPMENT OF REMEDIAL ALTERNATIVES 9-2
9.3.1 Alternative 1: No Further Action 9-2
9.3.2 Alternative 2: Soil Excavation to Background with In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation of Groundwater 9-2
9.3.3 Alternative 3a: Low-Permeability Cover System with In-Situ Chemical Oxidation of Groundwater 9-3
9.3.4 Alternative 3b: Low-Permeability Cover System with Enhanced Bioremediation of Groundwater 9-3
9.3.5 Alternative 4: In-Situ Chemical Oxidation and Enhanced Bioremediation of Groundwater 9-4
9.3.6 Alternative 5: Long-Term Groundwater Monitoring and Institutional Controls 9-4

10.0 DEVELOPMENT AND DETAILED DESCRIPTION OF ALTERNATIVES 10-1

10.1 ALTERNATIVE 1: NO FURTHER ACTION 10-1
10.2 ALTERNATIVE 2: SOIL EXCAVATION TO BACKGROUND WITH IN-SITU SORPTION, IN-SITU CHEMICAL REDUCTION, AND ENHANCED BIOREMEDIATION IN GROUNDWATER 10-1
10.3 ALTERNATIVE 3A: LOW-PERMEABILITY COVER SYSTEM WITH IN-SITU CHEMICAL OXIDATION OF GROUNDWATER 10-4
10.4 ALTERNATIVE 3B: LOW-PERMEABILITY COVER SYSTEM WITH ENHANCED BIOREMEDIATION OF GROUNDWATER 10-5

10.5 ALTERNATIVE 4: IN-SITU CHEMICAL OXIDATION AND ENHANCED BIOREMEDIATION OF GROUNDWATER....10-7
10.6 ALTERNATIVE 5: LONG-TERM GROUNDWATER MONITORING AND INSTUTIONAL CONTROLS....10-8

11.0 DETAILED ANALYSIS AND COMPARISON OF ALTERNATIVES....11-1

11.1 DETAILED ANALYSIS EVALUATION CRITERIA....11-1
11.2 COST ANALYSIS PROCEDURES....11-3
11.3 COMPARATIVE ANALYSIS OF ALTERNATIVES....11-5

12.0 REFERENCES....12-1

LIST OF FIGURES

Figures

1.1 Site Location
2.1 Sampling Locations
2.2 PFAS Soil Sample Locations
3.1 Groundwater Elevations
4.1 RI and SC PCE Results in Soil
4.2 PFOS Soil Sample Results
4.3 SC and RI PCE Groundwater Results
4.4 PCE Overburden Groundwater Results
4.5 Groundwater Results for Perfluorooctane sulfonic acid (PFOS)
4.6 Groundwater Results for Perfluorooctanoic acid (PFOA)
4.7 Soil Vapor Intrusion Sampling
5.1 Interpreted Cross Section A-A’
10.1 Proposed Soil Remediation Area, Alternatives 2 through 3b
10.2 Alternative 2: Proposed In-Situ Sorption Treatment Area
10.3 Alternative 2: In-Situ Chemical Reduction and Enhanced Bioremediation Proposed Treatment Area
10.4 Alternatives 3a and 3b: Proposed Injections Treatment Area
10.5 Alternative 4: Proposed Injections Treatment Areas

LIST OF TABLES

Tables

2.1 Summary of Remedial Investigation Activities
2.2 Monitoring Well Details
4.1 Soil VOC Results
4.2 Soil PFAS Results
4.3 Groundwater VOC Results
4.4 Groundwater PFAS Results
4.5 Groundwater SVOC, Metals, Pesticides, and PCB Results
4.6 Exterior Soil Vapor Results
4.7 SVI Results
9.1 Identification and Screening of Potential Remedial Technologies
9.2 Detailed Technology Screening and Retained Technologies

9.3 Development of Alternatives (Embedded in text)

11.1 Detailed Analysis and Comparison of Remedial Alternatives

11.2 Applicable Location and Action Specific Standards, Criteria and Guidance

11.3 Summary of Estimated Remedial Alternative Costs

11.4 Cost Summary for Alternative 2

11.5 Cost Summary for Alternative 3a and 3b

11.6 Cost Summary for Alternative 4

11.7 Cost Summary for Alternative 5

LIST OF APPENDICES

Appendix A: Select Site Characterization Report Tables, Figures, and Microbial Results

Appendix B: Waste Disposal Documentation

Appendix C: Survey Deliverables

Appendix D: Field Data Records

Appendix E: Climate Screening Checklist

Appendix F: Data Usability Summary Reports (DUSRs)

Appendix G: Remedial Alternative Cost Details

Appendix H: Remedial Activity Green House Gas Emissions

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
cis-1,2-DCE	cis-1,2-dichloroethene
COC	contaminants of concern
CSM	Conceptual Site Model
DER	Division of Environmental Remediation
DNAPL	dense non-aqueous phase liquid
DO	Dissolved Oxygen
DUSR	Data Usability Summary Report
EEEG	Earth and Environment Engineering and Geology, PC.
ELAP	Environmental Laboratory Approval Program
EC	Engineering Control
ESI	Ecosystems Strategies, Inc.
EWMI	Environmental Waste Minimization, Inc.
FAP	Field Activities Plan
FS	Feasibility Study
GHG	Greenhouse Gas
HASP	Health and Safety Plan
IC	Institutional Controls
IDW	investigation derived waste
ITRC	Interstate Technology and Regulatory Council
IRM	Interim Remedial Measure
ISCO	in situ chemical oxidation
LTM	Long-Term Monitoring
MACTEC	MACTEC Engineering and Geology, P.C.
MCL	maximum contaminant level
MNA	monitored natural attenuation
µg/kg	microgram(s) per kilogram
µg/L	microgram(s) per Liter
$\mu g/m^3$	microgram(s) per cubic meter
mg/kg	milligram(s) per kilogram
msl	mean sea level
ng/L	nanogram(s) per liter
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OMB	Office of Management and Budget
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PDI	Pre-Design Investigations
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonic acid
ppm	parts per million
PRB	Permeable Reactive Barrier
PW	Present Worth
QAPP	Quality Assurance Program Plan
QHHEA	Qualitative Human Health Exposure Assessment

RA	remedial alternative
RAO	remedial action objectives
RG	remediation goal
RI	Remedial Investigation
RMCA	Radon Mitigation Corporation of America
SC	Site Characterization
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objective
Site	Irvington Rugs and Cleaners
SMP	Site Management Plan
SSDS	sub-slab depressurization system
SVI	soil vapor intrusion
SVOC	semi-volatile organic compound
TCE	trichloroethene
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WA	Work Assignment

EXECUTIVE SUMMARY

This Remedial Investigation/Feasibility Study (RI/FS) Report has been completed for the Irvington Rugs and Cleaners Site (Site) located at 53 Main Street, in the Town of Greenburgh, New York under State Superfund Standby Contract Work Assignment D009809-28 (Site No. 360175). This RI/FS report provides the following information:

- Site description, history, and physical setting;
- technical scope of work for the RI field activities;
- presentation of RI data collected;
- interpretation of the RI findings;
- Conceptual Site Model (CSM) and contaminant fate and transport;
- Qualitative Human Health Exposure Assessment (QHHEA);
- development of remedial objectives; and
- evaluation of potential remedial alternatives (RAs) from an engineering, environmental, public health, and economic perspective.

The Site is located at 53 Main Street, in the Village of Irvington, Town of Greenburgh, Westchester County, New York and consists of a 0.06-acre lot covered by a one-story building and a paved parking area to the rear (north). The southern three quarters of the Site building has a full basement, and the northern one quarter is slab on grade. The Site operated as a dry cleaner from presumably 1965 to the present; however, the use of tetrachloroethene (PCE) at the Site as a dry-cleaning solvent was reportedly discontinued in 1990 (although an undisclosed quantity of PCE was removed from the facility in 2005).

The site is in a mixed use commercial and residential area that is in the Business District Zone and is serviced by public water and sewer.

Analytical data collected from investigations to date indicates that the volatile organic compound (VOC) PCE was discharged at the Site. There appears to be two primary source areas of PCE contamination: 1) soil in the parking area to the rear, north, of the Site building that was remediated by excavation prior to the sites listing on the inactive hazardous waste disposal program registry, and 2) contamination in soil/groundwater below the center of the Site. The highest concentration detected in soil was only 5.6 milligrams per kilogram (mg/kg) compared to a residential use criteria of 5.5 mg/kg. This detection was in soil collected below the water table and beneath the property building adjacent to the Site and may represent groundwater contamination. Entry points to the environment in the source areas likely included

spills/discharges to the ground on the north side of the building, and release of dry-cleaning solvents to the floor of the building, which entered the environment through floor cracks and/or the basement sump.

This contamination has migrated to groundwater and PCE and its breakdown products trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE) were detected in groundwater at and downgradient of the Site at concentrations above groundwater standards. PCE was the primary contaminant identified above its Standards, Criteria, and Guidance (SCG) value, with two apparent groundwater plumes: one smaller plume originating from the previously excavated area located to the rear (north) of the Site building (maximum concentration of PCE of 21.9 micrograms per liter [µg/L] detected during the Site Characterization [SC]) and extending approximately 50 feet west to North Dutcher Street, and one plume originating from under the center of the Site building and extending approximately 180 feet to the southwest at concentrations above standards. The highest concentration of PCE detected in the groundwater plume originating from below the site building, 2,500 µg/L, was on 49 Main Street. VOC groundwater contamination was present in the shallow groundwater, which primarily exists in overburden, although the bedrock surface is uneven and the water table drops below the top of bedrock surface in some locations downgradient of the Site where the bedrock rises closer to the ground surface.

The VOCs in soil and groundwater have the potential to migrate into nearby buildings by soil vapor intrusion (SVI). SVI sampling has been conducted at the Site building and at five off-site buildings. Based on the sampling results, sub-slab depressurization systems (SSDSs) were installed at two off-site mixed use (commercial/residential) buildings to mitigate the potential for SVI. Based on a review of the SVI data, the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) determined that SVI is not a concern for the other off-Site buildings sampled. SVI sampling results at the Site building in 2019 during the SC showed PCE in the indoor air at concentrations above NYSDOH guidance values which appeared at the time to be the result of vapor intrusion. However, results from additional soil vapor and indoor air samples collected in 2025 were below NYSDOH guidance values and indicated no further action is needed to mitigate potential vapor intrusion (EEEG, 2025b). It is possible that an unidentified product containing PCE was present in the dry cleaner in 2019 that has since been removed..

Per-and polyfluoroalkyl substances (PFAS) contamination was also identified in soil and groundwater at the Site and at the neighboring property during the RI. The source of PFAS is potentially the result of air deposition from dryer vents, or from discharges of PFAS contaminated wastewater. Concentrations of PFAS (primarily perfluorooctane sulfonic acid [PFOS]) in soil were detected at concentrations above protection of groundwater and residential use soil cleanup objectives (SCOs) below the driveway of the

Site and in the fenced-in yard of 49 Main Street; however, they were below the restricted residential and commercial use SCOs. In addition, background soil samples also exceeded the protection of groundwater SCO. The highest concentration of PFOS was 22 micrograms per kilogram (µg/kg) at a depth of two to three feet below ground surface (bgs), compared to a restricted residential use criteria of 44 µg/kg and commercial use criteria of 440 µg/kg.

PFAS contamination in soil has migrated to groundwater, with the highest concentrations detected near the rear (north) of the Site building and flowing primarily to the southwest. The highest concentration of Perfluorooctanoic acid (PFOA) detected was 95 nanograms per liter (ng/L) compared to a maximum contaminant level (MCL) of 10 ng/L and guidance value of 6.7 ng/L. PFOA was also detected in groundwater upgradient of the Site during the SC at a concentration of 18 ng/L. The plume of PFOA interpreted to be originating from the Site and exceeding upgradient concentrations, based on an upgradient temporary well DP-07, is anticipated to extend approximately 300 feet southwest from the rear of the Site building. The highest concentration of PFOS detected during the RI was 331 ng/L, compared to an MCL of 10 ng/L and guidance value of 2.7 ng/L. PFOS was also detected in groundwater upgradient of the Site during the SC at a concentration of 6.1 ng/L. The plume of PFOS originating from the Site and exceeding upgradient concentrations is anticipated to be slightly larger than the PFOA plume, extending more than 300 feet southwest from the rear of the Site building.

Potential exposure to VOC and/or PFAS contamination at the Site at concentrations above guidance values could result from contact with:

- contaminated subsurface soils during construction activities;
- contaminated groundwater via construction, excavation, or withdrawal; and
- soil vapor via migration into the on-Site building (VOCs only).

Following completion of the RI, screening of technologies was conducted to evaluate options to address the groundwater and soil impacts at the site. Screened technologies were used to develop remedial alternatives for further evaluation. Cost estimates and a comparison of alternatives against nine evaluation criteria was conducted for each of the alternatives. The remedial alternative evaluated included:

1) Alternative 1 – No Action. No additional action would be taken to address site impacts.
2) Alternative 2 – Soil Excavation with In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation in Groundwater. This alternative would address: PFAS impacts in soil by removal of PFAS soil to meet background concentration; PFAS impacts in groundwater

by in-situ sorption to minimize further migration; and VOC impacts in groundwater with combined in-situ chemical reduction and enhanced bioremediation within the footprint of the 49 and 53 Main Street Buildings and downgradient of these properties.

3) Alternative 3a and 3b – Low Permeability Cover with ISCO (Alternative A) or Enhanced Bioremediation (Alternative B). This alternative would reduce PFAS impacts to groundwater by installing a low permeability cover over PFAS impacted soil. This Alternative would also address VOC impacts in groundwater within the footprint of the 49 and 53 Main Street Buildings with ISCO (Alternative A) or with in-situ enhanced bioremediation (Alternative B) to reduce the VOC source area and the resulting soil vapor intrusion impacts.
4) Alternative 4 – This alternative would include ISCO to address VOCs in groundwater within the footprint of the 49 and 53 Main Street buildings below buildings (similar to Alternative 3A), and Enhanced Bioremediation to address VOCs in groundwater in the Northern Plume. PFAS impacts in soil or groundwater would not be addressed.
5) Alternative 5 – Monitored Natural Attenuation. This alternative would rely on natural attenuation to address VOC impacted groundwater and would not address PFAS impacts in soil or groundwater. Periodic monitoring would be conducted to evaluate progress. –

1.0 INTRODUCTION

This Remedial Investigation/Feasibility Study (RI/FS) report (Report) has been prepared by Earth Environment Engineering and Geology, P.C. (EEEG; Formerly MACTEC Engineering and Geology, PC [MACTEC]) in response to Work Assignment (WA) No. D009809-28 dated March 16, 2021 from the New York State (NYS) Department of Environmental Conservation (NYSDEC) for the Irvington Rugs and Cleaners Site (Site) in the Town of Greenburgh, New York (**Figure 1.1**) (NYSDEC, 2021) and in accordance with the July 2020 Superfund Standby Contract between MACTEC and the NYSDEC.

The Site (Site No. 360175) is currently listed as a Class 2 site (i.e., poses a significant threat to the public health or environment) by the NYSDEC. WA No. D009809-28 was issued to conduct an RI and FS for the Site.

The classification of the Site stems from the results of the 2020 site characterization (SC) conducted at the Site by EEEG (conducted on behalf of the NYSDEC) (MACTEC, 2020a), as well as investigations previously conducted by the Site owner. Existing Site data was not sufficient to fully characterize the Site and therefore the RI was performed.

The RI/FS for the Site was conducted in accordance with applicable portions of the following documents:

- NYSDEC Division of Environmental Remediation (DER)-10 “Technical Guidance for Site Investigation and Remediation” (NYSDEC, 2010);
- 6 New York Codes, Rules and Regulations (NYCRR) Part 375 “Environmental Remediation Programs”;
- Sampling, Analysis, and Assessment of PFAS (NYSDEC, 2022a, 2022 b, and.2023); and
- NYS Department of Health (NYSDOH) “Guidance for Evaluating Soil Vapor Intrusion (SVI) in the State of New York” (NYSDOH, 2006).
    - Updates to Soil Vapor/Indoor Air Matrices (NYSDOH, 2017, 2024).

NYSDEC determined that the Site poses a potential significant threat to public health and the environment as defined in 6 NYCRR 375 based on the presence of contaminants in soil, groundwater and soil vapor/indoor air (NYS, 2006).

This Report presents the technical scope of work implemented for the RI field activities, presents the results of data collected, and includes an update to the Conceptual Site Model (CSM). The FS develops remedial objectives and evaluates potential RAs from an engineering, environmental, public health, sustainability and economic perspective and develops a preferred alternative.

1.1 REPORT ORGANIZTION

The RI/FS report is structured in general accordance with the NYSDEC DER-10 Guidance (NYSDEC, 2010). The RI/FS includes **Sections 1.0 to 12.0**, and associated Appendices. The RI portions of the report consist of **Sections 1.0 to 7.0**, outlined below.

Section 1.0: Discusses the purpose of the RI, Site history and previous investigations.

Section 2.0: Presents the specific scope of work for the RI.

Section 3.0: Summarizes the physical characteristics of the Site and surrounding area. This includes results of physical characteristics as determined during the RI field program.

Section 4.0: Presents results of analytical data and discusses the nature and extent of contamination.

Section 5.0: Presents the CSM and discusses the fate and transport of the Site contaminants.

Section 6.0: Presents the Qualitative Human Health Exposure Assessment (QHHEA).

Section 7.0 Presents the summary and conclusions of the RI.

The FS portions of the Report consist of **Sections 8.0 to 11.0**, outlined below.

Section.8.0: Discusses the development of remedial action objectives (RAOs), the general response actions, and the contamination requiring remediation.

Section 9.0: Discusses the identification and screening of applicable remedial technologies.

Section 10.0: Presents a detailed description of the various alternatives.

Section 11.0: Presents a detailed analysis and comparison of the various alternatives' relative performance against select criteria. The purpose of the comparative analysis is to identify the advantages and disadvantages of each alternative relative to one another to aid in selecting a remedy for the Site.

Section 12.0 contains references.

The Report is supplemented by the following attached documents:

- Appendix A: Select Site Characterization Report Tables and Figures
- Appendix B: Waste Disposal Documentation
- Appendix C: Survey Deliverables
- Appendix D: Field Data Records
- Appendix E: Climate Screening Checklist
- Appendix F: Data Usability Summary Reports (DUSRs)
- Appendix G Remedial Alternative Cost Details
- Appendix H Remedial Activity Green House Gas Emissions

1.2 PURPOSE OF RI/FS

The purpose of this RI is to evaluate the nature and extent of contamination associated with the Site, and to identify contaminant migration pathways with the potential to impact human health and the environment. The FS develops RAOs and identifies and evaluates potential remedies from an engineering, environmental, public health, sustainability and economic perspective.

1.3 SITE BACKGROUND

Information pertaining to the history of Site operations and past releases of contamination that were supplied by the NYSDEC and/or collected previously by EEEG was reviewed and used to prepare the RI/FS Field Activities Plan (FAP) for the field investigation. The observations from previous site field work, information collected, as well as information provided in the work assignment (WA), are summarized below.

The Site background is discussed in the following sub-sections. Background information was primarily based on reports from previous investigations (see **Section 1.3.3**).

1.3.1 Site Location and Description

The Site is located at 53 Main Street, in the Village of Irvington, Town of Greenburgh, Westchester County, New York (Tax Map and Lot: 2.50-20-11). The Site property consists of approximately 0.06 acres in the historic downtown district.

The property is covered mostly by a one-story building that shares walls with buildings on properties to the east and west of the Site. The southern three quarters of the Site building has a full basement, and the northern one quarter is slab on grade. The area of the Site to the rear (north) of the Site building is paved. The paved portion of the property is accessed from a driveway located on the property to the west.

The site is surrounded by mixed use commercial and residential properties and the surrounding area is serviced by public water and sewer. The Village of Irvington sanitary sewer lines were installed circa 1890 and are separate from the storm sewer. Sanitary sewage has been treated since the 1950's, originally by a village owned treatment plant, but has been pumped since 1971 from a pump station located at the intersection of Main Street and South Buckhout Street to a county treatment plant in Yonkers. The sanitary sewer line below North Dutcher Street is 8-inch diameter, and it flows to an 8-inch line that runs down Main Street; the depth of the lines at this intersection is 7.5 feet bgs.

1.3.2 Site History

It is not known when the Site was first developed, but the Village of Irvington historic downtown street layout was designed in the 1850s (Irvington Historical Society, 2018). Various buildings were present on the property in the early 1900's, and the southern portion of the current Site building may have been constructed as early as 1905 (Ecosystems Strategies, Inc. [ESI], 2005). It is not known when the Site was first used for dry cleaning services. However, the previous owner of the property, and founder of the Irvington Rugs and Cleaners business, purchased the property in 1965 (according to the Town of Greensburgh property card) and it is assumed that dry cleaning services began around this time. The previous owner reportedly stopped active dry cleaning at the property in approximately 1990 (the site was a drop off location only from 1990 until the property sold in 2006); however, an unknown quantity of polychlorinated biphenyl (PCE) was removed from the property around September 2005 (ESI, 2005). The current owner, who purchased the property in 2006, stated that they installed a second-generation hydrocarbon dry cleaning machine that used "Easy Clean" as a solvent (non-chlorinated solvent). Discussions with the property owner in February 2025, indicated that the dry cleaning solvents currently used at the property include DF-2000, a petroleum based solvent made by ExxonMobil Chemical Company, and spot cleaners Prenett A-B-C, Prenett CS and ClipComfort, by Kruessler, Inc. (none of which contain chlorinated compounds according to their safety data sheets). The property continues to operate as a dry-cleaning facility.

1.3.3 Previous Field Investigations

Several investigations have been conducted at or adjacent to the Site, as described below.

In preparation for the sale of the property in 2006, Phase I and II Environmental Site Assessment activities were performed on the Site by ESI (ESI, 2005 and ESI, 2006a). The assessments identified concentrations of PCE and other halogenated volatile organic compounds (VOCs) in soil, groundwater and soil vapor samples collected beneath the Site's building foundation and parking area. The assessment concluded that the soils beneath the site parking area were impacted by PCE at concentrations greater than guidance values (maximum concentration of 3.3 milligrams per kilogram [mg/kg] compared to the guidance value at the time [Technical Administration Guidance Memorandum 4043] of 1.3 mg/kg). VOCs were also detected in groundwater at concentrations above the NYS standard of 5 µg/L including:

- PCE (600 µg/L),
- TCE (440 µg/L), and
- cis-1,2-DCE (1,200 µg/L).

PCE was detected in soil vapor collected beneath the Site parking lot and below the slab on grade portion of the Site building at concentrations of 53,800 micrograms per cubic meter (µg/m^3), and 1,450 µg/m^3, respectively.

Based on these investigations, soil was excavated in April 2006 from the Site parking lot in an area approximately 21 feet long, 12 feet wide, and 5 feet deep and shipped to a licensed disposal facility. Results of five confirmation soil samples collected were below the current NYS protection of groundwater standard for PCE of 1.3 mg/kg (ESI, 2006b). One groundwater sample was also collected in the vicinity of the excavation in May 2006 and analyzed for VOCs; PCE (28 µg/L) was the only compound detected (ESI, 2006c).

In 2015 Enviro-Sciences of Delaware, Inc. collected two near slab soil vapor samples and two groundwater samples for VOC analysis from 49 Main Street which is located adjacent to the site to the west. PCE was detected in the soil vapor at a maximum concentration of 1,410 µg/m^3 (collected from NS-1, located near the exterior basement stairs) and in groundwater at a maximum concentration of 160 µg/L (collected from TP-2, located at the approximate location of the SC/RI DP-05 sample location) (Enviro-Sciences, 2015).

In 2016, ten (10) indoor air samples, one roof air sample, and one ambient (background) air sample from 49 Main Street were collected and analyzed for VOCs. VOCs were only detected in the indoor air samples. The maximum indoor air concentration detected for PCE was 60.1 µg/m^3 in the basement. Indoor air samples were re-collected in February 2018, with a maximum indoor air concentration for PCE of 15.2 µg/m^3 in Apartment 6, located on the third floor (Enviro-Sciences, 2018) (this third-floor air concentration was later determined to be the result of air traveling from the basement to the third floor via a former dumb waiter shaft (MACTEC, 2020a).

EEEG, under contract to the NYSDEC completed a SC in 2020 (MACTEC, 2020a). The SC investigation consisted of soil, groundwater, soil vapor, and basement sump water sampling. Select Figures and Tables from the SC report are included in **Appendix A** and include:

- Figure A.1 Basement and Exterior Sample Locations
- Figure A.2 Groundwater Contours
- Figure A.3 PCE Groundwater Results
- Figure A.4 PCE Soil Vapor Results
- Table A.1 Soil VOC Results
- Table A.2 Groundwater VOC Results
- Table A.3 Emerging Contaminants in Groundwater

The SC investigation did not identify a soil source at the site. PCE and its breakdown products were not detected in the soil samples collected, with the exception of one detection below the Title 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs) in a sample collected beneath the basement floor of the Site. Although limited soil sampling was conducted for this SC, based on these and previous soil sample results, it was concluded that the soil removal action in the rear of the dry cleaner was sufficient to remediate soils in this area to meet the SCOs for unrestricted use.

The SC identified two separate areas that exceeded the NYS groundwater standards. PCE (21.9 µg/L), TCE (6.4 µg/L), and cis-1,2-DCE (6.2 µg/L) were detected in groundwater at one location, collected from beneath the parking area which was likely the result of the previously identified spills. VOC concentrations decreased to the southwest of this location.

The second area was beneath the buildings at the Site and 49 Main Street. PCE was detected in samples from the sump within the Site building and groundwater from beneath the basement slab at 49 Main Street at concentrations exceeding the fresh groundwater (Class GA) standard. The highest concentration of PCE in groundwater was detected in the Site's basement sump (154 µg/L) (the sump water is interpreted to be groundwater). The concentrations exceeding standards extend west under the adjacent structure at 49 Main Street.

In addition to PCE and its breakdown products, per- and polyfluoroalkyl substances (PFAS) was detected in groundwater at the Site at concentrations above the NYS standards. Maximum concentrations of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) were 480 nanograms per liter (ng/L), and 95 ng/L, respectively. PFOS and PFOA were also detected in an upgradient sample at concentrations of 6.1 ng/L and 18 ng/L, respectively.

The highest detection of PCE in water (425 µg/L) was in a sample collected from an apparent vertical cast iron floor drainpipe located at the bottom of a brick floor drain/sump in the basement of 49 Main Street. The SC speculated that this contamination originated at the Site, but the source of PCE was not identified and there were no apparent pipes leading into this brick floor drain/sump. Concentrations of PCE within this pipe were at least an order of magnitude higher than the nearby groundwater sample concentrations.

The SC also identified PCE in the indoor air in both the Site building and the 49 Main Street building at concentrations greater than the NYSDOH guidance value of 30 µg/m^3. The highest indoor air concentrations were detected in a sample collected from within a flux-chamber placed over the floor drain/sump located in 49 Main Street. A source of indoor air contamination was not identified in the SC.

Based on the findings of the SC, the RI was conducted to further evaluate the nature and extent of contamination.

2.0 SCOPE OF WORK

To assess the potential for the Site to pose a threat to public health and the environment as defined in 6 NYCRR 375 (NYS, 2006), an RI was performed. Based on historical data, the RI was performed with the following technical objectives:

- Geophysical survey to clear borings for utilities, as well as to evaluate potential sub-slab piping at 49 Main Street.
- Installation of temporary microwells to evaluate groundwater flow direction.
- Collection of groundwater samples from existing and temporary wells to evaluate extent of potential groundwater contamination, including chlorinated compounds and PFAS.
- Collection of sump water samples to evaluate concentrations of contaminants in basement water.
- Collection of exterior, off-site soil vapor samples to evaluate the potential for vapor migration of site related contaminants.
- Completion of a horizonal and elevation survey of the temporary microwells to evaluate groundwater flow direction.
- Installation and sampling of one bedrock groundwater well at the Site to evaluate the potential for deeper groundwater contamination.
- Collection of surface and subsurface soil samples with hand probe and direct push rig for PFAS analysis to evaluate the extent of PFAS soil contamination.
- Removal of contaminated sediment and water from the dry sump and depression within the basement of 49 Main Street to prevent potential exposure.
- Collection of soil and water samples from below the dry sump and slab of 49 Main Street to evaluate for potential soil and groundwater contamination of site-related contaminants.
- Collection of soil vapor and indoor air samples at four properties (including 49 Main Street), based on exterior soil vapor and groundwater results and approved property access to evaluate for potential SVI.

In addition, based on soil vapor and indoor air sampling results, sub-slab depressurization systems (SSDSs) were installed at two off-site properties as interim remedial measures (IRMs) to prevent vapor intrusion into the indoor air.

Additional activities conducted after the RI field work above and reported under separate cover, but discussed briefly in this report, include:

- Conducting a Pre-Design Investigation (PDI) in August 2024 to evaluate the potential to conduct injections under 49 and 53 Main street as part of the remedy, and collection of additional soil and groundwater samples below 49 Main Street to evaluate depth of overburden contamination (EEEG, 2025a).
- Collection of SVI samples at 53 Main Street in 2025 to assess current SVI conditions (EEEG, 2025b).

To meet the technical objectives outlined above, the investigations outlined in **Table 2.1** were conducted.

The RI fieldwork was conducted in accordance with the specifications presented in the Quality Assurance Program Plan (QAPP) (MACTEC, 2020b) and the Site-specific FAP (MACTEC, 2022a) and FAP addendums (MACTEC, 2022b, MACTEC, 2023a, and MACTEC 2024a). The following subcontractors were used during the RI:

- Aztech Technologies (standby direct push) from Ballston Spa, New York.
- Lawson Surveying and Mapping (site survey) from Oneonta, New York.
- Utility Survey, Inc./Blood Hound (utility clearance).
- Environmental Waste Minimization, Inc. (EWMI) (transportation and disposal of investigation derived waste [IDW]).
- Pace Analytical/Contest (Laboratory analysis provided under direct contract to the NYSDEC).
- Eurofins (conducted some of the PFAS and soil vapor/indoor air sample analysis under contract to EEEG).
- Radon Mitigation Corporation of America (RMCA) (SSDS installation)

Laboratory analysis complied with published protocols.

General field activities, including mobilization, health and safety, and decontamination, are described in the following subsections.

2.1 GENERAL FIELD ACTIVITIES

The field activities completed, including mobilizations, health and safety, decontamination, sampling procedures and any other relevant activities are described in the following subsections. Upon approval of the Site FAP, EEEG and its subcontractors mobilized to the Site and conducted RI fieldwork activities.

The EEEG RI Field Team and project manager performed a video conference prior to each mobilization to familiarize themselves with the site and goals of each step of the investigation.

2.1.1 Health and Safety

RI fieldwork was conducted at a Level D protection level and in compliance with the Site-Specific Health and Safety Plan (HASP) included in the FAP (MACTEC, 2022a). Prior to any fieldwork, daily health and safety meetings were conducted.

2.1.2 Investigation Derived Wastes

IDW generated during this RI was disposed of as appropriate based upon whether the wastes are considered municipal or non-hazardous for disposal/treatment. Used disposable equipment and protective clothing were double bagged in polyethylene trash bags and disposed of as non-hazardous refuse. Transport and disposal of these containers was completed by EWMI and arranged by EEEG on behalf of NYSDEC. Purge water generated during groundwater sampling and well development was containerized. Soil drill cuttings generated during monitoring well installation were containerized. Two drums of purge water/sump pit water and one drum of drill cuttings and basement depression sediment were removed from the Site; soil/sediment was disposed of as non-hazardous waste soil by EWMI based on analytical data (**Appendix B**).

2.1.3 Community Air Monitoring Plan

Investigation techniques were used that minimized the potential for dust and air contamination. Sampling was conducted using direct push technology, which does not generally produce dust, and the rock coring was completed using water to prevent dust. Visible dust was not observed during the field program. VOC air monitoring was conducted at the location of the subsurface work using a RAE Systems MiniRAE 2000 photoionization detector. VOC readings at the drilling/subsurface sampling locations did not exceed the action level of five parts per million (ppm) above background at any time during field work.

2.1.4 Well and Sample Point Survey

Upon completion of the installations of the temporary microwells, Lawson Surveying and Mapping completed a survey of the microwells. Horizontal and vertical locations were then presented to EEEG in excel format to be used with geographic information system software. Horizontal locations are tied to the NYS Plane Coordinate System using North American Datum of 1983 and measured to an accuracy of 0.1 feet. Vertical elevations of groundwater wells were tied to mean sea level (msl), using North

American Vertical Datum of 1988, and measured to an accuracy of 0.01 feet. In addition, Lawson Surveying and Mapping surveyed the horizontal locations of the exterior soil vapor sample locations. The Survey Deliverables are included in **Appendix C**. Because the bedrock well was installed at a later date, the horizontal location was measured in the field by the field crew and no formal survey was conducted. The soil sample and indoor sample locations were measured in the field by the field crew using three-point ties.

2.1.5 DER-31

During the course of the RI field activities, EEEG considered NYSDEC DER-31 implementation objectives (NYSDEC, 2011). The NYSDEC DER's approach to remediating Sites in the context of the larger environment is a concept known as "Green Remediation". The approach is intended to improve the overall sustainability of the investigation by promoting the use of more sustainable practices and technologies. Green Remediation practices and technologies are less disruptive to the environment, generate less IDW, increase reuse and recycling, and emit fewer pollutants, including greenhouse gases (GHGs), to the atmosphere. Green Remediation concepts and techniques were used during the RI/FS investigation field events, including:

- Completing the majority of soil investigations using direct push technologies rather than using Hollow Stem Auger techniques:
    - Reducing emissions to the atmosphere, and reducing IDW
- Using staff local to the Site, carpooling and eliminating idling/using vehicles when possible
    - Reducing emissions to the atmosphere
- Planning sampling events to maximize level of effort while traveling to/from the Site
    - Economy of scale implementing multiple sampling events

2.1.6 Laboratory Analysis

Laboratory analysis for most of the samples were provided under direct contract to the NYSDEC with Pace Analytical, a laboratory certified under the Environmental Laboratory Approval Program (ELAP). Some of the soil vapor/indoor air samples and PFAS soil samples were analyzed by Eurofins, an ELAP-certified laboratory under contract to EEEG. Samples collected were analyzed using the methods below. Pace Analytical and Eurofins provided results as NYSDEC Category B Deliverables.

For soil samples, the following methods were used:

- VOCs by United States Environmental Protection Agency (USEPA) Method 8260
- PFAS by Modified USEPA Method 537 and USEPA Method 1633

For groundwater samples, the following methods were used:

- VOCs by USEPA Method 8260
- Semi-Volatile Organic Compounds (SVOCs) by USEPA Method 8270
- Pesticides by USEPA Methods 8081
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082
- Metals (target analyte list plus mercury) by USEPA Methods 6010/7470
- PFAS by Modified USEPA Method 537 and USEPA Method 1633

For Soil Vapor and Indoor Air samples, the following methods were used:

- VOCs by USEPA Method TO-15

2.1.7 Mobilization

Mobilization included obtaining utility clearances for all proposed locations, procurement of subcontractors, and the acquisition and coordination of supplies. The NYSDEC was responsible for obtaining access agreements to the site and all offsite locations, while EEEG was responsible for obtaining any road opening permits and parking permits from the Village of Irvington.

2.1.8 Access and Clearance

EEEG acquired a road opening permit from the Village of Irvington for all borings located within the public right of way. For Private Property access, EEEG coordinated with NYSDEC and respective property owners. EEEG then had a public and private utility mark-out conducted by Dig Safety NY and Utility Survey, Inc/Blood Hound respectively. Blood Hound also evaluated the potential for sub-slab piping at 49 Main Street and the potential path of the pipe run associated within the dry sump in 49 Main Street to evaluate if it connects to the municipal sewer.

In addition to the utility locates, the drilling subcontractor cleared the exterior microwell locations by soft digging and air-vacuuming to five feet bgs, if possible.

2.1.9 Decontamination

Sampling methods and equipment for this field program were chosen to minimize decontamination requirements, mitigating potential for cross contamination. Disposable sampling equipment was used as much as practical to minimize decontamination time and water disposal. Non-disposable sampling equipment was decontaminated before and after the collection of each sample.

Non disposable sampling equipment was decontaminated by washing the sample collection equipment with potable water and Alquinox, rinsing with potable water, rinsing with deionized water, and then allowing the equipment to air dry. Drilling equipment was decontaminated by steam cleaning with potable water prior to each boring and before leaving the Site. Drilling equipment (i.e. drill rods and casing) was decontaminated on a temporary decontamination pad constructed at the Site. Decontamination fluid was containerized for off-site disposal at a licensed facility.

2.2 FIELD PROGRAM SAMPLING

Fieldwork was conducted in the manner described in the following subsections. Fieldwork was conducted in accordance with specifications presented in the QAPP (MACTEC, 2020b).

2.2.1 Temporary Direct Push Microwell Installation and Sampling

To better evaluate groundwater contaminant concentrations and distribution in overburden groundwater, as well as groundwater flow downgradient, EEEG oversaw the installation of 8 temporary monitoring wells. Two of the proposed 10 microwells (DP-13 and DP-14, located on South Cottenet Street), were unable to be completed due to cobbles/refusal and utilities in the target area. Completed microwell locations are shown on **Figure 2.1** (although dry at refusal, location of DP-14 also shown since it was used as GV-14 location). The microwells were constructed with schedule 40 polyvinyl chloride, with up to 10-foot lengths of 0.01-inch machine slotted well screens. The microwells were installed with the bottom of the well screens set between 7 and 15 feet bgs. All microwells were presumably set on top of rock (direct push refusal), except for DP-5 (set at 15 feet bgs with no direct push refusal). Well installation logs are included in **Appendix D**. Well details are also included on **Table 2.2**.

Once installed, the temporary microwells were sampled at a low flow rate (e.g., 150 milliliters per minute) using grab sample techniques. Although newly installed microwells are considered fresh groundwater, one well volume was purged prior to collecting the sample, if possible. Groundwater samples were analyzed for VOCs and at four locations for PFAS. Although the temporary microwells were originally installed and sampled at the end of March 2022, the VOC samples needed to be recollected using the same methods and locations at the end of May 2022. Water levels were slightly lower in May and a VOC sample was not able to be collected from DP-09.

2.2.2 Water Level Measurements

Water levels were measured between March 23-25, 2022, from existing monitoring wells and temporary microwells to evaluate groundwater flow direction. Water levels are presented in **Table 2.2**.

2.2.3 Existing Well Groundwater Sampling

Groundwater samples were collected from the three existing monitoring well/microwell locations in March and June 2022 using low-flow sampling procedures (DP-02, DP-04, and DP-05).

Field measurements for pH, temperature, specific conductivity, oxidation reduction potential, dissolved oxygen (DO), and turbidity were collected at each monitoring well during pre-sample purging to evaluate well stabilization, as well as to provide information for evaluating geochemical parameters. Field measurements and monitoring well sampling activities were documented using a Low Flow Groundwater Data Record (**Appendix D**).

Purge water was containerized and stored on-Site in 55-gallon drums for disposal at a licensed facility.

Groundwater samples from permanent monitoring wells installed March 2022 were analyzed for VOCs, SVOCs, pesticides, PCBs, and metals (target analyte list plus mercury), and in June 2023 for PFAS.

Additional groundwater samples were collected in March 2024 from DP-04 for analysis of PFAS.

2.2.4 Bedrock Well Installation and Sampling

Due to the identification of shallow bedrock at the Site (i.e., less than 20 feet bgs) and the concern that if the PCE was present as a dense non-aqueous phase liquid (DNAPL) it could migrate deeper and affect bedrock groundwater, one bedrock well (MW-3D) was installed to the rear (north) of the Site facility in June 2022 (**Figure 2.1**). MW-3D was installed at the location of temporary well DP-03, which was installed and sampled during the SC. The well was installed using Hollow Stem Auger to bedrock at 19 feet bgs, then coring using water to a depth of 29 feet bgs. The bedrock well was set with a five-foot screen from approximately 21 to 26 feet bgs (bottom three feet of boring caved in during well installation), with sand up to 19 feet bgs, and a one-foot bentonite seal at the overburden/bedrock interface. The well was developed using pump and surge techniques.

The well was sampled in June 2022 for VOCs and PFAS and again in March 2024 for PFAS using low flow sampling procedures.

2.2.5 Exterior Soil Vapor Sampling

Nine temporary soil vapor sample points were installed at depths up to 5 feet bgs and co-located within five feet of the temporary microwells using push point samplers (GV-08 to GV-12 and GV-14 to GV-17) (**Figure 2.1**) (Sample GV-13 could not be completed due to utilities). The ¼-inch outside diameter push points with 1-inch screens were pushed to depths of four to five feet bgs and sealed at the surface with hydrated bentonite and modeling clay. Helium leak testing was completed along with collecting soil vapor samples for VOC (EPA Method TO-15) analysis. The soil vapor sample locations were surveyed by Lawson Surveying and Mapping (GV-14 was located at DP-14 location).

2.2.6 Sump Water Sampling

Water samples were collected from the basement sumps located at the Site, at 49 Main Street (DW-02), at 47 Main Street (DW-05), and at 45 Main Street (DW-06) for analysis of VOCs (**Figure 2.1**). Samples were collected with ¼ inch high-density polyethylene and silicon tubing connected to a peristaltic pump to fill sample vials.

An additional sump water sample was collected from 45 Main Street (DW-06) for analysis of PFAS. The PFAS sample container was dipped into the sump water after emptying the sump and allowing it to recharge; care was taken to not allow the bottle to overfill.

2.2.7 PFAS Soil Sampling

Based on the detection of PFAS in the groundwater samples collected in 2022, soil sampling was conducted at the Site and 49 Main Street to identify a potential source(s).

Twelve samples were collected with hand augers from the ground surface to depths up to two feet bgs at four locations (SB-01 to SB-04) in September 2022 and analyzed for PFAS.

Based on the results of the 2022 soil sampling, an additional 30 soil samples were collected at depths up to 6 feet bgs from 10 locations using hand augers and direct push technology in October 2023 and analyzed for PFAS (SB-1A to SB-4A and SB-5 to SB-10). PFAS soil sample locations are presented on **Figure 2.2**.

2.2.8 Indoor Air and Sub-Slab Soil Vapor Intrusion Sampling

Soil vapor and indoor air samples were collected from the Site and two off-Site buildings during the SC. Based on these results, the NYSDEC and NYSDOH determined that additional off-site properties should be sampled to evaluate if contaminants of concern (COCs) from the Site are migrating off-Site in groundwater and creating a potential exposure pathway via vapor intrusion. Indoor air and sub-slab soil vapor samples were collected from three additional properties west of the Site in 2022. Samples were obtained over an approximate 24-hour period (flow rate was less than 0.2 liters per minute as required by NYSDOH and collected per the NYSDOH guidance [NYSDOH, 2024]). Two of the off-site properties were resampled in 2023.

Based on the construction of the building evaluated (e.g., presence of a concrete slab or dirt floor), one sub-slab soil vapor sample and one basement air sample were collected from one of the properties, and one basement air and one first floor air sample were collected at the remaining two properties, along with one ambient air background sample per 24-hour sample period. One duplicate sample was also collected. Samples were submitted for analysis of VOCs (EPA Method TO-15).

Soil vapor sampling activities were documented using a Soil Vapor Sampling Record. Soil vapor/indoor air results and field documentation were reported under separate cover (MACTEC, 2023b and MACTEC, 2023c).

2.3 INTERIM REMEDIAL MEASURES

IRMs are conducted to "prevent, mitigate, or remedy environmental damage or human exposure to contaminants while RAs are being considered" (NYSDEC, 2010). SSDSs were installed to mitigate vapor intrusion of Site related contaminants at:

1) 47 Main Street based on the NYSDOH SVI matrix (NYSDOH, 2017) for trichloroethene (TCE) (installed in October/November 2023).
2) 49 Main Street based on the NYSDOH SVI matrix (NYSDOH, 2017) for PCE (installed in July 2022).

The SSDSs were designed and installed by RMCA, a licensed radon installer with oversight by EEEG. The design/installation followed ASTM E2121 (Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings) and was performance based to meet a sub-slab vacuum of 0.004 inches water column. SSDS installation reports were completed under separate cover to document the installations (MACTEC, 2023d and MACTEC, 2024b).

Prior to installing the SSDS at 49 Main Street, additional sampling and remedial activities were conducted in January 2022 to evaluate and remediate PCE contamination that was identified within the basement during the SC, including:

- In sediment and water in an approximate two-foot by two-foot by one-foot-deep brick sediment trap/sump located on the western edge of the basement. The sump had an approximate three-inch diameter cast iron pipe in the bottom that was determined to have a p-trap prior to connecting to the sanitary sewer system (this location is below the depth of the storm sewer).
- In silt/water within an approximate 8-foot by 12-foot depression located on the eastern edge of the basement

Additional characterization samples were collected during the RI, and actions were taken to mitigate exposure to the identified contaminants, as described in the following paragraphs.

The brick sump had a constant trickle of water entering from an unknown location. Blood Hound used geophysical techniques across the basement slab to attempt to identify if any pipes/brick conduits lead to the sump on the western side of the basement. Although no obvious pipes were identified, a potential line was identified in a general east west direction on the east side of the sump. To evaluate if this was potentially a leaking pipe coming from the direction of the Site, or a preferential path for contaminated groundwater, the basement slab was cored at two locations in the vicinity of this line for the collection of soil and/or groundwater samples.

Samples were collected from the following locations in the basement:

- GW-002-14 water sample from the three-inch cast iron pipe in the brick sump.
- HA-001-01 soil sample from 0 to 0.6 feet below the bricks within the sump.
- Core hole location 1, 12 feet east of the brick sump
    - GW-002-15 water sample (clear water, no odor or sheen)
    - HA-002 soil sample (wet brown sand with silt and cobbles)
- Core hole location 2, 18 feet east of the brick sump
    - GW-002-16 water sample; yellow oily sheen and petroleum odor
    - HA-003 soil sample (wet brown sand with silt and cobbles)
- GW-002-13 water that filled the depression on the east side of the basement after it had been cleaned out.

After the samples were collected from the brick sump, the sump was power washed and cleaned to remove any potentially contaminated sediment and water. The cast iron pipe was also cleaned out and confirmed to be functional and connected to the sanitary sewer (although the actual connection was not visually identified, the pipe was traced from the surface and the pipe signal disappeared below North Dutcher Street in the vicinity of the sanitary sewer line, which is reportedly present at approximately seven feet below the road).

The depression on the east side of the basement was cleaned of debris and silt and power washed to remove any potentially contaminated sediment. The depression immediately filled with groundwater that seeped in the sides and the above referenced water sample (GW-002-13) was collected.

A daily field activities log detailing the interior sampling conducted in January 2022 is included in **Appendix D**.

During the installation of the SSDS at 49 Main Street in July 2022 the sloped concrete edges of the depression were removed and the depression was mostly filled with washed stone (the depression was approximately 1.2 feet deep) and an approximate 6-inch thick rebar reinforced concrete slab was placed to match the grade of the existing slab (MACTEC, 2023D). This work was conducted to prevent contact to contaminated groundwater and to provide a barrier to prevent off-gassing of VOCs from the groundwater in the depression directly into indoor air.

2.4 ADDITIONAL POST RI SAMPLING CONDUCTED

After the RI activities were completed and during the compilation of the FS, it was determined that additional data would be beneficial to evaluate alternatives and potential remedial actions, and therefore the following activities were conducted and reported under separate cover:

- A PDI was conducted in August 2024 to evaluate the potential to conduct injections under 49 and 53 Main Street as part of the remedy, and collection of additional soil and groundwater samples below 49 Main Street at boring DP-18 (same location as HA-03/GW-02-16) to evaluate depth of overburden contamination, overburden hydraulic conductivity, and the soil oxidant demand (EEEG, 2025a).
- SVI samples were collected at 53 Main Street in 2025 to assess current SVI conditions and potential need for an SSDS (EEEG, 2025b).

3.0 PHYSICAL SETTING

The sections below describe the topography, climate, surface water and groundwater hydrology, and geology in the area surrounding the Site.

3.1 TOPOGRAPHY

The Site is generally flat and is located at an elevation of approximately 90 feet above msl. The topography of the surrounding area slopes down to the west towards the Hudson River which is located approximately 1,300 feet from the Site at an elevation near sea level (United States Geological Survey, 1979).

3.2 CLIMATE

The climate of the area is characterized by moderately warm summers and cold winters. Mean monthly temperatures range from 31.4 degrees Fahrenheit (°F) in January to 75.0°F in July. Average annual precipitation is 51.24 inches. Average annual snowfall is 32.7 inches per year (National Climatic Data Center, 2020). A Climate Screening was conducted for the Site to assess the potential for exposures to changes in climate hazards. Potential exposures were not identified (Screening Checklist included in **Appendix E**).

3.3 GEOLOGY

Field investigations at the Site suggest that overburden in the area is an unconsolidated till which primarily consists of brown sands and silts. Shallow fill also contained large cobbles. United States Department of Agriculture (USDA) Natural Resources Conservation Services Soil Survey identifies the shallow soil at the Site as Urban land-Charlton complex (8 to 15 percent [%]) that is very deep, well-drained soil (USDA, 1994). The native overburden in the area (below the fill) consists of glacial till deposits overlaying the bedrock (Cadwell, 1989). During the RI/FS, bedrock was encountered at depths between 9 feet bgs and 20 feet bgs across the study area, with bedrock below the parking lot on the north side of the Site encountered at 19 feet bgs. The bedrock surface in the study area is uneven and appears to undulate shallower and deeper bgs.

Bedrock below the Site is mapped as Early Cambrian to Late Ordovician Inwood Marble (Fisher et al., 1970). Inwood Marble is characteristically a dolomite marble, calc-schist, granulite and quartzite overlain by calcite marble (Fisher et al., 1970). However, field observations indicate that the bedrock below the site may be the Fordham Gneiss, which is older than the Inwood Marble and also present in much of Westchester County and is generally described as a coarse-textured, banded black and white biotite gneiss that is rich in quartz and biotite (but is also interlaid with marble, mica schist and granite (Reynolds, 1988). The rock quality designation was 73% for the top five feet of bedrock and 86% from five feet to eight feet into bedrock, indicating high quality rock.

3.4 SURFACE WATER HYDROLOGY

The Site is covered by impervious surfaces including the Site building (which occupies the majority of the property) and a paved driveway/parking area. Precipitation from the rear of the property is anticipated to flow down the driveway to North Dutcher streets and into storm water drains which flow west to the Hudson River. Roof drains are also assumed to be connected to the storm water drains.

Storm sewer lines on North Dutcher Street are 16-inch diameter concrete pipes located on the east and west sides of the street and are approximately 56 inches deep.

3.5 GROUNDWATER HYDROLOGY

Groundwater beneath the site and the immediate surrounding area is encountered from approximately three to ten feet bgs. Although groundwater was encountered within the overburden at most locations, the top of the water table was below the bedrock surface in some downgradient areas where depth to bedrock was shallow and rose above the top of the water table. Groundwater measurements indicate that shallow groundwater flows west towards the Hudson River. Interpreted groundwater contours and flow direction are presented on **Figure 3.1**. Water level measurements are presented in **Table 2.2**.

As presented in the PDI Report (EEEG, 2025a), hydraulic conductivity values for DP-02 ranged from 1.2 to 2.8 feet per day, resulting in a flow velocity of approximately 170 to 310 feet per year assuming an effective porosity of 0.2 and a hydraulic gradient of 0.623 feet per foot. Values were lower for DP-05, screened slightly deeper than DP-02, with K values ranging from 0.3 to 0.4 feet/day and resulting flow velocities of 40 to 50 feet per year, using the same effective porosity and hydraulic gradient assumptions above.

4.0 NATURE AND EXTENT OF CONTAMINATION

This section presents the results of soil, groundwater, sump water, sub-slab soil vapor, and indoor/ambient air samples collected during the RI/FS field work from 2022 through 2024. The results from sub-slab soil vapor and indoor/ambient air sampling conducted in 2022 and 2023 presented in separate reports submitted to the NYSDEC (MACTEC, 2023b and MACTEC 2023c) are included in this evaluation. In addition, relevant analytical results from previous investigations described in **Section 1.0** are discussed as applicable.

Laboratory results were reviewed and evaluated against data quality objectives. DUSRs were prepared in accordance with the "Guidance for the Development of Data Usability Reports" (NYSDEC, 2010) (see **Appendix F**). The data presented in this report and used in this section meet the data quality objectives for an RI/FS.

Analytical Results were compared to the following Standards, Criteria, and Guidance (SCGs):

- Groundwater SCGs are from the NYSDEC's Ambient Water Quality Standards and Guidance Values (NYSDEC, 1998) and Part 5 of the NYS Sanitary Code and the NYSDEC Sampling, Analysis, and Assessment of PFAS (NYSDEC, 2023).
- Soil SCGs are from the NYSDEC's Cleanup Objectives included in 6 NYCRR Subpart 375-6 - Remedial Program SCOs for Unrestricted and Restricted Uses (NYS, 2006) and the NYSDEC Sampling, Analysis, and Assessment of PFAS (NYSDEC, 2023)
- Soil vapor and indoor air were evaluated using the air guidelines provided in the NYSDOH guidance document titled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York," (the NYSDOH Guidance) (NYSDOH, 2017, 2024).

4.1 SOIL

Soil samples were not collected for metals, pesticides, PCBs, and SVOCs during the RI because results from the SC did not indicate the site was a source of these contaminants to the environment. One of the five soil samples collected during the SC (location DP-02 at a depth of one foot) did indicate several SVOCs at concentrations above the SCOs for residential use (and one above the SCO for commercial use); however, this sample was collected just below the paved parking lot and is assumed to represent likely asphalt in the sample and not that the site is a source of SVOC contamination. In addition, mercury was detected in one of the five soil samples (location DP-03 at a depth of 3 ft) at a concentration of 1.6

mg/kg compared to the SCO for residential use of 0.81 mg/kg. This result appears to be an anomaly as mercury was not present at elevated concentrations in the other on-site borings and therefore the site was not determined to be a source of mercury contamination.

Soil samples collected during the RI were analyzed for VOCs and PFAS. Soil sample results for VOCs are presented in **Table 4.1** and PFAS are presented in **Table 4.2**. VOC soil sample results from the PDI are also included in **Table 4.1**.

VOCs.

Soil samples were collected during the RI and PDI at four locations below the basement slab of the adjacent 49 Main Street (HA-01 to HA-03 and DP-18, although HA-03 and DP-18 were cored at the same location). PCE was detected at three of the four locations (HA-01, HA-03, and DP-18) at concentrations above the SCO for the protection of groundwater:

- Two of these three locations (HA-03 and DP-18) also slightly exceeded the SCO for residential use (maximum detection of 8.46 mg/kg compared to SCO for residential use of 5.5 mg/kg).
- Two of the results (HA-03 and DP-18) also exceeded the SCO for the protection of groundwater for cis-1,2-DCE.
- Highest concentrations were immediately below the basement slab, with low concentrations (below SCGs) on top of bedrock at nine feet below the top of the slab.
- These soil samples were collected below the groundwater table.

Soil sampling conducted at the Site prior to the RI did not indicate remaining VOC contamination at the Site above the SCOs for unrestricted use, including:

- Confirmation soil sampling post the 2006 excavation of the previously identified soil source area to the rear (north) of the building.
- Soil sampling conducted during the 2018 SC, which included exterior soil borings to the rear of the site building (DP-3), adjacent to the west side of the site building (DP-4 and DP-5), and below the slab on grade portion of the building (DP-01).
- Soil sampling conducted during the 2018 SC from below the Site's basement slab (HA-01-10 and HA-01-12) (SC sampling locations and results are presented in **Appendix A**).

VOC sampling indicates an apparent historic release or releases of dry-cleaning solvents from previous Site activities. The concentrations of PCE detected in soil did not indicate an obvious contaminant source area, and most detections were in samples from soils below the groundwater table and likely represent

contaminant migrating in groundwater. Sample locations and PCE results from the SC and RI are presented on **Figure 4.1**.

PFAS.

Sampling results indicate that PFAS contamination is present in Site soil; however, PFAS are also present in background areas unaffected by Site activities. The primary PFAS detected above its guidance value was PFOS. **Figure 4.2** presents locations of PFAS soil samples and relative concentrations of PFOS detected. Although the use of the site is commercial, and 49 Main Street is mixed use for commercial/multi-tenant residential, PFAS soil results are discussed below in relation to the SCOs for multiple uses for comparative purposes.

Background.

For comparative purposes, samples for PFAS analysis were collected from one location upgradient of the Site (DP-09). Concentrations of PFOS were detected in the surface soil sample (3.15 µg/kg) and one- to two-foot-deep sample (1.31 µg/kg]) above the SCO for the protection of groundwater (1.0 µg/kg) and SCO for unrestricted use (0.88 µg/kg).

Site.

PFAS sampling below the parking area to the rear of the Site indicate that:

- Of the 12 soil samples collected:
    - seven exceeded the protection of groundwater SCO for PFOS (1.0 µg/kg)
    - four exceeded the background concentration for PFOS (3.15 µg/kg), and
    - two exceeded the residential use SCO for PFOS (8.8 µg/kg).
    - None of the sample results exceeded the restricted residential use or commercial use SCOs for PFOS or PFOA.
- The highest concentration of PFOS detected during the sampling 22 µg/kg was detected at SB-03, near the rear door of the Site building, at a depth of two to three feet bgs.
- PFOS concentrations were below background and the protection of groundwater SCO at the two soil samples collected from five to six feet bgs.

49 Main Street.

Concentrations of PFAS were also detected within the fenced in yard and below the paved driveway of 49 Main Street and results indicate:

- Of the 27 soil samples collected:
  - 20 exceeded the protection of groundwater SCO for PFOS (1.0 µg/kg)
  - 14 exceeded the background concentration for PFOS (3.15 µg/kg), and
  - five exceeded the residential use SCO for PFOS (8.8 µg/kg).
  - one exceeded the protection of groundwater SCO for PFOA (0.8 µg/kg)
  - None of the sample results exceeded the restricted residential use or commercial use SCOs for PFOS or PFOA.
- The highest concentration of PFOS, 18.4 µg/kg, was detected at SB-05 at a depth of two to three feet bgs below the paved driveway.
- PFOS concentrations were below the background concentration in the five samples collected at five to six feet bgs, and below the protection of groundwater SCO in four of the five samples.

Grassed roadside along N. Dutcher Street.

PFAS was detected in the one soil sample collected outside the driveway of 49 Main Street (SB-10).

- PFOS was detected at a depth of one to two feet bgs at a concentration of 3.5 µg/kg, slightly above the background result of 3.15 µg/kg.
- Although it's possible this could be Site related, for the purposes of source area delineation, this sample is being considered background.

PFAS conclusions.

PFAS are present in background soil in the vicinity of the Site, although at lower concentrations than detected at the Site. No obvious point source of PFAS was identified at the Site, and although there may have been discharges of wastewater to the rear of the building that contained PFAS, it is also likely that PFAS distribution in soil is the result of air deposition of PFAS discharged from dryer vents. Concentrations of PFOS were detected in soil at the Site and 49 Main Street at concentrations above residential use and protection of groundwater SCOs, as well as background. Concentrations in soil appear to diminish with depth, with concentrations in samples collected from five to six feet bgs below the background result. The approximate area where PFOS exceeded background (potentially 3.5 µg/kg) is 1,740 square feet. With an estimated depth of contamination above background at four feet bgs, the volume of contaminated soil above background is approximately 260 cubic yards. Although this area exceeded the protection of groundwater SCOs and apparent background concentrations for PFOS, concentrations did not exceed restricted residential use or commercial use SCOs.

4.2 GROUNDWATER

Groundwater results for VOCs are presented in **Table 4.3**, PFAS are presented in **Table 4.4**, and SVOCs, metals, pesticides, and PCBs are presented in **Table 4.5**. VOC results from the PDI are also included in **Table 4.3**.

Upgradient.: A temporary upgradient (likely background) groundwater well was installed during the SC (DP-07) and sampled in January 2019. Results of the upgradient sample indicated:

- VOCs were not present in upgradient groundwater.
- PFAS were present in upgradient groundwater.
    - PFOS were detected at a concentration of 6.1 ng/L, compared to a MCL of 10 ng/L and guideline value of 2.7 ng/L.
    - PFOA were detected at a concentration of 18 ng/L, compared to an MCL of 10 ng/L and guideline value of 6.7 ng/L.

VOCs: PCE and its degradation compounds TCE and cis-1,2-DCE are the primary contaminants in groundwater detected at concentrations above SCGs. The highest PCE concentration detected during the RI, 2,500 µg/L, was detected in groundwater immediately below the basement slab of 49 Main Street, just downgradient from the Site. This concentration is similar to that detected during the SC and PDI. Concentrations of PCE detected in groundwater in the immediate vicinity of the Site during the SC and RI are presented on **Figure 4.3**. and concentrations above groundwater standards are interpreted to extend approximately 200 feet west and southwest of the Site. The extent of the PCE plume is shown on **Figure 4.4**.

Groundwater results indicate potentially two separate areas of VOC contamination above groundwater criteria: 1) from approximately the center of the Site building and extending approximately 200 feet to the west and southwest, and 2) from below the parking area to the north side of the Site building and extending approximately 100 feet to the west. Because there was a known historic spill of PCE to the parking area and a previous soil removal action, a bedrock groundwater monitoring well was installed in this area to confirm there was not a deep source of contamination; VOCs were not detected in groundwater from this bedrock monitoring well. Groundwater samples collected during the PDI also indicate decreased concentrations with depth at DP-18, located below 49 Main Street and immediately downgradient of the presumed source.

PFAS: Detections of PFAS exceeded the NYS standard for PFOS and PFOA. The highest concentrations detected during the 2022 RI sampling were detected adjacent to the Site building at DP-04, with concentrations of PFOS at 230 ng/L and concentrations of PFOA of 42 ng/L, which exceed their respective published MCL of 10 ng/L. These concentrations are slightly lower, but in the same order of magnitude as those detected during the SC at temporary point DP-03 (480 ng/L), located directly north of the site building (in the vicinity of MW-3D). DP-04 was resampled in March 2024 with results indicating concentrations of PFOS at 331 ng/L and concentrations of PFOA of 66.7 ng/L.

The groundwater plume indicates that the soil contamination is leaching/has leached to groundwater in the vicinity of the north end of the Site building. The extent of the PFOS overburden groundwater plume is presented on **Figure 4.5**, and the extent of the PFOA overburden groundwater plume is presented on **Figure 4.6** (concentrations shown represent 2022 and older results). The PFOA plume at concentrations above upgradient levels is anticipated to extend approximately 300 feet southwest of the Site and the PFOS plume is anticipated to be slightly longer.

Other Parameters. The metals iron, manganese, and sodium were detected in exceedance of the SCGs; however, they are not considered to be Site contaminants and typically occur naturally in the environment. SVOCs were only detected in DP-04 and are likely related to a historic leaking underground heating oil tank at 49 Main Street (petroleum odors and black stained tubing were observed at DP-04); however, SVOCs were not detected at concentrations above SCGs. Pesticides and PCBs were not detected in the groundwater samples.

4.3 EXTERIOR SOIL VAPOR

Exterior Soil Vapor samples were collected from nine locations at depths of approximately five feet bgs. Elevated concentrations of PCE (1,100 µg/m^3) and TCE (110 µg/m^3) were detected in sample GV-08, which was collected below the driveway of 49 Main Street. PCE was detected in the remaining eight soil vapor samples, but at a maximum concentration of 11 µg/m^3 and TCE was not detected in any of the remaining 8 samples. Soil vapor results are presented in **Table 4.6**.

4.4 SOIL VAPOR/INDOOR AIR

Sub-slab soil vapor, indoor air, and/or outdoor ambient air samples were collected during the RI in 2022 and 2023 at four off-site structures located in the vicinity of the Site (Structures 2, 4, 5, and 6) (MACTEC, 2023b and MACTEC, 2023c). Soil vapor samples were also collected from a fifth structure (Structure 3) during the SC. Sampling was offered at an additional two structures, but property owners declined. Sampling locations are shown on **Figure 4.7**, including the Site building, denoted as Structure

1. Results of air samples collected during the RI are also presented in **Table 4.7**. Structure 1 was sampled during the SC and resampled in February 2025 (reported under separate cover).

As a result of SVI sampling during the SC and RI, two SSDSs were installed at Structures 2 and 5 (MACTEC, 2023d and MACTEC 2024a). The NYSDEC and NYSDOH deemed that no further action was necessary at the remaining properties and that no further sampling was needed.

5.0 CONCEPTUAL SITE MODEL

The CSM is based on historical data and data collected during the SC, RI, and PDI. The CSM is based on information that is currently available and is considered to be a dynamic model taking into consideration sources of contamination, potential receptors, exposure pathways, and exposure points. This CSM is intended to be modified as more data become available and to be referenced while collecting and/or analyzing data in the future. The CSM should be modified when information gleaned from field and/or laboratory data demonstrates the need for its modification.

5.1 SITE BACKGROUND

It is believed that dry cleaning operations began at the Site in 1965 and have continued (with a period of inactivity between 1990 and 2006) to the present. PCE was used as a dry-cleaning solvent until reportedly 1990, when the Site became a drop off/pick up location only; however, PCE was still present at the facility until 2005, when an undefined quantity of PCE was removed. Although PCE was likely released to the environment prior to 1990 during active PCE use, it is possible that a release could have occurred up to 2005, when the last PCE was removed from the building; spills reportedly occurred in the unpaved parking area behind the building and, based on concentrations observed in groundwater beneath the building foundation, also likely occurred at locations within the building. When the property changed hands in 2006 the use of PCE was reportedly discontinued and operations have since included non-PCE containing solvents and cleaners.

5.2 CONTAMINANTS OF CONCERN (COCS)

VOCs, primarily PCE, are present in soil, groundwater, soil vapor, and indoor air at concentrations above the applicable SCGs. The emerging contaminants PFAS have also been identified in soil and groundwater at concentrations above their state criteria.

The fate of VOCs and PFAS in the environment varies in part on their ability to degrade/breakdown and their persistence.

VOCs. Chlorinated VOCs are fairly persistent in the environment. The processes that likely control the fate of these contaminants at the Site include the following:

- Volatilization reduces mass through the partitioning of contaminants from aqueous phase to vapor.
- Dissolution reduces soil mass as residual solvent product partitions to groundwater.

- Biodegradation reduces mass as contaminants undergo transformational reactions via aerobic and/or anaerobic processes.

The presence of the PCE degradation products TCE and cis-1,2-DCE in groundwater indicate that some degradation is occurring. Microbial data and monitored natural attenuation (MNA) parameters collected during the SC indicated that although proper microbes for the complete degradation of PCE to non-toxic biproducts are present in low numbers, there is limited evidence for biological degradation (MACTEC, 2020a) (microbial and Biochlor screening results from the SC are also included in **Appendix A**).

However, concentrations of contamination in groundwater in the two plumes appear to be diminishing over time.

For the groundwater plume emanating from the source below the Site parking area, concentrations have been diminishing since the soil removal action in 2006, as evidenced by PCE detected in groundwater in 2006 in the vicinity of DP-03 at concentrations of 600 µg/L prior to the soil removal action, compared to concentrations of 21.9 µg/L during the SC in 2018.

For the groundwater plume apparently emanating from below the center of the Site building, concentrations of PCE remain fairly high in groundwater below the adjacent 49 Main Street (2,500 µg/L) detected during the RI in 2022. There is minimal temporal groundwater data for this second plume; however, the following was observed:

- Groundwater concentrations of PCE in the Site's basement sump were fairly consistent between 2018 and 2022 (154 µg/L and 150 µg/L, respectively).
- Concentrations of PCE along the northern edge of this plume below the southern side of the outdoor courtyard behind 49 Main Street have shown a decreasing trend. DP-05 is at the approximate location of boring TP-2 completed in 2015 by ESI (Enviro Sciences, 2015), and concentrations of PCE in DP-05/TP-2 having diminished from 160 µg/L in 2015, to 2.2 µg/L in 2018, to 0.94 µg/L in 2022.

Although data indicates that the groundwater VOC plumes are diminishing over time, there is likely residual contamination bound to soil below the groundwater table and beneath the Site building that is acting as a continuing source of groundwater contamination. PCE within the soil/water matrix will likely persist for some time as the natural degradation process in this area appears slow.

PFAS: PFAS are very persistent in the environment and are considered a class of "forever chemicals" because they are long lasting with components that break down very slowly over time. The processes that likely control the fate of these contaminants at the Site include the following:

- Dissolution reduces soil mass as residual PFAS partitions to groundwater. PFAS were made for their oil and water-resistant properties, and as such, are highly mobile in groundwater; although they can repartition to soil organic matter, as well as other solids based on electrostatic interactions.

There is insufficient PFAS data to determine if there are any trends or patterns in groundwater concentrations.

Although PFAS are present in background soil and upgradient groundwater, the higher concentrations detected in soil at the Site and neighboring yard are likely acting as a continuing source of groundwater contamination.

5.3 SOURCE AREAS AND POINTS OF ENTRY

VOCs: PCE was previously used at the Site as a dry-cleaning solvent, however no current ongoing use or storage of chlorinated VOCs (e.g., storage tank, or use of chlorinated VOCs) was identified at the Site. Residual soil contamination from spills could be acting as a source to groundwater and indoor air. Reported spills of PCE occurred in the parking area to the rear of the Site building, which was previously unpaved. Soil contamination in this area was excavated to meet unrestricted use SCOs, however, contaminants appear to have migrated with infiltrating rainwater to groundwater in this area of the Site. Additionally, based on concentrations identified in the water collected from the basement sump at the Site, it is likely that spills occurred at locations inside the building and migrated to sub-slab soil. Although possible, it is not apparent that PCE is present as a DNAPL in soil below the Site building. Convention is that a VOC is present as a DNAPL, or was present at one time as a DNAPL, if concentrations in groundwater exceed 1% of the effective solubility of the compound (Plankow, 1996). The highest concentration of PCE detected in groundwater, 2.5 mg/L at GW-02-16, is approximately 1.6% of the solubility of PCE in water (150 mg/L). Although greater than 1% of effective solubility, due to the low concentration and time since the likely spill that would allow the product to sorb to soil particles, there is not strong evidence for the presence of PCE as a DNAPL. In addition, soil and groundwater data collected during the PDI indicate decreased concentrations of PCE with depth below sample GW-02-16 (at DP-18), indicating that PCE did not travel vertically through the soil column as a DNAPL. Although PCE as a DNAPL is not likely present below the site, it is likely that there are pockets

of unidentified PCE soil contamination below the site building, or sorbed to soil particles below 49 Main Street, that are acting as a continued source of groundwater contamination.

Although chlorinated compounds present in building material, for example chlorinated compounds that spill to building material such as concrete, can act as a source of contamination to indoor air, screening conducted during the SC did not identify an interior source of PCE contamination.

PFAS.: PFAS have been used since the 1950's to make products resistant to heat, oil, stains, grease, and water (USEPA, 2017) including use as coatings for material such as clothing and carpets. During the cleaning process PFAS can leach from this material into cleaning solvents and wastewater and can be discharged to the air during the material drying process. PFAS was identified in soil at the Site and at 49 Main Street. The source of this PFAS soil contamination is likely discharges of solvents or wastewater used in the cleaning process to the ground surface to the rear (north) of the Site building, as well as likely air deposition from dryer vents at the Site. This soil contamination is likely acting as a continued source of groundwater contamination.

In addition to site activities resulting in a soil source area of PFAS contamination, worldwide use of PFAS have made them fairly ubiquitous in the environment at low concentrations. PFAS was detected in the vicinity of the Site in background soil and upgradient groundwater, although at lower concentrations than those identified on-site.

5.4 HYDROGEOLOGY AND CONTAMINANT DISTRIBUTION

Field investigations at the Site suggest that overburden in the area is an unconsolidated till which primarily consists of brown sands and silts overlaying the bedrock. Bedrock was encountered at 19 feet bgs below the Site parking lot and approximately 9 feet bgs 100 feet west of the Site (**Figure 5.1**). Groundwater beneath the site and immediate surrounding area was encountered from approximately three to ten feet bgs. Groundwater measurements indicate that flow is generally west towards the Hudson River.

VOCs: Two distinct PCE plumes have been identified in Site groundwater apparently originating from two primary sources: soils below the parking area behind the building (soils were previously removed), and contaminated soil beneath the site building (although a soil source area below the building was not identified). The plume originating from the parking area has lower PCE concentrations (detected as high as 7.5 µg/L during the RI) than the plume originating from beneath the Site building (PCE detected as high as 2500 µg/L during the RI just downgradient from the center of the Site building). A geologic

cross section below the Site building and vicinity showing groundwater chlorinated compound contamination is presented on **Figure 5.1** (cross section location shown on **Figure 2.1**).

The PCE groundwater plume originating from the parking area is interpreted to extend in overburden groundwater at concentrations above NYS standards approximately 60 feet west. Chlorinated compounds were not detected in the bedrock groundwater sample collected from MW-3D, indicating that VOC contamination did not extend to bedrock in the vicinity of the contaminant source area in the parking lot.

The PCE plume originating from below the center of the Site building is interpreted to extend at concentrations above NYS Standards approximately 200 feet west-southwest.

PFAS: PFAS are highly mobile in groundwater and ubiquitous in the environment. The PFAS soil contamination at the Site and 49 Main Street has resulted in a groundwater plume with concentrations of PFOS and PFOA above upgradient concentrations that extend an estimated 300 feet west of the site. The concentrations of PFOS and PFOA in upgradient groundwater are above the published NYS maximum contaminant levels (MCLs) of 10 ng/L for each of these compounds. Although the far downgradient samples collected (DP-15) are in the same order of magnitude as concentrations in upgradient groundwater, allowing for an approximate estimation of the area of groundwater contamination related to Site activities, due to the limited data set and the presence in upgradient groundwater, the exact extent of the Site related plume of PFOA and PFOS is not defined.

5.5 CONTAMINANT MIGRATION

VOCs: VOCs have migrated from the site from soil source areas to groundwater and soil vapor. Although the parking lot source was excavated from the site in 2006, contaminants appear to have migrated into the groundwater in this area, likely with precipitation. Groundwater is also present immediately below the Site building and contaminants that were discharged to soil below the building have migrated into groundwater, likely with fluctuating water levels that inundate contaminated soil.

Groundwater flows to the west, and the plume of PCE at concentrations greater than NYS standards is interpreted to extend approximately 200 feet west and southwest of the Site.

VOCs in soil and groundwater can partition to soil vapor and migrate into the indoor air with soil vapor intrusion. Soil vapor and indoor air was evaluated at structures above the groundwater plume. PCE was detected within the indoor air at the Site and at 49 Main Street at concentrations above the NYSDOH guidance values for PCE. In addition, TCE, a PCE breakdown product, was detected in

soil vapor below an additional building above the groundwater plume at a concentration which the NYSDOH recommends that a mitigation system be installed in the overlying structure to prevent potential indoor air contamination. As a result of the SVI sampling, SSDSs were installed at two structures hydraulically downgradient from the Site. Based on SVI sampling conducted at two other structures, no further actions were recommended by the NYSDOH.

PFAS.: The primary migration pathway for PFAS contamination from the Site is through groundwater. The PFAS present in soil has migrated to groundwater with infiltrating rainwater. This plume above upgradient concentrations and the NYS MCLs is interpreted to extend approximately 300 feet west of the Site.

5.6 SITE RECEPTORS

Human Receptors.

VOCs.: Potential human exposure to VOC contamination could result from contact with:

- contaminated subsurface soils below the Site building during construction activities.
- contaminated groundwater during construction activities, such as excavation, or if extracted.
- contaminated indoor air via vapor migration into commercial or residential structures.

PFAS: Potential human exposure to PFAS contamination could result from contact with:

- contaminated surface and subsurface soils during intrusive activities.
- contaminated groundwater during construction, activities, such as excavation, or if extracted.

Human exposure is discussed in more detail in **Section 6**.

Ecological Receptors.

There is limited available habitat at the site as the majority of the contamination at the Site is either beneath paved surfaces or building foundations. It is not anticipated that contamination is reaching surface water (i.e., the Hudson River) at concentrations above SCGs. As a result of a lack of potential ecological receptors, a fish and wildlife impact analysis was not conducted.

6.0 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

This section provides a QHHEA for the Irvington Rugs and Cleaners Site. The QHHEA is performed in accordance with NYSDEC DER-10 Technical Guidance (NYSDEC, 2010), which indicates that the QHHEA should evaluate the populations of humans that may potentially occur at and in the vicinity of the Site, and the mechanisms or exposure pathways by which those humans may be potentially exposed to contamination associated with the Site. This section also evaluates the significance of exposure that may occur through the potential exposure pathways. This exposure assessment involves five elements:

1) Description of the contaminant source and the contaminated environmental medium (discussed in detail in **Section 5.0**).
2) Explanation of the contaminant release and transport mechanisms to the exposed population (discussed in detail in **Section 5.0**).
3) Identification of potential exposure points to which the populations may come in contact with contaminated medium (discussed in detail in **Section 5.0**).
4) Description of the routes of exposure (i.e., ingestion, inhalation, etc.).
5) Characterization of the receptor population who may be exposed to contaminants at the identified points of exposure (takes into consideration the populations that may be potentially exposed to Site-related contamination under the current and future land uses).

Exposure Pathway Evaluation and Qualitative Exposure Analysis

The current and anticipated future use of the Site property is commercial. The properties bordering the Site are a mix of commercial and residential properties.

Chlorinated VOCs and PFAS compounds are the COCs at the Site in relation to potential human exposures above SCGs. Potentially complete exposure pathways include direct contact with soil and groundwater via construction and landscaping activities and inhalation of vapors that may migrate from soil and/or groundwater to air within overlying structures.

Soil

VOCs: PCE was detected at locations below the Site parking area and below the Site basement concrete slab, but concentrations were below the SCO for unrestricted use for PCE. Concentrations of PCE detected in a soil sample collected from beneath the building slab at 49 Main Street, downgradient from the Site, did exceed the Residential Use SCO. Residents and commercial workers would not come into direct contact with contaminated soils below 49 Main Street unless subsurface work occurs below the

basement slab. Currently, subsurface work is not planned at the Site, and therefore direct contact with subsurface soils by residents and construction workers is not currently a complete exposure pathway. However, there is a potential for future exposure.

Although direct contact to contaminated soils is not anticipated to be a potentially complete exposure pathway, concentrations observed in soil below the 49 Main Street could act as a continuing source of groundwater contamination. Groundwater exposure scenarios are discussed in the following paragraphs. VOCs in soil in the vicinity of the Site building also have the potential to migrate into surrounding buildings via vapor intrusion (discussed below).

PFAS: PFAS compounds were detected below the Site driveway and below the driveway and in soil in the fenced-in yard at 49 Main Street at concentrations greater than residential use criteria, but below restricted residential use and commercial use SCOs. Construction workers could come into contact with this soil contamination if construction activities occur, and workers or residents of 49 Main Street could come into contact with contaminated soil if landscaping work is done in this area. Although PFAS can transfer into the body through dermal contact, the primary exposure pathways would be inhalation of contaminated dust, or ingestion of contaminated soil.

Groundwater

There are no known current residential or commercial groundwater wells within a mile of the Site. Public water is supplied from Upstate New York by underground aqueducts that supply New York City. Based on this information, there are no known direct exposures to contaminated groundwater from a drinking water pathway under current or potential future land uses.

However, a comparison of groundwater analytical data to NYS drinking water standards and guidance values provides information regarding constituents that would be of concern if Site groundwater was used as potable water under existing conditions. A review of the analytical data indicates that chlorinated VOCs (i.e., PCE, TCE, and cis-1,2-DCE) and the PFAS compounds PFOA and PFOS were detected at concentrations that exceed drinking water standards. Although several metals (iron, manganese, and sodium) were detected at concentrations greater than drinking water standards, these are not anticipated to be related to Site activities.

Although contaminant concentrations in groundwater exceed drinking water standards, the drinking water pathway is not a complete exposure pathway of concern under the existing and potential future land uses. Direct contact with contaminated groundwater is possible if excavations are conducted within

the area of the overburden groundwater plume (depth to groundwater in the vicinity of the groundwater plume varies from between 4 and 9 feet bgs).

Soil Vapor Intrusion

SVI has been identified as a complete exposure pathway in the vicinity of the Site resulting from off-gassing of contaminated groundwater and soil. SVI sampling has been conducted at six properties since 2019 (Structures 1 to 6 shown on **Figure 4.7**). Based on sampling results, it was determined that soil vapor intrusion was occurring at one off-site property at levels exceeding the NYSDOH indoor air guideline value, and there was a potential for soil vapor intrusion at a second off-site property. To mitigate identified and potential exposure, SSDSs were installed at two off-site properties. A description of the installation of the SSDSs is presented under separate cover (MACTEC, 2023d and MACTEC, 2024b). Additional SVI sampling conducted in 2025 did not identify an exposure pathway at the Site.

7.0 RI SUMMARY AND CONCLUSIONS

Analytical data collected from investigations to date indicates that PCE was discharged at the Site. There appears to be two primary source areas of PCE contamination: 1) the soil in the parking area to the rear (north) of the Site building that was remediated by excavation in April 2006, and 2) contamination in soil/groundwater below the center of the Site. Entry points to the environment in the source areas likely included spills/discharges to the ground on the north side of the building, and release of dry-cleaning solvents to the floor of the building, which entered the environment through floor cracks and/or the basement sump. In addition to the VOC contamination, PFAS contamination was identified in soil at the Site and at the neighboring property, potentially as the result of air deposition of PFAS from dryer vents, or from discharges of wastewater containing PFAS. Chlorinated VOCs and PFAS present in contaminated soil have migrated vertically to the water table and continue to migrate with groundwater flow to the west/southwest towards the Hudson River.

Soil: Concentrations of PCE in soil samples collected below the Site parking area and Site basement did not exceed SCGs (samples collected during the SC). Three of the four soil samples collected below the basement of 49 Main Street (during RI and PDI) exceeded the protection of groundwater SCOs for PCE and two of these (both at same location) also slightly exceeded the residential use SCO for PCE (maximum concentration of 8.46 mg/kg compared to a residential use criteria of 5.5 mg/kg). These soil samples were collected below the groundwater table and likely are the result of contaminated groundwater. It is possible that soil contamination exists below the center of the Site building, but it does not appear to be an extensive source. Based on the current use of the Site and 49 Main Street and the historic nature of the Village of Irvington, direct contact to VOC contaminated soil under the buildings is unlikely; although construction work could occur that would disturb the basements' concrete slabs.

Concentrations of PFAS (primarily PFOS) in soil below the driveway of the Site and 49 Main Street, as well as in the fenced-in yard of 49 Main Street were detected at concentrations above protection of groundwater and residential use SCOs; however, concentrations of PFAS did not exceed the SCOs for restricted residential or commercial use. In addition, background soil samples also exceeded the protection of groundwater SCO. The highest concentration of PFOS detected in the was 22 µg/kg, compared to a restricted residential use criteria of 44 µg/kg and commercial use criteria of 440 µg/kg. The estimated volume of PFAS-contaminated soil above background is 260 cubic yards. Direct contact with PFAS-contaminated soil may be a complete exposure pathway by maintenance workers or residents

if landscaping work is done in the fenced-in yard. Construction workers could also come into contact with contaminated soil if the paved driveway is removed.

Water: PCE and its breakdown products TCE and cis,1-2 DCE were detected in groundwater at and downgradient of the Site at concentrations above groundwater standards. PCE was the primary contaminant identified above its SCG, with two apparent groundwater plumes: one smaller plume originating from the previously excavated area located to the rear (north) of the Site building extending approximately 50 feet west to North Dutcher Street, and one plume originating from under the center of the Site building and extending approximately 180 feet to the southwest at concentrations above standards. The highest concentration of PCE detected in groundwater, 2880 µg/L, was detected below 49 Main Street during the PDI. VOC groundwater contamination was present in the shallow groundwater, which primarily exists in overburden, although the bedrock surface is uneven and the water table drops below the top of bedrock surface periodically downgradient of the Site where the bedrock rises closer to the ground surface.

PFAS contamination in soil has migrated to groundwater, with the highest concentrations detected near the rear (north) of the Site building and flowing primarily to the southwest. The highest concentration of PFOA detected was 95 ng/L compared to an MCL of 10 ng/L and guidance value of 6.7 ng/L. PFOA was also detected in groundwater upgradient of the Site during the SC at a concentration of 18 ng/L. The plume of PFOA interpreted to be originating from the Site and exceeding upgradient concentrations is anticipated to extend approximately 300 feet southwest from the rear of the Site building. The highest concentration of PFOS detected during the RI was 331 ng/L, compared to an MCL of 10 ng/L and guidance value of 2.7 ng/L. PFOS was also detected in groundwater upgradient of the Site during the SC at a concentration of 6.1 ng/L. The plume of PFOS originating from the Site and exceeding upgradient concentrations is anticipated to be slightly larger than the PFOA plume, extending more than 300 feet southwest from the rear of the Site building.

Groundwater in the vicinity of the Site is not used as a source of drinking water and VOC contamination is not anticipated to reach the Hudson. In addition, concentrations of site related PFAS in groundwater are anticipated to reduce to upgradient concentrations prior to reaching the Hudson River.

Soil Vapor/Indoor Air: VOC contaminants in soil and groundwater have the potential to migrate into nearby buildings via SVI. Soil vapor intrusion sampling has been conducted at the Site building and at five off-site buildings (Structures 1 to 6 investigated during both the RI and SC). Based on the sampling results, SSDSs were installed at two off-site mixed use (commercial/residential) buildings to mitigate the potential for SVI. The NYSDEC and NYSDOH determined that soil vapor intrusion is not a concern

for the other off-Site buildings sampled. Based on SVI sampling results from the SC in 2019, PCE detected in the indoor air at the Site building at concentrations above guidance values appeared to be the result of vapor intrusion; however, additional SVI sampling conducted in February 2025 and reported under separate cover indicated SVI was not a concern at the Site building and no further action was necessary (EEEG, 2025b). It's possible that an unidentified product containing PCE was present in the building in 2019 that has since been removed.

Data Gaps: Based on results of the RI investigation and the CSM presented in **Section 5.0**, data gaps were evaluated and include:

- Although the PFOS plume in groundwater originating from the Site and above upgradient concentrations is anticipated to extend slightly more than 300 feet southwest of the rear of the Site building and diminish to upgradient concentrations prior to reaching the Hudson River, the actual extent of the PFOS plume exceeding upgradient concentrations was not defined. However, there is sufficient data to prepare the FS.

8.0 DEVELOPMENT OF REMEDIAL ACTION GOALS AND OBJECTIVES, AND GENERAL RESPONSE ACTIONS FOR CONTAMINATION REQUIRING REMEDIATION

RAOs form the basis for identifying remedial technologies and developing RAs. This section identifies RAOs for the contaminated Site media, general response actions to address these RAOs, and the extent of contamination requiring remedial action.

Site-specific remedial objectives for the impacted media were developed with consideration for the frequency of contaminant detections; background/upgradient concentrations; the chemical and toxicological properties of the COCs; existing or potential exposure pathways; and the present or projected Site use.

8.1 IDENTIFICATION OF REMEDIAL ACTION OBJECTIVES

RAOs consist of medium-specific or operable unit-specific goals for protecting human health and the environment (NYSDEC, 2010). RAOs specify the COCs, exposure pathway(s) and receptor(s), and acceptable contaminant levels or range of levels for each exposure route. Site-specific COCs were determined by comparison of contaminant levels to Chemical-Specific SCG values but did not consider Site-specific exposure pathways.

RAOs presented in the following subsections were developed for the specific media and receptors identified in the QHHEA. Acceptable contaminant levels or range of levels for each media are referred to as remediation goals (RGs). The RGs developed for the Site consider both the identified COCs and the potential exposure pathways and receptors. The Chemical-Specific SCGs generally provide both exposure pathway- and receptor-specific criteria and were used in the development of Site-specific RGs.

8.1.1 Remedial Action Objectives for Soil

RI sampling results indicate that PFAS contamination is present in both on-Site soil and off-Site soil at the adjacent property (49 Main Street). PFAS is present in soils at concentrations above Unrestricted Use SCOs both below the parking area to the rear of the Site and within the fenced-in yard of 49 Main Street. The majority of contamination is at depths 1 to 2 feet bgs, with concentrations appearing to diminish with depth.

Although sampling conducted during the SC and RI did not indicate remaining VOC contamination in soil at the Site above Unrestricted Use SCOs, VOCs were detected in soil samples collected from beneath the slab of 49 Main Street at concentrations above Unrestricted Use SCOs.

Direct contact with contaminated soils could occur if subsurface work were to occur in areas where contaminated soil is present. Remaining impacted soil will likely continue to act as a source of groundwater contamination.

VOCs at shallow depths in soil have the potential to migrate into surrounding buildings via vapor intrusion.

Therefore, the RAOs for soil are:

- Prevent ingestion/direct contact to contaminated soil.
- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.
- Prevent migration of contaminants that would result in groundwater contamination.

8.1.2 Remedial Action Objectives for Groundwater

Groundwater VOC contamination at the Site may contribute to soil vapor and result in vapor intrusion to on-and off-Site indoor air. Indoor air and soil vapor sampling conducted at six structures in the vicinity of the Site during the SC and RI from 2018 to 2025 resulted in the installation of two SSDSs. Although no further action or sampling was deemed necessary at the remaining properties, the shallow depth to water at the Site (typically between 4 and 9 feet bgs) makes vapor intrusion a concern for buildings above the contaminant plume.

Groundwater at and in the vicinity of the Site contains COC at concentrations exceeding drinking water standards. The area is serviced by public water, and therefore groundwater is not believed to be used as a source of drinking water. Groundwater as a drinking water source is not a complete exposure pathway of concern under the existing or potential future land uses.

Direct contact with contaminated groundwater is possible if excavations are conducted within the area of the overburden groundwater plume (depth to groundwater in the vicinity of the groundwater plume varies from between 4 and 9 feet bgs).

Therefore, the RAOs for groundwater are:

- Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater.
- Remove or control the source of ground or surface water contamination.

8.1.3 Remedial Action Objectives for Soil Vapor/Indoor Air

Chlorinated solvents present in shallow saturated soil and groundwater have the potential to migrate into nearby structures a result of SVI. Evaluation of six properties in the vicinity of the Site identified SVI occurring at one off-Site property, and identified a potential for SVI at a second off-Site property. SSDSs were installed at the two off-Site properties, and no further action was deemed necessary at the remaining properties.

Therefore the RAOs for Soil Vapor/Indoor Air are:

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings in the vicinity of the Site.

8.1.4 Remediation Goals

The RGs for the Site include attaining, to the extent practicable, the following chemical-specific SCGs:

- GA Groundwater Quality Standards (NYS, 1999)
- Division of Water Technical and Operational Guidance Series (TOGS), 2023 Addendum for guidance values related to PFAS (NYSDEC, 2023).
- Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH, 2024).

8.2 IDENTIFICATION OF GENERAL RESPONSE ACTIONS AND EXTENT OF CONTAMINATION REQUIRING REMEDIAL ACTION

General response actions describe those actions that will satisfy the RAOs (NYSDEC, 2010). General response actions may include treatment, containment, excavation and disposal, institutional controls (IC), engineering controls (EC), or a combination of these. Like RAOs, general response actions are medium-specific. Based upon the current Site conditions and the RAOs identified for the Site, the potential threats related to the Site are exposure to contaminated soil, groundwater, and indoor air (from vapor intrusion).

8.2.1 General Response Actions – Soil

The following general response actions would address the RAOs identified for subsurface soil at the Site property.

- IC and EC
- Containment

- Removal
- In-Situ Treatment

8.2.2 General Response Actions – Groundwater

The following general response actions would address the RAOs identified for groundwater at the Site.

- ICs
- Natural Attenuation
- Containment
- In-Situ Treatment
- Ex-Situ Treatment

8.2.3 General Response Actions – Soil Vapor/Indoor Air

The following general response actions would address the RAOs identified for soil vapor intrusion at the Site and surrounding properties.

- ECs

9.0 IDENTIFICATION AND SCREENING OF TECHNOLOGIES AND DEVELOPMENT OF ALTERNATIVES

This section identifies and screens potential remedial technologies. Technologies are identified for the purpose of attaining the RAOs established in **Section 8.1** following the general response actions described in **Section 8.2**.

Following identification, candidate technologies are screened based on their applicability to Site- and contaminant-limiting characteristics. The purpose of the screening is to produce an inventory of suitable technologies that can be assembled into RAs capable of mitigating actual or potential risks at the Site. Potential technologies representing a range of general response actions (i.e., no further action, Site management, treatment, etc.) are considered. Technology screening results in a list of potential remedial technologies that may be developed into candidate remedial action alternatives.

9.1 IDENTIFICATION AND INITIAL SCREENING OF TREATMENT TECHNOLOGIES

Preliminary review of remedial technologies and specific process options applicable to the Site summarized in **Table 9.1** was conducted in general accordance with the USEPA's Guidance for Conducting RI/FS (USEPA, 1988). Additional technologies from the Interstate Technology and Regulatory Council (ITRC) were also reviewed (ITRC, 2024). The screening focuses on technology types capable of remediating the COCs present in Site soils, groundwater, and soil vapor and evaluates the implementability of the technology. Based on this evaluation, technologies retained are determined to be potentially viable treatment options for the contaminated Site media. These technologies will undergo a more detailed evaluation in the following report subsections.

9.2 DETAILED SCREENING OF TECHNOLOGIES

Consistent with DER-10, the remedial action technologies retained from the initial screening process (**Table 9.1**) were screened based on whether they can meet the RAOs (Effectiveness) and whether they are technically implementable (Implementability). Additionally, based upon available information, the relative cost of each RA is also evaluated. The rationale for either retaining or eliminating treatment options is presented and summarized in **Table 9.2**. The remedial action options retained from the detailed screening process were used to develop the proposed RAs discussed below in **Subsection 9.3**, and further described in **Section 10.0**.

9.3 DEVELOPMENT OF REMEDIAL ALTERNATIVES

Media-specific remedial components retained in **Table 9.2** were compiled into five RAs which address contaminated media. The RAs are summarized in **Table 9.3** below, followed by a brief description of each alternative in the following sub-sections.

Table 9.3 Development of Alternatives

	Proposed Alternatives					
Alternative Components	**1**	**2**	**3a**	**3b**	**4**	**5**
No Action	X					
Pre-Design Investigation		X	X	X	X	X
Institutional/Engineering Controls and Site Management Plan			X	X	X	X
Soil Excavation		X				
Low Permeability Cover System			X	X		
In-Situ Sorption and In-Situ Chemical Reduction		X				
Enhanced Bioremediation		X		X	X	
In-Situ Chemical Oxidation			X		X	
Monitored Natural Attenuation		X		X		X
Long-Term Groundwater Monitoring			X	X	X	X

9.3.1 Alternative 1: No Further Action

This alternative will be used as a baseline for comparison to other RAs. No further action would be taken to address contaminated soil or groundwater or soil vapor intrusion related to the Site.

9.3.2 Alternative 2: Soil Excavation to Background with In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation of Groundwater

Alternative 2 includes the excavation of surface and subsurface soil exceeding background concentrations of PFOS (3.15 ppb) to minimize the potential for direct exposure to impacted soil. Alternative 2 also includes in-situ sorption with liquid carbon where PFAS concentrations in groundwater exceed 50 ng/L to bind PFAS contamination and reduce contaminant mobility, followed by in-situ chemical reduction and enhanced bioremediation where PCE concentrations exceed 5 µg/L in

groundwater. Alternative 2 includes a PDI to conduct baseline groundwater sampling, develop a vertical profile of contaminant mass flux via flux mapping, and perform property surveys, structural analyses, and waste characterization to support excavation design. The objective of the Site work would be to reach pre-disposal conditions to extent feasible. Groundwater monitoring, including MNA, would be conducted for 5 years to evaluate the effectiveness of the remedy. After which, it is assumed that neither a Site Management Plan (SMP) nor Long-Term Monitoring (LTM) would be required.

9.3.3 Alternative 3a: Low-Permeability Cover System with In-Situ Chemical Oxidation of Groundwater

Alternative 3a includes placement of a low-permeability cover where surface and subsurface soil exceeds protection of groundwater standards for PFOS and in-situ chemical oxidation (ISCO) of impacted groundwater. The objective of the cover would be to minimize precipitation through PFOS impacted soil and ongoing contributions to groundwater. Groundwater treatment would be restricted to where PCE concentrations exceed 100 µg/L, to reduce the size and concentration of the source area to effectively reduce potential impacts to indoor air. Alternative 3a includes a PDI to conduct baseline groundwater sampling and to perform property surveys and waste characterization to support removal of soil where a cover system would be installed. Following implementation, a SMP would be prepared, periodic inspections and monitoring would be conducted to evaluate Site conditions, and ICs would be implemented in the form of a deed restriction to prevent installation of drinking water wells and to require inspections of the cover system. Additional monitoring wells would be installed, and monitoring would be conducted to assess groundwater quality for up to 30 years.

9.3.4 Alternative 3b: Low-Permeability Cover System with Enhanced Bioremediation of Groundwater

Alternative 3b includes placement of a low-permeability cover where surface and subsurface soil exceeds protection of groundwater standards for PFOS and enhanced bioremediation of impacted groundwater. The objective of the cover would be to minimize precipitation through PFOS impacted soil and ongoing contributions to groundwater. Groundwater treatment would be restricted to where PCE concentrations exceed 100 µg/L, to reduce the size and concentration of the source area to effectively reduce potential impacts to indoor air. Alternative 3b includes a PDI to conduct baseline groundwater sampling and to perform property surveys and waste characterization to support removal of soil where a cover system would be installed. Following implementation, a SMP would be prepared, periodic inspections and monitoring would be conducted to evaluate Site conditions, and ICs would be implemented in the form of a deed restriction to prevent installation of drinking water wells and to

require inspections of the cover system. Additional monitoring wells would be installed, and monitoring would be conducted to assess groundwater quality for up to 30 years.

9.3.5 Alternative 4: In-Situ Chemical Oxidation and Enhanced Bioremediation of Groundwater

Alternative 4 includes groundwater treatment with ISCO where PCE concentrations exceed 100 µg/L, to reduce the size and concentration of the source area to effectively reduce potential impacts to indoor air. Additionally, groundwater in the northern part of the site that exceeds 10 µg/L would be treated with enhanced bioremediation. Alternative 4 includes a PDI to conduct baseline groundwater sampling and to perform property surveys. Following implementation, a SMP would be prepared, periodic inspections and monitoring would be conducted to evaluate Site conditions, and ICs would be implemented in the form of a deed restriction to prevent installation of drinking water wells. Additional monitoring wells would be installed, and monitoring would be conducted to assess groundwater quality for up to 30 years.

9.3.6 Alternative 5: Long-Term Groundwater Monitoring and Institutional Controls

An SMP would be prepared, and periodic inspections and monitoring would be conducted to evaluate Site conditions, and ICs would be implemented in the form of a deed restriction to prevent installation of drinking water wells and future residential use of the Site. Additional monitoring wells would be installed, and groundwater samples would be tested for multiple parameters to evaluate water quality for up to 30 years. Alternative 5 includes a PDI to install monitoring wells and conduct baseline groundwater sampling.

10.0 DEVELOPMENT AND DETAILED DESCRIPTION OF ALTERNATIVES

This section provides a detailed description of the alternatives retained in **Section 9.0**. These conceptual designs were used to estimate the associated costs for each alternative.

10.1 ALTERNATIVE 1: NO FURTHER ACTION

This alternative does not include any actions to address Site contamination. This alternative will be used as a baseline for comparison to other RAs.

10.2 ALTERNATIVE 2: SOIL EXCAVATION TO BACKGROUND WITH IN-SITU SORPTION, IN-SITU CHEMICAL REDUCTION, AND ENHANCED BIOREMEDIATION IN GROUNDWATER

Alternative 2, soil excavation to background with in-situ sorption, in-situ chemical reduction and enhanced bioremediation in groundwater, consists of the following components, which are subsequently described in detail:

- PDI
- Soil Excavation
- On- and off-site in-situ sorption in groundwater with liquid carbon
- On- and off-site in-situ chemical reduction and enhanced bioremediation
- Groundwater Monitoring and Monitored Natural Attenuation

PDI: Prior to implementation, a PDI will be conducted to support remedial design of Alternative 2, including the installation of four (4) permanent groundwater monitoring wells, collection of baseline groundwater samples, and vertical delineation of contaminant mass flux and groundwater velocity via flux mapping. Baseline groundwater samples will be tested for VOCs, PFAS, and MNA parameters, in addition to field parameters for pH, oxidation reduction potential, and DO. Additionally, PDI activities will include property and utility surveys and structural analysis of buildings near the soil excavation area to support excavation design. Soil samples will be collected from the proposed soil excavation area for waste characterization.

Soil Excavation: Contaminated soil with PFAS concentrations above background levels (3.15 ppb) at this property will be excavated. Impacted soil is estimated to be within an approximate 1,740 square feet area; the approximate location of the excavation is shown in **Figure 10.1**. Excavation of soil to the shallower of either 4 feet bgs or top of groundwater will occur following initial clearing of existing

asphalt and brush. Excavated soil will be direct loaded into trucks for off-Site transportation and disposal. Excavation dewatering is not anticipated. Excavation supports adjacent to the buildings may be required during excavation. Documentation samples will be collected from the bottom of the excavation, on a frequency of one sample per 25 foot by 25 foot area. Upon completion of the excavation, suitable backfill material meeting DER-10 criteria will be placed and compacted in six-inch lifts to within 6 inches of existing grades. Topsoil will then be placed in areas that are currently vegetated, and asphalt will be placed in areas that are currently paved.

On- and Off-Site In-Situ Sorption with Liquid Carbon: Injection of liquid activated carbon will be implemented to act as a permeable reactive barrier (PRB) for PFAS plume control, reducing contaminant mobility downgradient. Roto-sonic drilling of injection points has been assumed for this area, where bedrock is shallow and may be difficult to penetrate with a direct push drill rig. For costing purposes, it is assumed that injection activities will be performed with temporary injection points and no permanent wells will be installed. **Figure 10.2** shows the proposed treatment area as a 90-foot long PRB along the western edge of North Dutcher Street, spanning from the corner of North Dutcher Street and Main Street across the breadth of the 50 ng/L concentration contours of the PFOS and PFOA plumes. The PRB will extend approximately 10 feet to the north of 50 ng/L concentration contour of the combined PFOS and PFOA plume. Injections at 36 locations are estimated.

Injection of liquid activated carbon to bind PFAS impacts will also be implemented at a treatment area of approximately 180 square feet in the yard and driveway at the rear of the buildings at 49-53 Main Street, in conjunction with in-situ chemical reduction and enhanced bioremediation, further described below. Injection of liquid carbon at this treatment area is assumed for only the first of two rounds of injections. Injections at 8 locations via direct push drilling methods are estimated.

A budgetary estimate was obtained from a specialized vendor for the cost of activated carbon and injection services based on the treatment area and depth of the treatment zone and the associated contaminants. Final decisions regarding well layout, use of permanent or temporary wells, and injection frequency will be made during remedy design.

On- and Off-Site In-Situ Chemical Reduction and Enhanced Bioremediation: Injection of chemical reductants in conjunction with bio-amendments will be implemented to address on- and off-Site PCE-impacted groundwater. Chemical reductants and bio-amendments are assumed to be fully compatible and injected as a single mixture. For costing purposes, it is assumed that injection activities will be performed through temporary injection points and that permanent wells will not be required. Two rounds

of injections at each of the following proposed treatment areas is assumed. **Figure 10.3** shows four proposed treatment areas as follows:

1) An approximately 120-foot long PRB spanning across Main Street from the western corner of South Dutcher Street and Main Street, along the western edge of North Dutcher Street, and extending approximately 10 feet north of the 5 µg/L concentration contour of the PCE plume.

2) An approximately 50-foot long PRB spanning across South Dutcher Street from the western corner of South Dutcher and Main Street and extending approximately 10 feet to the east of the 5 µg/L concentration contour of the PCE plume. Injections at 29 total locations via roto-sonic drilling methods are estimated for both PRBs.

3) A treatment area of approximately 2,430 square feet where PCE concentrations exceed 5 µg/L in groundwater beneath the buildings at 49-53 Main Street. Injections at 26 locations via direct push drilling methods are estimated.

4) A treatment area of approximately 180 square feet where PCE concentrations exceed 10 µg/L in the yard and driveway at the rear of the buildings at 49-53 Main Street. Injections at 8 locations via direct push drilling methods are estimated. The first round of injections at this proposed treatment area is assumed to include the injection of liquid activated carbon in addition to the injection of chemical reductants and bio-amendments, to bound PFAS impacts. The second round of injections at this location is assumed to include the injection of chemical reductants and bio-amendments only.

A budgetary estimate was obtained from a specialized vendor for the cost of reductants, bio-amendments, and injection services based on the area and depth of the treatment zone and the associated contaminants. For costing purposes, an intermediate round of groundwater sampling between injection events (approximately 3 months following the first round of injections) is assumed. Samples will be analyzed for VOCs and PFAS and will be collected from the four (4) monitoring wells installed during the PDI, as well as from two existing sumps in the basement of 49 and 53 Main Street. Final decisions regarding well layout, use of permanent or temporary wells, and injection frequency will be made during remedy design.

Groundwater Monitoring and Monitored Natural Attenuation: It is assumed that after soil excavation work and two rounds of groundwater injections are complete, groundwater monitoring will be carried out for up to five (5) years. Groundwater sampling will be conducted at the four (4) monitoring wells installed during PDI, as well as two (2) existing sumps in the basements of 49 and 53 Main, to be

analyzed for VOCs, PFAS, and MNA parameters. Groundwater sampling is assumed to be conducted semiannually and the results presented in an annual report.

10.3 ALTERNATIVE 3A: LOW-PERMEABILITY COVER SYSTEM WITH IN-SITU CHEMICAL OXIDATION OF GROUNDWATER

Alternative 3a, Low Permeability Cover system with ISCO of Groundwater, consists of the following components which are subsequently described in detail:

- PDI
- Installation of low-permeability cover system
- On-Site and off-Site ISCO
- ICs and ECs, including preparation of an SMP
- LTM and reporting

PDI: Prior to implementation, a PDI will be conducted to support the remedial design of Alternative 3a. Pre-design activities will include the installation of four (4) permanent groundwater monitoring wells and collection of baseline groundwater samples. Baseline groundwater samples will be tested for VOCs, PFAS, and MNA parameters, in addition to field parameters for pH, oxidation reduction potential, and DO. Additionally, PDI activities will include property and utility surveys to support remedial design. Soil samples will be collected from the proposed capping area for waste characterization.

Implementation of Low Permeability Cover System: Contaminated soil with PFAS concentrations above background levels (3.15 ppb) at this property will be contained under a low permeability cover system. The purpose of the cover system is to provide a direct exposure barrier to impacted soil and to minimize stormwater infiltration through the PFAS impacted soil. Currently, an asphalt road exists over an approximate 1,270 square foot area over impacted soil (**Figure 10.1**). This asphalt cover will remain in place as part of the cover system. The remaining area with PFAS impacted soil in an approximate 470 square foot area as shown in **Figure 10.1**. Soil in this area will be excavated to approximately 1-foot bgs to ensure existing ground elevations are matched following implementation of the cover system. Excavated soil will be direct loaded into trucks for off-Site transportation and disposal. Upon completion of the excavation to 1-foot bgs, the proposed capped area will be backfilled with crushed stone subbase and paved with 6 inches of asphalt. The cover system design will also include stormwater controls to ensure that the additional paved surface does not result in flooding of the adjacent buildings. **On-Site and Off-Site In-Situ Chemical Oxidation:** Injection of chemical oxidants will be implemented to address on-Site and off-Site PCE-impacted groundwater. **Figure 10.4** shows the proposed treatment area

of approximately 940 square feet where PCE concentrations exceed 100 µg/L in groundwater, located primarily within the building footprints of 49 & 53 Main Street. For costing purposes, it is assumed that injection activities will be performed with temporary injection points and that no permanent injection wells will be installed. Two rounds of injections at 12 locations via direct push drilling is assumed. Approximately two-thirds of the total chemical oxidants is estimated to be injected during the first round, with the remaining one-third to be injected during the second round. Splitting the proposed oxidant quantity into two rounds is expected to reduce the possibility of daylighting into the basement during injections. A budgetary estimate was obtained from a specialized vendor for the cost of the chemical oxidants based on the area and depth of the treatment zone and the associated contaminants. Final decisions regarding well layout, use of permanent or temporary wells, and injection frequency will be made during remedy design.

IC and ECs: ICs will likely include the implementation of land-use restrictions to control on-Site subsurface activity to minimize contaminant exposure. Land-use restrictions will be implemented through legal instruments such as deeds, easements, and/or permitting processes, and an SMP will be required. The cover system will be considered an EC and it is assumed that annual site inspections of the low permeability cover system will be conducted for up to 30 years. The existing SSDSs at 47 and 49 Main Street will continue to operate as ECs. Periodic review will be conducted on an annual basis and be reported along with necessary IC and EC certifications in a periodic review report annually (unless otherwise specified by the NYSDEC).

LTM and Reporting: It is assumed that after installation of the low permeability cover and groundwater injections are complete, and IC/ECs are in place, groundwater monitoring will be carried out for up to 30 years. Groundwater sampling will be conducted at the four (4) monitoring wells installed during the PDI, as well as two (2) existing sumps in the basements of 49 and 53 Main Street, to be analyzed for VOCs and PFAS. Groundwater sampling is assumed to be conducted semiannually for the first five (5) years following completion of the remedial action and reduced to annual sampling for years 6 through 30. Monitoring results will be presented in an annual report.

10.4 ALTERNATIVE 3B: LOW-PERMEABILITY COVER SYSTEM WITH ENHANCED BIOREMEDIATION OF GROUNDWATER

Alternative 3b, Low-Permeability Cover System with Enhanced Bioremediation of Groundwater, consists of the following components which are subsequently described in detail:

- PDI

- Installation of low-permeability cover system
- On-Site and off-Site enhanced bioremediation
- ICs and ECs, including preparation of an SMP
- LTM with MNA and reporting

PDI: A PDI will be conducted as described in Alternative 3a.

Implementation of Low Permeability Cover System: Implementation of a low permeability cover system will be conducted as described in Alternative 3a.

On-Site and Off-Site Enhanced Bioremediation: Injection of bio-amendments will be implemented to address on-Site and off-Site PCE-impacted groundwater. **Figure 10.4** shows the proposed treatment area of approximately 940 square feet where PCE concentrations exceed 100 µg/L in groundwater, located primarily within the building footprints of 49 & 53 Main Street. For costing purposes, it is assumed that injection activities will be performed with temporary injection points and that no permanent injection wells will be installed. Two rounds of injections at 12 locations via direct push drilling is assumed. Approximately two-thirds of the total bio-amendments are estimated to be injected during the first round, with the remaining one-third to be injected during the second round. Splitting the proposed bio-amendment quantity into two rounds is expected to reduce the possibility of daylighting into the basement during injections. A budgetary estimate was obtained from a specialized vendor for the cost of the bio-amendments based on the area and depth of the treatment zone and the associated contaminants. Final decisions regarding well layout, use of permanent or temporary wells, and injection frequency will be made during remedy design.

IC and ECs: ICs and ECs will be the same as described in Alternative 3a, and an SMP will be required.

LTM with MNA and Reporting: It is assumed that after installation of the low permeability cover and groundwater injections are complete, and IC/ECs are in place, groundwater monitoring will be carried out for up to 30 years. Groundwater sampling will be conducted at the four (4) monitoring wells installed during PDI, as well as two (2) existing sumps in the basements of 49 and 53 Main Street, to be analyzed for VOCs, PFAS, and MNA parameters. Groundwater sampling is assumed to be conducted semiannually for the first five (5) years following completion of the remedial action, with samples analyzed for MNA parameters annually. Groundwater sampling is assumed to be reduced to an annual basis for years 6 through 30 following completion of the remedial action. Monitoring results will be presented in an annual report.

10.5 ALTERNATIVE 4: IN-SITU CHEMICAL OXIDATION AND ENHANCED BIOREMEDIATION OF GROUNDWATER

Alternative 4, ISCO and Enhanced Bioremediation of Groundwater, consists of the following components which are subsequently described in detail:

- PDI
- On-Site and off-Site ISCO
- On-Site and off-Site enhanced bioremediation
- ICs and ECs, including preparation of an SMP
- LTM and reporting

PDI: A PDI will be conducted to support the remedial design of Alternative 4. Pre-design activities will be similar to those outlined for Alternative 3 as it relates to groundwater. However, soil samples for the delineation of PFAS impacts and for waste characterization will not be included.

On-Site and Off-Site In-Situ Chemical Oxidation and Enhanced Bioremediation: Treatment of groundwater for this alternative will be conducted in two target areas using two separate treatment technologies (**Figure 4.5**):

1) Injection of chemical oxidants will be implemented similarly to Alternative 3A within the approximately 940 square foot area located primarily under the buildings at 49 and 53 Main Street.
2) Injection of chemical reductants and bio-amendments will be implemented in an approximately 180 square foot area where PCE concentrations exceed 10 µg/L in the yard and driveway at the rear of the buildings at 49 & 53 Main Street, identified in Alternative 2. Injections would take place at four (4) locations via direct push drilling methods, with a second round of injections in two (2) locations.

IC and ECs: ICs will likely include the implementation of land-use restrictions to control on-Site subsurface activity to minimize contaminant exposure. Land-use restrictions will be implemented through legal instruments such as deeds, easements, and/or permitting processes, and an SMP will be required. The existing SSDSs at 47 and 49 Main Street will continue to operate as ECs.

LTM and Reporting: It is assumed that after groundwater injections are complete, and IC/ECs are in place, groundwater monitoring will be carried out for up to 30 years. Groundwater sampling will be conducted at the four (4) monitoring wells installed during the PDI, as well as two (2) existing sumps in

the basements of 49 and 53 Main Street, to be analyzed for VOCs. Groundwater sampling is assumed to be conducted semiannually for the first five (5) years following completion of the remedial action and reduced to annual sampling for years 6 through 30. Monitoring results will be presented in an annual report.

10.6 ALTERNATIVE 5: LONG-TERM GROUNDWATER MONITORING AND INSTUTIONAL CONTROLS

Alternative 5, Long-Term Groundwater Monitoring and IC, consists of the following components, which are subsequently described in detail:

- PDI
- ICs and ECs, including preparation of an SMP
- LTM with MNA and reporting

PDI: To properly evaluate MNA, four (4) permanent groundwater monitoring wells will be installed. Following monitoring well installation, baseline groundwater samples will be collected and analyzed for VOCs, PFAS, and MNA parameters, in addition to field parameters for pH, oxidation reduction potential, and DO.

IC and ECs: ICs will likely include the implementation of land-use restrictions to control on-Site subsurface activity to minimize contaminant exposure. Land-use restrictions will be implemented through legal instruments such as deeds, easements, and/or permitting processes, and an SMP will be required. The existing SSDSs at 47 and 49 Main Street will continue to operate as ECs.

LTM with MNA and Reporting: It is assumed that after IC/ECs are in place, groundwater monitoring will be carried out for up to 30 years. Groundwater sampling will be conducted at the four (4) monitoring wells installed during PDI, as well as two (2) existing sumps in the basements of 49 and 53 Main Street, to be analyzed for VOCs, PFAS and MNA parameters. Groundwater sampling is assumed to be conducted semiannually for the first five (5) years following implementation of ICs/ECs, with samples analyzed for MNA parameters annually. Groundwater sampling is assumed to be reduced to an annual basis for years 6 through 30. Monitoring results will be presented in an annual report.

11.0 DETAILED ANALYSIS AND COMPARISON OF ALTERNATIVES

11.1 DETAILED ANALYSIS EVALUATION CRITERIA

The detailed analysis of each remedial action alternative for soil and groundwater was performed using the evaluation criteria identified in DER-10 (NYSDEC, 2010) and Subpart 375-1.8(f) (NYS, 2006), as well as the Green Remediation criteria in DER-31 (NYSDEC, 2011). **Table 11.1** includes a comparison of alternatives to the following criteria:

- Overall protectiveness of the public health and the environment
- Compliance with SCGs
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume of contamination through treatment
- Short-term impacts and effectiveness
- Implementability
- Cost effectiveness
- Land use
- Sustainability/Green Remediation (DER-31)

Overall Protectiveness of the Public Health and the Environment

This criterion evaluates the remedy's ability to protect the public health and the environment, assessing how risks posed through each existing or potential exposure pathway are eliminated, reduced, or controlled through removal, treatment, containment, ECs or ICs. The remedy's ability to achieve each of the RAOs is evaluated.

Compliance with Standards, Criteria and Guidance.

Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance. Chemical-specific SCGs were discussed in **Section 8. Table 11.2** summarizes the list of applicable SCGs used in the evaluation of alternatives against this criterion. **Table 11.1** indicates whether each RA meets, partially meets, or does not meet compliance with the Site-specific SCGs.

Long-term Effectiveness and Permanence.

This criterion evaluates the long-term effectiveness and permanence of the remedy after implementation. If contamination will remain on- or off-Site after the selected remedy has been implemented, the following items are evaluated:

1) magnitude of remaining risks
2) adequacy of the engineering and ICs intended to limit the risk
3) reliability of these controls
4) ability of the remedy to continue to meet RAOs in the future

Reduction of Toxicity, Mobility, or Volume with Treatment.

This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination. Preference is given to remedies that permanently or significantly reduce the toxicity, mobility, or volume of the contamination.

Short-Term Impacts and Effectiveness.

This criterion evaluates the potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during construction and/or implementation. For the RAs discussed herein, the Site work will be conducted to reduce potential of short-term impacts by use of perimeter air monitoring; designated decontamination locations; erosion and sediment controls; temporary fencing around work areas, and personal protective equipment. Additionally, remedial action contractors will prepare and adhere to a construction work plan and HASP. The potential for short-term impacts increases with the duration of intrusive Site work. The duration of the remedial activities, along with indication as to whether the remedy will result in short-term effectiveness, is included in **Table 11.1.**

Implementability.

This criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with construction and the ability to monitor the effectiveness of the remedy. Administrative feasibility includes the availability of the necessary personnel and materials, as well as the potential difficulties in obtaining operating approvals, access for construction, or other issues.

Cost-Effectiveness.

This criterion evaluates the overall cost effectiveness of the remedy. Capital and Site Management costs, were estimated based on the conceptual designs described in **Section 10.0** for each RA and are compared on a present worth (PW) basis.

Land Use.

This criterion evaluates the current, intended, and reasonably anticipated future use of the site and its surroundings when unrestricted levels would not be achieved under a proposed remedy.

Sustainability / Green Remediation (DER-31).

Evaluating compliance with DER-31 (NYSDEC, 2011) was conducted. This includes applying green remediation concepts, such as minimizing energy consumption; reducing GHG emissions; maximizing the reuse of land and the recycling of materials; and conserving natural resources such as soil, water, and habitat to the extent possible, while still implementing remedies that are protective of public health and the environment. Additionally, an assessment of the operational and embodied energy (converted to metric tons of emissions of carbon dioxide equivalents [CO_2e]) associated with remedial activities was performed to quantitatively compare the environmental impacts of each alternative using SiteWise™.

11.2 COST ANALYSIS PROCEDURES

Estimated costs presented in this FS Report are intended to be within the target accuracy range of minus 30 to plus 50 percent of actual cost (USEPA, 1988). Costs are presented as a PW and as a total cost for up to a 30-year period.

A summary of the costs for each alternative identifying capital and PW costs are included in each alternative's cost description. Each cost estimate includes a PW analysis to evaluate expenditures that occur over different time periods. The analysis discounts future costs to a PW and allows the cost of RAs to be compared on an equal basis. PW represents the amount of money that, if invested now and disbursed as needed, will be sufficient to cover costs associated with the remedial action over its planned life. Discount rates of 1.6% and 2.3% were used for a 5-year and 30-year period, respectively, as published by the Office of Management and Budget (OMB), to prepare the cost estimates (OMB, 2024).

Consistent with USEPA FS cost estimating guidance (USEPA, 2000), the RA cost estimates include costs for project management, remedial design, construction management, technical support, and scope contingency.

Project management includes planning and reporting, community relations support during construction or LTM, bid or contract administration, permitting (not already provided by the construction contractor), and legal services outside of ICs. Project management costs are generally between 5 and 10 percent of total direct costs.

Remedial design cost includes cost for collection and analysis of pre-design field data, engineering survey for design, treatability study/pilot-scale testing, and the various design components such as design analysis, plans, specifications, cost estimate, and schedule. Remedial design cost is generally between 6 and 20 percent of total direct costs.

Construction management cost includes cost associated with services to manage construction or installation of the remedial action, except any similar services provided as part of regular construction activities. Activities include review of submittals, design modifications, engineering survey for construction, documentation of quality control/quality assurance, and record drawings. Construction management cost is generally between 6 and 15 percent of total direct costs.

Technical support during LTM includes services to monitor, evaluate, and report progress of the remedial action. This includes oversight of LTM activities, and progress reporting and is generally between 10 percent and 20 percent of total annual costs depending on complexity of the remedial action (USEPA, 2000).

Scope contingency represents project risks associated with the feasibility-level of design presented in this FS Report. This type of contingency represents costs, unforeseeable at the time of estimate preparation, which are likely to become known as the remedial design proceeds. Scope contingency ranges from 10 to 25 percent, with higher values appropriate for alternatives with greater levels of cost growth potential (USEPA, 2000). A contingency of 20% for capital costs and 25% for annual and periodic costs was added to each of the alternatives described herein.

Project management, remedial design, and construction management costs, related to implementation of the chosen RA, presented in this FS Report are based upon the following matrix presented in the USEPA FS cost estimating guidance (USEPA, 2000).

Professional and Technical Costs as Percentage of Direct Costs					
Indirect Cost	< $100K (%)	$100K-$500K (%)	$500K-$2M (%)	$2M-$10M (%)	>$10M (%)
Project Management	10	8	6	5	5
Remedial Design	20	15	12	8	6
Construction Management	15	10	8	6	6

11.3 COMPARATIVE ANALYSIS OF ALTERNATIVES

The comparative analysis evaluates the relative performance of each alternative using the same criteria by which the detailed analysis of each alternative was conducted. The purpose of the comparative analysis is to identify the advantages and disadvantages of each alternative relative to one another to aid in selecting an overall remedy for the Site. In addition to the comparison provided in **Table 11.1**, a detailed narrative for the comparative analysis of RAs using the evaluation criteria identified in DER-10 (NYSDEC, 2010) and Subpart 375-1.8(f) (NYS, 2006) is presented below.

The comparative analysis presented in this document uses a qualitative approach to comparison, with the exceptions of comparing alternative costs and the required time to implement each alternative. A comparison of the capital and long-term costs associated with the RAs is presented in **Table 11.3**, with costs for each alternative summarized in **Tables 11.4** to **11.7**. Detailed cost analysis backup is provided in **Appendix G**.

Overall Protectiveness of the Public Health and the Environment.

The comparative analysis of alternatives relative to Overall Protection of the Public Health and the Environment takes into consideration current exposure pathways. Direct contact with PFAS contaminated soil may be a complete exposure pathway if residents of 49 Main Street perform gardening or yardwork in the fenced-in yard, although this area is quite small and much of the area with PFAS impacts is located under paved surfaces. Groundwater in the vicinity of the Site is not used as a source of drinking water. There is no complete exposure pathway to groundwater except for a construction or utility worker that may be required to conduct work in the subsurface. Soil vapor intrusion has been mitigated with SSDSs at 47 and 49 Main Street and does not appear to be a complete exposure pathway

for contaminant concentrations above guidance values for residential and commercial properties downgradient of the Site.

Alternative 2 addresses soil exposure pathways by removing soil with contamination exceeding background levels (3.15 ppb). Although Alternatives 3a and 3b partially address soil exposure pathways by limiting contact with contaminated soils through containment of remaining accessible soils under a low permeability cover system, the primary purpose of the cover system is to reduce migration of contaminants in shallow soil to groundwater.

Alternatives 2 through 4 address groundwater exposure pathways through targeted groundwater treatment, with Alternative 2 targeting the most areas, followed by Alternative 4, then Alternatives 3a and 3b.

Alternative 2 ranks the highest for overall protectiveness of the public health and the environment, followed in decreasing rating by Alternatives 3a and 3b, 4, 5 and 1.

Compliance with Standard, Criteria, and Guidance.

Alternative 1 does not include actions to address contamination at the Site. This remedy is not compliant with Site-specific and chemical-specific SCGs.

Alternative 2 will result in compliance with Site-specific and chemical-specific SCGs. Alternatives 3a through 5 will result in partial compliance with Site-specific SCGs. Alternatives 3a and 3b will leave contaminated soils on-Site and off-Site above background, under a lower-permeability cover system. Alternatives 3a and 3b include targeted groundwater treatment to reduce time required to achieve SCGs, while Alternative 4 targets an additional area of treatment to further reduce time required to achieve SCGs. Alternatives 4 and 5 leave contaminated soil on-Site and off-Site at concentrations greater than background. Alternative 5 leaves contaminated groundwater on-Site and off-Site at concentrations greater than SCGs with the expectation that SCGs may be met at some future time due to natural attenuation processes. Therefore, Alternative 2 ranks highest for meeting Site-specific and chemical-specific SCGs, followed in decreasing rating by Alternatives 3a and 3b, and 4.

Long-Term Effectiveness and Permanence.

Alternatives 1 and 5 rate the lowest at Long-Term Effectiveness and Permanence since little to no active remediation will occur for either alternative. Alternative 2 rates highest for long-term effectiveness and permanence given that soils with contamination exceeding background levels will be permanently removed, the proposed area of groundwater treatment is larger than other alternatives thereby increasing

the reduction of site-related groundwater contamination, and the proposed remedy includes a PRB for reduction in plume mobility downgradient. Alternatives 3a and 3b rate the next highest for long-term effectiveness and permanence, given that contaminated soil will remain in place on-Site and off-Site rather than permanently removed. Alternative 4 rates fourths for long-term effectiveness and permanence, given that contaminated soil will not be addressed, however an additional target treatment area for groundwater will be implemented compared to Alternatives 3a and 3b.

It is worth noting, however, that the CSM indicates that a likely source of PFAS impacts to surface soil is through air deposition from dryer vents, therefore it is conceivable that Alternatives that include soil removal or a cover system may not be permanent, as these areas could get re-contaminated by continued cleaning of clothing that contains PFAS. Therefore, if we consider permanency for groundwater remediation only, Alternative 2 rates highest, followed by Alternative 4 then Alternatives 3a and 3b.

Reduction of Toxicity, Mobility, or Volume with Treatment. Alternatives 1 and 5 rate the lowest at Reduction of Toxicity, Mobility, or Volume with Treatment, as little to no active remediation will occur for either alternative. Any reduction in toxicity or volume of contaminants would occur from natural attenuation processes.

Alternative 2 rates the highest for reduction in toxicity, mobility, and volume. This is the only alternative that addresses PFAS contamination in groundwater, through the implementation of liquid activated carbon to reduce plume mobility. Alternative 2 also addresses a larger area of PCE-impacted groundwater than Alternatives 3a, 3b and 4, thereby having an increased reduction in contaminant toxicity and volume. Alternative 2 is followed in decreasing rating by Alternatives 3a and 3b and Alternative 4. Alternatives 3a and 3b address the same area of PCE-impacted groundwater, either through in-situ chemical oxidation or enhanced bioremediation. Alternatives 3a and 3b also address the same area of PFAS-impacted soil, by placing a low permeability cover, which could reduce the infiltration of rainwater through PFAS-impacted soils, thereby reducing the mobility of contamination into groundwater. Alternative 4 does not reduce toxicity, mobility or volume of PFAS impacted soil, however it does address a larger area of PCE-impacted groundwater than Alternatives 3a and 3b.

Short-Term Impacts and Effectiveness.

Although ECs will be used and a HASP will be prepared and followed, there is potential for short-term adverse impacts and risks upon the community, the workers, and the environment during the construction of Alternatives 2, 3a, 3b, 4 and 5. Alternative 1 is not expected to cause adverse short-term impacts as the alternative does not include intrusive activities.

Alternative 5 is ranked as having the least adverse short-term impacts followed by Alternative 4, as the only intrusive activities included are the installation of monitoring wells (both alternatives), and drilling activities for injection of amendments (Alternative 4). Alternatives 2, 3a, and 3b, all include adverse short-term impacts for the soil remedy where care would be needed to avoid impacting surrounding buildings, properties, and day-to-day public activities. Of these alternatives, due to the size of the soil remedial area and the duration of operations, Alternative 2 would have the highest short-term impacts followed by 3a and 3b.

Alternatives 3a and 3b, however, both address the same-sized proposed groundwater treatment area, the duration of injections of chemical oxidants is expected to be longer than that of bio-amendments, due to larger volume of injection material required for ISCO compared to enhanced bioremediation. Due to differences in duration of implementations of remedies, Alternative 5, the least adverse for short-term impacts, is followed in ranking by Alternative 4, then Alternatives 3b and 3a. Alternative 2 is ranked as having the most adverse short-term impacts due to the longest duration and largest areal extent of intrusive activities of the proposed remedy.

Rankings of Alternatives with regards to short-term effectiveness are generally inverse to rankings with regards to short-term adverse impacts. Alternatives that include soil remedies will be effective immediately. Additionally, remediation of impacted groundwater via ISCO mechanisms implemented in Alternatives 3a and 4 are expected to result in contaminant breakdown more rapidly than the combined ISCR and bioremediation mechanisms implemented in Alternatives 2 and 3b. Alternative 5 is ranked lowest for short-term effectiveness as its only short-term component is in the implementation of ICs.

Implementability.

There would be little to no difficulties implementing Alternatives 1, 4, or 5. Administrative difficulties for Alternatives 3a through 5 would include implementing deed restrictions to limit potential future use of the Site. Administrative difficulties for Alternatives 2 through 5 will also include cooperation with city officials and property owners for the installation of permanent groundwater monitoring wells.

Alternative 2 is expected to have the most technical and administrative difficulties due to this alternative proposing the largest expanse of treatment area for impacted groundwater, proposed injection points in roadways and town sidewalks. Alternative 2, along with Alternatives 3a and 3b will also have technical and administrative difficulties associated with the soil remedy that will require structural analysis and/or protection of nearby structures and restrict use of a yard and driveway during construction. Implementation of Alternatives 3a, 3b and 4 are expected to have comparable technical difficulties

associated with conducting injections through basement floors. Time frames to complete injections are expected to be longer for Alternatives 3a and 4 compared to 3b due to differences in injection volumes between ISCO and enhanced bioremediation, however the number of locations, proposed treatment area, and number of rounds of injections is common among all three alternatives, with slightly more injection locations for Alternative 4. Alternatives 3a and 3b are expected to have higher administrative difficulties than others upon completion of the remedy, due to the annual EC inspections and certifications for the low permeability cover system that will be required for these alternatives.

Alternative 1 is ranked highest for implementability, followed in decreasing order by Alternatives 5, 4, 3a and 3b, and 2.

Cost-Effectiveness.

The estimated capital cost and present worth of the RAs (as summarized from **Table 11.3**) are as follows:

Remedial Alternatives	Capital Cost	Present Worth
Alternative 1: No Further Action	$ 0	$ 0
Alternative 2: Soil Excavation to Pre-Disposal Conditions, with In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation of Groundwater	$2,535,000	$2,821,000
Alternative 3a: Low-Permeability Cover System with In-Situ Chemical Oxidation of Groundwater	$571,000	$1,583,000
Alternative 3b: Low-Permeability Cover System with Enhanced Bioremediation of Groundwater	$387,000	$1,441,000
Alternative 4: In-Situ Chemical Oxidation and Enhanced Bioremediation of Groundwater	$478,000	$1,490,000
Alternative 5: Long-Term Groundwater Monitoring and Institutional Controls	$63,000	$1,117,000

A summary of the costs associated with these alternatives is presented in **Tables 11.4** through **11.7**. Detailed cost analysis backup is provided in **Appendix G**.

Land Use.

As established in **Section 6**, exposure pathways at the Site include potential exposure to subsurface soil, groundwater, and soil vapor intrusion. Each Alternative currently addresses soil vapor intrusion as mitigation systems are already in place. Alternative 2addresses potential exposure pathways to soil by removing contaminated subsurface soils to background or residential use SCOs, preventing future exposure and minimizing the source of groundwater PFAS contamination. Alternatives 3a and 3b will limit PFAS migration through implementation of a low permeability cover system. Infiltration of rainwater through PFAS-impacted soils will be reduced, thereby also reducing the mobility of PFAS contamination into groundwater, but land use will have restrictions. A secondary benefit of the low permeability cover system is that potential direct contact with subsurface soils will be limited. For Alternatives 2 through 3b, the combination of removal or containment of PFAS-impacted soil with targeted groundwater injection treatments meets current and foreseeable Land Use. Although Alternatives 1, 4 and 5, do not address potential soil exposure pathways, the foreseeable land use as commercial or mixed use commercial/residential will likely limit residential exposure to contaminated soil.

Sustainability/Green Remediation (DER-31).

The environmental impacts of each remedial alternative were calculated using SiteWise™ (SiteWise™ outputs included in **Appendix H**). Environmental footprint analyses for each alternative include calculations of GHG emissions, total energy use, air emissions of pollutants (nitrogen oxides, sulfur oxides, and particulate matter), water consumption, resource consumption, and worker safety ratings. Inputs considered during the calculations of these metrics include the production of required treatment or construction materials, transportation of materials, equipment, and personnel, on-Site equipment operation, and waste management. Total GHG emissions for each RA are as follows:

Remedial Alternatives	Pre-Design Investigation (metric ton CO_2e)	Implementation (metric ton CO_2e)	Long Term Monitoring (metric ton CO_2e)	Total GHG Emissions (metric ton CO_2e)
Alternative 1: No Further Action	0	0	0	0
Alternative 2: Soil Excavation to Pre-Disposal Conditions, with In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation of Groundwater	12	101	22	135
Alternative 3a: Low-Permeability Cover System with In-Situ Chemical Oxidation of Groundwater	10	19	69	98
Alternative 3b: Low-Permeability Cover System with Enhanced Bioremediation of Groundwater	10	11	88	109
Alternative 4: In-Situ Chemical Oxidation and Enhanced Bioremediation of Groundwater	9	12	69	90
Alternative 5: Long-Term Groundwater Monitoring and Institutional Controls	9	0	88	97

Note: CO_2e = carbon dioxide equivalent

As shown above, Alternative 1 rates highest on sustainability because no action would be taken to address the impacts at the Site. Alternative 4 rates second highest on sustainability, as there would be no hauling contaminated materials off site, and less laboratory samples than Alternative 5. Alternative 5 rates third having a higher emissions footprint than Alternative 4. Minimal emissions are required for the implementation of monitoring wells, however there are higher emissions for LTM due to a greater number of lab samples than Alternative 4. Alternatives 3b and 3a rate fourth and fifth, respectively, because of the small footprint and shallow depth of soil to be excavated and replaced with asphalt, and the shorter duration of the bioremediation compared to the ISCO for groundwater. Alternative 2 rates

lowest for sustainable / green remediation. Alternative 2 rates low because it would require significant resources for additional transportation and disposal of excavated soil and fuel for equipment and water for multiple injections of amendments into groundwater. For alternatives 3a, 3b, 4 and 5, LTM accounts for a large portion of total GHG emissions. The emissions factors are high because of the impact of Laboratory samples. SiteWise calculates the impacts of lab samples based on the cost of sample, rather than what kind of test is being performed. It is expected for these results to vary from the output given by SiteWise. Another portion of the LTM component is personnel transportation. The 30-year time frame for LTM allows for the possibility to reduce overall emissions through use of electric vehicles.

12.0 REFERENCES

Irvington Historical Society, 2018. Historical Society website: http://www.irvingtonhistoricalsociety.org/history.htm . Visited November 11, 2018.

Earth Environment Engineering and Geology (EEEG), 2025a. Pre-Design Investigation Report, Irvington Rugs and Cleaners Site. March 21, 2025.

EEEG, 2025b. February 2025 SVI Sampling Report, Irvington Rugs and Cleaners Site. April 10, 2025.

Ecosystems Strategies, Inc. (ESI), 2005. Combined Phase I and Phase II Environmental Site Assessment (ESI File: GI05204.20). December 2, 2005.

ESI, 2006a. Summary Report of Remedial Activities, Performed on the Irvington Rugs and Cleaners Property. ESI File: GI05204.21. February 10, 2006.

ESI, 2006b. Summary Report of Remedial Activities, Performed on the Irvington Rugs and Cleaners Property. ESI File: GI05204.30. April 20, 2006.

ESI, 2006c. Letter Report of Investigation Activities. 53 Main Street, Village of Irvington. ESI File: GI05204.31. May 18, 2006.

Enviro-Sciences of Delaware, Inc., 2015. Phase II Investigation, 49 Main Street, Village of Irvington, NY. 2015.

Enviro-Sciences, 2018. Vapor Intrusion Investigation Summary, 49 Main Street, Irvington, NY. January 10, 2018.

Fisher, D.W., Isachsen, Y.W., Rickard, L.V., Geologic Map of New York. March, 1970.

Interstate Technology and Regulatory Council (ITRC), 2024. ITRC WebSite: https://www.itrcweb.org/Guidance-documents. Visited November 2024.

MACTEC, 2024a. RI FAP Addendum 2 for the Irvington Rugs and Cleaners Site. March 5, 2024.

MACTEC, 2024b. 47 Main Street – Sub-Slab Depressurization System Installation Report-R1. May 21, 2024.

MACTEC, 2023a. RI FAP Addendum 2 for the Irvington Rugs and Cleaners Site. October 9, 2023.

MACTEC, 2023b. 2022 SVI Sampling Report, Irvington Rugs and Cleaners Site (Site 360175). February 14, 2023.

MACTEC, 2023c. March 2023 SVI Sampling Report, Irvington Rugs and Cleaners Site (Site 360175). June 2, 2023b.

MACTEC, 2023d. 49 Main Street – Sub-Slab Depressurization System Installation Report. July 20, 2023.

MACTEC,2022a. Field Activities Plan Remedial Investigation/Feasibility Study, Irvington Rugs and Cleaners. Prepared for the New York State Department of Environmental Conservation, Albany, New York. March 2022.

MACTEC, 2022b. RI FAP Addendum for the Irvington Rugs and Cleaners Site. May 17, 2022.

MACTEC, 2020a. Final Site Characterization Report, Irvington Rugs and Cleaners. Prepared for the New York State Department of Environmental Conservation, Albany, New York. August 2020.

MACTEC, 2020b. *QAPP and Program Field Activities Plan*. Prepared for the New York State Department of Environmental Conservation, Albany, New York. April 2020.

National Climatic Data Center, 2020. Comparative Climatic Data for the United States, 1991 to 2020 (Accessed for Dobbs Ferry-Ardsley New York on 6.10.2024). 2020.

NYS, 2006. New York Codes, Rules, and Regulations, Title 6, Part 375- Environmental Remediation Programs. December, 2006.

NYS, 1999. New York Codes, Rules, and Regulations, Title 6, Part 700-705 Water Quality Regulations Surface Water and Groundwater Classifications and Standards. Amended August 1999.

NYSDEC, 2023. Sampling, analysis, and assessment of per- and polyfluoroalkyl substances. April 2023.

NYSDEC, 2022a. Sampling, analysis, and assessment of per- and polyfluoroalkyl substances. May 2022.

NYSDEC, 2022b. Sampling, analysis, and assessment of per- and polyfluoroalkyl substances. November 2022.

NYSDEC, 2021. Work Assignment Issuance/Notice to Proceed for the Irvington Rugs and Cleaners Site, Site Number 360175. March 16, 2021.

NYSDEC, 2011. DER-31/Green Remediation. January 20, 2011.

NYSDEC, 2010a. DER-10, Technical Guidance for Site Investigation and Remediation. May 3, 2010.

NYSDEC, 2010b. CP-51 Soil Cleanup Guidance. October 21, 2010, with proposed revision June 2024.

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (and 2000, 2004, 2023 addendums).

NYSDOH, 2006. Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October 2006. Matrix updates in May 2017 and February 2024.

OMB, 2024. Circular No. A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, Appendix C: Discount Rates for Cost-Effectiveness, Lease Purchase, and Related Analyses. November 2024.

Reynolds, 1988. Hydrogeology of the Croton-Ossining Area, Westchester County, New York. 1988.

USEPA, 2000. A Guide to Developing and Documenting Cost Estimates During the FS. July 2000.

United States Department of Agriculture (USDA) Conservation Service – Soil Survey for Putnam and Westchester Counties, New York. 1994.

United States Geological Survey, Topographic Map of the White Plains, New York Quadrangle. 1979.

FIGURES

Map Copyright:© 2013 National Geographic Society, i-cubed

Prepared/Date: MCB 12-22-24
Checked/Date: EKS 12-22-24

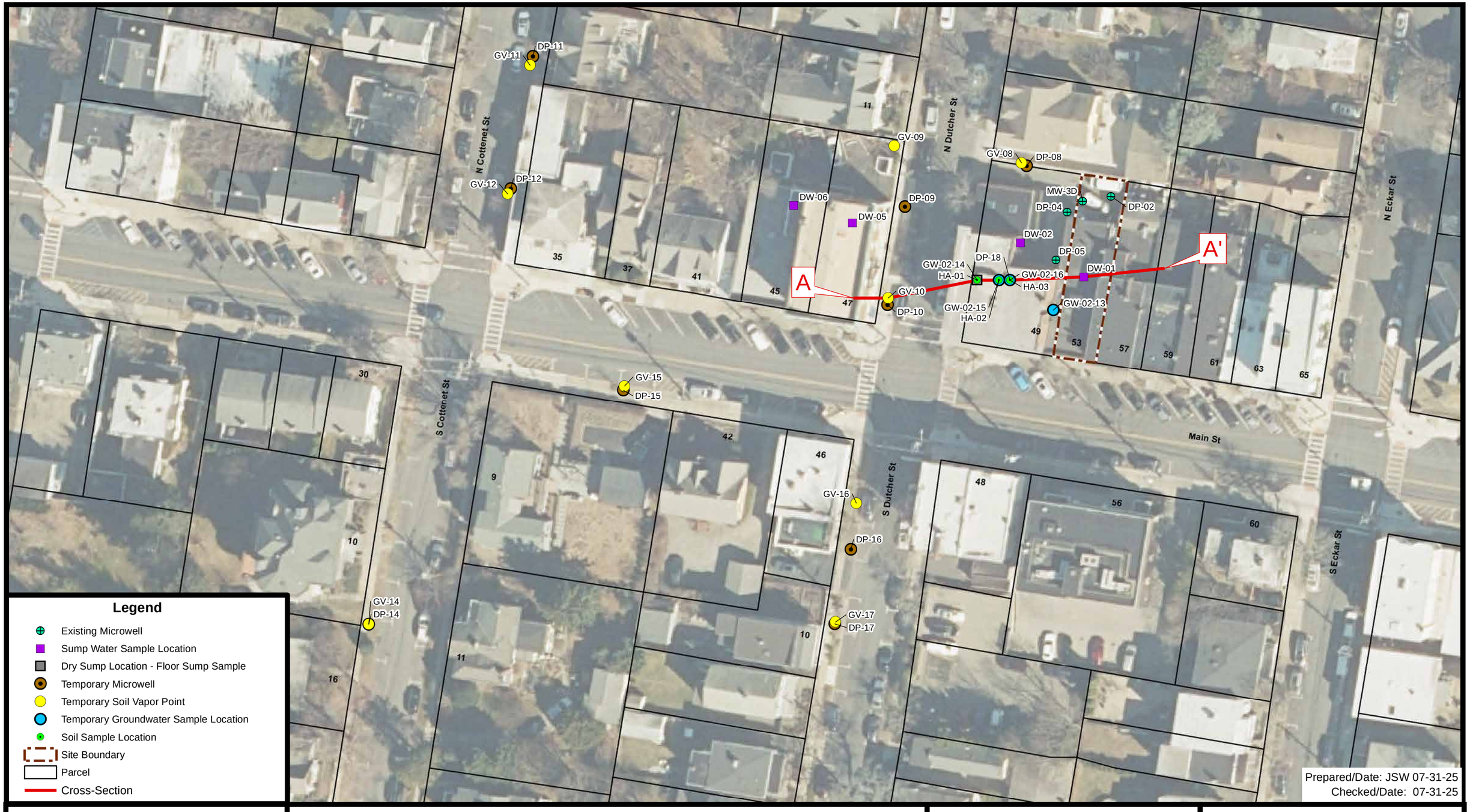
NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

Site Location

Project 3616216144 Figure 1.1

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC_General\NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\Irvington_Site_Location.mxd
PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC_General\NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 1.1 - Site Location.pdf 12-22-2024 9:11 PM madison.bolduc



Legend

- Existing Microwell
- Sump Water Sample Location
- Dry Sump Location - Floor Sump Sample
- Temporary Microwell
- Temporary Soil Vapor Point
- Temporary Groundwater Sample Location
- Soil Sample Location
- Site Boundary
- Parcel
- Cross-Section

Prepared/Date: JSW 07-31-25
Checked/Date: 07-31-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

1. Imagery - Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

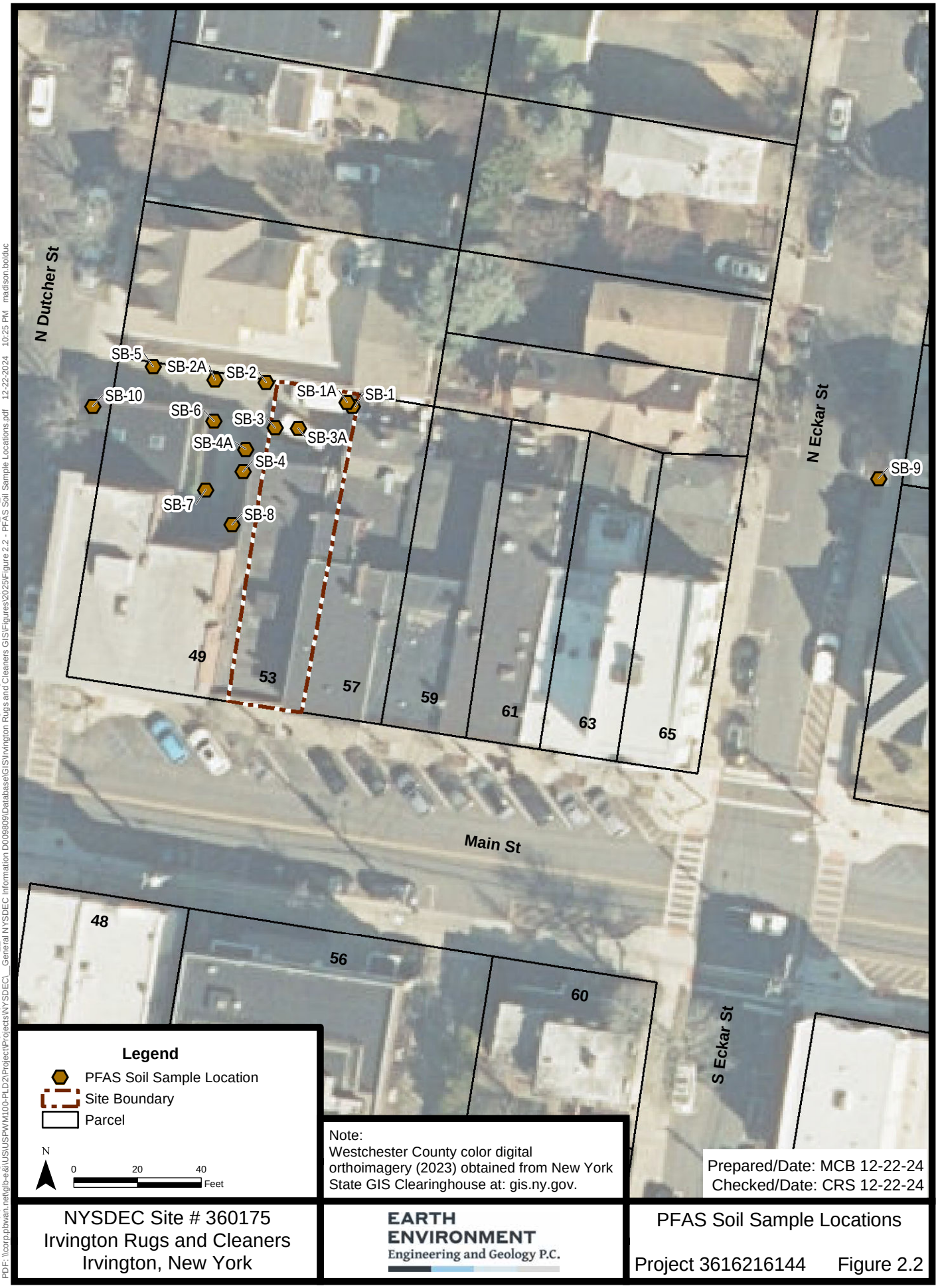
0 25 50
Feet

EARTH ENVIRONMENT
Engineering and Geology P.C.

Sampling Locations

Project 3616216144 Figure 2.1

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\Survey_Spring2022_11x17LS_Figs2-1_3-1_4-1_10-3_10-4_CBlack.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 3.1 - Groundwater Elevations.pdf 07-31-2025 1:32 PM madison.bolduc



Document: \\corp.pbwan.net\gb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC_ General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\PFAS_Soil_8.5x11P.mxd
PDF: \\corp.pbwan.net\gb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC_General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025Figure 2.2 - PFAS Soil Sample Locations.pdf 12-22-2024 10:25 PM madison.bolduc

DP-11 [66.6]
DP-12 [65.3]
DP-08 [81.0]
DP-02 [85.39]
DP-09 [75.6]
DP-04 [82.26]
DP-05 [79.78]
DP-10 [75.6]
DP-15 [64.4]
DP-16 [74.0]
DP-17 [72.5]
DP-14 [<59.81]
65
70
75
80
60
N Cottenet St
S Cottenet St
N Dutcher St
S Dutcher St
N Eckar St
S Eckar St
Main St
11
35
37
41
45
47
49
53
57
59
61
63
65
30
42
46
9
10
16
48
56
60
50

Legend

- Existing Microwell
- Temporary Microwell
- Groundwater Contour
- Interpreted Groundwater Flow Direction
- Site Boundary
- Parcel

Prepared/Date: MCB 12-22-24
Checked/Date: CRS 12-22-24

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

Notes:
1. Groundwater measurements collected in March 2022
2. Groundwaer elevations in feet above mean sea level
3. Imagery - Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov

N

0 25 50
Feet

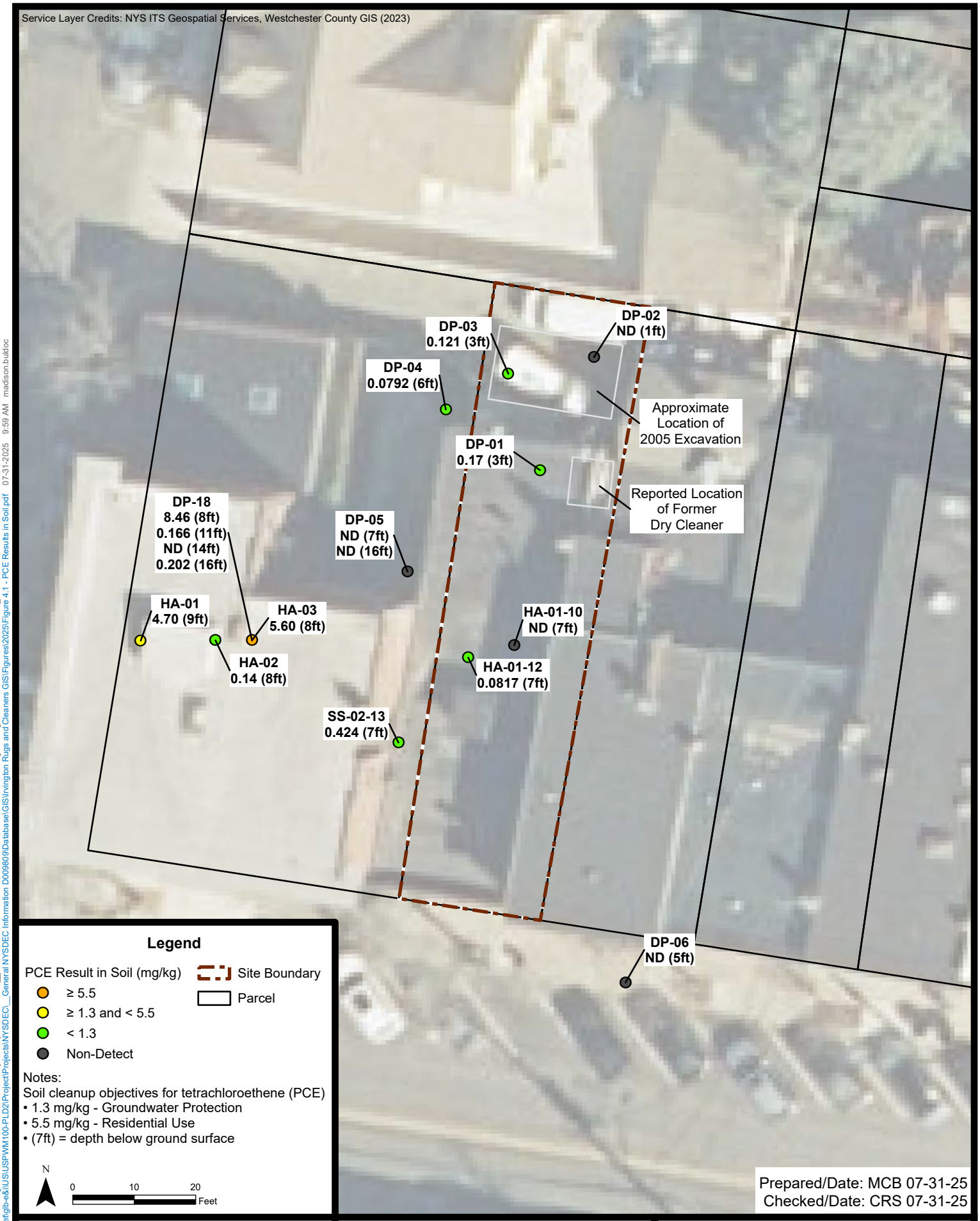
EARTH ENVIRONMENT
Engineering and Geology P.C.

Groundwater Elevations

Project 3616216144

Figure 3.1

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\Survey_Spring2022_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 3.1 - Groundwater Elevations.pdf 12-22-2024 11:02 PM madison.bolduc



NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

RI and SC PCE Results in Soil

Project 3616216144 Figure 4.1

Document: \\corp.pbwan.net\glb-ex\IUS\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\APRX\PFAS_Soil
PDF: \\corp.pbwan.net\glb-ex\IUS\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 4.1 - PCE Results in Soil.pdf 07-31-2025 9:59 AM madison.buldoc

Legend

Soil Sample Depth (ft)

0
1
2
5

PFOS Concentration (ppb)

- Not Sampled
- 0 to 0.88
- > 0.88 to 3.15
- > 3.15 to 8.8
- > 8.8

- Potential Area of PFOS Exceeding Background
- Site Boundary
- Parcel

Note:
Westchester County color digital orthoimagery (2023) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

0 10 20 Feet

Guidance Value for Anticipated Site Use	PFOS Concentration in ppb
Unrestricted	0.88
Protection of Groundwater	1.0
Potential Background*	3.15
Residential	8.8
Restricted Residential	44

Note: Concentrations from NYSDEC April 2023 PFAS Guidance. * = Potential Background = sample result from SB-9.

Prepared/Date: MCB 12-22-24
Checked/Date: CRS 12-22-24

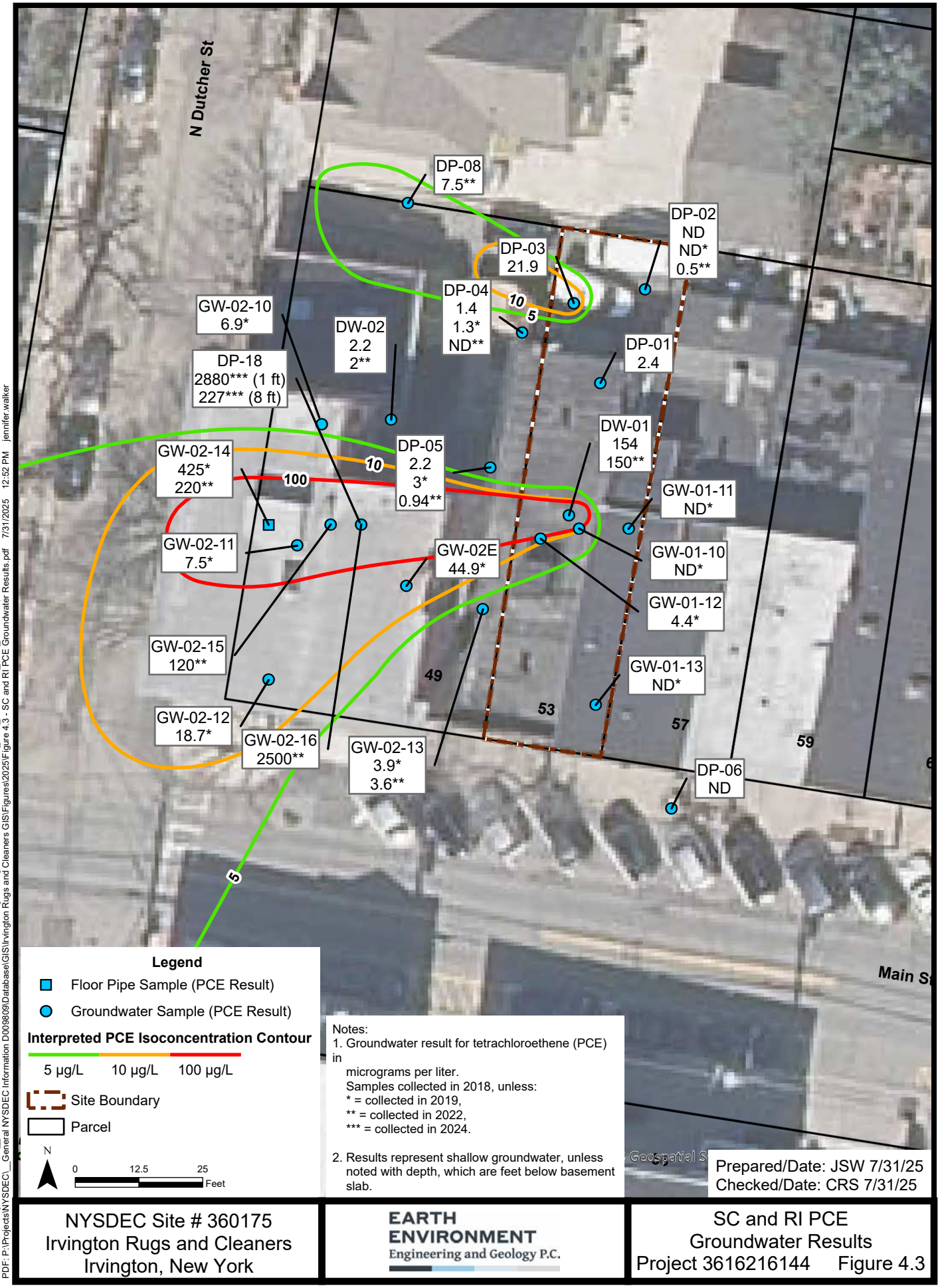
NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

PFOS Soil Sample Results

Project 3616216144 Figure 4.2

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\PFOS_Soil_2023_Results_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 4.2 - PFOS Soil Sample Results.pdf 12-22-2024 11:07 PM madison.bolduc



Notes:
1. Groundwater result for tetrachloroethene (PCE) in micrograms per liter.
Samples collected in 2018, unless:
* = collected in 2019,
** = collected in 2022,
*** = collected in 2024.

2. Results represent shallow groundwater, unless noted with depth, which are feet below basement slab.

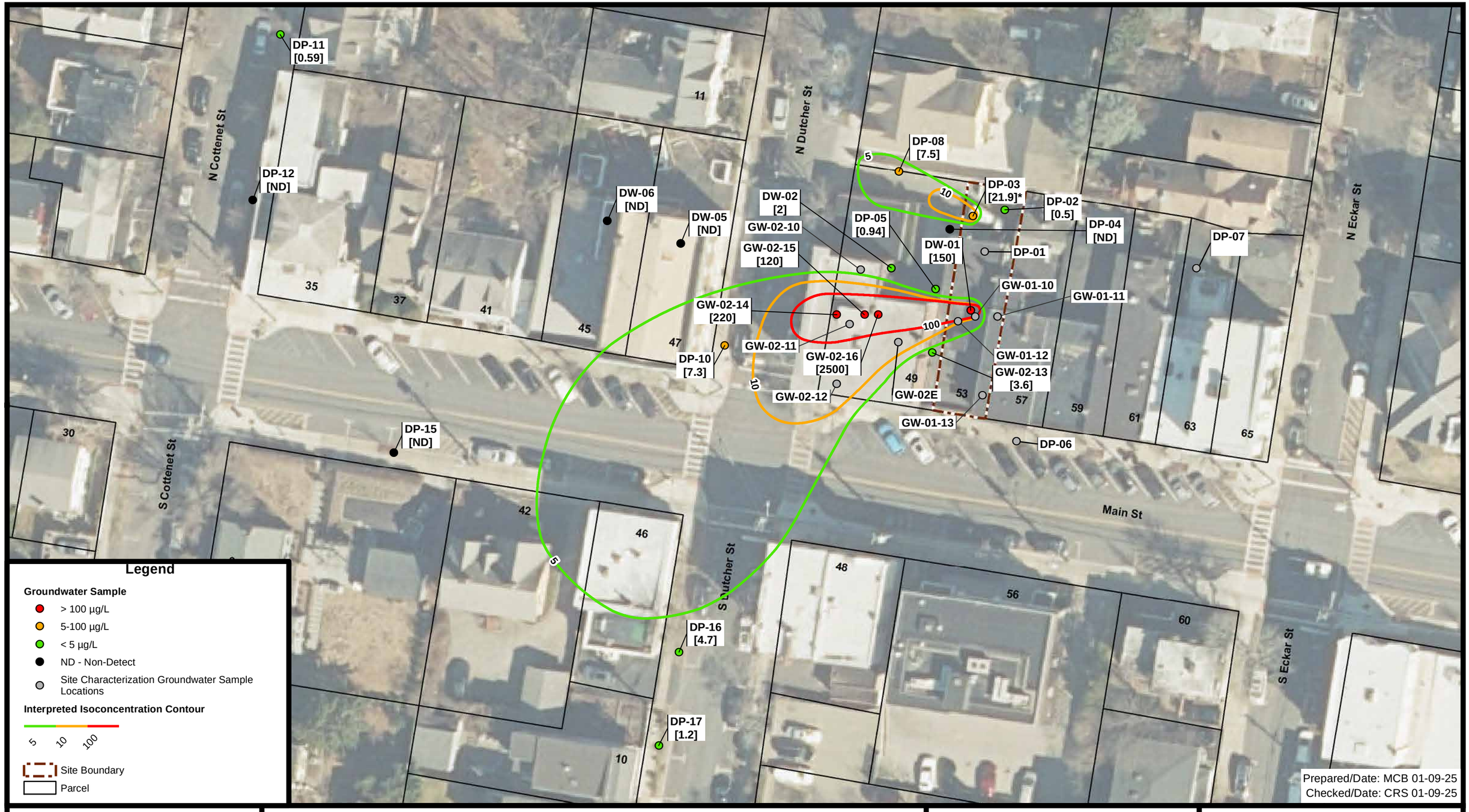
Prepared/Date: JSW 7/31/25
Checked/Date: CRS 7/31/25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

SC and RI PCE
Groundwater Results
Project 3616216144 Figure 4.3

Document: P:\Projects\NYSDEC_General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\APRX\GW_PCE_8.5x11P\GW_PCE_8.5x11P.aprx
PDF: P:\Projects\NYSDEC_General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 4.3 - SC and RI PCE Groundwater Results.pdf 7/31/2025 12:52 PM jennifer.walker



Legend

Groundwater Sample

- > 100 µg/L
- 5-100 µg/L
- < 5 µg/L
- ND - Non-Detect
- Site Characterization Groundwater Sample Locations

Interpreted Isoconcentration Contour

5 10 100

Site Boundary

Parcel

Prepared/Date: MCB 01-09-25
Checked/Date: CRS 01-09-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

Notes:
1. Groundwater samples collected between January and May 2022. (Except *, which was collected in December 2018).
2. Groundwater results for tetrachloroethene (PCE) in micrograms per liter (µ/L).
3. Imagery - Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

0 25 50 Feet

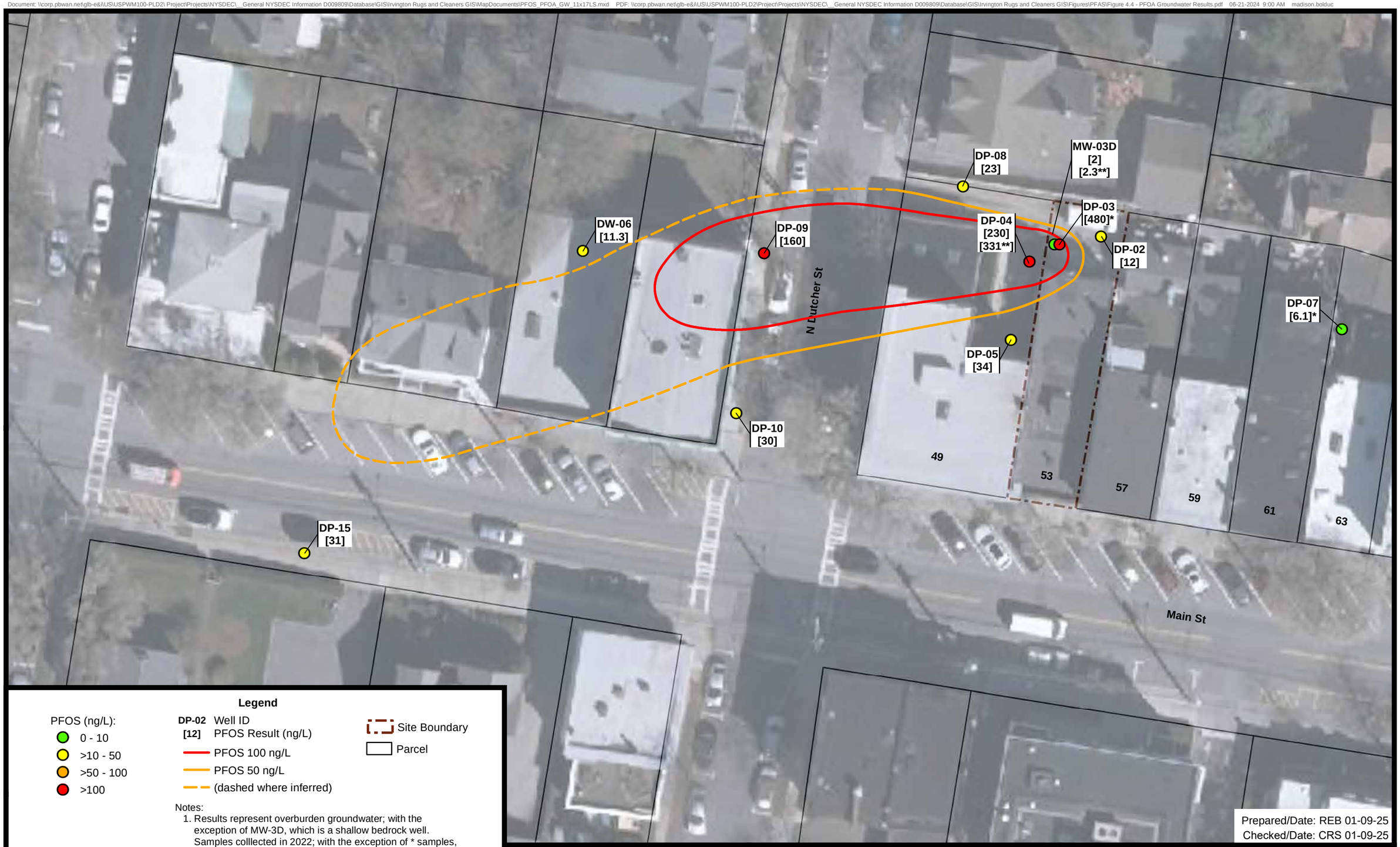
EARTH ENVIRONMENT
Engineering and Geology P.C.

PCE Overburden Groundwater Results

Project 3616216144 Figure 4.4

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\Survey_Spring2022_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 3.1 - Groundwater Elevations.pdf 01-09-2025 2:20 PM madison.bolduc

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\PFOS_PFOA_GW_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\PFAS\Figure 4.4 - PFOA Groundwater Results.pdf 06-21-2024 9:00 AM madison.bolduc



Legend

PFOS (ng/L):
- 0 - 10
- >10 - 50
- >50 - 100
- >100

DP-02 Well ID
[12] PFOS Result (ng/L)
PFOS 100 ng/L
PFOS 50 ng/L
(dashed where inferred)

Site Boundary
Parcel

Notes:
1. Results represent overburden groundwater; with the exception of MW-3D, which is a shallow bedrock well. Samples colllected in 2022; with the exception of * samples, which were collected as part of the Site Characterization in 2018 and 2019, and ** samples, which were collected in March 2024.
2. Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N
0 15 30 Feet

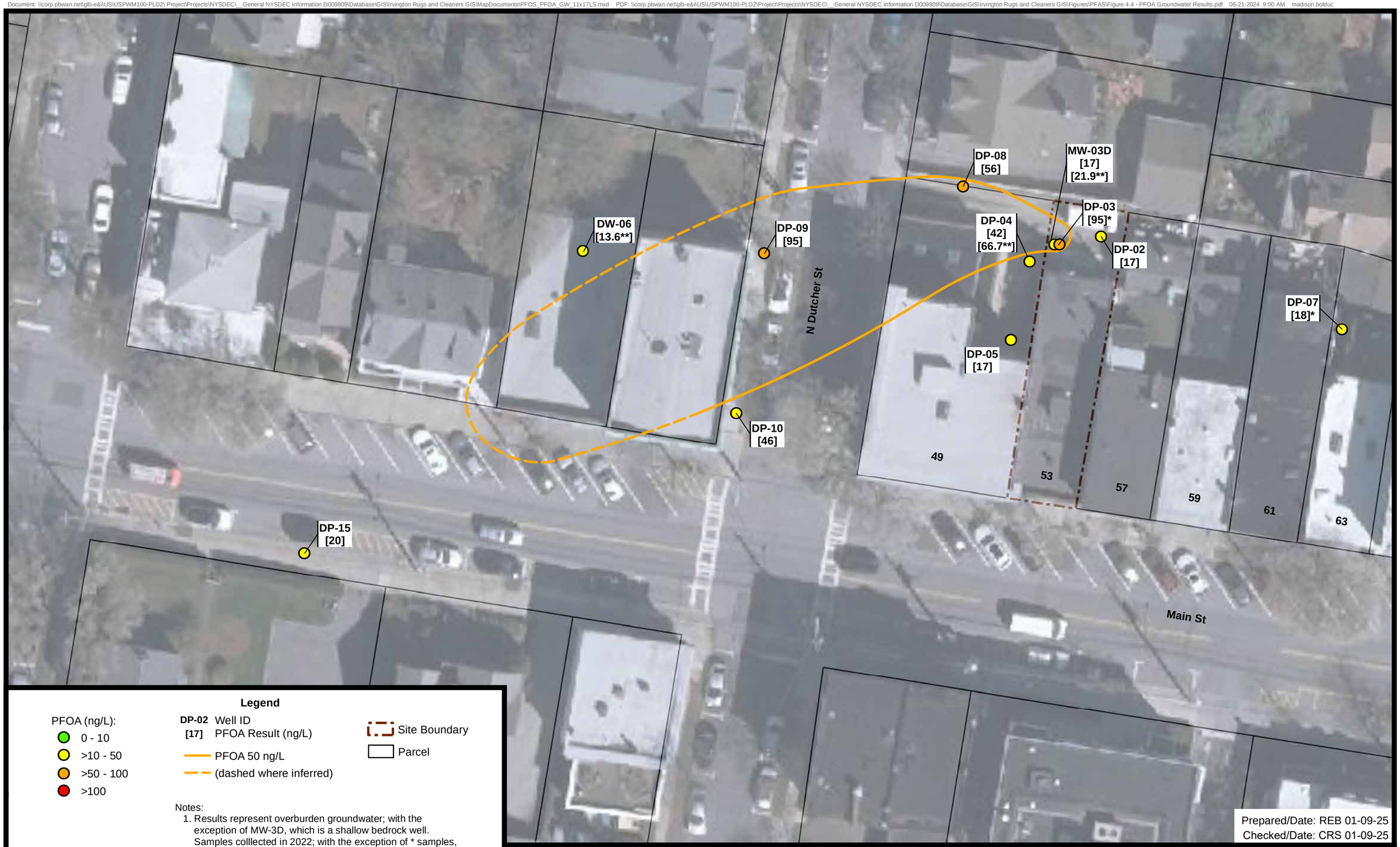
Prepared/Date: REB 01-09-25
Checked/Date: CRS 01-09-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

Groundwater Results for
Perfluorooctanesulfonic acid (PFOS)
Project 3616216144 Figure 4.5

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\PFOS_PFOA_GW_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\PFAS\Figure 4.4 - PFOA Groundwater Results.pdf 06-21-2024 9:00 AM madison.bolduc



Legend

PFOA (ng/L):
- 0 - 10
- >10 - 50
- >50 - 100
- >100

DP-02 Well ID
[17] PFOA Result (ng/L)
PFOA 50 ng/L
(dashed where inferred)

Site Boundary
Parcel

Notes:
1. Results represent overburden groundwater; with the exception of MW-3D, which is a shallow bedrock well. Samples colllected in 2022; with the exception of * samples, which were collected as part of the Site Characterization in 2018 and 2019, and ** samples, which were collected in March 2024.
2. Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

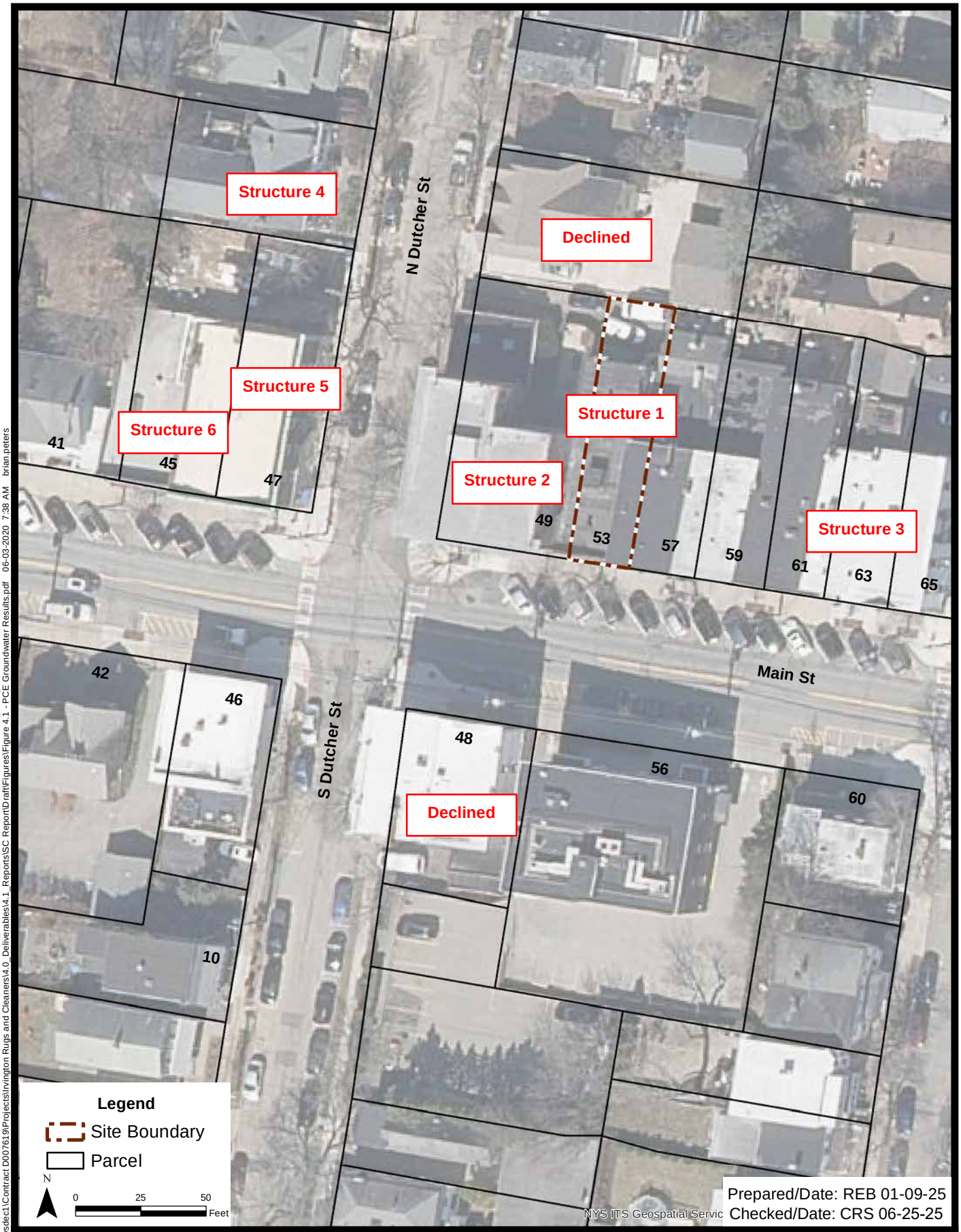
0 15 30 Feet

Prepared/Date: REB 01-09-25
Checked/Date: CRS 01-09-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

Groundwater Results for
Perfluorooctanoic acid (PFOA)
Project 3616216144 Figure 4.6



NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

Soil Vapor Intrusion Sampling

Project 3611181228 Figure 4.7

Document: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\GW_PCE_8.5x11P.mxd
PDF: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\4.0_Deliverables\4.1_Reports\SC Report\Draft\Figures\Figure 4.1 - PCE Groundwater Results.pdf 06-03-2020 7:38 AM brian.peters

A

A'

47 Main St

49 Main St

53 Main St
(SITE)

57 Main St

DP-10
5/24/2022
PCE 7.3
TCE 0.25 J
DCE 0.23 J

GW-02-14
1/12/2022
PCE 220 J
TCE 4
DCE 3.6

GW-02-16
1/12/2022
PCE 2500 J
TCE 28
DCE 20

DP-5
(off-centerline)

DP-6 (SC)
(off-centerline)

DW-01
3/22/2022
PCE 150
TCE 0.66 J
DCE 2 U

N. Dutcher St

Line indicates
existing grade

Storm Sewer

Storm Sewer

Sanitary Sewer

DP-18
8/20/2024
PCE 227
TCE 10.9
DCE 5.78

Medium to coarse sand, little silt

Bedrock

110
105
100
95
90
85
80
75
70

Elevation, Feet (bgs)

0 5
Vertical Scale (ft)

0 10
Horizontal Scale (ft)

Prepared/Date: KLD 01-15-25
Checked/Date: CRS 07-22-25

Legend

Approximate Groundwater Table

PCE - tetrachloroethene
TCE - trichloroethene
DCE - cis-1,2-dichloroethene

J - estimated
U - non-detect
Results in micrograms per liter

EARTH ENVIRONMENT
Engineering and Geology P.C.

NYSDEC Site #360175
Irvington Rugs and Cleaners

Interpreted Cross-Section A-A'

Project 3616216144

Figure 5.1

Legend

- Proposed extent of soil remediation for Alternatives 2 through 3b
- Existing Yard / Vegetated
- Existing Paved Area
- Site Boundary
- Parcel

N

0 10 20 Feet

Note:
Westchester County color digital orthoimagery (2023) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

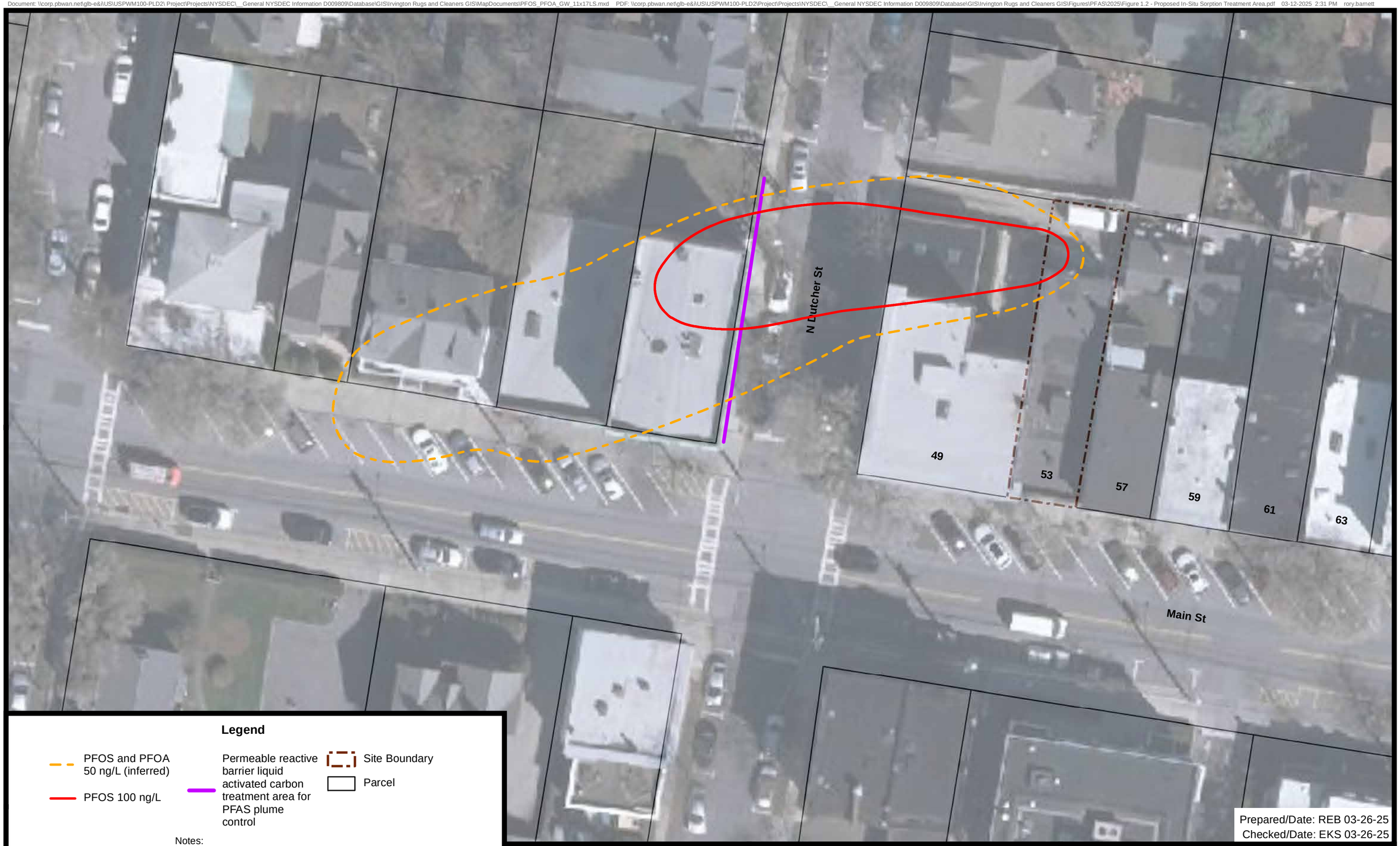
Prepared/Date: REB 03-26-25
Checked/Date: CRS 03-26-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

Proposed Soil Remediation Area,
Alternatives 2 through 3b
Project 3616216144 Figure 10.1

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\PFOS_Soil_2023_Results_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 10.1 - Propsed Soil Remediation Area.pdf 03-26-2025 12:26 PM rory.barnett



Legend

- PFOS and PFOA 50 ng/L (inferred)
- PFOS 100 ng/L
- Permeable reactive barrier liquid activated carbon treatment area for PFAS plume control
- Site Boundary
- Parcel

Notes:
1. Isoconcentration contours developed from analytical results of sampling conducted during the Remedial Investigation.
2. Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

0 15 30 Feet

Prepared/Date: REB 03-26-25
Checked/Date: EKS 03-26-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

EARTH ENVIRONMENT
Engineering and Geology P.C.

Alternative 2
Proposed In-Situ Sorption Treatment Area
Project 3616216144 Figure 10.2

Legend

Interpreted Isoconcentration Contour (µg/L)

5 10 100

Permeable reactive barrier treatment area for volatile organic compound (VOC) plume control

In-situ chemical reduction and enhanced bioremediation injection treatment areas for VOC-impacted groundwater

Site Boundary

Parcel

Prepared/Date: MCB 03-12-25
Checked/Date: CRS 03-12-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

Notes:
1. Isoconcentration contours developed from analytical results of sampling conducted during the Remedial Investigation
2. Imagery - Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

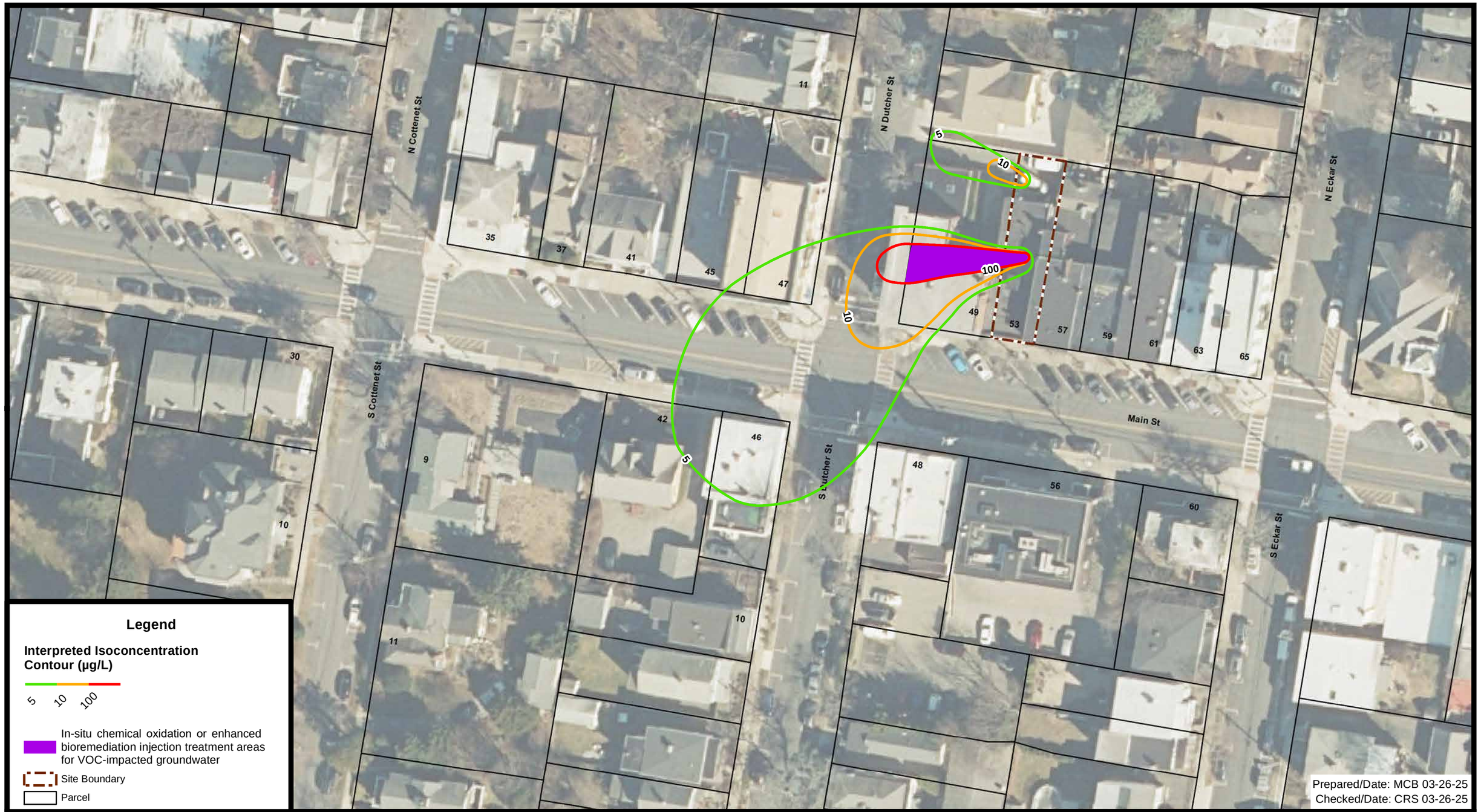
0 25 50 Feet

EARTH ENVIRONMENT
Engineering and Geology P.C.

Alternative 2 In-Situ Chemical Reduction and Enhanced Bioremediation Proposed Treatment Areas

Project 3616216144 Figure 10.3

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\Survey_Spring2022_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 3.1 - Groundwater Elevations.pdf 03-12-2025 11:17 AM madison.bolduc



NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

Notes:
1. Isoconcentration contours developed from analytical results of sampling conducted during the Remedial Investigation
2. Imagery - Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

0 25 50
Feet

EARTH ENVIRONMENT
Engineering and Geology P.C.

Alternatives 3a and 3b
Proposed Injections Treatment Area

Project 3616216144 Figure 10.4

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\ Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\Survey_Spring2022_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 3.1 - Groundwater Elevations.pdf 03-26-2025 2:19 PM madison.bolduc

N Cottenet St
N Dutcher St
N Eckar St
S Cottenet St
S Dutcher St
S Eckar St
Main St
5
10
100
11
35
37
41
45
47
49
53
57
59
61
63
65
30
42
46
9
10
48
56
60
11
10

Legend

Interpreted Isoconcentration Contour (µg/L)

5 10 100

In-situ chemical oxidation or enhanced bioremediation injection treatment areas for VOC-impacted groundwater

Site Boundary

Parcel

Prepared/Date: MCB 03-26-25
Checked/Date: CRS 03-26-25

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

Notes:
1. Isoconcentration contours developed from analytical results of sampling conducted during the Remedial Investigation
2. Imagery - Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov.

N

0 25 50
Feet

EARTH ENVIRONMENT
Engineering and Geology P.C.

Alternative 4
Proposed Injections Treatment Area

Project 3616216144 Figure 10.5

Document: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\MapDocuments\Survey_Spring2022_11x17LS.mxd PDF: \\corp.pbwan.net\glb-e&i\US\USPWM100-PLD2\Project\Projects\NYSDEC__General NYSDEC Information D009809\Database\GIS\Irvington Rugs and Cleaners GIS\Figures\2025\Figure 3.1 - Groundwater Elevations.pdf 03-26-2025 2:19 PM madison.bolduc

TABLES

Table 2.1: Summary of Remedial Investigation Activities

LOCATION TYPE	Date	Sample Locations	RATIONALE	ANALYTICAL
Utility Clearance	1/12/2022 (Interior) 3/22/2022 (Exterior)	49 Main Street basement, DP/GV-008 to DP/GV-017	To locate utilities to evaluate preferential migration pathways (piping, etc.) inside and outside 49 Main St, and to avoid striking or penetrating sub-grade utilities while conducting subsurface explorations.	NA
Interior Activities at 49 Main Street	1/12/2022	Dry sump on west side of basement and concrete depression on east side of basement.	Cleaned out dry sump and depression of sediment to mitigate potential exposure pathways within 49 Main Street and evaluate potential migration paths from sump.	NA
49 Main Street Basement Soil Samples	1/12/2022	Soil samples HA-01 from below dry sump and HA-02 and HA-03 from below slab.	To assess presence/absence of VOC contamination in soil below dry sump and at select locations below basement slab.	VOCs - Soil
49 Main Street Basement Water Samples	1/12/2022	Water samples GW-02-14 from drain pipe in dry sump, GW-02-13 from depression, GW-02-15 from core hole HA-02, and GW-02-16 from core hole HA-03.	To assess water within dry sump, open depression, and below the slab (anticipated to represent groundwater or groundwater seeps).	VOCs - Water
Interior Sump Water Samples	3/22/2022, 12/20/2022, 3/21/2023, and 3/8/2024	DW-01 (53 Main St.) DW-02 (49 Main St.), DW-05 (47 Main St.), and DW-06 (45 Main St.).	Sump water is presumed to be groundwater and samples collected to evaluate groundwater concentrations below buildings.	VOCs (and one sample for PFAS) - Water
Exterior Soil Vapor Sampling - Downgradient	3/23-25/2022	GV-08 to GV-12 and GV-14 to GV-17 (GV-13 not collected due to utilities at proposed location)	To evaluate the potential presence of site related contaminants in soil vapor downgradient/cross gradient from the Site.	VOCs - Soil Vapor
Temporary Microwell Installation and Sampling	3/23-25/2023 5/24-5/25/2022	DP-008 to DP-017; VOC sample could not be collected from DP-009 and water samples could not be collected from DP-013 and DP-014 due to refusal above water table.	To evaluate the extent of the groundwater plume downgradient from the Site. VOC samples collected in March could not be analyzed and samples recollected in May.	VOCs, plus four samples for PFAS- Water
Existing Monitoring Wells Groundwater Sampling	3/22/2022	DP-002, DP-004 and DP-005.	To evaluate on-site and off-site groundwater quality, as well as collection of water levels to evaluate groundwater flow direction.	VOCs, SVOCs, and Metals - Water
Site Survey	3/24/2022	DP-008 to DP-012, DP-014 to DP-017, and GV-008 to GV-012, and GV-014 to GV-017 (GV-014 was located at DP-014 location).	To aid in evaluating groundwater flow directions and to position sample location on a Site figure.	NA
Install Bedrock Well	5/25-26/2022	MW-03D	To evaluate shallow bedrock groundwater contamination.	NA
Groundwater Sampling	6/14/2022	DP-002, DP-004, DP-005, and MW-03D	To evaluate PFAS in site wells and bedrock well.	PFAS - Water
Groundwater Sample Bedrock Well	6/24/2022	MW-03D	To evaluate VOCs in bedrock groundwater at the Site.	VOC - Water
PFAS Soil Sample	9/27/2022	SB-01 to SB-04 (multiple depths from 0 to 2 feet)	Soil sampling with hand tools to evaluate potential source of PFAS in groundwater	PFAS - Soil
Managing Investigation Derived Waste (IDW)	11/11/2022	IDW from all soil and groundwater locations, as well as from basement of 49 Main Street.	Remove waste material from Site.	NA
Installation of Sub-Slab Depressurization System (SSDS) at Structure 2.	7/25-7/29/2022	Structure 2 basement	Install SSDS to prevent vapor intrusion. Includes filling and capping concrete depression to prevent groundwater infiltration into basement and covering of basement sump pit.	NA

Prepared by: CRS 4/14/2025
Checked by: JJM 4/18/25

Table 2.1: Summary of Remedial Investigation Activities

LOCATION TYPE	Date	Sample Locations	RATIONALE	ANALYTICAL
Soil Vapor Intrusion Sampling	12/21/2022	Structures 2, 4, 5, and 6. Conduct soil vapor intrusion sampling at four NYSDOH selected properties: Structure 2 was SSDS indoor air confirmation sampling; Structure 5 had a full concrete slab and included two sub-slab samples; and, Structures 4 and 6 had full or partial dirt floor and consisted of just indoor air samples. Ambient air background also collected (plus QC).	Evaluate the potential for vapor migration into structures at three new buildings and evaluate effectiveness off SSDS installed at Structure 2.	VOCs - Soil Vapor and Air
Soil Vapor Intrusion Sampling	3/21/2023	Structures 2 and 6. Conduct soil vapor intrusion sampling at two properties. Indoor air and ambient background samples.	Collect repeat samples at Structure 2 due to questionable results and additional sampling at Structure 6 to confirm vapor intrusion is not occurring.	VOCs - Air
Additional PFAS Soil Sampling	10/18/2023	SB-1A to SB-4A and SB-05 to SB-10 (Multiple depths)	Collect soil samples with direct push technology and with hand tools to better delineate PFAS soil contamination.	PFAS - Soil
Installation of Sub-Slab Depressurization System (SSDS) at Structure 5.	10/31-11/3/2023	Structure 5 basement	Install SSDS to prevent vapor intrusion. Includes repair of section of concrete floor where a trench was dug and filled with dirt and filling and sealing of sump pit.	NA
Additional PFAS Groundwater Sampling	3/8/2024	MW-03D, DP-04 (and DW-06 listed above).	Collect additional groundwater and sump water samples to confirm concentrations at the Site and further downgradient from the Site.	PFAS - Groundwater
Pre-Design Investigation Soil and Groundwater Sampling	8/20/2024	DP-18 (multiple depths)	As part of injection well test, collected soil and groundwater samples below the basement of 49 Main Street to evaluate concentrations at depth. Full results reported under separate cover (EEEG, 2025a)	VOC- Soil and water
Soil Vapor Intrusion Sampling	2/11/2025	Structure 1. Conduct soil vapor intrusion sampling at the Site.	Re-sample soil vapor, basement air, first floor air, and ambient air to evaluate current concentrations. Results reported under separate cover (EEEG, 2025).	VOCs - Air

Notes:
bgs = below ground surface
VOC = volatile organic compounds
SVOC = semi-volatile organic compound
SSDS = sub-slab depressurization system
QA/QC = quality assurance / quality control
FD =field duplicate, MS/MSD = matrix spike and matrix spike duplicate
PFAS = per and polyfluoroalkyl substances
NA = Not Applicable

Prepared by: CRS 4/14/2025
Checked by: JJM 4/18/25

Table 2.2: Monitoring Well Details

Well ID	Northing	Easting	Ground Elevation	Casing Elevation	Casing height	DTW (ft)*	DTB (ft)*	Water Elevation	Notes
DP-002	804308.9	665997.9	89.32	89.19	-0.13	3.8	12.15	85.39	
DP-004	804300.4	665973.8	88.62	88.06	-0.56	5.8	14.05	82.26	
DP-005	804274.0	665967.6	87.9	87.63	-0.27	7.85	15.3	79.78	
DP-008	804325.8	665951.4	86.67	88.67	2.0	5.65	15	81.0	Casing Elev estimated
DP-009	804303.2	665884.4	84.07	84.69	0.62	8.5	10	75.6	
DP-010	804249.3	665874.9	83.24	83.24	0.0	7.65	11.05	75.6	
DP-011	804386.0	665679.5	73.23	75.23	2.0	6.65	7.9	66.6	Casing Elev estimated
DP-012	804313.2	665667.5	69.53	69.34	0.19	4.2	5.11	65.3	
DP-014**	804073.3	665589.1	68.81	NA	NA	Dry	9	<59.81	
DP-015	804202.1	665729.4	72.41	73.71	1.30	8	8.65	64.4	Casing Elev estimated (survey-top grate)
DP-016	804114.6	665854.8	81.72	82.99	1.27	7.7	13.05	74.0	
DP-017	804073.4	665845.9	81.45	82.00	0.55	9	14.28	72.5	
MW-3D	804306	665982	88.7	88.53	-0.17	9.1	25.85	79.6	Ground elevation estimated from SC survey

*Depth to water (DTW) and depth to bottom (DTB) have been adjusted for casing height and indicate depth below ground surface for temporary wells.
**DP-014 no well set (dry at 9 ft below ground surface)
Locations surveyed by Lawson Surveying and Mapping on March 24, 2022; with the exception of MW-3D.
Groundwater elevations collected by MACTEC on March 24, and 25 2022; MW-3D measured on March 8, 2024.
Elevations in feet above mean sea level; North Atlantic Vertical Datum 88.
Northing and Easting in New York State Plane Coordinates.

Table 4.1: Soil VOC Results

Event				RI Investigation				Pre-Design Investigation				
Location				HA-01	HA-01	HA-02	HA-03	DP-18	DP-18	DP-18	DP-18	DP-18
Field Sample Date				1/12/2022	1/12/2022	1/12/2022	1/12/2022	8/20/2024	8/20/2024	8/20/2024	8/20/2024	8/20/2024
Field Sample ID				360175-HA001001	360175-HA001001D	360175-HA002001	360175-HA003001	360175-DP018001-Soil	360175-DP018001D-Soil	360175-DP018004	360175-DP018007	360175-DP018009
Field Sample Depth (ft btos)				1	1	1	1	1	1	4	7	9
Qc Code	PGW	RES	COM	FS	FD	FS	FS	FS	FD	FS	FS	FS
Parameter				Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier
VOCs (mg/Kg)												
1,3,5-Trichlorobenzene	8.4	47	190	0.001 U	0.00085 U	0.0013 U	0.07 U	0.0628 U	0.0573 U	0.044 U	0.0437 U	**0.0105 J**
Bromomethane	NS	NS	NS	0.0051 UJ	0.0043 UJ	0.0065 UJ	0.13 UJ	**0.0588 J**	0.115 U	**0.0341 J**	**0.0362 J-**	**0.0352 J**
cis-1,2-Dichloroethene	0.25	59	500	**0.00053 J**	**0.0004 J**	**0.00084 J**	**0.71**	**0.98**	**0.784**	0.044 U	0.0437 U	0.0419 U
Hexachlorobutadiene	NS	NS	NS	--	--	--	--	0.0628 U	0.0573 U	0.044 U	0.0437 U	**0.0327 J**
Naphthalene	12	100	500	0.0021 U	0.0017 U	0.0026 U	0.14 U	0.126 UJ	0.115 U	0.088 UJ	0.0874 UJ	**0.021 J**
Tetrachloroethene	1.3	5.5	150	**3.4 J**	**4.7 J**	**0.14**	**5.6**	**8.46**	**5.87**	**0.166**	0.0495 U	**0.202**
trans-1,2-Dichloroethene	0.19	100	500	0.001 U	0.00085 U	0.0013 U	**0.015 J**	0.0628 U	0.0573 U	0.044 U	0.0437 U	0.0419 U
Trichloroethene	0.47	10	200	**0.0013**	**0.0011**	**0.0026**	**0.16**	**1.54 J**	**0.457 J**	**0.00824 J**	0.0437 U	0.0419 U
Other (mg/Kg)												
Diesel Range Organics	NS	NS	NS	--	--	--	--	**366**	--	**33.1**	--	--
Gasoline Range Organics	NS	NS	NS	--	--	--	--	5 U	--	5 U	--	--
Percent Solids (Percent)	NS	NS	NS	83.9	83.9	84.1	76.6	78.3	77.4	90.8	91.5	90

Notes:
PGW = New York State Protection of Ground Water Standards
RES = New York State Residential Use Standards
COM = New York State Commercial Use Standards
ft btos = feet below top of basement slab
NS = No Standard
mg/Kg = milligrams per kilogram
FS = field sample, FD = field duplicate
-- = not analyzed

Table 4.2: Soil PFAS Results

					Location	SB-01		SB-01		SB-01		SB-02		SB-02		SB-02		SB-03		SB-03		SB-03	
					Sample Date	9/27/2022		9/27/2022		9/27/2022		9/27/2022		9/27/2022		9/27/2022		9/27/2022		9/27/2022		9/27/2022	
					Field Sample ID	360175-SB001-0.17		360175-SB001-1.0		360175-SB001-2.0		360175-SB002-0.17		360175-SB002-1.0		360175-SB002-2.0		360175-SB003-0.17		360175-SB003-1.0		360175-SB003-2.0	
					Sample Depth (ft bgs)	0.17		1		2		0.17		1		2		0.17		1		2	
					QC Code	FS		FS		FS		FS		FS		FS		FS		FS		FS	
Parameter	**Unres**	**PG**	**Res**	**ResRes**		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
PFAS by method E1633 (micrograms per kilogram)																							
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG	NG	NG	NG		NA		NA		NA		NA		NA		NA		NA		NA		NA	
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	**0.14**	J	0.51	U	0.49	U	**0.5**	J	0.52	U
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG	NG	NG	NG		NA		NA		NA		NA		NA		NA		NA		NA		NA	
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	**0.11**	J	**0.096**	J	0.51	U	0.49	U	**0.24**	J	0.52	U
Perfluorobutanesulfonic acid (PFBS)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	0.51	U	0.49	U	0.5	U	0.52	U
Perfluorobutanoic acid (PFBA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	0.51	U	**0.088**	J	**0.081**	J	0.52	U
Perfluorodecanesulfonic acid (PFDS)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	**0.14**	J	0.51	U	0.49	U	**0.12**	J	0.52	U
Perfluorodecanoic acid (PFDA)	NG	NG	NG	NG		**0.07**	J	**0.61**		**0.88**		0.5	U	**0.3**	J	**1.1**		**0.56**		**0.7**		**0.87**	
Perfluorododecanoic acid (PFDoA)	NG	NG	NG	NG		0.48	U	**0.28**	J	0.58	U	0.5	U	**0.4**	J	**0.13**	J	**0.7**		**0.93**		0.52	U
Perfluoroheptanesulfonic acid (PFHpS)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	0.51	U	0.49	U	0.5	U	0.52	U
Perfluoroheptanoic acid (PFHpA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	0.51	U	**0.16**	J	**0.16**	J	**0.1**	J
Perfluorohexanesulfonic acid (PFHxS)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	0.51	U	0.49	U	0.5	U	0.52	U
Perfluorohexanoic acid (PFHxA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	0.51	U	**0.23**	J	**0.15**	J	**0.11**	J
Perfluorononanoic acid (PFNA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	**0.089**	J	**0.31**	J	**0.22**	J	**0.18**	J
Perfluorooctanesulfonamide (PFOSA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	U	0.5	U	**0.45**	J	0.51	U	**0.17**	J	**2.6**		**0.89**	
Perfluorooctanesulfonic acid (PFOS)	0.88	1	8.8	44		**0.16**	J	**1.3**		**2.5**		**0.11**	J	**6.6**		**13**		**1.1**		**15**		**22**	
Perfluorooctanoic acid (PFOA)	0.66	0.8	6.6	33		0.48	U	0.51	U	0.58	U	0.5	U	0.48	U	**0.21**	J	**0.22**	J	**0.34**	J	**0.24**	J
Perfluoropentanoic acid (PFPeA)	NG	NG	NG	NG		0.48	U	**0.08**	J	**0.11**	J	0.5	U	**0.084**	J	**0.089**	J	**0.38**	J	**0.31**	J	**0.17**	J
Perfluorotetradecanoic acid (PFTeDA)	NG	NG	NG	NG		0.48	U	**0.13**	J	0.58	UJ	0.5	U	**0.18**	J	0.51	U	**0.31**	J	**0.32**	J	0.52	UJ
Perfluorotridecanoic acid (PFTrDA)	NG	NG	NG	NG		0.48	U	0.51	U	0.58	UJ	0.5	U	**0.14**	J	0.51	U	0.49	U	**0.16**	J	0.52	UJ
Perfluoroundecanoic acid (PFUnA)	NG	NG	NG	NG		0.48	U	**0.3**	J	0.58	U	0.5	U	**0.34**	J	**0.17**	J	**0.12**	J	**0.34**	J	0.52	U

Notes:
PFAS = per- and polyfluoroalkyl substances
Only detected compounds shown
ft bgs = feet below ground surface
FS = field sample; FD Field Duplicate
Bold result = analyte detected
NG = No Guidance
NA = Not Analyzed
U = analyzed but not detected
UJ = analyzed but not detected, estimated value
J = estimated value; J+ = estimated value, biased high
Unres = NYSDEC Guidance - SOIL Unrestricted Use
PG = NYSDEC Guidance - SOIL Protection of Groundwater
Res = NYSDEC Guidance - SOIL Residential Use
ResRes = NYSDEC Guidance - SOIL Restricted Residential Use
Yellow highlighted cells indicate an exceedance of Unrestriced Use
Blue highlighted cells indicate an exceedance of PG
Orange highlighted cells indicate an exceedance of Residential Use
Only parameters with detections shown

Table 4.2: Soil PFAS Results

					Location	SB-04		SB-04		SB-04		SB-04		SB-1A		SB-1A		SB-1A	
					Sample Date	9/27/2022		9/27/2022		9/27/2022		9/27/2022		10/18/2023		10/18/2023		10/18/2023	
					Field Sample ID	360175-SB004-0.17		360175-SB004-1.0		360175-SB004-2.0		360175-SB004-D		360175-SB-1A-0		360175-SB-1A-2		360175-SB-1A-5	
					Sample Depth (ft bgs)	0.17		1		2		2		0 - 1		2 - 3		5 - 6	
					QC Code	FS		FS		FS		FD		FS		FS		FS	
Parameter	**Unres**	**PG**	**Res**	**ResRes**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
PFAS by method E1633 (micrograms per kilogram)																		
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG	NG	NG	NG	NA		NA		NA		NA		1.97	U	1.98	U	1.98	U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG	NG	NG	NG	**0.34**	J	**0.24**	J	0.55	U	**0.37**	J	0.197	U	0.198	U	0.198	U
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG	NG	NG	NG	NA		NA		NA		NA		0.197	U	0.198	U	0.198	U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG	NG	NG	NG	0.52	U	0.5	U	0.55	U	0.52	U	0.197	U	0.198	U	0.198	U
Perfluorobutanesulfonic acid (PFBS)	NG	NG	NG	NG	0.52	U	0.5	U	0.55	U	0.52	U	0.197	U	0.198	U	0.198	U
Perfluorobutanoic acid (PFBA)	NG	NG	NG	NG	**0.088**	J	0.5	U	**0.099**	J	**0.083**	J	0.788	U	0.791	U	0.794	U
Perfluorodecanesulfonic acid (PFDS)	NG	NG	NG	NG	0.52	U	0.5	U	0.55	U	0.52	U	0.197	U	0.198	U	0.198	U
Perfluorodecanoic acid (PFDA)	NG	NG	NG	NG	**0.3**	J	**0.1**	J	**0.41**	J	**0.3**	J	**0.466**		0.198	U	0.198	U
Perfluorododecanoic acid (PFDoA)	NG	NG	NG	NG	**0.37**	J	**0.21**	J	0.55	U	**0.35**	J	**0.0864**	J+	0.198	U	0.198	U
Perfluoroheptanesulfonic acid (PFHpS)	NG	NG	NG	NG	0.52	U	0.5	U	0.55	U	0.52	U	0.197	U	0.198	U	0.198	U
Perfluoroheptanoic acid (PFHpA)	NG	NG	NG	NG	**0.11**	J	0.5	U	**0.099**	J	**0.093**	J	**0.113**	J	**0.0673**	J	**0.0507**	J
Perfluorohexanesulfonic acid (PFHxS)	NG	NG	NG	NG	0.52	U	0.5	U	0.55	U	0.52	U	0.197	U	0.198	U	0.198	U
Perfluorohexanoic acid (PFHxA)	NG	NG	NG	NG	0.52	U	0.5	U	0.55	U	**0.098**	J	**0.152**	J+	**0.117**	J+	0.198	U
Perfluorononanoic acid (PFNA)	NG	NG	NG	NG	**0.11**	J	0.5	U	**0.14**	J	**0.089**	J	**0.149**	J+	**0.514**	J+	**0.364**	J+
Perfluorooctanesulfonamide (PFOSA)	NG	NG	NG	NG	**0.96**		**1.3**		**0.19**	J	**1.2**		0.197	U	0.198	U	0.198	U
Perfluorooctanesulfonic acid (PFOS)	0.88	1	8.8	44	**11**		**6.8**	J+	**14**		**13**		**3.68**		**7.19**		**0.601**	
Perfluorooctanoic acid (PFOA)	0.66	0.8	6.6	33	**0.43**	J	**0.19**	J	**0.37**	J	**0.48**	J	**0.195**	J+	**0.178**	J+	**0.221**	J+
Perfluoropentanoic acid (PFPeA)	NG	NG	NG	NG	**0.14**	J	0.5	U	**0.21**	J	**0.15**	J	0.394	U	**0.13**	J+	0.397	U
Perfluorotetradecanoic acid (PFTeDA)	NG	NG	NG	NG	**0.16**	J	**0.099**	J	0.55	UJ	**0.16**	J	0.197	U	0.198	U	0.198	U
Perfluorotridecanoic acid (PFTrDA)	NG	NG	NG	NG	**0.36**	J	**0.21**	J	0.55	UJ	**0.36**	J	0.197	U	0.198	U	0.198	U
Perfluoroundecanoic acid (PFUnA)	NG	NG	NG	NG	**0.26**	J	**0.092**	J	**0.48**	J	**0.24**	J	**0.1**	J+	0.198	U	0.198	U

Notes:
PFAS = per- and polyfluoroalkyl substances
Only detected compounds shown
ft bgs = feet below ground surface
FS = field sample; FD Field Duplicate
Bold result = analyte detected
NG = No Guidance
NA = Not Analyzed
U = analyzed but not detected
UJ = analyzed but not detected, estimated value
J = estimated value; J+ = estimated value, biased high
Unres = NYSDEC Guidance - SOIL Unrestricted Use
PG = NYSDEC Guidance - SOIL Protection of Groundwater
Res = NYSDEC Guidance - SOIL Residential Use
ResRes = NYSDEC Guidance - SOIL Restricted Residential Use
Yellow highlighted cells indicate an exceedance of Unrestriced Use
Blue highlighted cells indicate an exceedance of PG
Orange highlighted cells indicate an exceedance of Residential Use
Only parameters with detections shown

Created by: KLD 5/20/2024
Checked by: CRS 5/22/2024

Table 4.2: Soil PFAS Results

					Location	SB-2A		SB-2A		SB-2A		SB-3A		SB-3A		SB-3A		SB-4A		SB-4A		SB-4A	
					Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023	
					Field Sample ID	360175-SB-2A-0		360175-SB-2A-2		360175-SB-2A-5		360175-SB-3A-0		360175-SB-3A-0 D		360175-SB-3A-2		360175-SB-3A-5		360175-SB-4-0		360175-SB-4-2		360175-SB-4-5	
					Sample Depth (ft bgs)	0 - 1		2 - 3		5 - 6		0 - 1		0 - 1		2 - 3		5 - 6		0 - 1		2 - 3		5 - 6	
					QC Code	FS		FS		FS		FS		FD		FS		FS		FS		FS	
Parameter	**Unres**	**PG**	**Res**	**ResRes**		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
PFAS by method E1633 (micrograms per kilogram)																							
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG	NG	NG	NG		1.99	U	1.99	U	1.97	U	2	U	1.98	U	1.99	U	1.98	U	1.98	U	1.98	U	1.99	U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG	NG	NG	NG		**0.432**	J+	0.199	U	0.197	U	0.2	U	0.198	U	0.199	U	**0.166**	J+	**0.11**	J	**0.141**	J	0.199	U
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG	NG	NG	NG		0.199	U	0.199	U	0.197	U	0.2	U	0.198	U	0.199	U	**0.0637**	J	0.198	U	0.198	U	0.199	U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG	NG	NG	NG		**0.2**	J+	0.199	U	0.197	U	**0.111**	J+	**0.0899**	J+	0.199	U	**0.137**	J+	0.198	U	**0.135**	J+	0.199	U
Perfluorobutanesulfonic acid (PFBS)	NG	NG	NG	NG		**0.0517**	J+	**0.132**	J+	**0.061**	J+	0.2	U	0.198	U	0.199	U	0.198	U	**0.121**	J+	0.198	U	0.199	U
Perfluorobutanoic acid (PFBA)	NG	NG	NG	NG		0.797	U	0.795	U	0.79	U	0.8	U	0.791	U	0.795	U	0.79	U	**0.109**	J	0.793	U	0.795	U
Perfluorodecanesulfonic acid (PFDS)	NG	NG	NG	NG		0.199	U	0.199	U	0.197	U	0.2	U	0.198	U	0.199	U	0.198	U	0.198	U	0.198	U	0.199	U
Perfluorodecanoic acid (PFDA)	NG	NG	NG	NG		**1.66**		0.199	U	0.197	U	**0.904**		**0.866**		**0.667**		0.198	U	**0.262**		**0.327**		0.199	U
Perfluorododecanoic acid (PFDoA)	NG	NG	NG	NG		**0.768**	J+	0.199	U	0.197	U	**2.26**	J+	**2.08**	J+	0.199	U	0.198	U	**0.147**	J	**0.0865**	J	0.199	U
Perfluoroheptanesulfonic acid (PFHpS)	NG	NG	NG	NG		0.199	U	**0.223**	J+	0.197	U	0.2	U	0.198	U	0.199	U	0.198	U	0.198	U	0.198	U	0.199	U
Perfluoroheptanoic acid (PFHpA)	NG	NG	NG	NG		0.199	U	**0.129**	J	0.197	U	**0.053**	J	**0.0658**	J	**0.226**		0.198	U	0.198	U	0.198	U	0.199	U
Perfluorohexanesulfonic acid (PFHxS)	NG	NG	NG	NG		**0.0563**	J	**0.128**	J	0.197	U	0.2	U	0.198	U	**0.0589**	J	0.198	U	0.198	U	0.198	U	0.199	U
Perfluorohexanoic acid (PFHxA)	NG	NG	NG	NG		0.199	U	**0.117**	J+	0.197	U	0.2	U	0.198	U	**0.0843**	J+	0.198	U	0.198	U	0.198	U	0.199	U
Perfluorononanoic acid (PFNA)	NG	NG	NG	NG		**0.122**	J+	**2.85**	J+	**0.289**	J+	**0.557**	J+	**0.467**	J+	**0.108**	J+	0.198	U	0.198	U	**0.11**	J+	**0.07**	J+
Perfluorooctanesulfonamide (PFOSA)	NG	NG	NG	NG		**0.593**		0.199	U	0.197	U	**0.238**		**0.221**		0.199	U	**0.141**	J	**0.118**	J	**0.197**	J	0.199	U
Perfluorooctanesulfonic acid (PFOS)	0.88	1	8.8	44		**4.41**		**4.08**	J	**0.279**		**0.869**		**0.854**		**0.762**		**0.451**		**4.36**		**8.67**		**0.537**	
Perfluorooctanoic acid (PFOA)	0.66	0.8	6.6	33		**0.163**	J+	**1.18**	J+	**0.12**	J+	**0.157**	J+	**0.221**	J+	**0.558**	J+	0.198	U	**0.122**	J+	**0.109**	J+	0.199	U
Perfluoropentanoic acid (PFPeA)	NG	NG	NG	NG		0.398	U	**0.134**	J+	0.395	U	0.4	U	0.396	U	**0.171**	J+	0.395	U	0.396	U	0.397	U	0.398	U
Perfluorotetradecanoic acid (PFTeDA)	NG	NG	NG	NG		**0.226**		0.199	U	0.197	U	**0.665**		**0.616**		0.199	U	0.198	U	**0.0674**	J	0.198	U	0.199	U
Perfluorotridecanoic acid (PFTrDA)	NG	NG	NG	NG		**0.0978**	J	0.199	U	0.197	U	**0.238**		**0.194**	J	0.199	U	0.198	U	0.198	U	0.198	U	0.199	U
Perfluoroundecanoic acid (PFUnA)	NG	NG	NG	NG		**0.358**	J+	0.199	U	0.197	U	**0.837**	J+	**0.794**	J+	0.199	U	**0.0509**	J+	**0.102**	J	**0.0656**	J	0.199	U

Notes:
PFAS = per- and polyfluoroalkyl substances
Only detected compounds shown
ft bgs = feet below ground surface
FS = field sample; FD Field Duplicate
Bold result = analyte detected
NG = No Guidance
NA = Not Analyzed
U = analyzed but not detected
UJ = analyzed but not detected, estimated value
J = estimated value; J+ = estimated value, biased high
Unres = NYSDEC Guidance - SOIL Unrestricted Use
PG = NYSDEC Guidance - SOIL Protection of Groundwater
Res = NYSDEC Guidance - SOIL Residential Use
ResRes = NYSDEC Guidance - SOIL Restricted Residential Use
Yellow highlighted cells indicate an exceedance of Unrestriced Use
Blue highlighted cells indicate an exceedance of PG
Orange highlighted cells indicate an exceedance of Residential Use
Only parameters with detections shown

Table 4.2: Soil PFAS Results

					Location	SB-5		SB-5		SB-5		SB-5		SB-6		SB-6		SB-6		SB-6		SB-6	
					Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023	
					Field Sample ID	360175-SB-5-0		360175-SB-5-0 D		360175-SB-5-2		360175-SB-5-5		360175-SB-6-0		360175-SB-6-0.2		360175-SB-6-1		360175-SB-6-2		360175-SB-6-5	
					Sample Depth (ft bgs)	0 - 1		0 - 1		2 - 3		5 - 6		0 - 0.2		0.2 - 1		1 - 2		2 - 3		5 - 6	
					QC Code	FS		FD		FS		FS		FS		FS		FS		FS		FS	
Parameter	**Unres**	**PG**	**Res**	**ResRes**		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
PFAS by method E1633 (micrograms per kilogram)																							
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG	NG	NG	NG		1.97	U	2.24	U	2	U	1.97	U	**0.517**	J	**0.765**	J	1.98	U	1.98	U	1.99	U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG	NG	NG	NG		0.197	U	0.224	U	0.2	U	0.197	U	**0.161**	J	**0.179**	J	**0.0704**	J	0.198	U	0.199	U
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG	NG	NG	NG		0.197	U	0.224	U	0.2	U	0.197	U	0.199	U	0.2	U	0.198	U	0.198	U	0.199	U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG	NG	NG	NG		**0.123**	J+	**0.139**	J+	0.2	U	0.197	U	**0.055**	J+	**0.095**	J+	**0.0731**	J+	0.198	U	0.199	U
Perfluorobutanesulfonic acid (PFBS)	NG	NG	NG	NG		0.197	U	**0.0755**	J	0.2	U	**0.0583**	J+	**0.112**	J+	0.2	U	0.198	U	0.198	U	0.199	U
Perfluorobutanoic acid (PFBA)	NG	NG	NG	NG		0.79	U	0.898	U	0.8	U	0.789	U	**0.123**	J	0.798	U	0.791	U	0.793	U	0.797	U
Perfluorodecanesulfonic acid (PFDS)	NG	NG	NG	NG		0.197	U	0.224	U	0.2	U	0.197	U	**0.179**	J	**0.0927**	J	0.198	U	0.198	U	0.199	U
Perfluorodecanoic acid (PFDA)	NG	NG	NG	NG		**1.38**		**1.66**		0.2	U	0.197	U	**0.623**		**0.385**		**0.264**		**0.233**		**0.0524**	J
Perfluorododecanoic acid (PFDoA)	NG	NG	NG	NG		**0.577**	J+	**0.45**		0.2	U	0.197	U	**0.89**		**0.476**		**0.149**	J	0.198	U	0.199	U
Perfluoroheptanesulfonic acid (PFHpS)	NG	NG	NG	NG		0.197	U	0.224	U	**0.0973**	J+	0.197	U	0.199	U	0.2	U	0.198	U	0.198	U	0.199	U
Perfluoroheptanoic acid (PFHpA)	NG	NG	NG	NG		**0.112**	J	**0.104**	J	**0.0925**	J	0.197	U	**0.112**	J+	**0.0718**	J+	**0.0691**	J+	**0.0552**	J+	0.199	U
Perfluorohexanesulfonic acid (PFHxS)	NG	NG	NG	NG		**0.0967**	J	**0.108**	J	**0.122**	J	0.197	U	**0.081**	J	**0.0516**	J	**0.0597**	J	0.198	U	0.199	U
Perfluorohexanoic acid (PFHxA)	NG	NG	NG	NG		0.197	U	**0.0861**	J	**0.0697**	J+	0.197	U	**0.32**	J	**0.208**		**0.264**	J	**0.118**	J	0.199	U
Perfluorononanoic acid (PFNA)	NG	NG	NG	NG		**0.185**	J+	**0.187**	J+	**1.29**	J+	**0.138**	J+	**0.209**	J+	**0.141**	J+	**0.0926**	J+	**0.0626**	J+	**0.195**	J+
Perfluorooctanesulfonamide (PFOSA)	NG	NG	NG	NG		**0.151**	J	**0.132**	J	0.2	U	0.197	U	**0.277**		**0.336**		**0.126**	J	0.198	U	0.199	U
Perfluorooctanesulfonic acid (PFOS)	0.88	1	8.8	44		**12.3**		**13.4**		**18.4**		**1.04**		**6.06**		**3.8**		**4.71**		**2.49**		**0.848**	
Perfluorooctanoic acid (PFOA)	0.66	0.8	6.6	33		**0.202**	J+	**0.243**	J+	**0.352**	J+	**0.106**	J+	**0.502**	J+	**0.306**	J+	**0.228**	J+	**0.114**	J+	**0.0784**	J+
Perfluoropentanoic acid (PFPeA)	NG	NG	NG	NG		**0.139**	J+	**0.144**	J+	**0.187**	J+	0.395	U	**0.343**	J+	**0.23**	J+	**0.326**	J+	**0.153**	J+	0.398	U
Perfluorotetradecanoic acid (PFTeDA)	NG	NG	NG	NG		**0.171**	J	**0.137**	J	0.2	U	0.197	U	**0.311**		**0.172**	J	**0.0604**	J	0.198	U	0.199	U
Perfluorotridecanoic acid (PFTrDA)	NG	NG	NG	NG		**0.0682**	J	**0.0687**	J	0.2	U	0.197	U	**0.338**		**0.148**	J	0.198	U	0.198	U	0.199	U
Perfluoroundecanoic acid (PFUnA)	NG	NG	NG	NG		**0.254**	J+	**0.261**		0.2	U	0.197	U	**0.865**		**0.454**		**0.199**		**0.0913**	J	0.199	U

Notes:
PFAS = per- and polyfluoroalkyl substances
Only detected compounds shown
ft bgs = feet below ground surface
FS = field sample; FD Field Duplicate
Bold result = analyte detected
NG = No Guidance
NA = Not Analyzed
U = analyzed but not detected
UJ = analyzed but not detected, estimated value
J = estimated value; J+ = estimated value, biased high
Unres = NYSDEC Guidance - SOIL Unrestricted Use
PG = NYSDEC Guidance - SOIL Protection of Groundwater
Res = NYSDEC Guidance - SOIL Residential Use
ResRes = NYSDEC Guidance - SOIL Restricted Residential Use
Yellow highlighted cells indicate an exceedance of Unrestriced Use
Blue highlighted cells indicate an exceedance of PG
Orange highlighted cells indicate an exceedance of Residential Use
Only parameters with detections shown

Table 4.2: Soil PFAS Results

				Location	SB-7		SB-7		SB-8		SB-8		SB-8		SB-8		SB-9		SB-9		SB-10	
				Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023		10/18/2023	
				Field Sample ID	360175-SB-7-0		360175-SB-7-1		360175-SB-8-0		360175-SB-8-0.2		360175-SB-8-1		360175-SB-8-2		360175-SB-8-5		360175-SB-9-0		360175-SB-9-2		360175-SB-10-1	
				Sample Depth (ft bgs)	0 - 1		1 - 1.5		0 - 0.2		0.2 - 1		1 - 2		2 - 3		5 - 6		0 - 0.2		1 - 2		1 - 2	
				QC Code	FS		FS		FS		FS		FS		FS		FS		FS		FS	
Parameter	**Unres**	**PG**	**Res**	**ResRes**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
PFAS by method E1633 (micrograms per kilogram)																						
N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG	NG	NG	NG	2	U	2	U	1.99	U	1.99	U	1.99	U	1.99	U	1.98	U	2	U	2	U	1.98	U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG	NG	NG	NG	**0.0585**	J	0.2	U	**0.223**		0.199	U	0.199	U	0.199	U	0.198	U	**2.17**		**0.0967**	J	0.198	U
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG	NG	NG	NG	0.2	U	0.2	U	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	0.2	U	0.2	U	0.198	U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG	NG	NG	NG	0.2	U	0.2	U	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	**0.126**	J+	0.2	U	0.198	U
Perfluorobutanesulfonic acid (PFBS)	NG	NG	NG	NG	**0.0796**	J	0.2	U	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	0.2	U	**0.0605**	J+	0.198	U
Perfluorobutanoic acid (PFBA)	NG	NG	NG	NG	**0.143**	J	0.8	U	0.795	U	0.797	U	0.797	U	0.796	U	0.792	U	**0.129**	J	0.798	U	**0.172**	J
Perfluorodecanesulfonic acid (PFDS)	NG	NG	NG	NG	**0.15**	J	0.2	U	**0.0715**	J	0.199	U	0.199	U	0.199	U	0.198	U	**1.35**		**0.285**		0.198	U
Perfluorodecanoic acid (PFDA)	NG	NG	NG	NG	**0.462**		**0.256**		**0.092**	J	**0.185**	J	0.199	U	0.199	U	0.198	U	**1.84**		**1.12**		**0.422**	
Perfluorododecanoic acid (PFDoA)	NG	NG	NG	NG	**0.465**		**0.0904**	J	**0.374**		**0.343**		0.199	U	0.199	U	0.198	U	**1.58**		**0.177**	J	0.198	U
Perfluoroheptanesulfonic acid (PFHpS)	NG	NG	NG	NG	0.2	U	0.2	U	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	0.2	U	0.2	U	0.198	U
Perfluoroheptanoic acid (PFHpA)	NG	NG	NG	NG	**0.112**	J	**0.0801**	J	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	**0.135**	J+	0.2	U	**0.183**	J+
Perfluorohexanesulfonic acid (PFHxS)	NG	NG	NG	NG	0.2	U	0.2	U	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	0.2	U	0.2	U	0.198	U
Perfluorohexanoic acid (PFHxA)	NG	NG	NG	NG	**0.0892**	J+	**0.221**	J	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	0.2	U	0.2	U	**0.395**	J
Perfluorononanoic acid (PFNA)	NG	NG	NG	NG	**0.191**	J+	**0.168**	J+	0.199	U	**0.0902**	J+	**0.105**	J+	**0.0819**	J+	0.198	U	**0.484**	J+	**0.248**	J+	**0.653**	J+
Perfluorooctanesulfonamide (PFOSA)	NG	NG	NG	NG	0.2	U	0.2	U	0.199	U	0.199	U	0.199	U	0.199	U	0.198	U	**0.0758**	J	0.2	U	0.198	U
Perfluorooctanesulfonic acid (PFOS)	0.88	1	8.8	44	**2.24**		**1.05**		**0.657**		**1.64**		**1.06**		**0.955**		**0.326**		**3.15**		**1.31**		**3.5**	
Perfluorooctanoic acid (PFOA)	0.66	0.8	6.6	33	**0.366**	J+	**0.136**	J	0.199	U	0.199	U	**0.114**	J+	**0.118**	J+	**0.0644**	J+	**0.489**	J+	**0.156**	J+	**0.473**	J+
Perfluoropentanoic acid (PFPeA)	NG	NG	NG	NG	**0.166**	J	**0.26**	J	0.398	U	0.399	U	0.399	U	0.398	U	0.396	U	0.4	U	0.399	U	**0.34**	J+
Perfluorotetradecanoic acid (PFTeDA)	NG	NG	NG	NG	**0.211**		0.2	U	**0.163**	J	**0.0737**	J	0.199	U	0.199	U	0.198	U	**0.644**		**0.0788**	J	0.198	U
Perfluorotridecanoic acid (PFTrDA)	NG	NG	NG	NG	**0.211**		0.2	U	**0.168**	J	**0.146**	J	0.199	U	0.199	U	0.198	U	**0.625**		**0.0655**	J	0.198	U
Perfluoroundecanoic acid (PFUnA)	NG	NG	NG	NG	**0.555**		**0.125**	J	**0.324**		**0.123**	J	0.199	U	0.199	U	0.198	U	**1.51**		**0.251**		0.198	U

Notes:
PFAS = per- and polyfluoroalkyl substances
Only detected compounds shown
ft bgs = feet below ground surface
FS = field sample; FD Field Duplicate
Bold result = analyte detected
NG = No Guidance
NA = Not Analyzed
U = analyzed but not detected
UJ = analyzed but not detected, estimated value
J = estimated value; J+ = estimated value, biased high
Unres = NYSDEC Guidance - SOIL Unrestricted Use
PG = NYSDEC Guidance - SOIL Protection of Groundwater
Res = NYSDEC Guidance - SOIL Residential Use
ResRes = NYSDEC Guidance - SOIL Restricted Residential Use
Yellow highlighted cells indicate an exceedance of Unrestriced Use
Blue highlighted cells indicate an exceedance of PG
Orange highlighted cells indicate an exceedance of Residential Use
Only parameters with detections shown

Table 4.3: Groundwater VOC Results

			Location	GW-02-13		GW-02-14		GW-02-15		GW-02-16		DP-02		DP-04		DP-05		DP-05	
			Sample Date	1/12/2022		1/12/2022		1/12/2022		1/12/2022		3/22/2022		3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-GW002-13		360175-GW002-14		360175-GW002-15		360175-GW002-16		360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
			Sample Depth (ft bgs)	8		8		8		8		11		11		11		11	
			QC Code	FS		FS		FS		FS		FS		FS		FS		FD	
Parameter	**GA**	**GV**		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs (ug/L)																			
1,2,4-Trimethylbenzene	5	NS		1	U	1	U	1	U	1	U	1	U	**2.9**		1	U	1	U
1,3,5-Trimethylbenzene	5	NS		1	U	1	U	1	U	1	U	1	U	**0.53**	J	1	U	1	U
2-Butanone	NS	50		20	U	20	U	20	U	20	U	20	UJ	20	UJ	20	UJ	20	UJ
4-iso-Propyltoluene	5	NS		1	U	1	U	1	U	1	U	1	U	**0.38**	J	1	U	1	U
Acetone	NS	50		50	U	50	U	50	U	50	U	50	UJ	50	UJ	50	UJ	50	UJ
Chloroform	7	NS		2	U	2	U	2	U	2	U	**0.53**	J	2	U	2	U	2	U
cis-1,2-Dichloroethene	5	NS		1	U	**3.6**		**4.8**		**20**		1	U	**1.3**		**0.27**	J	1	U
Ethanol	NS	NS		--		--		--		--		--		--		--		--	
Isopropylbenzene	5	NS		1	U	1	U	1	U	1	U	1	U	**0.33**	J	1	U	1	U
Methylene chloride	5	NS		5	U	**1.3**	J+	5	U	5	U	5	U	5	U	5	U	5	U
n-Butylbenzene	5	NS		1	U	1	U	1	U	1	U	1	U	**0.68**	J	1	U	1	U
Naphthalene	NS	10		2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	**0.61**	J-	2	UJ	2	UJ
Propylbenzene	5	NS		1	U	1	U	1	U	1	U	1	U	**0.42**	J	1	U	1	U
sec-Butylbenzene	5	NS		1	U	1	U	1	U	1	U	1	U	**0.99**	J	1	U	1	U
t-Butyl alcohol	NS	NS		NA		NA		NA		NA		20	UJ	**92**	J-	20	UJ	20	UJ
Tetrachloroethene	5	NS		**3.6**	J+	**220**	J	**120**	J+	**2500**	J	**0.5**	J	1	U	**0.94**	J	**0.86**	J
Tetrahydrofuran	NS	50		NA		NA		NA		NA		10	U	10	U	10	U	10	U
Toluene	5	NS		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	NS		1	U	1	U	**1**		1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	NS		1	U	**4**		**8.2**		**28**		1	U	**0.31**	J	**0.28**	J	**0.31**	J

Notes:
Results reported in micrograms per liter (µg/L)
VOCs = Volatile Organic Compounds
Samples analyzed by EPA Method SW8260B
Only detected compounds shown
Bold = Compound detected in sample
NA = compound not analyzed
ft bgs = feet below ground surface
(basement water samples assumed to be 8 ft bgs)
QC Code: FS = Field Sample; FD = Field Duplicate
Qualifiers:
U = Not detected greater than the reporting limit
J = Estimated value ("+" = bias high, "-" = bias low)
GA = Class GA Groundwater Standard
GV = Groundwater Guidance Value
NS = No Standard/Guidance
Highlighted results exceed GA Standard
-- = not analyzed
DP-18 locatoin from PDI

Table 4.3: Groundwater VOC Results

	Location		DP-08		DP-10		DP-11		DP-12		DP-15		DP-16		DP-17		MW-3D		MW-3D	
	Sample Date		5/24/2022		5/24/2022		5/25/2022		5/26/2022		5/24/2022		5/24/2022		5/24/2022		6/24/2022		6/24/2022	
	Field Sample ID		360175-DP08011		360175-DP01009		360175-DP01108		360175-DP01206		360175-DP015010		360175-DP016012		360175-DP017012		360175-MW0030020		Dup	
	Sample Depth (ft bgs)		11		9		8		6		10		12		12		20		20	
	QC Code		FS		FS		FS		FS		FS		FS		FS		FS		FD	
Parameter	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs (ug/L)																				
1,2,4-Trimethylbenzene	5	NS	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	NS	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone	NS	50	20	UJ	**2.3**	J-	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ
4-iso-Propyltoluene	5	NS	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	NS	50	**3.2**	J	**12**	J	**2.8**	J	**3.2**	J	**8.3**	J	**7.2**	J	**8.1**	J	50	UJ	50	UJ
Chloroform	7	NS	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	**0.22**	J
cis-1,2-Dichloroethene	5	NS	**7.1**		**0.23**	J	**0.2**	J	1	U	1	U	**0.89**	J	1	U	1	U	1	U
Ethanol	NS	NS	--		--		--		--		--		--		--		--		--	
Isopropylbenzene	5	NS	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene chloride	5	NS	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	U	5	U
n-Butylbenzene	5	NS	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	NS	10	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ
Propylbenzene	5	NS	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	NS	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
t-Butyl alcohol	NS	NS	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ
Tetrachloroethene	5	NS	**7.5**		**7.3**		**0.59**	J	1	U	1	U	**4.7**		**1.2**		1	U	1	U
Tetrahydrofuran	NS	50	10	U	10	U	10	U	10	U	10	U	10	U	**1.8**	J	10	U	10	U
Toluene	5	NS	1	U	**0.3**	J	1	U	1	U	1	U	1	U	**0.29**	J	1	U	1	U
trans-1,2-Dichloroethene	5	NS	**0.7**	J	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	5	NS	**6.2**		**0.25**	J	**0.21**	J	1	U	1	U	**1.1**		1	U	1	U	1	U

Notes:
Results reported in micrograms per liter (µg/L)
VOCs = Volatile Organic Compounds
Samples analyzed by EPA Method SW8260B
Only detected compounds shown
Bold = Compound detected in sample
NA = compound not analyzed
ft bgs = feet below ground surface
(basement water samples assumed to be 8 ft bgs)
QC Code: FS = Field Sample; FD = Field Duplicate
Qualifiers:
U = Not detected greater than the reporting limit
J = Estimated value ("+" = bias high, "-" = bias lov
GA = Class GA Groundwater Standard
GV = Groundwater Guidance Value
NS = No Standard/Guidance
Highlighted results exceed GA Standard
-- = not analyzed
DP-18 locatoin from PDI

Table 4.3: Groundwater VOC Results

			Location	DW-01		DW-02		DW-05		DW-06		DP-18		DP-18		DP-18	
			Sample Date	3/22/2022		3/22/2022		12/20/2022		3/21/2023		8/20/2024		8/20/2024		8/20/2024	
			Field Sample ID	360175-DW001-1		360175-DW002-2		360175-005N SUMP		360175-006 SUMP		GW		360175-DP018001D-GW		360175-DP018008	
			Sample Depth (ft bgs)	8		8		8		8		8		8		15	
			QC Code	FS		FS		FS		FS		FS		FD		FS	
Parameter	**GA**	**GV**		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs (ug/L)																	
1,2,4-Trimethylbenzene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone	NS	50		40	UJ	20	UJ	20	U	20	U	2	U	2	UJ	**1.88**	J
4-iso-Propyltoluene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	NS	50		100	UJ	50	UJ	50	U	50	U	10	U	10	UJ	**14.9**	
Chloroform	7	NS		4	U	2	U	2	U	2	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	NS		2	U	2	U	1	U	1	U	**22.9**		**11.6**		**5.78**	
Ethanol	NS	NS		--		--		--		--		200	U	200	UJ	**14**	J
Isopropylbenzene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene chloride	5	NS		10	U	5	U	5	U	5	U	2	U	2	U	2	U
n-Butylbenzene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	NS	10		4	UJ	2	UJ	2	UJ	2	UJ	2	U	2	UJ	**0.874**	J
Propylbenzene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
t-Butyl alcohol	NS	NS		40	UJ	20	UJ	20	U	20	U	10	U	10	UJ	10	U
Tetrachloroethene	5	NS		**150**		**2**		1	U	1	U	**2590**		**2880**		**227**	
Tetrahydrofuran	NS	50		20	U	10	U	10	U	10	U	2	U	2	UJ	2	U
Toluene	5	NS		2	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	5	NS		2	U	1	U	1	U	1	U	**0.265**	J	1	U	1	U
Trichloroethene	5	NS		**0.66**	J	**5.2**		1	U	1	U	**59.6**		**31**		**10.9**	

Notes:
Results reported in micrograms per liter (µg/L)
VOCs = Volatile Organic Compounds
Samples analyzed by EPA Method SW8260B
Only detected compounds shown
Bold = Compound detected in sample
NA = compound not analyzed
ft bgs = feet below ground surface
(basement water samples assumed to be 8 ft bgs)
QC Code: FS = Field Sample; FD = Field Duplicate
Qualifiers:
U = Not detected greater than the reporting limit
J = Estimated value ("+" = bias high, "-" = bias lov
GA = Class GA Groundwater Standard
GV = Groundwater Guidance Value
NS = No Standard/Guidance
Highlighted results exceed GA Standard
-- = not analyzed
DP-18 locatoin from PDI

Table 4.4: Groundwater PFAS Results

			Location	MW-03D	MW-03D	DP-02	DP-04	DP-04	DP-05	DP-05
			Sample Date	6/14/2022	3/8/2024	6/14/2022	6/14/2022	3/8/2024	6/14/2022	6/14/2022
			Field Sample ID	360175-MW003D020	360175-MW003D027	360175-DP002011	360175-DP004011	360175-DP004012	360175-DP005011	DUP
			Sample Depth (ft bgs)	20	27	11	11	12	11	11
			QC Code	FS	FS	FS	FS	FS	FS	FD
Parameter	**MCL**	**Guideline**	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier
PFAS (ng/L)										
6:2 Fluorotelomer sulfonic acid (6:2FTS)	NS	NS	1.7 UJ	7.78 U	1.8 UJ	2 U	8.53 U	1.7 U	**0.34** J
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS	1.7 U	1.95 U	1.8 U	**0.97** J+	**3.2**	1.7 UJ	1.8 U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS	1.7 U	3.89 U	1.8 U	2 UJ	**1.76** J	1.7 UJ	1.8 U
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS	1.7 U	NA	**0.29** J	**4**	NA	**0.28** J	**0.27** J
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS	1.7 U	3.89 U	1.8 U	2 U	4.27 U	1.7 U	1.8 U
Perfluorobutanesulfonic acid (PFBS)	NS	NS	**7.7**	**6.97**	**8.9**	**14**	**20.9** J+	**8.4**	**7.9**
Perfluorobutanoic acid (PFBA)	NS	NS	**9.9**	**9.49**	**8.8**	**14** J	**23.3**	**9.1** J+	**8** J+
Perfluorodecanoic acid (PFDA)	NS	NS	1.7 U	1.95 U	1.8 U	**7.9**	**15.5**	1.7 U	1.8 U
Perfluorododecanoic acid (PFDoA)	NS	NS	1.7 U	1.95 U	1.8 U	R	2.13 U	R	1.8 UJ
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS	1.7 U	1.95 U	1.8 U	**3.1**	**2.53**	1.7 U	**1** J
Perfluoroheptanoic acid (PFHpA)	NS	NS	**4.9**	**6.29**	**4.2**	**17**	**47.3**	**4.6**	**4.7**
Perfluorohexanesulfonic acid (PFHxS)	NS	NS	**2.5**	**2.54**	**2.7**	**9.6**	**15.1**	**2.6**	**2.6**
Perfluorohexanoic acid (PFHxA)	NS	NS	**9.9**	**14.6**	**7.5**	**22**	**48.3**	**6.9**	**7.4**
Perfluorononanoic acid (PFNA)	NS	NS	1.7 U	1.95 U	**77**	**23**	**22.7**	**3.6**	**3.8**
Perfluorooctanesulfonamide (PFOSA)	NS	NS	1.7 U	1.95 U	1.8 U	**2.2** J	**3.62**	R	1.8 UJ
Perfluorooctanesulfonic acid (PFOS)	10	2.7	**2**	**2.3** J	**12**	**230**	**331**	**29** J+	**34** J+
Perfluorooctanoic acid (PFOA)	10	6.7	**17**	**21.9**	**17**	**42**	**66.7**	**16** J+	**17** J+
Perfluoropentanesulfonic acid (PFPeS)	NS	NS	**0.34** J	1.95 U	**0.32** J	**1.2** J	**33.7** J-	**0.37** J	**0.36** J
Perfluoropentanoic acid (PFPeA)	NS	NS	**11**	**15.6**	**8.7**	**32**	**61.5**	**7.7** J+	**8.3** J+
Perfluoroundecanoic acid (PFUnA)	NS	NS	1.7 U	1.95 U	1.8 U	2 UJ	2.13 U	1.7 UJ	1.8 U

Notes:

Results reported in nanograms per liter (ng/L)

Samples analyzed by EPA Methods 537.1 and 1633

Only detected compounds shown

Bold = Compound detected in sample

QC Code: FS = Field Sample; FD = Field Duplicate

Qualifiers:

U = Not detected greater than the reporting limit

UJ = Not detected greater than the reporting limit, estimated value

J = Estimated value

J+ = Estimated value, biased high

J- = Estimated value, biased low

R = Result rejected during validation

MCL = Drinking Water Standard

Guideline = NYS PFAS Guidelines

NS = No Standard

Gray shaded results exceed MCL

Table 4.4: Groundwater PFAS Results

			Location	DP-08		DP-09		DP-10		DP-15		DW-06		DW-06	
			Sample Date	3/23/2022		3/23/2022		3/23/2022		3/23/2022		3/8/2024		3/8/2024	
			Field Sample ID	360175-DP008011		360175-DP00909		360175-DP01009		360175-DP01508		360175-DW006		360175-DW006D	
			Sample Depth (ft bgs)	11		9		9		8		9		9	
			QC Code	FS		FS		FS		FS		FS		FD	
Parameter	**MCL**	**Guideline**		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
PFAS (ng/L)															
6:2 Fluorotelomer sulfonic acid (6:2FTS)	NS	NS		**0.39**	J	**1.2**	J	2.1	UJ	2	U	7.84	U	8.24	U
N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NS	NS		1.8	UJ	1.8	U	2.1	U	2	UJ	1.96	U	2.06	U
N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NS	NS		1.8	UJ	1.8	U	2.1	U	2	UJ	3.92	U	4.12	U
Perfluoro-1-butanesulfonamide (FBSA)	NS	NS		**8.3**		**3.6**		**1.2**	J	**0.74**	J	NA		NA	
Perfluoro-3-methoxypropanoic acid (PFMPA)	NS	NS		1.8	U	**1**	J	2.1	U	2	U	3.92	U	4.12	U
Perfluorobutanesulfonic acid (PFBS)	NS	NS		**24**		**7.6**		**10**		**5.8**		**7.36**		**7.41**	
Perfluorobutanoic acid (PFBA)	NS	NS		**9.8**		**20**	J	**14**		**11**	J	**5.94**	J	**6.5**	J
Perfluorodecanoic acid (PFDA)	NS	NS		1.8	U	**5**		**6.4**		**13**		1.96	U	2.06	U
Perfluorododecanoic acid (PFDoA)	NS	NS		1.8	UJ	1.8	U	**0.58**	J	2	UJ	1.96	U	2.06	U
Perfluoroheptanesulfonic acid (PFHpS)	NS	NS		**1.2**	J	**3.2**		2.1	U	2	U	1.96	U	2.06	U
Perfluoroheptanoic acid (PFHpA)	NS	NS		**12**		**17**		**11**		**6.9**		**2.64**		**2.6**	
Perfluorohexanesulfonic acid (PFHxS)	NS	NS		**10**		**3.8**		**3.3**		**3.2**		**1.95**	J	**1.93**	J
Perfluorohexanoic acid (PFHxA)	NS	NS		**18**		**38**		**28**		**19**		**3.66**		**3.49**	
Perfluorononanoic acid (PFNA)	NS	NS		**9.2**		**48**		**9.2**		**4.6**		**0.854**	J	**0.766**	J
Perfluorooctanesulfonamide (PFOSA)	NS	NS		1.8	U	1.8	UJ	2.1	U	2	UJ	1.96	U	2.06	U
Perfluorooctanesulfonic acid (PFOS)	10	2.7		**23**		**160**		**30**		**31**		**11.3**		**11.2**	
Perfluorooctanoic acid (PFOA)	10	6.7		**56**		**95**		**46**		**20**		**13.6**		**13.9**	
Perfluoropentanesulfonic acid (PFPeS)	NS	NS		**1**	J	1.8	U	**0.44**	J	2	U	**0.513**	J	2.06	U
Perfluoropentanoic acid (PFPeA)	NS	NS		**19**		**51**		**31**		**35**		**2.96**	J	**3.62**	J
Perfluoroundecanoic acid (PFUnA)	NS	NS		1.8	U	1.8	U	**0.73**	J	**0.45**	J	1.96	U	2.06	U

Notes:

Results reported in nanograms per liter (ng/L)

Samples analyzed by EPA Methods 537.1 and 1633

Only detected compounds shown

Bold = Compound detected in sample

QC Code: FS = Field Sample; FD = Field Duplicate

Qualifiers:

U = Not detected greater than the reporting limit

UJ = Not detected greater than the reporting limit, estimated value

J = Estimated value

J+ = Estimated value, biased high

J- = Estimated value, biased low

R = Result rejected during validation

MCL = Drinking Water Standard

Guideline = NYS PFAS Guidelines

NS = No Standard

Gray shaded results exceed MCL

Table 4.5: Groundwater SVOC, Metals, Pesticides, and PCB Results

		Location	DP-02		DP-04		DP-05		DP-05	
		Sample Date	3/22/2022		3/22/2022		3/22/2022		3/22/2022	
		Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
		QC Code	FS		FS		FS		FD	
Parameter	**GA**	**GV**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SVOCs (ug/L) - Method 8270										
1-Methylnaphthalene	NS	NS	4.8	U	**3.9**	J	4.9	U	5	U
2-Methylnaphthalene	NS	NS	4.8	U	**1.4**	J	4.9	U	5	U
Dibenzofuran	NS	NS	4.8	U	**0.63**	J	4.9	U	5	U
Fluorene	NS	50	4.8	U	**0.87**	J	4.9	U	5	U
Naphthalene	NS	10	4.8	U	**0.62**	J	4.9	U	5	U
Phenanthrene	NS	50	4.8	U	**1.1**	J	4.9	U	5	U
Metals (mg/L) - Method 6010										
Aluminum	NS	NS	**0.073**		**0.074**		**0.015**	J	**0.021**	J
Arsenic	0.025	NS	0.01	U	**0.018**		0.01	U	0.01	U
Barium	1	NS	**0.039**	J	**0.052**		**0.041**	J	**0.042**	J
Calcium	NS	NS	**67**		**120**		**74**		**74**	
Cobalt	NS	NS	**0.0016**	J	**0.0052**	J	0.01	U	0.01	U
Iron	0.3	NS	**0.15**		**6.4**		**0.045**	J	**0.044**	J
Magnesium	NS	35	**23**		**23**		**26**		**26**	
Manganese	0.3	NS	**0.053**		**1.5**		**0.019**		**0.019**	
Potassium	NS	NS	**4.8**		**5.3**		**4.7**		**4.8**	
Sodium	20	NS	**39**		**22**		**26**		**26**	
Vanadium	NS	NS	**0.0076**	J	**0.0082**	J	**0.0067**	J	**0.0073**	J
Zinc	NS	2	**0.0051**	J	**0.005**	J	**0.0054**	J	**0.0047**	J
Pesticides - Method 8081: All Non Detect										
PCBs - Method 8082: All Non-Detect										

Notes:
Results reported in micrograms per liter (µg/L) or milograms per liter (mg/L)
Only detected compounds shown
Bold = Compound detected in sample
QC Code: FS = Field Sample; FD = Field Duplicate
Qualifiers:
U = Not detected greater than the reporting limit
J = Estimated value
GA = Class GA Groundwater Standard
GV = Groundwater Guidance Value
NS = No Standard/Gudance
Highlighted results exceed GA Standard

Table 4.6: Exterior Soil Vapor Results

Location	GV-08		GV-09		GV-09		GV-10		GV-11		GV-12		GV-14		GV-15		GV-16		GV-17	
Sample Date	3/23/2022		3/23/2022		3/23/2022		3/24/2022		3/24/2022		3/24/2022		3/25/2022		3/24/2022		3/23/2022		3/24/2022	
Field Sample ID	360175-GV008005		360175-GV009005		360175-GV009005D		360175-GV010005		360175-GV011005		360175-GV012005		360175-GV014005		360175-GV015005		360175-GV016005		360175-GV017005	
QC Code	FS		FS		FD		FS		FS		FS		FS		FS		FS		FS	
Parameter	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs (ug/m3)																				
1,3,5-Trimethylbenzene	0.98	U	0.98	U	0.98	U	0.98	U	0.98	U	0.98	U	0.98	U	0.98	U	0.98	U	**0.59**	J
1,3-Dichlorobenzene	**3**		**1.8**		**2.3**		1.2	U	1.2	U	1.2	U	1.2	U	**0.84**	J	1.2	U	1.2	U
2-Propanol	**5.4**	J	**4.8**	J	**5.1**	J	**3.7**	J	**4.4**	J	**5.1**	J	**34**		**23**		**210**		**32**	
Acetone	**57**		**32**		**31**		**73**		**210**		**150**		**160**		**80**		**120**		**25**	
Benzene	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U	0.64	U	**0.74**		**80**	J	**1.3**		**2.5**	
Chloroform	**2.4**		0.98	U	0.98	U	0.98	U	**1.2**		**1.2**		0.98	U	80	U	0.98	U	**0.98**	
Chloromethane	0.83	U	**0.33**	J	0.83	U	0.83	U	0.83	U	0.83	U	0.83	U	80	U	**1.5**		0.83	U
cis-1,2-Dichloroethene	**86**		0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	80	U	0.79	U	0.79	U
Cyclohexane	0.69	U	0.69	U	0.69	U	0.69	U	0.69	U	0.69	U	0.69	U	80	U	**7.5**		**5.6**	
Dichlorodifluoromethane	**1.9**		**2.3**		**2.1**		**2.1**		**1.9**		**2**		**2**		**80**		**1.2**		**2.1**	
Ethanol	**98**		**100**		**100**		**160**		**67**		**180**		**100**		**80**		**790**		**200**	
Ethylbenzene	**0.64**	J	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U	0.87	U	**80**	J	0.87	U	**5**	
Heptane	**1.6**		0.82	U	0.82	U	**0.66**	J	**0.75**	J	**0.84**		**0.66**	J	**80**		**2.9**		**7.2**	
Hexane	28	U	28	U	28	U	28	U	28	U	28	U	28	U	**80**	J	**310**		**8.8**	J
Tetrachloroethene	**1100**		**4.6**		**5**		**7.9**		**4.1**		**7.1**		**11**		**80**		**3**		**5.3**	
Toluene	**4.5**		**1.9**		**1.9**		**1.7**		**2.1**		**1.7**		**1.6**		**80**		**5.2**		**42**	
trans-1,2-Dichloroethene	**8.7**		0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	0.79	U	80	U	0.79	U	0.79	U
Trichloroethene	**110**		1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	80	U	1.1	U	1.1	U
Trichlorofluoromethane	**1.3**	J	**1.4**	J	**1.4**	J	4.5	U	4.5	U	4.5	U	**1.4**	J	**80**	J	**1.4**	J	**1.5**	J
Vinyl chloride	**0.85**		0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	80	U	0.51	U	0.51	U
Xylene, o	**0.8**	J	**0.49**	J	**0.45**	J	0.87	U	0.87	U	0.87	U	0.87	U	**80**		**0.82**	J	**5.1**	
Xylenes (m&p)	**2**		**1.3**	J	**1.4**	J	1.7	U	1.7	U	1.7	U	1.7	U	**80**		**2.4**		**21**	

Notes:
Results in micrograms per cubic liter (ug/m3)
Samples analyzed by USEPA Method TO-15
Only detected compounds shown.
Bold = Compound detected in sample
Qualifiers:
U = Not detected greater than the reporting limit
J = Estimated value
QC Code: FS = Field Sample; FD = Field Duplicate

Table 4.7: SVI Results

Address	**49 Main Street (Building 002)**							**11 N. Dutcher Street (Building 004)**		**47 Main Street (South and North) (Building 005)**			
Location	Bldg 2 Basement East	Bldg 2 Basement East	Bldg 2 Basement West	Bldg 2 Basement West	Bldg 2 Basement West	Bldg 2 Basement West	Bldg 2 Third Floor	IA-04CS	IA-04F1	SV-05N	SV-05S	IA-05BN	IA-05BS
Field Sample Date	12/21/2022	3/21/2023	12/21/2022	12/21/2022	3/21/2023	3/21/2023	12/21/2022	12/21/2022	12/21/2022	12/21/2022	12/21/2022	12/21/2022	12/21/2022
Field Sample ID	360175-IA002E	360175-IA002E	360175-IA002W	360175-IA002W D	360175-IA002W	360175-IA002WD	360175-IA0023F	360175-IA004CS	360175-IA004F1	360175-SV005N	360175-SV005S	360175-IA005BN	360175-IA005BS
QC Code	FS	FS	FS	FD	FS	FD	FS	FS	FS	FS	FS	FS	FS
Parameter	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier	Result Qualifier
VOCs (µg/m3)													
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	**0.57** J	**0.41** J	**0.5** J	**0.47** J	**0.41** J	1.5 U	**0.49** J	**0.49** J	**0.51** J	3.1 U	3.1 U	**0.51** J	**0.52** J
1,2,4-Trimethylbenzene	**0.17**	0.98 U	**0.14** J	**0.14** J	0.98 U	0.98 U	**0.22**	**0.2**	**0.2**	**0.28** J	0.49 U	**0.82**	**0.68**
1,2-Dichloroethane	0.14 U	0.81 U	0.14 U	0.14 U	0.81 U	0.81 U	0.14 U	0.14 U	0.14 U	0.4 U	0.4 U	0.14 U	0.14 U
1,3,5-Trimethylbenzene	0.17 U	0.98 U	0.17 U	0.17 U	0.98 U	0.98 U	0.17 U	0.17 U	0.17 U	0.49 U	0.49 U	**0.29**	**0.22**
1,3-Butadiene	0.077 U	**0.12** J	0.077 U	0.077 U	0.44 U	0.44 U	0.077 U	0.077 U	0.077 U	0.22 U	0.22 U	0.077 U	0.077 U
1,4-Dichlorobenzene	0.21 U	1.2 U	0.21 U	0.21 U	1.2 U	1.2 U	0.21 U	0.21 U	0.21 U	**1.1**	**1.2**	0.21 U	0.21 U
2-Butanone	**2.9** J	1.5 U	4.1 U	4.1 U	**24** J	1.5 UJ	**1.5** J	4.1 U	**2.4** J	12 U	12 U	**1.1** J	**2.1** J
2-Hexanone	**0.53**	2 U	0.29 U	0.29 U	2 U	2 U	**0.29**	0.29 U	**0.54**	0.82 U	**0.57** J	0.29 U	**0.27** J
2-Propanol	**3.2** J	12 U	**2.9** J	**3** J	**7.2** J	12 U	**3** J	**1.2** J	**6.9**	9.8 U	9.8 U	**1.6** J	**3** J
4-Ethyltoluene	0.17 U	0.98 U	0.17 U	0.17 U	0.98 U	0.98 U	0.17 U	0.17 U	0.17 U	0.49 U	0.49 U	**0.21**	**0.16** J
4-iso-Propyltoluene	NA	1.1 U	NA	NA	**1.5** J	1.1 UJ	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	**0.13** J	2 U	0.14 U	0.14 U	2 U	2 U	0.14 U	0.14 U	0.14 U	0.41 U	0.41 U	**0.083** J	**0.13** J
Acetone	**32**	**11** J	**7.6** J	**15** J	**80** J	**12** J	**10**	**4.6**	**16**	**54**	**23**	**18**	**20**
Benzene	**1.1**	**0.65**	**0.92**	**0.94**	**0.59** J	**0.58** J	**1.1**	**1**	**1.7**	**5.7**	**0.33** J	**0.78**	**0.82**
Bromodichloromethane	0.23 U	1.3 U	0.23 U	0.23 U	1.3 U	1.3 U	0.23 U	0.23 U	0.23 U	**0.64** J	**1.2**	0.23 U	0.23 U
Butane	NA	**2.9**	NA	NA	**2.9**	**2.9**	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	1.1 U	1.6 U	1.1 U	1.1 U	**0.43** J	**0.57** J	1.1 U	1.1 U	1.1 U	**56**	3.1 U	1.1 U	1.1 U
Carbon tetrachloride	**0.42**	**0.25**	**0.41**	**0.43**	**0.27**	**0.27**	**0.43**	**0.43**	**0.41**	0.63 U	0.63 U	**0.38**	**0.42**
Chlorodifluoromethane	NA	**2**	NA	NA	**1.8**	**1.4** J	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.092 U	1.3 U	0.092 U	0.092 U	1.3 U	1.3 U	0.092 U	0.092 U	0.092 U	**0.31**	0.26 U	**0.085** J	0.092 U
Chloroform	0.17 U	0.98 U	**0.18** J	**0.3** J	0.98 U	0.98 U	**0.52**	**0.19**	**2.6**	**3.6**	**29**	0.17 U	**0.26**
Chloromethane	**0.91**	**1.1**	**0.94**	**0.93**	**1.3**	**1.1**	**0.99**	**0.87**	**2.3**	**0.4** J	**0.52**	**1**	**0.93**
cis-1,2-Dichloroethene	**4.2**	0.2 U	0.14 UJ	**6.1** J	0.2 U	0.2 U	0.14 U	0.14 U	0.14 U	**3.8**	**26**	0.14 U	0.14 U
Cyclohexane	**0.082** J	0.69 U	0.12 U	**0.074** J	0.69 U	0.69 U	**0.074** J	**0.098** J	**0.1** J	**1.4**	0.34 U	0.12 U	0.12 U
Dichlorodifluoromethane	**2.6**	**1.9** J	**2.4**	**2.5**	**1.9** J	**1.9** J	**2.6**	**2.6**	**2.4**	**2.9**	**2.4**	**2.5**	**2.4**
Ethanol	**18**	NA	**18**	**17**	NA	NA	**35**	**15**	**56**	**8.9**	**8.7**	**7**	**92**
Ethyl acetate	**3.3**	NA	**3.6**	**3.9**	NA	NA	**1.6**	1.3 U	**0.94** J	**2.5** J	3.6 U	**14**	**9.6**
Ethylbenzene	**0.18**	**0.33** J	**0.2**	**0.19**	**0.34** J	**0.35** J	**0.18**	**0.17**	**0.3**	**0.32** J	0.43 U	**0.17**	**0.22**
Heptane	**0.26**	**0.27** J	**0.17**	**0.15**	**0.34** J	**0.25** J	**0.27**	**0.22**	**0.23**	**1.3**	**0.37** J	**0.26**	**0.18**
Hexachlorobutadiene	0.37 UJ	2.1 U	0.37 UJ	0.37 UJ	2.1 U	2.1 U	0.37 UJ	0.37 UJ	0.37 UJ	1.1 UJ	1.1 UJ	0.37 UJ	0.37 UJ
Hexane	**0.75** J	**1.9**	**0.68** J	**0.73** J	**0.61** J	**0.48** J	**0.66** J	**0.82** J	**0.68** J	**1.9** J	14 U	**0.94** J	**0.65** J
Isooctane	NA	**0.25** J	NA	NA	**0.26** J	**0.25** J	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	1.2 U	**1.2** J	**0.59** J	1.2 U	**0.82** J	**0.63** J	**0.57** J	**27**	**10**	3.5 U	3.5 U	**0.89** J	1.2 U
Naphthalene	0.18 U	2.6 U	**0.14** J	0.18 U	2.6 U	2.6 U	**0.14** J	0.18 U	0.18 U	**0.42** J	**0.61**	0.18 U	0.18 U
Propylene	2.4 U	NA	2.4 U	2.4 U	NA	NA	2.4 U	2.4 U	2.4 U	6.9 U	**4.1** J	2.4 U	2.4 U
sec-Butylbenzene	NA	1.1 U	NA	NA	1.1 U	1.1 U	NA	NA	NA	NA	NA	NA	NA
Styrene	**0.25**	**0.26** J	**0.26**	**0.26**	0.85 U	0.85 U	**0.29**	0.15 U	**0.13** J	0.43 U	0.43 U	**0.1** J	0.15 U
Tetrachloroethene	**0.62**	**0.38** J	**0.35** J	**2.4** J	**0.2** J	**0.21** J	**0.21** J	0.24 U	**2.6**	**460**	**370**	0.24 U	**0.79**
Tetrahydrofuran	**0.5** J	15 U	1 U	**0.58** J	15 U	15 U	1 U	1 U	1 U	2.9 U	2.9 U	1 U	**0.34** J
Toluene	**0.79**	**1.5**	**0.63**	**0.58**	**1.3**	**0.99**	**0.82**	**0.81**	**1.6**	**2**	**0.68**	**7.4**	**4.3**
trans-1,2-Dichloroethene	**0.17**	**0.1** J	0.14 U	0.14 U	0.79 U	0.79 U	0.14 U	0.14 U	0.14 U	0.4 U	**0.73**	0.14 U	0.14 U
Trichloroethene	**0.3**	0.2 U	0.19 UJ	**6.2** J	0.2 U	0.2 U	0.19 U	0.19 U	0.19 U	**58**	**97**	0.19 U	0.19 U
Trichlorofluoromethane	**1.3**	**0.94** J	**1.2**	**1.3**	**0.93** J	**0.94** J	**1.2**	**1.3**	**1.3**	**1.4** J	**1.5** J	**1.3**	**1.2**
Vinyl acetate	**2.1** J	NA	2.5 U	2.5 U	NA	NA	2.5 U	**1.2** J	**1.9** J	**3** J	**3.7** J	2.5 U	2.5 U
Xylene, o	**0.27**	**0.4** J	**0.22**	**0.24**	**0.54** J	**0.48** J	**0.23**	**0.18**	**0.26**	**0.35** J	0.43 U	**0.22**	**0.28**
Xylenes (m&p)	**0.45**	**1** J	**0.43**	**0.45**	**1.1** J	**1.1** J	**0.46**	**0.43**	**0.77**	**1**	0.87 U	**0.44**	**0.55**

Notes:
Volatile Organic Compounds by Method TO15
Results in micrograms per cubic meter (µg/m3)
NA = Not Analyzed
Only detected compounds shown
Detected compounds in bold
Qualifier
U = not detected at the reporting limit
UJ = not detected at the reporting limit, estimated
J = estimated value
Location ID:
IA = indoor air sample
SV = Soil Vapor
AA = outdoor ambient air sample
QC Code: FS=Field Sample; FD=Field Duplicate

Created by: KLD 5/20/2024
Checked by: CRS 5/22/2024

Table 4.7: SVI Results

Address	**45 Main St (Building 006) (Flower Shop)**								**(Coffee Shop)**		**Ambient Air**	
Location	IA-06CS		IA-06CSE		IA-06CSW		IA-06F1E		IA-06F1W		Outside Air	Outside Air
Field Sample Date	12/21/2022		3/21/2023		3/21/2023		12/21/2022		12/21/2022		12/21/2022	3/21/2023
Field Sample ID	360175-IA006CS		360175-IA006CSE		360175-IA006CSW		360175-IA006F1E		360175-IA006F1W		360175-AA001	360175-AA001
QC Code	FS		FS		FS		FS		FS		FS	FS
Parameter	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result Qualifier	Result Qualifier
VOCs (µg/m3)												
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	**0.55**	J	1.5	U	1.5	U	**0.57**	J	**0.69**	J	**0.48** J	1.5 U
1,2,4-Trimethylbenzene	**1.5**		0.98	U	**2.4**		**4.3**		0.17	U	0.17 U	0.98 U
1,2-Dichloroethane	0.14	U	0.81	U	0.81	U	**0.17**		**0.2**		0.14 U	0.81 U
1,3,5-Trimethylbenzene	**0.49**		0.98	U	**1.6**		**1.1**		0.17	U	0.17 U	0.98 U
1,3-Butadiene	0.077	U	0.44	U	0.44	U	0.077	U	0.077	U	0.077 U	0.44 U
1,4-Dichlorobenzene	0.21	U	1.2	U	1.2	U	0.21	U	0.21	U	0.21 U	1.2 U
2-Butanone	4.1	U	1.5	U	**1.8**		**1.3**	J	**5.1**		4.1 U	1.5 U
2-Hexanone	0.29	U	2	U	2	U	0.29	U	0.29	U	0.29 U	2 U
2-Propanol	**3.4**	J	12	U	12	U	**68**		**38**		**0.92** J	12 U
4-Ethyltoluene	**0.34**		0.98	U	**0.42**	J	**0.6**		0.17	U	0.17 U	0.98 U
4-iso-Propyltoluene	NA		1.1	U	**1.7**		NA		NA		NA	1.1 U
4-Methyl-2-pentanone	**0.094**	J	2	U	2	U	0.14	U	0.14	U	0.14 U	2 U
Acetone	**23**		**6.7**	J	**9.7**	J	**89**		**48**		**5.5**	**5.5** J
Benzene	**0.75**		**0.39**	J	**0.89**		**0.98**		**1.4**		**0.71**	**0.52** J
Bromodichloromethane	0.23	U	1.3	U	1.3	U	0.23	U	**0.25**		0.23 U	1.3 U
Butane	NA		**2.9**		**2.2**		NA		NA		NA	**3.8**
Carbon disulfide	1.1	U	1.6	U	**2.1**		1.1	U	1.1	U	1.1 U	1.6 U
Carbon tetrachloride	**0.44**		**0.28**		**0.27**		**0.32**		**0.59**		**0.44**	**0.28**
Chlorodifluoromethane	NA		**1.4**	J	**1.4**	J	NA		NA		NA	**2.8**
Chloroethane	0.092	U	1.3	U	1.3	U	0.092	U	**0.15**		0.092 U	1.3 U
Chloroform	**0.51**		**0.28**	J	**0.33**	J	**0.89**		**27**		0.17 U	**0.79** J
Chloromethane	**0.87**		**0.63**	J	**1.3**		**0.96**		**1.6**		**0.92**	**1.1**
cis-1,2-Dichloroethene	**0.12**	J	0.2	U	0.2	U	0.14	U	0.14	U	0.14 U	0.2 U
Cyclohexane	**0.13**		**0.28**	J	0.69	U	**2**		**0.22**		0.12 U	0.69 U
Dichlorodifluoromethane	**2.5**		**1.9**	J	**2**	J	**3**		**3.4**		**2.6**	**2** J
Ethanol	**10**		NA		NA		**60**		**1700**		**8.9**	NA
Ethyl acetate	1.3	U	NA		NA		1.3	U	**61**		1.3 U	NA
Ethylbenzene	**0.25**		0.87	U	**67**		**1.3**		**0.12**	J	0.15 U	0.87 U
Heptane	**0.57**		0.82	U	**0.34**	J	**1.1**		**1.5**		**0.14**	**1.1**
Hexachlorobutadiene	0.37	UJ	2.1	U	2.1	U	0.37	UJ	**0.38**	J	0.37 UJ	2.1 U
Hexane	**1.1**	J	**0.48**	J	**0.47**	J	**0.79**	J	**2.7**	J	4.9 U	**1.5** J
Isooctane	NA		**0.2**	J	**0.21**	J	NA		NA		NA	**0.25** J
Methylene chloride	1.2	U	1.7	U	**1.2**	J	1.2	U	**1.3**		1.2 U	**0.65** J
Naphthalene	0.18	U	2.6	U	2.6	U	0.18	U	0.18	U	0.18 U	2.6 U
Propylene	2.4	U	NA		NA		2.4	U	2.4	U	2.4 U	NA
sec-Butylbenzene	NA		1.1	U	**0.27**	J	NA		NA		NA	1.1 U
Styrene	**0.089**	J	0.85	U	0.85	U	**0.2**		0.15	U	0.15 U	0.85 U
Tetrachloroethene	**0.35**		**0.59**	J	1.4	U	0.24	U	**2.1**		**0.89**	**0.7** J
Tetrahydrofuran	1	U	15	U	15	U	1	U	**1.7**		1 U	15 U
Toluene	**14**		**1**		**1.4**		**11**		**4.5**		**0.47**	**1**
trans-1,2-Dichloroethene	0.14	U	0.79	U	0.79	U	0.14	U	**0.84**		0.14 U	0.79 U
Trichloroethene	0.19	U	0.2	U	0.2	U	0.19	U	**0.16**	J	0.19 U	0.2 U
Trichlorofluoromethane	**1.5**		**1.1**		**1.4**		**1.4**		**54**		**1.3**	**0.94** J
Vinyl acetate	2.5	U	NA		NA		**1.7**	J	**4.7**		**0.93** J	NA
Xylene, o	**0.28**		0.87	U	**50**		**0.99**		**0.079**	J	0.15 U	0.87 U
Xylenes (m&p)	**0.63**		**0.5**	J	**280**		**2.9**		**0.23**	J	0.3 U	**0.49** J

Notes:

Volatile Organic Compounds by Method TO15

Results in micrograms per cubic meter (µg/m3)

NA = Not Analyzed

Only detected compounds shown

Detected compounds in bold

Qualifier

U = not detected at the reporting limit

UJ = not detected at the reporting limit, estimated

J = estimated value

Location ID:

IA = indoor air sample

SV = Soil Vapor

AA = outdoor ambient air sample

QC Code: FS=Field Sample; FD=Field Duplicate

Table 9.1: Identification and Screening of Potential Remedial Technologies

Environmental Media	General Response Action	Remedial Technology	Process Option	Applicability to		Screening Status	Comments
				Site-Limiting Characteristics	Waste-Limiting Characteristics		
Soil (COCs are PFAS at 53 and 49 Main Street)	No Action	Not Applicable	Not Applicable	None.	Would not reduce toxicity, mobility, or volume of PFAS contaminants.	Retained.	Retained to be carried through as a baseline comparison to other alternatives.
	Institutional Controls	Land Use Restrictions	Land Use Restrictions	Would require coordination and approval from the town and the current property owners.	Would not reduce toxicity, mobility, or volume of PFAS contaminants.	Retained.	Viable as a component of remedial actions which do not involve remediation allowing for unrestricted use.
		Fencing	Fencing	Would not limit direct exposure to site workers, and would reduce site Access that may be necessary for emergency exit from 49 Main Street.	Would not reduce toxicity, mobility, or volume of PFAS contaminants.	Eliminated.	Not viable due to site-limiting characteristics.
	Containment	Capping	Soil Cover	Contamination starts from ground surface (or under asphalt) and ranges from two to five feet below ground surface. A soil cover would not be implemented over the impacted area that already has an asphalt cover (driveway); however, a soil cover could be implemented in the adjacent yard, but shallow soil would need to be removed to allow space for cover.	Would prevent exposure to impacted soils but not reduce toxicity, mobility, or volume of PFAS contaminants.	Retained.	Viable as a component to prevent direct contact.
			Low Permeability Cover System	A portion of the impacted area is already under asphalt cover (driveway); however, a low permeable cover could be added to the landscaped yard.	Would prevent exposure to impacted soils but not reduce toxicity, mobility, or volume of PFAS contaminants.	Retained.	Viable as component to prevent direct contact.
	Removal	Excavation	Soil Excavation	Excavation near buildings may require geotechnical protection measures to access contaminated soils. Excavation would also require coordination and approval from the town (permit) and the current owners.	None.	Retained.	Viable as a component of remedial action where the excavation is limited or is for removal of source area soils. Retain for further evaluation.
	In-Situ Treatment	Biological Treatment	Enhanced Biodegradation	Injecting biological amendments may result in unpredictable distribution of amendments and uncertain contact with contaminants. Soil mixing may be effective at distributing the amendment over the contaminated area.	Although some trials have been conducted, PFAS may not be amenable for biological treatment to be significantly effective. Would not reduce toxicity, mobility, or volume of PFAS contaminants.	Eliminated.	Not viable for PFAS remediation
		Physical Treatment	Solidification/ Stabilization	Soil stabilization using sorbents that can be mixed with the soils to prevent PFAS from leaching into groundwater. Shallow in situ soil mixing may be effective at distributing the amendments/reagents over the contaminated area; however, asphalt will need to be removed and disposed offsite and approval and coordination from the town and current owners would be necessary.	Solidification/ stabilization using appropriately selected sorbents that leads to chemical fixation or immobilization has ability to effectively immobilize PFAS contamination in soil; however, it would not reduce toxicity or volume of PFAS contaminants.	Retained	Retained for further evaluation.
		Thermal Treatment	Electrical Resistance Heating or Other Thermal Technology	Requires the installation and operation of an on-site treatment system and engineering controls to mitigate risk of exposure to high temperature and soil vapor. Requires a substantial power source for thermal remediation and space to install a treatment system to treat soil vapors for PFAS.	Increased temperatures will volatilize contaminants, increasing the risk for soil vapor exposure. Would not significantly reduce toxicity, mobility, or volume of PFAS contaminants.	Eliminated.	Not viable for PFAS remediation
		Chemical Treatment	Oxidation	Injecting chemical oxidants may result in unpredictable distribution of reagents and uncertain contact with contaminants. Soil mixing may be effective at distributing the reagents over the contaminated area, but would require approval and coordination from the town and current owner.	Chemical oxidation may not be fully successful in destroying all the PFAS mass and smaller chain PFAS mass may increase as oxidation progresses. Would not significantly reduce toxicity, mobility, or volume of PFAS contaminants. In Situ chemical oxidation for PFAS remediation has not been applied successfully at full-scale.	Eliminated.	Not viable for PFAS remediation

Groundwater (COCs are PFAS and VOCs)	No Action	Not Applicable	Not Applicable	None.	Would not reduce toxicity, mobility, or volume of VOC and PFAS contaminants.	Retained.	Retained to be carried through as a baseline comparison to other alternatives.
	Institutional Controls	Groundwater Use Restrictions	Restrict use/drilling of production wells	Groundwater is not currently used as a drinking water source in the vicinity of the site. Would need to ensure that future supply wells are not installed. Would require coordination and approval from the town and the current owner.	Would not reduce toxicity, mobility, or volume of VOC and PFAS contaminants, but would ensure that groundwater is not used as a drinking water source in the future.	Retained.	Viable as a component of remedial actions which do not involve remediation allowing for unrestricted use.
	Natural Attenuation	Groundwater Monitoring	Long-term Monitoring	None.	May not reduce toxicity, mobility, or volume of VOC and PFAS contaminants in a reasonable timeframe.	Retained.	Viable as a component of remedial actions to monitor the effectiveness of treatment.
	Containment	Capping	Low Permeability Cover System	The impacted area is below the building slab and below groundwater table where a low permeable cover would not decrease groundwater impacts.	Would not reduce toxicity, mobility, or volume of VOC and PFAS contaminants.	Eliminated.	Not viable for remediation of contaminants currently in groundwater.
		Vertical Barriers	Slurry wall, sheet piling	Installation would be complicated by contaminant location beneath the building slab and limited amount of accessible space around the building. Demolition of the building would simplify installation but would require coordination and approval from the town and the current owner.	Would decrease mobility, but would not reduce toxicity or volume of VOC or PFAS contaminants.	Eliminated.	Not viable given current development of area (i.e., buildings and roads).
	In-Situ Treatment	Biological Treatment	Enhanced Biodegradation/Enhanced Reductive Dechlorination	Injecting biological amendments may result in unpredictable distribution of amendments and uncertain contact with contaminants. The impacted plume also extends over 100 ft beyond the borders of the site where the remedy may not be implemented to the required designed scale due to existing building structure and lack of locations to inject. Multiple rounds of low pressure/gravity feed injections may be required.	Would increase the volume of some of the VOC contaminants/daughter products temporarily before entire contaminant mass is reduced. Would not reduce toxicity, mobility, or volume of PFAS contaminants. In Situ bioremediation for PFAS has not been applied successfully at full-scale.	Retained.	Viable as a component of remedial action for VOCs. Retained for further evaluation.
			Biosparging	Would need to be conducted simultaneously with existing subslab depressurization system and require space for biosparging system installation.	Would require long-term operation and maintenance to degrade VOCs but it would not reduce toxicity, mobility, or volume of PFAS contaminants.	Retained	Viable as a component of remedial action for VOCs. Retained for further evaluation.
		Physical Treatment	Stabilization	Stabilization in groundwater using liquid carbon to "bind" VOC and PFAS contamination; however it may be difficult to treat all areas due to access (buildings/utilities/roads).	Would reduce mobility of VOCs and PFAS; however, would not reduce volume or toxicity of PFAS contamination. May allow for in-situ treatment of VOCs through biological degradation.	Retained	Viable as a component of remedial actions for VOCs and/or PFAS.
			Permeable Reactive Barrier	May require demolition of buildings, or disruption to sidewalks and streets depending on location of the barrier wall.	Would decrease mobility, but would not reduce the volume of PFAS contaminants.	Eliminated.	Not viable for PFAS remediation, and not viable given current development of area (i.e., buildings and roads).
		Thermal Treatment	Electrical Resistance Heating or Other Thermal Technology	Requires demolition of the existing building, construction and operation of a treatment facility, and coordination and approval from the town and the current property owners.	Would reduce toxicity, mobility, and volume of VOC contaminants but it would not significantly reduce toxicity and mobility of PFAS contaminants. Some PFAS may be removed during vapor extraction.	Eliminated.	Not viable for PFAS remediation and access limitations for VOC remediation.
		Chemical Treatment	Oxidation	Chemical oxidants need to come in contact with impacted water to be effective, and the impacted plume extends over 100 ft beyond the borders of the site where the remedy may not be implemented to the required designed scale due to existing building structure and lack of locations to inject. Multiple rounds of low pressure/gravity feed injections may be required.	Would reduce toxicity, mobility, and volume of VOC contaminants but it would not reduce toxicity, mobility, and volume of PFAS contaminants. Some long chain PFAS may be oxidized to small chain PFAS compounds. In Situ chemical oxidation for PFAS remediation has not been applied successfully at full-scale.	Retained.	Viable as a component of remedial action for VOCs. Retained for further evaluation.
	Ex-Situ Treatment	Pump and Treat	Granular Activated Carbon and/or air stripping	The VOCs and PFAS plumes are under existing buildings and do not have additional space to install a pump and treat system.	Would require long-term operation and maintenance. Pump and treat technologies are effective in the short-term, but plateau and require long-term installation to meet remedial goals. Would reduce toxicity, mobility, and volume of VOC and PFAS contaminants.	Eliminated.	Not viable due to space requirements, as well as lack of significant source area to treat.
Soil Vapor (COCs are VOCs only, No PFAS issue for Soil Vapors)	No Action	Not Applicable	Not Applicable	Not Applicable	Will not reduce toxicity, mobility, or volume of site related contaminants.	Retained	Retained to be carried through as a baseline comparison to other alternatives.
	Engineering Controls	Sub-Slab Depressurization	Sub-Slab Depressurization (SSD)	This would be conducted in on-site or off-site structures as applicable. Limiting characteristics would be structure specific and could include condition of the structure floor, the high groundwater table, and space restrictions.	None	Retained	Retained to be carried through as a component of other alternatives if deemed necessary in future.

Table 9.2: Detailed Technology Screening of Retained Technologies

Environmental Media	General Response Action	Remedial Technology	Process Option	Effectiveness	Implementability	Relative Cost	Screening Status	Comments
Soil (COCs are PFAS at 53 and 49 Main Street)	No Action	Not Applicable	No Action	Not effective for reducing contamination concentrations or addressing the identified exposure pathways.	No technical issues with implementing this alternative.	No cost associated.	Retained	Retained to use as a baseline for comparison to other alternatives.
	Institutional Controls	Land Use Restrictions	Institutional Controls	Institutional controls alone will not reduce contaminant concentrations.	Institutional controls are relatively easy to implement, but require acceptance from the public. Institutional Controls are typically captured in a Site Management Plan (SMP)	Relative costs are low.	Retained	Retained as a component of alternatives.
	Containment	Capping	Soil Cover	Not effective for reducing contamination concentrations but can prevent the exposure pathways from shallow soils.	There are no technical issues with implementing this alternative. A soil cover would not be implemented over the impacted area that already has an asphalt cover (driveway); however, a soil cover could be implemented in the adjacent yard, but shallow soil would need to be removed to allow space for cover.	Relative costs are low.	Eliminated.	Preferrable to either remove or cap with low permeability cover.
			Low Permeability Cover System	Not effective for reducing contamination concentrations but can prevent the exposure pathways from shallow soils. Reduced infiltration of rainwater would limit leaching of shallow soil contamination to groundwater.	There are no technical issues with implementing this alternative. A portion of the impacted area is already under asphalt cover (driveway); however, a low permeable cover could be added to the landscaped yard.	Relative costs are low.	Retained	Retained as a component of alternatives.
	Removal	Excavation	Soil Excavation	Excavation is an effective way to remove contaminated soil acting as either a source of direct contact (surface soil) or a continuing source to groundwater contamination.	The majority of the impacted area has asphalt cover and contamination starts from ground surface (under asphalt) and ranges from surface to five feet below ground surface. Excavation near buildings may require geotechnical protection measures to access contaminated soils. Excavation would require coordination and approval from the town and the current owners.	Relative costs are medium to high depending on the quantity and depth of soil removed. The primary items contributing to costs include transportation and disposal of soil and underground utilities.	Retained	Retained as a component of alternatives.
	In Situ Treatment	Physical Treatment	Solidification/ Stabilization	Solidification/ Stabilization using appropriately selected sorbent/s and/or binding agent/s is an effective way to remove contaminated soil acting as either a source of direct contact (surface soil) or a continuing source to downgradient groundwater contamination.	In situ soil mixing near buildings may require geotechnical protection measures to access contaminated soils. Equipment required for mixing and adding stabilization amendment would take a lot of space. Soil mixing around utilities will need additional protection measures. Although implementable, due to shallow nature of contamination, if excavating to mix soil, preferrable to remove given residential area.	Relative costs are medium to high for shallow soil mixing. The primary items contributing to costs include working around underground utilities and in situ mixing.	Eliminated.	Since physical work would be similar to excavation, it is preferable to remove the contaminated soil rather than solidify in place in residential setting.

Groundwater (COCs are PFAS and VOCs)	No Action	Not Applicable	Not Applicable	Not effective for reducing contamination concentrations or addressing the identified exposure pathways.	There are no technical issues with implementing this alternative.	No cost	Retained.	Retained to be carried through as a baseline comparison to other alternatives.
	Institutional Controls	Groundwater Use Restrictions	Restrict use/drilling of production wells	Institutional controls will not reduce contaminant concentrations but does eliminate potential exposure pathways resulting from extraction and direct contact with groundwater	There are no technical issues with implementing this alternative. Institutional controls are relatively easy to implement and are typically captured in a Site Management Plan (SMP).	Relative costs are low	Retained.	Viable as a component of remedial actions which do not involve remediation allowing for unrestricted use.
	Natural Attenuation	Groundwater Monitoring	Long-term Monitoring	The limited evidence of degradation products at the site and the persistence of contamination throughout the history of the site both suggest that MNA will not be effective in the short term or in ultimately achieving SCGs.	There are no technical issues with implementing this alternative.	Relative costs are low	Retained.	Viable as a component of remedial actions to monitor the effectiveness of treatment.
	In-Situ Treatment	Biological Treatment	Enhanced Anaerobic Bioremediation through permanent or temporary injection points	Enhanced Biodegradation of CVOCs is potentially effective in reducing the volume and toxicity of VOC contaminants at the site but it would not reduce toxicity, mobility, or volume of PFAS contaminants. Additionally biodegradation would not address the entirety of the off-site VOC plume extending over 100 ft from the property boundary.	Overlying structures would make it difficult to evenly distribute amendments and ensure good contact with contaminated media. The impacted plume also extends over 100 ft beyond the borders of the site where the remedy may not be implemented to the required designed scale due to existing building structure and lack of locations to inject.	Relative costs are medium to high	Retained.	Viable option in conjunction with other technologies that will eliminate off-site exposure pathways.
			Biosparging (Aerobic Remediation) through permanent air injection wells	Biosparging of CVOCs is potentially effective in reducing the volume and toxicity of VOC contaminants at the site but it would not reduce toxicity, mobility, or volume of PFAS contaminants. Additionally biosparging would not address the entirety of the off-site VOC plume extending over 100 ft from the property boundary.	The impacted plume also extends over 100 ft beyond the borders of the site where the remedy may not be implemented to the required designed scale due to existing building structure and lack of locations to inject. Lack of access and space at 49 Main Street for system installation would make this difficult to implement.	Relative costs are medium to high	Eliminated.	
		Physical Treatment	Stabilization	Stabilization of VOCs and PFAS with liquid carbon is potentially effective in reducing the mobility of VOCs and PFAS, as well as assist in the biological degradation of VOCs; however, it would not reduce the toxicity or volume of PFAS contamination.	The impacted plume also extends over 100 ft beyond the borders of the site where the remedy may not be implemented to the required designed scale due to existing building structure and lack of locations to inject.	Relative costs are medium to high	Retained	Viable option in conjunction with other technologies to reduce downgradient concentrations.
		Chemical Oxidation	In Situ chemical oxidation through permanent and temporary wells	Chemical oxidation of CVOCs is potentially effective in reducing the volume and toxicity of VOC contaminants at the site but it would not reduce toxicity, mobility, or volume of PFAS contaminants. Additionally chemical oxidation would not address the entirety of the off-site VOC plume extending over 100 ft from the property boundary.	The impacted plume also extends over 100 ft beyond the borders of the site where the remedy may not be implemented to the required designed scale due to existing building structure and lack of locations to inject.	Relative costs are medium to high	Retained.	Viable option in conjunction with other technologies that will eliminate off-site exposure pathways.
Soil Vapor (COCs are VOCs only, No PFAS issue for Soil Vapors)	No Action	Not Applicable	Not Applicable	Not effective for reducing contamination concentrations or addressing the identified exposure pathways.	There are no technical issues with implementing this alternative.	No cost	Retained	Retained to be carried through as a baseline comparison to other alternatives.
	Engineering Controls	Sub-Slab Depressurization	Sub-Slab Depressurization	Sub-Slab Depressurization would reduce contaminants present in sub-slab soil vapor but does not ultimately reduce their toxicity, only changes what media they exist in (effluent vapor/discharged to atmosphere).	This would be conducted in on-site and off-site structures as applicable. Installing off-site SSDSs requires obtaining access to private properties to perform assessment of existing conditions and eventual installation.	Relative costs are low to medium	Retained	Viable option to eliminate potential vapor exposure pathways.

Table 11.1: Detailed Analysis and Comparison of Remedial Alternatives

Remedial Alternative	Breakdown of Remedy Components[1]	Overall Protection of Public Health and the Environment (Is / Partially / Is Not Protective)	Compliance with Standards, Criteria and Guidance[2] (Meets / Partially Meets / Does Not Meet)	Long-term Effectiveness and Permanence (Not/ Partially /Effective)	Reduction of Toxicity, Mobility, or Volume with Treatment (Will Not / Will Partially / Will Reduce)	Short-term Impacts[3] (Will / Will Partially / Not Result)	Short-term Effectiveness[3] (Not/ Partially/ Effective)	Implementability (No / Some Technical Difficulties)	Land Use (Compatible / Not Compatible)	Sustainability / Green Remediation (DER-31) (High / Medium / Low Compliance)	Cost[4] (Numerically Ranked, 1=Lowest cost)
Alternative 1: No Action	**No Action for all Media**	Is not protective	Does not meet	Not effective or Permanent	Will Not Reduce	Will Not Result	Not Effective	No Technical Difficulties	Not compatible	High	1 There are no costs associated with Alternative 1.
Alternative 2: Soil Excavation with In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation in Groundwater	**PFAS Soil: Excavation to background.**	Is protective	Meets	Effective	Will Reduce	Will Result 20 Weeks	Effective	Some Technical Difficulties	Compatible	Low Compliance	6 $2,821,000
	PFAS Impacted GW: In-situ Sorption with liquid carbon	Partially Protective	Partially meets	Effective but not Permanent	Will Partially Reduce		Partially Effective	Some Technical Difficulties	Compatible	Low Compliance	
	VOC Impacted GW Beneath Buildings: ISCR and enhanced Bioremediation	Is protective	Meets	Effective	Will Reduce		Partially Effective	Some Technical Difficulties	Compatible	Low Compliance	
	VOC Impacted GW Outside Building Footprints: ISCR and enhanced Bioremediation	Is protective	Meets	Effective	Will Reduce		Partially Effective	Some Technical Difficulties	Compatible	Low Compliance	
Alternative 3a: Low Permeability Cover System with In-Situ Chemical Oxidation of Groundwater	**PFAS Soil: Partial Excavation with Low Permeability Cover System**	Partially Protective	Partially meets	Effective	Will Reduce	Will Result 10 Weeks	Effective	Some Technical Difficulties	Compatible	Medium	5 $1,583,000
	PFAS Impacted GW: ICs and long-term monitoring	Partially Protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Compatible	High	
	VOC Impacted GW Beneath Buildings: ISCO	Is protective	Partially meets	Effective	Will Reduce		Partially Effective	Some Technical Difficulties	Compatible	Medium	
	VOC Impacted GW Outside Building Footprints: ICs and long-term monitoring	Partially Protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Compatible	High	
Alternative 3b: Low Permeability Cover System with Enhanced Bioremediation of Groundwater	**PFAS Soil: Partial Excavation with Low Permeability Cover System**	Partially Protective	Partially meets	Effective	Will Reduce	Will Result 9 Weeks	Effective	Some Technical Difficulties	Compatible	Medium	3 $1,441,000
	PFAS Impacted GW: ICs and long-term monitoring	Partially Protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Compatible	High	
	VOC Impacted GW Beneath Buildings: Enhanced Bioremediation	Is protective	Partially meets	Effective	Will Reduce		Partially Effective	Some Technical Difficulties	Compatible	Medium	
	VOC Impacted GW Outside Building Footprints: ICs and long-term monitoring	Partially Protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Compatible	High	

Table 11.1: Detailed Analysis and Comparison of Remedial Alternatives

Remedial Alternative	Breakdown of Remedy Components[1]	Overall Protection of Public Health and the Environment (Is / Partially / Is Not Protective)	Compliance with Standards, Criteria and Guidance[2] (Meets / Partially Meets / Does Not Meet)	Long-term Effectiveness and Permanence (Not/ Partially /Effective)	Reduction of Toxicity, Mobility, or Volume with Treatment (Will Not / Will Partially / Will Reduce)	Short-term Impacts[3] (Will / Will Partially / Not Result)	Short-term Effectiveness[3] (Not/ Partially/ Effective)	Implementability (No / Some Technical Difficulties)	Land Use (Compatible / Not Compatible)	Sustainability / Green Remediation (DER-31) (High / Medium / Low Compliance)	Cost[4] (Numerically Ranked, 1=Lowest cost)
Alternative 4: Long Term Groundwater Monitoring and Institutional Controls	**PFAS Soil: Institutional Controls.**	Not Protective	Does not meet	Not effective	Will Not Reduce	Will Partially Result 4 Weeks Well Installation and Injections	Not Effective	Some Administrative Difficulties	Not compatible	High	4 $1,490,000
	PFAS Impacted GW: ICs and long-term monitoring	Partially Protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Compatible	High	
	VOC Impacted GW Beneath Buildings: ISCO	Is protective	Partially meets	Effective	Will Reduce		Partially Effective	Some Technical Difficulties	Compatible	Medium	
	VOC Impacted GW Outside Building Footprints: ISCR and enhanced Bioremediation (Small Area) and IC's/LTM	Is protective	Meets	Effective	Will Reduce		Partially Effective	Some Technical Difficulties	Compatible	Medium	
Alternative 5: Long Term Groundwater Monitoring and Institutional Controls	**PFAS Soil: Institutional Controls.**	Not Protective	Does not meet	Not effective	Will Not Reduce	Will Partially Result 1 Week of Well Installation	Not Effective	Some Administrative Difficulties	Not compatible	High	2 $1,117,000 Minimal capital costs.
	PFAS Impacted GW: ICs and long-term monitoring	Partially Protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Compatible	High	
	VOC Impacted GW Beneath Buildings: ICs and long-term monitoring	Is not protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Not compatible	High	
	VOC Impacted GW Outside Building Footprints: ICs and long-term monitoring	Partially Protective	Does not meet	Not effective	Will Not Reduce		Not Effective	No Technical Difficulties	Compatible	High	

Color indicates relative ranking of the remedial option based on the evaluation criteria.
Green indicates the most desirable result;
Orange indicates a less desirable result;
Pink indicates a negative result for the evaluation criteria.

Notes:

(1) A narrative discussion of the strengths and weaknesses of the remedial action alternatives relative to one another with respect to these evaluation criteria are included in Section 11.3 of the Feasibility Study.

(2) In alternatives where standards, criteria, and guidance values (SCGs) will not be met, contamination in excess of SCG values will remain onsite, leading to potential adverse human health and environmental impacts. It is possible that SCGs may be met at some time in the future due to natural attenuation processes.

(3) Adverse short-term impacts and health risks will be managed using temporary controls to prepare the Site for remedial action implementation, including but not limited to installation of an equipment decontamination area, implementation of erosion and sediment control measures, and the placement of temporary fencing around work areas. Implementation will also include preparation of and adherence to a construction work plan and a health and safety plan. The duration shows is for pre-design investigations and remedial implementation, but does not include Longterm Monitoring.

(4) Costs presented are the estimated total present worth (including capital costs and annual and periodic costs) for each alternative. Costs are further detailed in Tables 11.3 through 11.7 and Appendix G.

Table 11.2: Applicable Location- and Action-Specific Standards, Criteria, and Guidance

Requirement	Consideration in the Remedial Response Process
29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response	Applicable to Health and Safety implementation, enforcement, and emergency response.
6 NYCRR Part 700-705 Water Quality Regulations Surface Water and Groundwater Classifications and Standards	Applicable to the development and implementation of remedial programs.
6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes (November 1998)	Applicable to the characterization, handling, transportation, and treatment/disposal of investigative derived waste and other soils/liquids generated that require removal from the Site.
6 NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (November 1998)	Applicable to the handling, transportation, and treatment/disposal of investigative derived waste and other soils/liquids generated that require removal from the Site.
6 NYCRR Part 375 - Environmental Remediation Programs (as amended December 2006)	Applicable to the development and implementation of remedial programs.
6 NYCRR Part 376 - Land Disposal Restrictions	Applicable to disposal of hazardous wastes. Identifies those wastes that are restricted from land disposal.
DER-10 Technical Guidance for Site Investigation and Remediation	Applicable to the development and implementation of remedial programs.
Citizen Participation in New York's Hazardous Waste Site Remediation Program: A Guidebook (June 1998)	Applicable to the development and implementation of remedial programs.
Solidification/Stabilization and its Application to Waste Materials	May be applicable to disposal of wastes generated during implementation of remedial program.
DER-31 - Green Remediation (Revised January 2011)	Applicable to the development and implementation of remedial programs.
Sampling, Analysis, and Assessment of Per-and Polyfluoralkyl Substances (PFAS) (April 2023)	Applicable to the development and implementation of remedial programs.
NYSDOH Final Guidance for Evaluation of Soil Vapor Intrusion in the State of New York (Amended 2017 and 2024)	Applicable to the development and implementation of remedial programs.
USEPA Underground Injection Control (UIC) Permimtting. Form 7520-16. (April 2019)	Applicable to the development and implementation of remedial programs.

Table 11.3 Summary of Estimated Remedial Alternative Costs

Item	Description	Alternative 1	Alternative 2	Alternative 3		Alternative 4	Alternative 5
				3a	3b		
1	Total Capital Costs[8]	$ -	$ 2,535,000	$ 571,000	$ 387,000	$ 478,000	$ 63,000
	Soil Remedy	*$ -*	*$ 302,000*	*$ 81,000*	*$ 81,000*	*$ -*	*$ -*
	GW Remedy	*$ -*	*$ 1,367,000*	*$ 233,000*	*$ 112,000*	*$ 259,000*	*$ -*
2	Average Annual Cost (Present Worth)[9]	$ -	$ 10,000	$ 34,000	$ 35,000	$ 34,000	$ 35,000
3	Present Worth of Annual and Periodic Costs	$ -	$ 286,000	$ 1,012,000	$ 1,054,000	$ 1,012,000	$ 1,054,000
4	Total Present Worth (Item 1 plus item 3)	$ -	$ 2,821,000	$ 1,583,000	$ 1,441,000	$ 1,490,000	$ 1,117,000
5	Total Non-Discounted Cost	$ -	$ 2,835,000	$ 1,941,000	$ 1,817,000	$ 1,848,000	$ 1,493,000

Notes:

1. Alternative 1: No Further Action
2. Alternative 2: PFAS Soil Excavation, On and Off-Property In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation
4. Alternative 3:
   Alternative 3a: PFAS Soil Capping and On-Property In-Situ Chemical Oxidation
   Alternative 3b: PFAS Soil Capping and On-Property Bioremediation
5. Alternative 4: On-Property In-Situ Chemical Oxidation (Beneath Buildings) and Enhanced Bioredediation (Back of Properties)
6. Alternative 5: Monitored Natural Attenuation
7. Costs in this summary table have been rounded to nearest thousand.
8. The breakdown of Soil Remedy and groundwater remedy does not include pre-design investigations or indirect costs, see tables 11.4 through 11.8 for additional information.
9. Average Annual Cost of each alternative is the average over 30 years, regardless of how long the annual costs will occur.

Prepared by: JDW 3/21/25
Checked/Revised by: EKS 10/10/25
Revised by: JDW 1/28/2026

Table 11.4: Cost Summary for Alternative 2
PFAS Soil Excavation, On and Off-Property In-Situ Sorption, In-Situ Chemical Reduction, and Enhanced Bioremediation

Item No.	Item Description		COST
DIRECT CAPITAL COSTS			
Pre-design Investigation			
1A	Pre-Design Investigation and Baseline Sampling for Alternative 2	$	66,000
Implementation			
2A	Implement PFAS Soil Excavation (4-feet)	$	302,000
2D	Implement In-Situ Sorption (PFAS in GW) and ISCR/Bio (PCE in GW) - On and off-site locati	$	1,367,000
	Direct Cost Subtotal	$	1,735,000
INDIRECT CAPITAL COSTS			
	Project Management (@ 6 Percent)	$	105,000
	Remedial Design (@ 12 Percent)	$	209,000
	Construction Management (@ 8 Percent)	$	139,000
	Contingency (@ 20 Percent)	$	347,000
	Indirect Cost Subtotal	$	800,000
TOTAL CAPITAL COSTS		**$**	**2,535,000**
Long-Term Annual Costs*			
3A	LTM & Reporting - Alt 2 (Years 1 through 5)	$	60,000
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (5 yrs)		**$**	**286,000**
TOTAL PRESENT WORTH OF ALTERNATIVE (5 yrs)		**$**	**2,821,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE (5 yrs)		**$**	**2,835,000**

NOTES:
1. Costs have been rounded to the nearest thousand.
2. * - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs.

Prepared by: JDW 3/21/25
Checked/Revised by: EKS 10/10/25
Revised by: JDW 1/28/2026

Table 11.5: Cost Summary for Alternative 3a and 3b
PFAS Soil Capping and On-Property In-Situ Chemical Oxidation(a) or Bioremediation(b)

Item No.	Item Description	COST Alternative 4A Chem Ox	COST Alternative 4B Bio
DIRECT CAPITAL COSTS			
Pre-design Investigation			
1C	Pre-Design Investigation and Baseline Sampling for Alternative 3	$ 33,000	$ 33,000
Implementation			
2C	Implement PFAS Minor Soil Excavation and Capping	$ 81,000	$ 81,000
2E	Implement In-Situ Chemical Oxidation (PCE) - On-Site only (49 & 53 Main St)	$ 233,000	NA
2F	Implement In-Situ Bioaugmentation - On-Site only (49 & 53 Main St)	NA	$ 112,000
2H	Institute ICs/EC & Site Management Plan	$ 25,000	$ 25,000
	Direct Cost Subtotal	$ 372,000	$ 251,000
INDIRECT CAPITAL COSTS			
	Project Management (@ 8 Percent)	$ 30,000	$ 21,000
	Remedial Design (@ 15 Percent)	$ 56,000	$ 38,000
	Construction Management (@ 10 Percent)	$ 38,000	$ 26,000
	Contingency (@ 20 Percent)	$ 75,000	$ 51,000
	Indirect Cost Subtotal	$ 199,000	$ 136,000
TOTAL CAPITAL COSTS		**$ 571,000**	**$ 387,000**
Long-Term Annual Costs*			
3B	LTM & Reporting - Alt 3a & 4 (Years 1 through 5)	$ 58,000	NA
3C	LTM & Reporting - Alt 3a & 4 (Years 6 through 30)	$ 36,000	NA
3D	LTM/MNA & Reporting - Alt 3b and 5 (Years 1 through 5)	NA	$ 60,000
3E	LTM/MNA & Reporting - Alt 3b and 5 (Years 6 through 30)	NA	$ 38,000
3F	Long Term IC/EC Inspections, Certifications and Reporting	$ 6,000	$ 6,000
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)		**$ 1,012,000**	**$ 1,054,000**
TOTAL PRESENT WORTH OF ALTERNATIVE (30 yrs)		**$ 1,583,000**	**$ 1,441,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE (30 yrs)		**$ 1,941,000**	**$ 1,817,000**

NOTES:
1. Costs have been rounded to the nearest thousand.
2. * - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs. Costs assume annual inspection and reporting.

Prepared by: JDW 3/21/25
Checked/Revised by: EKS 10/10/25
Revised: JDW 1/28/2026

Table 11.6: Cost Summary for Alternative 4
PFAS Soil Capping and On-Property In-Situ Chemical Oxidation(a) or Bioremediation(b)

Item No.	Item Description		COST
DIRECT CAPITAL COSTS			
Pre-design Investigation			
1D	Pre-Design Investigation for Alternative 4	$	27,000
Implementation			
2G	Implement ISCO (Beneath 49 & 53 Main Streeet), Bio-Augmentation (Back of pro	$	259,000
2H	Institute ICs/EC & Site Management Plan	$	25,000
	Direct Cost Subtotal	$	311,000
INDIRECT CAPITAL COSTS			
	Project Management (@ 8 Percent)	$	25,000
	Remedial Design (@ 15 Percent)	$	47,000
	Construction Management (@ 10 Percent)	$	32,000
	Contingency (@ 20 Percent)	$	63,000
	Indirect Cost Subtotal	$	167,000
TOTAL CAPITAL COSTS		**$**	**478,000**
Long-Term Annual Costs*			
3B	LTM & Reporting - Alt 3a & 4 (Years 1 through 5)	$	58,000
3C	LTM & Reporting - Alt 3a & 4 (Years 6 through 30)	$	36,000
3F	Long Term IC/EC Inspections, Certifications and Reporting	$	6,000
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)		**$**	**1,012,000**
TOTAL PRESENT WORTH OF ALTERNATIVE (30 yrs)		**$**	**1,490,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE (30 yrs)		**$**	**1,848,000**

NOTES:

1. Costs have been rounded to the nearest thousand.
2. * - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs. Costs assume annual inspection and reportin

Table 11.7: Cost Summary for Alternative 5
Monitored Natural Attenuation

Item No.	Item Description	COST
DIRECT CAPITAL COSTS		
Pre-design Investigation		
1E	Baseline Sampling for Alternative 5	$ 23,000
Implementation		
2H	Institute ICs/EC & Site Management Plan	$ 25,000
	Direct Cost Subtotal	$ 48,000
INDIRECT CAPITAL COSTS		
	Project Management (@ 10 Percent)	$ 5,000
	Remedial Design (@ 20 Percent)	NA
	Construction Management (@ 15 Percent)	NA
	Contingency (@ 20 Percent)	$ 10,000
	Indirect Cost Subtotal	$ 15,000
TOTAL CAPITAL COSTS		**$ 63,000**
Long-Term Annual Costs*		
3D	LTM/MNA & Reporting - Alt 3b and 5 (Years 1 through 5)	$ 60,000
3E	LTM/MNA & Reporting - Alt 3b and 5 (Years 6 through 30)	$ 38,000
3F	Long Term IC/EC Inspections, Certifications and Reporting	$ 6,000
PRESENT WORTH OF ANNUAL AND PERIODIC COSTS (30 yrs)		**$ 1,054,000**
TOTAL PRESENT WORTH OF ALTERNATIVE (30 yrs)		**$ 1,117,000**
TOTAL NON-DISCOUNTED COST OF ALTERNATIVE (30 yrs)		**$ 1,493,000**

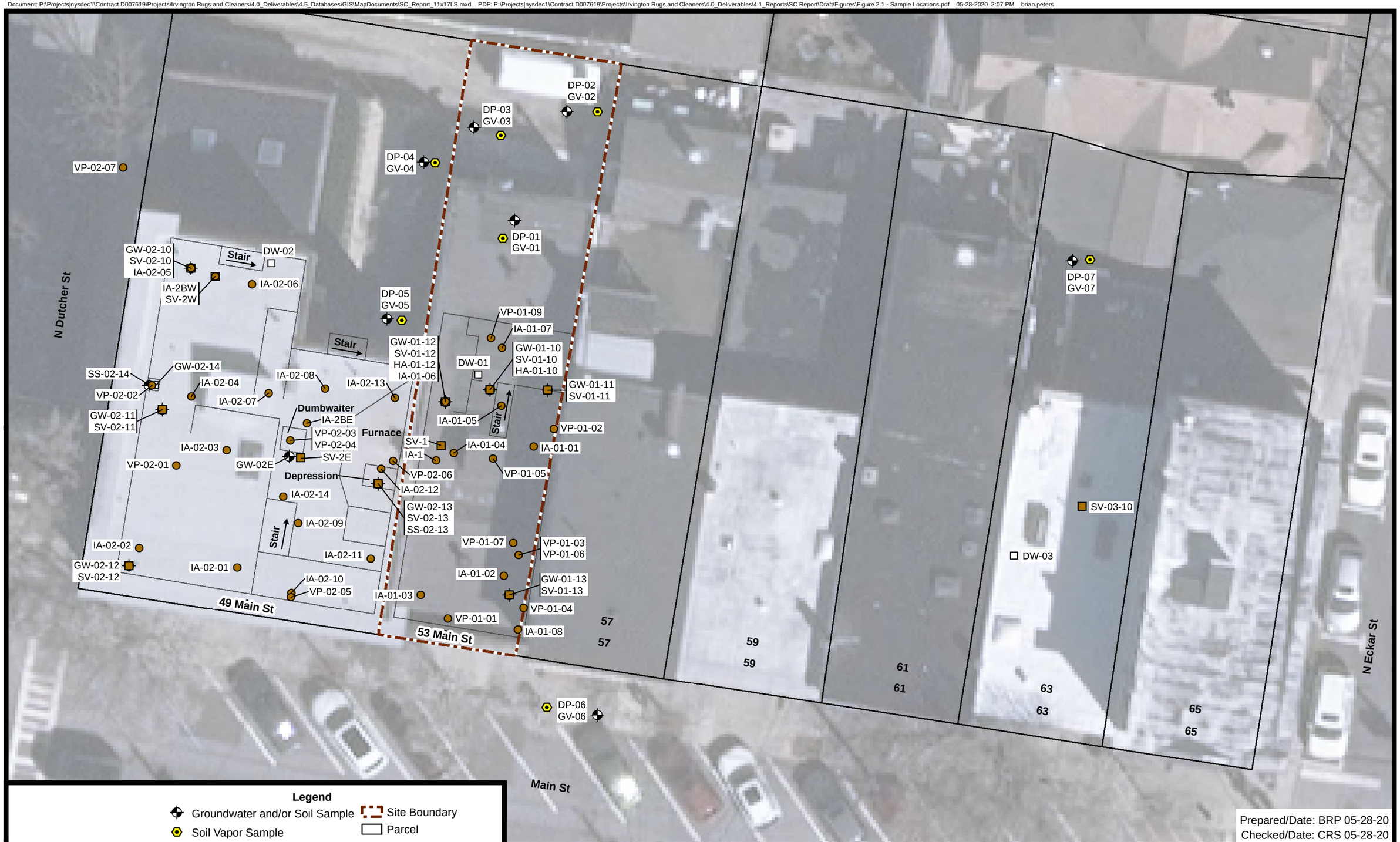
NOTES:

1. Costs have been rounded to the nearest thousand.
2. * - Costs include additional 10 percent for technical support and 25 percent contingency for unforeseen project complexities, including insurance, taxes, and licensing costs. Costs assume annual inspection and reporting.

Prepared by: JDW 3/21/25
Checked/Revised by: EKS 10/10/25
Revised by: JDW 1/28/2026

APPENDIX A

SELECT SITE CHARACTERIZATION REPORT TABLES, FIGURES, AND MICROBIAL RESULTS



Legend

- Groundwater and/or Soil Sample
- Soil Vapor Sample
- Sump Water Sample
- IA/VP Location
- SV Location
- Site Boundary
- Parcel

N

0 5 10 15 Feet

Note: Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov

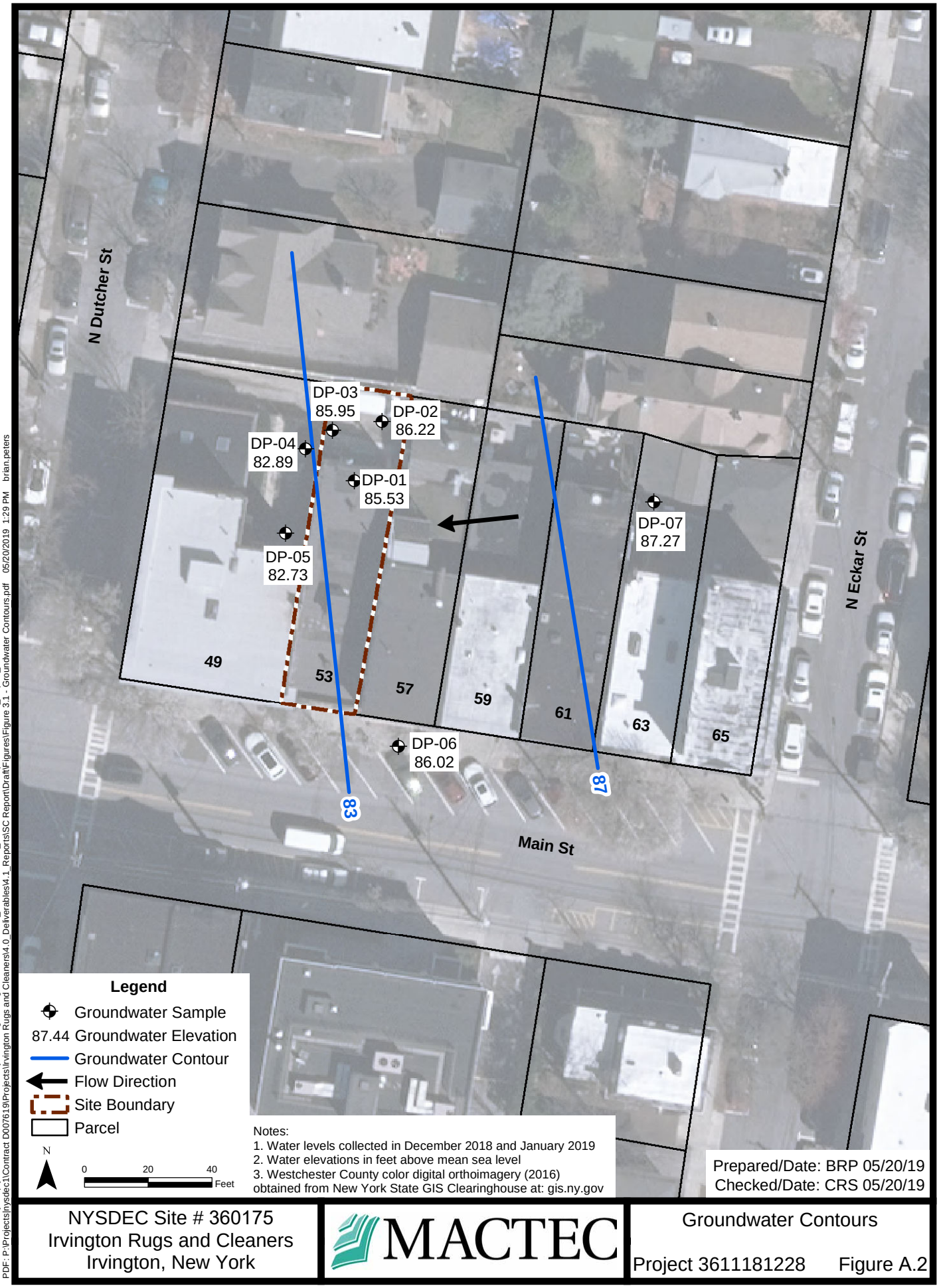
Prepared/Date: BRP 05-28-20
Checked/Date: CRS 05-28-20

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

MACTEC

Basement and Exterior Sample Locations

Project 3611181228 Figure A.1



Notes:
1. Water levels collected in December 2018 and January 2019
2. Water elevations in feet above mean sea level
3. Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov

Prepared/Date: BRP 05/20/19
Checked/Date: CRS 05/20/19

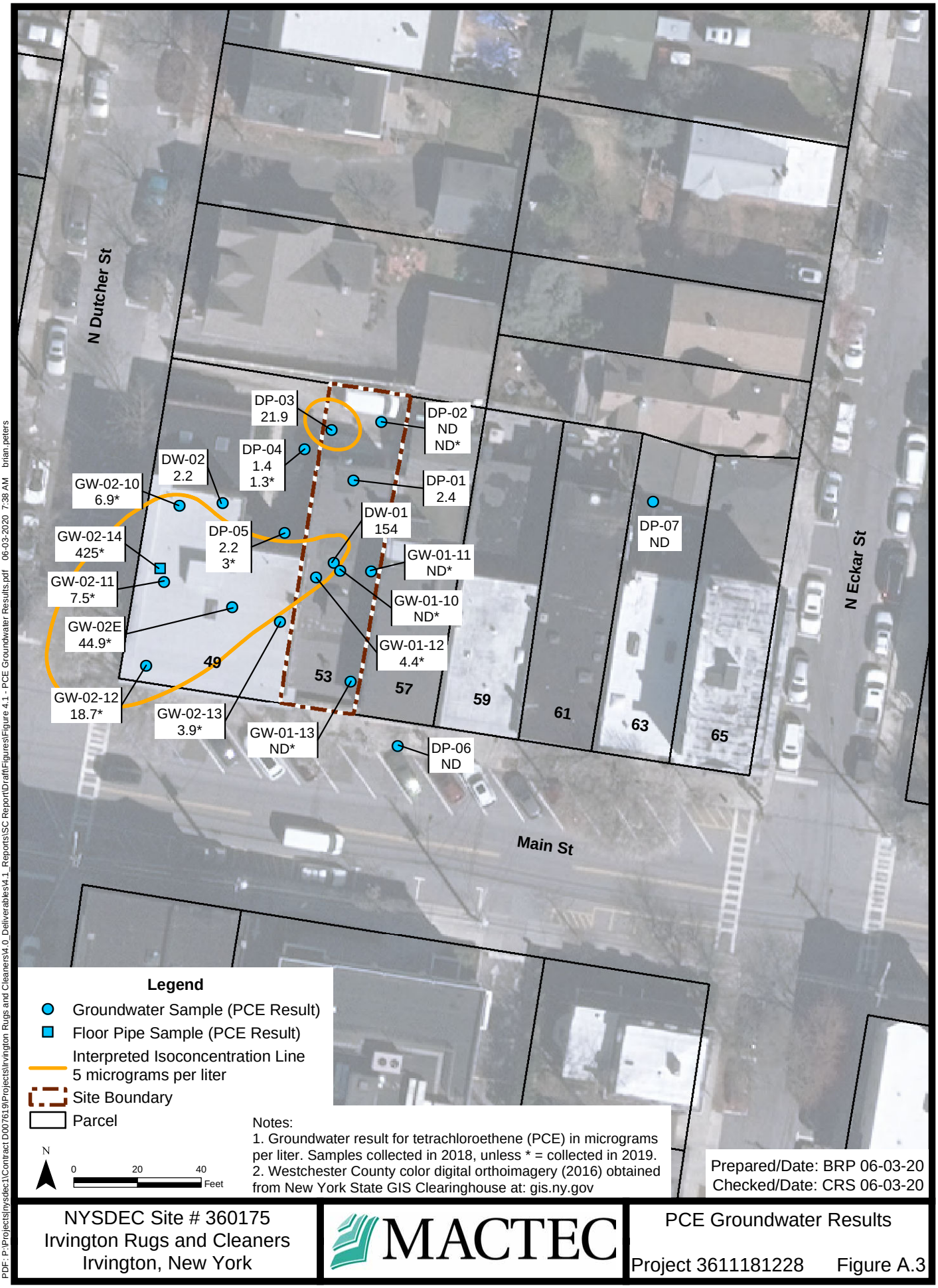
NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

MACTEC

Groundwater Contours

Project 3611181228 Figure A.2

Document: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\SC_Report_8.5x11P.mxd
PDF: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\4.0_Deliverables\4.1_Reports\SC Report\Draft\Figures\Figure 3.1 - Groundwater Contours.pdf 05/20/2019 1:29 PM brian.peters



Notes:
1. Groundwater result for tetrachloroethene (PCE) in micrograms per liter. Samples collected in 2018, unless * = collected in 2019.
2. Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov

Prepared/Date: BRP 06-03-20
Checked/Date: CRS 06-03-20

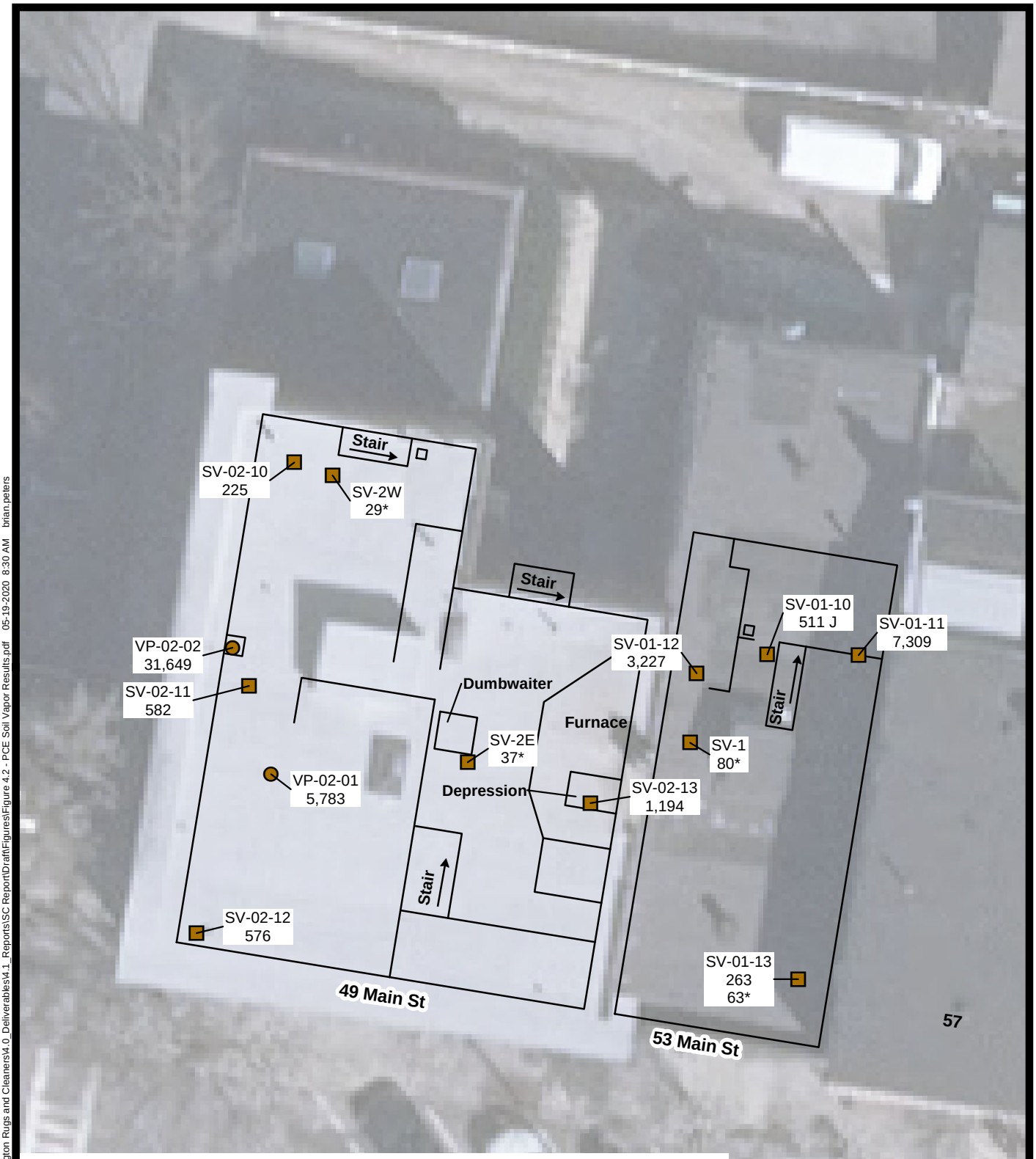
NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

MACTEC

PCE Groundwater Results

Project 3611181228 Figure A.3

Document: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\v4.0_Deliverables\v4.5_Databases\GIS\MapDocuments\GW_PCE_8.5x11P.mxd
PDF: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\v4.0_Deliverables\v4.1_Reports\SC Report\Draft\Figures\Figure 4.1 - PCE Groundwater Results.pdf 06-03-2020 7:38 AM brian.peters



Legend

- IA/VP Location
- SV Location

N

0 5 10 15 Feet

Notes:
1. Number next to location represents concentrations of Tetrachloroethene in micrograms per cubic meter
2. Results are HAPSITE field screening results, unless *
3. * = fixed laboratory result
4. Samples collected in November 2019, except SV-1, SV-2E and SV-2W collected in February 2019.
5. Westchester County color digital orthoimagery (2016) obtained from New York State GIS Clearinghouse at: gis.ny.gov

Prepared/Date: BRP 05-19-20
Checked/Date: CRS 05-19-20

NYSDEC Site # 360175
Irvington Rugs and Cleaners
Irvington, New York

MACTEC

PCE Soil Vapor Results

Project 3611181228 Figure A.4

Document: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\v4.0_Deliverables\v4.5_Databases\GIS\MapDocuments\Soil_PCE_8.5x11P.mxd
PDF: P:\Projects\nysdec1\Contract D007619\Projects\Irvington Rugs and Cleaners\v4.0_Deliverables\v4.1_Reports\SC Report\Draft\Figures\Figure 4.2 - PCE Soil Vapor Results.pdf 05-19-2020 8:30 AM brian.peters

Table A.1: Soil VOC Results

			Location	DP-01		DP-01		DP-02	DP-03		DP-04		DP-05	
			Sample Depth (ft bgs)	3		3		1	3		6		7	
			Sample Date	12/20/2018		12/20/2018		12/19/2018	12/19/2018		12/18/2018		12/18/2018	
			Sample ID	360175-DP001003		360175-DP001003D		360175-DP002001	360175-DP003003		360175-DP004006		360175-DP005007	
			QC Code	FS		FD		FS	FS		FS		FS	
Parameter	**UNR**	**RES**	**COM**	Result	Qualifier	Result	Qualifier	Result Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Volatile Organic Compounds (VOCs) (mg/kg)														
1,2,4-Trimethylbenzene	3.6	47	190	0.143	U	0.152	U	0.112 U	0.115	U	0.157	U	0.121	U
1,3,5-Trimethylbenzene	8.4	47	190	0.143	U	0.152	U	0.112 U	0.115	U	0.157	U	0.121	U
Acetone	0.05	100	500	0.143	U	0.152	U	0.112 U	0.115	U	0.157	U	0.121	U
n-Butylbenzene	12	100	500	0.143	U	0.152	U	0.112 U	0.115	U	0.157	U	0.121	U
Naphthalene	12	100	500	0.143	UJ	0.152	UJ	0.112 UJ	0.115	UJ	0.157	UJ	0.121	UJ
Tetrachloroethene	1.3	5.5	150	0.143	UJ	**0.17**	J	0.112 U	**0.121**		**0.0792**	J	0.121	U

Notes:

Only detected compounds shown: detections in bold

Blank results indicate parameter not analyzed; ND= not detected

Samples analyzed for: VOCs by USEPA Method 8260

ft bgs = feet below ground surface (or below slab)

mg/kg = milligrams per kilogram

Qualifier: U = not detected; J = estimated

QC Code: FS = field sample; FD = field duplicate

Regulatory criteria from NYCRR-Part 375 Soil Cleanup Objectives:

UNR = Unrestricted Use

RES = Residential Use

COM = Commercial Use

NL = not listed/no criteria

Table A.1: Soil VOC Results

				Location	DP-05		DP-06		DP-07		HA-01-10		HA-01-10		HA-01-12	
				Sample Depth (ft bgs)	16		5		5		2		2		2	
				Sample Date	12/18/2018		12/19/2018		1/7/2019		11/12/2019		11/12/2019		11/12/2019	
				Sample ID	360175-DP005016		360175-DP006005		360175-DP007005		360175-HA001-10002		360175-HA001-10002D		360175-HA001-12002	
				QC Code	FS		FS		FS		FS		FD		FS	
Parameter	**UNR**	**RES**	**COM**		Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Volatile Organic Compounds (VOCs) (mg/kg)																
1,2,4-Trimethylbenzene	3.6	47	190		0.106	U	0.104	U	0.248	U	0.121	U	0.111	U	**0.144**	
1,3,5-Trimethylbenzene	8.4	47	190		0.106	U	0.104	U	0.248	U	0.121	U	0.111	U	**0.114**	J
Acetone	0.05	100	500		0.106	U	0.104	U	0.248	U	0.121	UJ	0.111	UJ	**0.116**	J+
n-Butylbenzene	12	100	500		**0.0628**	J	0.104	U	0.248	U	0.121	U	0.111	U	0.118	U
Naphthalene	12	100	500		**0.0918**	J	0.104	UJ	0.248	U	0.121	U	0.111	U	0.118	U
Tetrachloroethene	1.3	5.5	150		0.106	U	0.104	U	0.248	U	0.121	U	0.111	U	**0.0817**	J

Notes:

Only detected compounds shown: detections in bold

Blank results indicate parameter not analyzed; ND= not detected

Samples analyzed for: VOCs by USEPA Method 8260

ft bgs = feet below ground surface (or below slab)

mg/kg = milligrams per kilogram

Qualifier: U = not detected; J = estimated

QC Code: FS = field sample; FD = field duplicate

Regulatory criteria from NYCRR-Part 375 Soil Cleanup Objectives:

UNR = Unrestricted Use

RES = Residential Use

COM = Commercial Use

NL = not listed/no criteria

Table A.2: Groundwater VOC Results

	Location	DP-01		DP-01		DP-02		DP-02		DP-03		DP-04		DP-04		DP-05	
	Sample Date	12/20/2018		12/20/2018		12/20/2018		11/12/2019		12/20/2018		12/19/2018		11/13/2019		12/19/2018	
	Sample ID	360175-GW001012		360175-GW001012D		360175-GW002012		360175-GW102008		360175-GW003013		360175-GW004015		360175-GW104010		360175-GW005015	
	Sample Depth (ft bgs)	12		12		12		08		13		15		10		15	
	QC Code	FS		FD		FS		FS		FS		FS		FS		FS	
Parameter	**Criteria**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Volatile Organic Compounds (VOCs)																	
Acetone	50*	5	U	**2.9**	J	5	U	5	U	**1.7**	J	5	U	5	U	**2.1**	J
Chloroform	7	**1.1**		**1.1**		1	U	1	U	**1.7**		1	U	1	U	1	U
cis-1,2-Dichloroethene	5	1	U	1	U	1	U	1	U	**6.4**		**1.8**		**1.8**		**2.1**	
Tetrachloroethene	5	**2.4**		**2.5**		1	U	1	U	**21.9**		**1.4**		**1.3**		**2.2**	
Trichloroethene	5	1	U	1	U	1	U	1	U	**6.2**		**1.7**		**1.3**		**1.4**	

Notes:

Results reported in micrograms per liter (µg/L)

Only detected compounds shown;

Samples analyzed by EPA Method SW8260B

ft bgs = feet below ground surface

QC Code: FS = Field Sample; FD = Field Sample

Qualifiers:

U = Not detected greater than the reporting limit

J = Estimated value

values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998).

* = Guidance Value

NL = Not Listed

Bold = Compound detected in sample

Highlighted results exceed criteria

Table A.2: Groundwater VOC Results

	Location	DP-05		DP-05		DP-06		DP-07		GW-01-10		GW-01-11		GW-01-12		GW-01-13	
	Sample Date	11/13/2019		11/13/2019		12/20/2018		1/7/2019		11/12/2019		11/12/2019		11/13/2019		11/12/2019	
	Sample ID	360175-GW105010		360175-GW105010 D		360175-GW006018		360175-GW007015		360175-GW001-10003		360175-GW001-11001		360175-GW001-12004		360175-GW001-13001	
	Sample Depth (ft bgs)	10		10		18		15		3		01		04		01	
	QC Code	FS		FD		FS		FS		FS		FS		FS		FS	
Parameter	**Criteria**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Volatile Organic Compounds (VOCs)																	
Acetone	50*	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Chloroform	7	1	U	1	U	**2.5**		1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	**1**		1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	5	**3**		**2.9**		1	U	1	UJ	1	U	1	U	**4.4**		1	U
Trichloroethene	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Notes:

Results reported in micrograms per liter (µg/L)

Only detected compounds shown;

Samples analyzed by EPA Method SW8260B

ft bgs = feet below ground surface

QC Code: FS = Field Sample; FD = Field Sample

Qualifiers:

U = Not detected greater than the reporting lim

J = Estimated value

values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998).

* = Guidance Value

NL = Not Listed

Bold = Compound detected in sample

Highlighted results exceed criteria

Table A.2: Groundwater VOC Results

	Location	GW-02E		GW-02-10		GW-02-11		GW-02-12		GW-02-13	
	Sample Date	2/27/2019		11/13/2019		11/13/2019		11/13/2019		11/13/2019	
	Sample ID	360175-GW002-E		360175-GW002-10003		360175-GW002-11003		360175-GW002-12003		360175-GW002-13002	
	Sample Depth (ft bgs)	1		03		03		03		02	
	QC Code	FS		FS		FS		FS		FS	
Parameter	**Criteria**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Volatile Organic Compounds (VOCs)											
Acetone	50*	5	U	5	U	5	U	5	U	5	U
Chloroform	7	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	5	1	U	**13.4**		1	U	1	U	1	U
Tetrachloroethene	5	**44.9**		**6.9**		**7.5**		**18.7**		**3.9**	
Trichloroethene	5	1	U	**15.9**		1	U	1	U	1	U

Notes:
Results reported in micrograms per liter (µg/L)
Only detected compounds shown;
Samples analyzed by EPA Method SW8260B
ft bgs = feet below ground surface
QC Code: FS = Field Sample; FD = Field Sample
Qualifiers:
U = Not detected greater than the reporting lim
J = Estimated value
values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998).
* = Guidance Value
NL = Not Listed
Bold = Compound detected in sample
Highlighted results exceed criteria

Table A.3: Emerging Contaminants in Groundwater

		Location Area	DP-01 On-Site		DP-01 On-Site		DP-03 On-Site		DP-04 Off-Site		DP-07 Background	
		Sample Date	12/20/2018		12/20/2018		12/20/2018		12/19/2018		1/7/2019	
		Sample ID	360175-GW001012		360175-GW001012D		360175-GW003013		360175-GW004015		360175-GW007015	
		Qc Code	FS		FD		FS		FS		FS	
Parameter	**EPA***	**MCL****	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Dioxane by USEPA Method 8270 SIM (ug/L)												
1,4-Dioxane	1	1	**0.099**	J	**0.083**	J	**0.12**	J	0.25	UJ	0.25	UJ
Per-and Poly-fluoroalkynated Substances (PFAS) by USEPA Modified Method 537 (ng/L)												
6:2 Fluorotelomer sulfonate (6:2 FTS)	NL	NL	2	U	2.1	U	2.2	U	2.4	U	1.7	U
8:2 Fluorotelomer sulfonate (8:2 FTS)	NL	NL	2	U	2.1	U	2.2	U	2.4	U	1.7	U
N-ethyl perfluorooctanesulfonamidoacetic acid (N EtFOSAA)	NL	NL	1.9	U	2	U	2.1	U	2.2	U	1.6	U
N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	NL	NL	3.2	U	3.3	U	3.4	U	3.7	U	2.7	U
Perfluorobutanesulfonic acid (PFBS)	NL	NL	**6.4**		**6.7**		**29**		**10**		**7.2**	
Perfluorobutanoic acid (PFBA)	NL	NL	**2**		**2.3**		**26**		**10**		**6.5**	
Perfluorodecanesulfonic acid (PFDS)	NL	NL	0.33	U	0.34	U	0.35	U	0.38	U	0.27	U
Perfluorodecanoic acid (PFDA)	NL	NL	**2.3**		**2.3**		**5.7**		**3**		0.27	U
Perfluorododecanoic acid (PFDoA)	NL	NL	0.56	U	0.58	U	0.59	U	0.65	U	0.47	U
Perfluoroheptanesulfonic acid (PFHpS)	NL	NL	**0.43**	J	**0.51**	J	**5.6**		**0.86**	J	**0.18**	J
Perfluoroheptanoic acid (PFHpA)	NL	NL	**2.8**		**2.9**		**43**		**10**		**5.6**	
Perfluorohexanesulfonic acid (PFHxS)	NL	NL	**2.8**		**2.7**		**28**		**5.5**		**4.7**	
Perfluorohexanoic acid (PFHxA)	NL	NL	**2.5**		**2.2**		**65**		**13**		**6.5**	
Perfluorononanoic acid (PFNA)	NL	NL	**15**		**15**		**42**		**15**		**0.54**	J
Perfluorooctanessulfonic acid (PFOS)	70*	10	**45**		**48**		**480**		**99**	J	**6.1**	
Perfluorooctanoic acid (PFOA)	70*	10	**11**		**11**		**95**		**28**		**18**	
Perfluoropentanoic acid (PFPeA)	NL	NL	**2**		**1.7**	J	**87**		**15**		**6.7**	
Perfluorotetradecanoic acid (PFTeDA)	NL	NL	0.3	U	0.3	U	0.31	U	**0.41**	J	0.25	U
Perfluorotridecanoic acid (PFTrDA)	NL	NL	1.3	U	1.4	U	1.4	U	1.5	U	1.1	U
Perfluoroundecanoic acid (PFUnDA)	NL	NL	1.1	U	1.2	U	1.2	U	1.3	U	0.94	U
Perfluroroctanesulfonamide (FOSA)	NL	NL	0.36	U	0.37	U	**2.1**	J	0.41	U	0.3	U

Notes:

ug/L = micrograms per liter

ng/L = nanograms per liter

Qualifier: U = not detected; J = estimated

QC Code: FS = field sample; FD = field duplicate

United States Environmental Protection Agency (EPA) Health Advisory Limit: for PFOS and PFOA, the limit of 70 ng/L is for the combined concentration.

MCL** = New York State Groundwater Quality Council proposed maximum contaminant level.

NL = not listed/no criteria

Table A.4: HAPSITE Results

				Analyte	Tetrachloroethene		Trichloroethene		
				Units	ug/m3		ug/m3		
Area	**Loc ID**	**Matrix**	**Date Sampled**	**QC Type**	Result	Qualifier	Result	Qualifier	**Comments**
49 Main Street Indoor Air	IA-02-01	IA	11/12/2019	FS	5.6		0.54	U	Basement
	IA-02-02	IA	11/12/2019	FS	4.4		0.54	U	Basement
	IA-02-03	IA	11/12/2019	FS	16		0.54	U	Basement
	IA-02-04	IA	11/12/2019 09:09	FS	26		0.54	U	Basement
	IA-02-04	IA	11/12/2019 16:26	FS	36		1		Basement
	IA-02-05	IA	11/12/2019	FS	13		0.54	U	Basement
	IA-02-06	IA	11/12/2019	FS	17		0.54	U	Basement
	IA-02-07	IA	11/12/2019	FS	25		0.66		Basement
	IA-02-07 DUP	IA	11/12/2019	FD	27		0.89		Basement
	IA-02-08	IA	11/12/2019	FS	33		0.78		Basement
	IA-02-09	IA	11/12/2019	FS	71		1.3		Basement
	IA-02-09	IA	11/13/2019	FS	72		1.2		Basement
	IA-02-10	IA	11/12/2019	FS	74		1.4		Basement
	IA-02-11	IA	11/12/2019	FS	49		1.1		First Floor
	IA-02-12	IA	11/12/2019	FS	42		0.97		Basement
	IA-02-13	IA	11/12/2019	FS	33		0.77		Basement
	IA-02-14	IA	11/12/2019	FS	43		0.94		Basement
	IA-02-15	IA	11/13/2019	FS	10		0.54	U	First Floor
	IA-02-16	IA	11/13/2019	FS	14		0.54	U	Second Floor
	IA-02-17	IA	11/13/2019	FS	11		0.54	U	Third Floor
49 Main Street Sub-Slab	SV-02-10	SS	11/13/2019	FS	225		512		
	SV-02-11	SS	11/13/2019	FS	582		220		
	SV-02-12	SS	11/13/2019	FS	576		58		
	SV-02-13	SS	11/13/2019	FS	1194		54	U	
49 Main Street Other Location	VP-02-01	VP	11/12/2019	FS	5783		537	U	Sample taken from flux chamber over crack in the floor in southern portion of the basement
	VP-02-02	VP	11/12/2019	FS	31649		575		Sample taken from flux chamber over floor drain along the western wall
	VP-02-03	VP	11/12/2019	FS	58		1.2		Sample collected at the base of the dumbwaiter shaft
	VP-02-04	VP	11/12/2019	FS	38		0.82		Sample collected at the top of the dumbwaiter shaft on the 3rd floor
	VP-02-05	VP	11/12/2019	FS	79		1.4		Sample taken inside 'coal chute' in the south wall
	VP-02-06	VP	11/12/2019	FS	19		5.4	U	sample taken from flux chamber along eastern wall next to chimney
	VP-02-07	VP	11/13/2019	FS	2.1		0.54	U	Sample taken inside crawl space under northern portion of the building
53 Main Street Indoor Air	IA-01-01	IA	11/11/2019	FS	8		0.54	U	Basement
	IA-01-02	IA	11/11/2019	FS	15		0.54	U	Basement
	IA-01-03	IA	11/11/2019	FS	10		0.54	U	Basement
	IA-01-04	IA	11/11/2019	FS	13		0.54	U	Basement
	IA-01-05	IA	11/11/2019	FS	10		0.54	U	Basement
	IA-01-06	IA	11/11/2019	FS	10		0.54	U	Basement
	IA-01-07	IA	11/11/2019	FS	6.1		0.54	U	Basement
	IA-01-08	IA	11/11/2019	FS	9		0.54	U	Basement
	IA-01-08 DUP	IA	11/11/2019	LD	9.3		0.54	U	Basement
	IA-01-09	IA	11/11/2019	FS	3.1		0.54	U	First Floor (north of top of stairs-center of building)
	IA-01-10	IA	11/11/2019	FS	2.4		0.54	U	First Floor (in storage rack area behind/north of front desk)
	IA-01-11	IA	11/13/2019	FS	8		0.54	U	First Floor (northeast corner behind washers)
53 Main Street Soil Vapor	SV-01-10	SS	11/12/2019	FS	511	J	54	U	
	SV-01-10 DUP	SS	11/12/2019	FD	252	J	54	U	
	SV-01-11	SS	11/12/2019	FS	7309		113		
	SV-01-12	SS	11/12/2019	FS	3227		305		
	SV-01-13	SS	11/12/2019	FS	263		54	U	
53 Main Street Other Location	VP-01-01	VP	11/11/2019	FS	0.73		0.54	U	Sample taken at exhaust of a vent blowing air into the basement from the south side of the building
	VP-01-02	VP	11/11/2019	FS	0.68	U	0.54	U	Sample taken inside 1" black tube connected to sewer
	VP-01-03	VP	11/11/2019	FS	22		0.54	U	Sample collected from air adjacent to rugs laying on the southeast corner of the basement
	VP-01-04	VP	11/11/2019	FS	1.7		0.54	U	Sample collected from air adjacent to rugs laying on the southeast corner of the basement
	VP-01-05	VP	11/11/2019	FS	15		0.54	U	Sample taken from inside hoses used to clean carpets
	VP-01-06	VP	11/11/2019	FS	16		0.54	U	Sample collected from air inside rugs laying on the southeast corner of the basement
	VP-01-07	VP	11/11/2019	FS	16		0.54	U	Sample collected from under flux chamber placed on the floor of the basement in the southeast corner
	VP-01-08	VP	11/11/2019	FS	4.4		0.54	U	Sample collected from under flux chamber placed on the1st floor behind washing machines in the northeast corner
	VP-01-09	VP	11/11/2019	FS	15		0.54	U	Sample collected from under flux chamber placed on the floor of the basement on the north end outside boiler room
63 Main Street	SV-03-10	SS	11/13/2019	FS	44		5.4	U	

Notes:
ug/m3 = micrograms per cubic meter
Matrix: IA = indoor air; SS = soil vapor; VP = potential pathway/source
QC Type: FS = Field Sample; FD = Field Duplicate
Qualifiery: U = not detected above reporting limit

MICROBAC®

Microbac Laboratories, Inc., Oak Ridge

CERTIFICATE OF ANALYSIS

Z9K0083

John Wood Group, Plc COmpany

Charles Staples
511 Congress Street, Ste. 200
Portland, ME 04101

Project Name: DHc Testing

Project / PO Number: N/A
Received: 11/14/2019
Reported: 11/21/2019

Analytical Testing Parameters

Client Sample ID: 360175-GW001-12004
Sample Matrix: Water
Lab Sample ID: Z9K0083-01

Location GW-01-12

Collection Date: 11/13/2019 8:10

Molecular - QPCR	Result	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
QPCR								
Dehalobacter spp. (DHb)	**<100**		gene copies/L	1		11/14/19 1109	11/21/19 1057	RWB
Dehalococcoides spp. (DHc)	**575000**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Trichloroethene Reductase (tceA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Vinyl Chloride Reductase (bvcA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Vinyl Chloride Reductase (vcrA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB

Client Sample ID: 360175-GW105010
Sample Matrix: Water
Lab Sample ID: Z9K0083-02

Location DP-05

Collection Date: 11/13/2019 14:41

Molecular - QPCR	Result	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
QPCR								
Dehalobacter spp. (DHb)	**80000**		gene copies/L	1		11/14/19 1109	11/21/19 1057	RWB
Dehalococcoides spp. (DHc)	**35000**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Trichloroethene Reductase (tceA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Vinyl Chloride Reductase (bvcA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Vinyl Chloride Reductase (vcrA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB

Notes from Irvington Site Characterization:
The presence of dehalococcoides (*DHC*) ≥ 10^4 cells/milliliter has been proposed as a screening criterion indicating high possibility of fully reductive dechlorination (See Microbial Insights DHC Interpretation Page included below). The three samples collected (from locations GW-01-12, DP-04, and DP-05) had populations ranging from 10^1 to 10^2 cells/milliliter, which are considered to have moderate potential for complete reductive dechlorination of TCE to ethene.

MICROBAC®

Microbac Laboratories, Inc., Oak Ridge

CERTIFICATE OF ANALYSIS

Z9K0083

Client Sample ID: 360175-GW104010
Sample Matrix: Water
Lab Sample ID: Z9K0083-03

Location DP-04

Collection Date: 11/13/2019 16:16

Molecular - QPCR	Result	RL	Units	Dilution	Note	Prepared	Analyzed	Analyst
QPCR								
Dehalobacter spp. (DHb)	**4000**		gene copies/L	1		11/14/19 1109	11/21/19 1057	RWB
Dehalococcoides spp. (DHc)	**206000**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Trichloroethene Reductase (tceA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Vinyl Chloride Reductase (bvcA)	**<100**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB
Vinyl Chloride Reductase (vcrA)	**2350**		gene copies/L	1		11/14/19 1109	11/19/19 1315	RWB

Definitions

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

Reviewed and Approved By:

Maraea Clark
Project Manager
Reported: 11/21/2019 15:12

MICROBAC®
MICROBAC LABORATORIES, INC
MICROBIOTEST DIVISION
800 Oak Ridge Turnpike, Suite A-702
Oak Ridge, TN 37830
PHONE: (865) 687-4887 FAX: (703) 925-9366

CHAIN OF CUSTODY

Page 1 of 1

Z9K0083-01 Sampled: 11/13/2019 08:10
John Wood Group, Plc Company

Project ID: 360118/228
Permit #:
If drinking water, State Reported?: ☐ Yes ☐ No

Report To: Chuck Staples
Address: 511 Congress St Suite 200
Portland, ME 04101
Phone: 207-775-5401 Fax
E-mail: charles.staples@woodplc.com

Invoice To: Same
Address:
P.O. #:
Quote #:

(1) Sample Matrix codes

AR = Air	OL = Oil	SW = Storm Water
DW = Dr. Water	PC = Paint Chip	WP = Wipe
FO = Food	SB = Swab	WW = Waste Water
FT = Filter	SD = Soil/Solid	FB = Field Blank
GW = Gr. Water	SL = Sludge	TB = Trip Blank

(2) Sample Type codes

G = Grab	C = Composite

Sample Identification	Sample Date	Sample Time	(1) Sample Matrix	(2) Sample Type	# of Containers	Dechlorinating Microbes
360175-GW001-12004	11/13/19	0810	GW	G		X
360175-GW105010	11/13/19	1441	GW	G		X
360175-GW104010	11/13/19	1616	GW	G		X

ANALYSIS REQUIRED
Please Mark Testing Required Below (X)

FOR LAB CHECK-IN ONLY
Temp Rec'd: 0.5 °C
Prop. Preserved: ___ Y ___ N
Customer #:
Project: Product Analysis
Proj. Mgr:

Special instructions / notes:
call 860-204-1937 w/ questions.

Samples collected by [please print]:
Amberlee Clark
Alex Howe

PRIORITY (addl. fee)
☐ Same Day (+200%)
☐ Next Day (+100%)
☐ 2 Day (+50%)
☐ 3 Day (+25%)
☐ 4 Day (+10%)

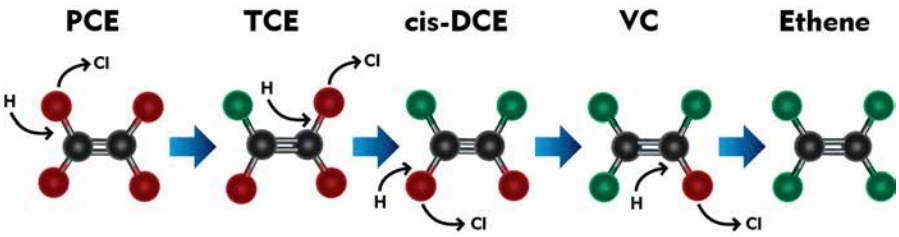
All rush priority orders require prior approval.

	Relinquished By:	Date:	Time:	Received By:
1		11/13/19	1700	
2	FedEx	11-14-19	1000	MNC
3				

DHC Interpretation

Dehalococcoides 16S rRNA gene (qDHC)

Under anaerobic conditions, tetrachloroethene (PCE) and trichloroethene (TCE) can undergo sequential reductive dechlorination through the daughter products *cis*-dichloroethene (*cis*-DCE) and vinyl chloride to nontoxic ethene (1,2).



While a number of bacterial cultures capable of utilizing PCE and TCE as growth supporting electron acceptors have been isolated (3-7), *Dehalococcoides* spp. may be the most important because they are the only bacterial group that has been isolated to date which is capable of complete reductive dechlorination of PCE to ethene (8). In fact, the presence of *Dehalococcoides* spp. has been associated with complete dechlorination to ethene at sites across North America and Europe (9).

Status	*Dehalococcoides spp.*	Observation
	≥ 10^4 (cells/mL)	Lu et al. proposed that a concentration of 1 x 10^4 DHC cells/mL could be used as a screening criterion to identify sites where reductive dechlorination will yield a generally useful biodegradation rate (10). Similarly, in an internal study conducted with nearly 1000 groundwater samples obtained from sites across the US, ethene production was observed in approximately 80% of samples in which CENSUS® qDHC results were greater than or equal to 10^4 DHC cells/mL.
	10^1 to < 10^4 (cells/mL)	When vinyl chloride reductase genes (See DHC functional genes discussion below) are also detected, complete reductive dechlorination of PCE and TCE to ethene may still occur even with moderate DHC concentrations. When the DHC population is below the 10^4 cells/mL criterion proposed by Lu et al. (10), project managers should carefully consider other site-specific data to determine whether subsurface conditions may be limiting reductive dechlorination. For example, the addition of an electron donor may be able to stimulate DHC growth and enhance anaerobic bioremediation.
	< 10^1 (cells/mL)	DHC concentrations are low suggesting that complete reductive dechlorination of PCE and TCE to ethene is unlikely to occur under existing conditions. Enhanced anaerobic bioremediation options (biostimulation or bioaugmentation) may need to be considered.

10515 Research Drive
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

DHC Functional Genes (*tce*A, *bvc*A, *vcr*A)

A "stall" where daughter products *cis*-DCE and vinyl chloride accumulate can occur at PCE- and TCE-impacted sites especially under MNA conditions. The accumulation of vinyl chloride, generally considered more carcinogenic than the parent compounds, is particularly problematic. Although elevated *Dehalococcoides* concentrations correspond to ethene production in numerous studies, the range of chlorinated ethenes metabolized and cometabolized varies among species and strains within the *Dehalococcoides* genus. For example, *Dehalococcoides ethenogenes* str. 195 metabolizes PCE, TCE, and *cis*-DCE and cometabolizes vinyl chloride (8) to produce ethene. Conversely, *Dehalococcoides* sp. CBDB1 utilizes PCE and TCE but does not cometabolize additional chloroethenes (11). Other *Dehalococcoides* strains, such as BAV1, GT and VS, are known to fully dechlorinate cis-DCE and VC to ethene (14,16,19). Quantification of reductive dehalogenase genes is used to more definitively confirm the potential for reductive dechlorination of TCE, cis-DCE, and vinyl chloride (12-15).

Functional Gene	Observation
TCE Reductase	
***tce*A gene**	The *tce*A gene encodes the enzyme responsible for reductive dechlorination of TCE to *cis*-DCE in some strains of *Dehalococcoides*. Absence of *tce*A does not preclude the potential for reductive dechlorination of TCE in the field since the *tce*A gene is not universally distributed among all DHC and is not present in other microorganisms capable of reductive dechlorination of TCE (e.g. *Dehalobacter*). Detection of the *tce*A gene provides an additional line of evidence indicating the potential for dechlorination of TCE.
Vinyl Chloride Reductase	
***bvc*A gene**	The *bvc*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of vinyl chloride to ethene by *Dehalococcoides* sp. str. BAV1 (16). Presence of *bvc*A gene indicates the potential for reductive dechlorination of VC to ethene. Absence of both *bvc*A and *vcr*A genes suggests VC may accumulate. An internal study with ~1,000 samples showed ethene production was observed in 80% of the samples that the DHC population was greater than or equal to 10^4 cells/mL. The *bvc*A gene was detected in over 50% of these samples. Van Der Zaan et al (17) noted that the bvcA gene was the only VC reductase gene detected at three of their sites. Alfred Spormann's laboratory at Stanford University (18) reported that the *bvc*A gene was the most abundant and active at the outflow of a PCE fed column study. This section of the column was in the DCE to VC stages of reductive dechlorination thus confirming the importance of the *bvc*A gene for complete reductive dechlorination.
***vcr*A gene**	The *vcr*A gene encodes the vinyl chloride reductase enzyme responsible for reductive dechlorination of *cis*-DCE and vinyl chloride by *Dehalococcoides* sp. strain VS (14). Presence of *vcr*A gene indicates the potential for reductive dechlorination of DCE and/or VC to ethene. Absence of both *bvc*A and *vcr*A genes suggest VC may accumulate. As with the *bvc*A gene, detection of the *vcr*A gene is associated with ethene production in internal studies (67%) and vinyl chloride reduction in independent studies (14, 17).

10515 Research Drive
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

Reporting

Microbial Insights can provide a variety of data packages and reporting levels to suit the needs of any project. Data packages range from simple analytical reports with results only to more complex data packages that include a report narrative, analytical results, QC data, and supporting materials including all raw data and chain-of-custody documentation. The figure below shows our standard report and explains the way values are reported.

Microbial Insights, Inc.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: Company Name
Project: Your Project Name

MI Project Number: Unique Laboratory Identifier
Date Received: Date Samples Arrived

Sample Information

Client Sample ID:		Sample A	Sample B	Sample C
Sample Date:		00/00/0000	00/00/0000	00/00/0000
Units:		cells/mL	cells/mL	cells/mL
Analyst:		Intials	Intials	Intials
Dechlorinating Bacteria				
Dehalococcoides spp.	DHC	**1.84E+05**	**2.76E+02**	**2.28E+01 (J)**
Functional Genes				
tceA Reductase	TCE	**6.00E+01**	**3.23E+01**	<4.00E-01
bvcA Reductase	BVC	**1.17E+04**	**1.81E+01**	<4.00E-01
vcrA Reducatase	VCR	**8.42E+04**	**1.74E+02**	<4.00E-01

"J" value
Result is an estimated value. This data qualifier (flag) is used when the target gene is detected but at a concentration or abundance below the practical quantification limit (PQL).

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

< value
The target gene was not detected at the limit of quantitation (LOQ) reported for that sample.

"I" value
QA Procedure indicated that the sample may have exhibited PCR inhibition. Although relatively rare, PCR inhibition can occur due to the presence of metals or humic acids at high concentrations in the sample.

10515 Research Drive
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

Quality Assurance

Microbial Insights' comprehensive Quality Assurance (QA) Program is the foundation of all laboratory analyses, ensuring that our clients receive high-quality analytical services that are timely, reliable, and meet their intended purpose in a cost effective manner. MI is committed to providing quality data that surpasses regulatory and industry standards, thus enabling the client to make well-informed decisions. MI maintains strict standard operating procedures and QA/QC measures throughout all of the analyses offered. The following Table details specific QA/QC procedures that are used for CENSUS.

QA/QC	Description
Date of Extraction	DNA and RNA extractions are performed the day the samples are received by MI to minimize the possibility of any changes to the microbial community prior to analysis.
Laboratory Method Blanks	An extraction blank (no sample added) is processed alongside each set of field samples from DNA extraction through CENSUS® analysis to ensure that cross contamination has not occurred. Although MI has never experienced this issue, the detection of the CENSUS® target (e.g. *Dehalococcoides*) in an extraction blank is direct evidence of cross contamination with a sample or contamination of a reagent and would invalidate the results. If this were to occur, MI would re-extract the sample. If not possible to re-extract, MI would contact the client immediately and notate it on the laboratory report.
Laboratory Control Samples (LCS)	A laboratory control sample (LCS) or positive control (target DNA) is included with each CENSUS® plate to confirm amplification and as a continuing calibration check.
Negative Controls	A negative control (no DNA) is included with each CENSUS plate to ensure that cross contamination has not occurred during amplification. As with the extraction blank, detection of CENSUS target (e.g. DHC) in a negative control is direct evidence of contamination and would invalidate the results. If this were to occur, MI would rerun the analysis.

References

1. Freedman, D. L. and J. M. Gossett. 1989. Biological reductive dechlorination of tetrachloroethylene and trichloroethylene to ethylene under methanogenic conditions. Applied and Environmental Microbiology 55(9): 2144-2151.

2. DiStefano, T. D., J.M. Gossett, and S.H. Zinder. 1991. Reductive dechlorination of high concentrations of tetrachlorethene to ethene by an anaerobic enrichment culture in the absence of methanogenesis. Applied and Environmental Microbiology 57(8): 2287-2292.

3. Gerritse, J., V. Renard, T. M. Pedro Gomes, P. A. Lawson, M. D. Collins, and J. C. Gottschal. 1996. *Desulfitobacterium* sp. Strain PCE1, an anaerobic bacterium that can grow by reductive dechlorination of tetrachloroethene or ortho-chlorinated phenols. Archives of Microbiology 165(2): 132-140.

4. Gerritse, J., O. Drzyzga, G. Kloetstra, M. Keijmel, L. P. Wiersum, R. Hutson, M. D. Collins, and J. C. Gottschal. 1999. Influence of different electron donors and acceptors on dehalorespiration of tetrachloroethene by *Desulfitobacterium frappieri* TCE1. Applied and Environmental Microbiology 65(12): 5212-5221.

5. Holliger, C., G. Schraa, A.J.M. Stams, and A.J.B. Zehnder. 1993. A highly purified enrichment culture couples the reductive dechlorination of tetrachloroethene to growth. Applied and Environmental Microbiology 59 (9): 2991-2997.

6. Krumholz, L. R., R. Sharp, and S. S. Fishbain. 1996. A freshwater anaerobe coupling acetate oxidation to tetrachloroethylene dehalogenation. Applied and Environmental Microbiology 62(11): 4108-4113.

7. Löffler, F.E., R.A. Sanford, and J.M. Tiedje. 1996. Initial characterization of a reductive dehalogenase from *Desulfitobacterium chlororespirans* Co23. Applied and Environmental Microbiology 62(10): 3809–3813.

10515 Research Drive
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

8. Maymó-Gatell, X., T. Anguish, and S.H. Zinder. 1999. Reductive dechlorination of chlorinated ethenes and 1,2-dichloroethane by *Dehalococcoides ethenogenes* 195. Applied and Environmental Microbiology 65(7): 3108–3113.

9. Hendrickson, E.R., J. Payne, R.M. Young, M.G. Starr, M.P. Perry, S. Fahnestock, D.E. Ellis, and R.C. Eversole. 2002. Molecular analysis of *Dehalococcoides* 16S ribosomal DNA from chloroethene-contaminated sites throughout North America and Europe. Applied and Environmental Microbiology 68(2): 485-495.

10. Lu, X., J.T. Wilson, and D.H. Kampbell. 2006. Relationship between *Dehalococcoides* DNA in ground water and rates of reductive dechlorination at field scale. Water Research 40:3131-3140.

11. Adrian, L, U. Szewzyk, J. Wecke, and H. Görisch. 2000. Bacterial dehalorespiration with chlorinated benzenes. Nature 408(6812): 580-583.

12. Holmes, V.F., J. He, P.K.H. Lee, and L. Alvarez-Cohen. 2006. Discrimination of multiple *Dehalococcoides* strains in a trichlorethene enrichment by quantification of their reductive dehalogenase genes. Applied and Environmental Microbiology 72(9): 5877-5883.

13. Lee, P.K.H., D.R. Johnson, V.F. Holmes, J. He, and L. Alvarez-Cohen. 2006. Reductive dehalogenase gene expression as a biomarker for physiological activity of *Dehalococcoides* spp. Applied and Environmental Microbiology 72(9): 6161-6168.

14. Müller, J.A., B.M. Rosner, G. von Avendroth, G. Meshulam-Simon, P.L. McCarty, and A.M. Spormann. 2004. Molecular identification of the catabolic vinyl chloride reductase from *Dehalococcoides* sp. strain VS and its environmental distribution. Applied and Environmental Microbiology 70(8): 4880-4888.

15. Ritalahti, K.M., B.K. Amos, Y. Sung, Q. Wu, S.S. Koenigsberg, and F.E. Löffler. 2006. Quantitative PCR targeting 16S rRNA and reductive dehalogenase genes simultaneously monitors multiple *Dehalococcoides* strains. Applied and Environmental Microbiology 72(4): 2765-2774.

16. Krajmalnik-Brown, R., T. Hölscher, I. N. Thomson, F. M. Saunders, K. M. Ritalahti, and F. E. Löffler. 2004. Genetic identification of a putative vinyl chloride reductase in *Dehalococcoides* sp. strain BAV1. Applied and Environmental Microbiology 70:6347–6351.

17. van der Zaan, B., F. Hannes, N. Hoekstra, H. Rijnaarts, W.M. de Vos, H. Smidt, and J. Gerritse. 2010. Correlation of *Dehalococcoides* 16S rRNA and chlorethene-reductive dehalogenase genes with geochemical conditions in chloroethene-contaminated groundwater. Applied and Environmental Microbiology 76(3):843-850.

18. Behrens, S., M.F., Azizian, P.J. McMurdie, A. Sabalowsky, M.E. Dolan, L. Semprini, and A.M. Spormann. 2008. Monitoring abundance and expression of *Dehalococcoides* species chloroethene-reductive dehalogenases in a tetrachloroethene-dechlorinating flow column. Applied and Environmental Microbiology 74(18):5695-5703.

19. Sung, Y., K. M. Ritalahti, R. P. Apkarian, and F. E. Löffler. 2006. Quantitative PCR confirms purity of strain GT, a novel trichloroethene (TCE)-to-ethene respiring Dehalococcoides isolate. Appl. Environ. Microbiol. 72:1980-1987

10515 Research Drive
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

Natural Attenuation Screening Protocol

The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.

Interpretation	Score
Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5
Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14
Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20
Strong evidence for anaerobic biodegradation* of chlorinated organics	>20

DP-04
Score: 10

Scroll to End of Table

* reductive dechlorination

Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
Oxygen*	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	○	◉	0
	> 5mg/L	Not tolerated; however, VC may be oxidized aerobically	○	◉	0
Nitrate*	<1 mg/L	At higher concentrations may compete with reductive pathway	○	◉	0
Iron II*	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	◉	○	3
Sulfate*	<20 mg/L	At higher concentrations may compete with reductive pathway	○	◉	0
Sulfide*	>1 mg/L	Reductive pathway possible	○	◉	0
Methane*	>0.5 mg/L	Ultimate reductive daughter product, VC Accumulates	○	◉	0
Oxidation Reduction Potential* (ORP)	<50 millivolts (mV)	Reductive pathway possible	◉	○	1
	<-100mV	Reductive pathway likely	○	◉	0
pH*	5 < pH < 9	Optimal range for reductive pathway	◉	○	0
TOC	>20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	◉	○	2
Temperature*	>20°C	At T >20°C biochemical process is accelerated	○	◉	0
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	○	◉	0
Alkalinity	>2x background	Results from interaction of carbon dioxide with aquifer minerals	○	◉	0
Chloride*	>2x background	Daughter product of organic chlorine	○	◉	0
Hydrogen	>1 nM	Reductive pathway possible, VC may accumulate	○	◉	0
Volatile Fatty Acids	>0.1 mg/L	Intermediates resulting from biodegradation of aromatic compounds; carbon and energy source	○	◉	0
BTEX*	>0.1 mg/L	Carbon and energy source; drives dechlorination	○	◉	0
PCE*		Material released	◉	○	0
TCE*		Daughter product of PCE a/	◉	○	2
DCE*		Daughter product of TCE. If cis is greater than 80% of total DCE it is likely a daughter product of TCE a/; 1,1-DCE can be a chem. reaction product of TCA	◉	○	2
VC*		Daughter product of DCE a/	○	◉	0
1,1,1-Trichloroethane*		Material released	○	◉	0
DCA		Daughter product of TCA under reducing conditions	○	◉	0
Carbon Tetrachloride		Material released	○	◉	0
Chloroethane*		Daughter product of DCA or VC under reducing conditions	○	◉	0
Ethene/Ethane	>0.01 mg/L	Daughter product of VC/ethene	○	◉	0
	>0.1 mg/L	Daughter product of VC/ethene	○	◉	0
Chloroform		Daughter product of Carbon Tetrachloride	○	◉	0
Dichloromethane		Daughter product of Chloroform	○	◉	0

* required analysis.
a/ Points awarded only if it can be shown that the compound is a daughter product (i.e., not a constituent of the source NAPL).

SCORE

Reset

End of Form

Natural Attenuation Screening Protocol

The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.

Interpretation	Score
Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5
Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14
Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20
Strong evidence for anaerobic biodegradation* of chlorinated organics	>20

DP-05
Score: 10

Scroll to End of Table

* reductive dechlorination

Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
Oxygen*	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	○	◉	0
	> 5mg/L	Not tolerated; however, VC may be oxidized aerobically	○	◉	0
Nitrate*	<1 mg/L	At higher concentrations may compete with reductive pathway	○	◉	0
Iron II*	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	◉	○	3
Sulfate*	<20 mg/L	At higher concentrations may compete with reductive pathway	○	◉	0
Sulfide*	>1 mg/L	Reductive pathway possible	○	◉	0
Methane*	>0.5 mg/L	Ultimate reductive daughter product, VC Accumulates	○	◉	0
Oxidation Reduction Potential* (ORP)	<50 millivolts (mV)	Reductive pathway possible	◉	○	1
	<-100mV	Reductive pathway likely	○	◉	0
pH*	5 < pH < 9	Optimal range for reductive pathway	◉	○	0
TOC	>20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	◉	○	2
Temperature*	>20°C	At T >20°C biochemical process is accelerated	○	◉	0
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	○	◉	0
Alkalinity	>2x background	Results from interaction of carbon dioxide with aquifer minerals	○	◉	0
Chloride*	>2x background	Daughter product of organic chlorine	○	◉	0
Hydrogen	>1 nM	Reductive pathway possible, VC may accumulate	○	◉	0
Volatile Fatty Acids	>0.1 mg/L	Intermediates resulting from biodegradation of aromatic compounds; carbon and energy source	○	◉	0
BTEX*	>0.1 mg/L	Carbon and energy source; drives dechlorination	○	◉	0
PCE*		Material released	◉	○	0
TCE*		Daughter product of PCE [a/]	◉	○	2
DCE*		Daughter product of TCE. If cis is greater than 80% of total DCE it is likely a daughter product of TCE[a/]; 1,1-DCE can be a chem. reaction product of TCA	◉	○	2
VC*		Daughter product of DCE[a/]	○	◉	0
1,1,1-Trichloroethane*		Material released	○	◉	0
DCA		Daughter product of TCA under reducing conditions	○	◉	0
Carbon Tetrachloride		Material released	○	◉	0
Chloroethane*		Daughter product of DCA or VC under reducing conditions	○	◉	0
Ethene/Ethane	>0.01 mg/L	Daughter product of VC/ethene	○	◉	0
	>0.1 mg/L	Daughter product of VC/ethene	○	◉	0
Chloroform		Daughter product of Carbon Tetrachloride	○	◉	0
Dichloromethane		Daughter product of Chloroform	○	◉	0

* required analysis.
a/ Points awarded only if it can be shown that the compound is a daughter product (i.e., not a constituent of the source NAPL).

SCORE

Reset

End of Form

APPENDIX B

WASTE DISPOSAL DOCUMENTATION

EWMI RAPID RESPONSE

Sales Order: 57791
CRM#: 117196

Customer: Irvington Rugs and Cleaners
Contact:
Phone: **E-Mail:**
Job Site: Irvington Rugs and Cleaners
53 Main Street
Irvington, NY 10533
CSR: LM

Site Notes: ~~Do you need a lift gate? ?~~ drum cart
~~Do you need a pallet jack? ?~~
~~What are the loading dock hours? ?~~
On site at 8am

Job Notes: Henl 347- ~~846 8546~~ 216 5559

Names	Code	Start	O.S. Start	O.S. Finish	Finish	Total Hours
Brandon M.		6:00	8:30	9:30	4:30	3.5hrs

QTY	Materials/Consumables
1	PPE Level -(Circle One) Mod-D D C B
	PPE Level -(Circle One) Mod-D D C B

Disposal Facility / Manifest #	Count
CL/ 0350806	02
CL/ 0350305	01

Equipment	QTY
T-134	1
Drum Cart	1
Tool Box	1

Line	Profile	Description	Container Qty	Type	Size
1	212984	PFAS IMPACTED GROUNDWATER	✓ 2	DM	55
2	212984	IDW SOIL	✓ 1	DM	55

Notes:
- Drove to site
- Spoke with contact and located waste
- Marked and labeled all pieces
- Loaded truck with waste
- Tightened all rings
- Filled out paper work and acquired signatures
- Left site

THE UNDERSIGNED AGREES THAT ALL THE ABOVE SERVICE INFORMATION IS CORRECT
CUSTOMER SIGNATURE _____ PRINTED NAME Henl M Benny DATE 11/11/22

Straight Bill of Lading

Please type or print

EWMI RAPID RESPONSE INC.

1. Generator EPA ID# (if applicable)	2. Page 1 of	3. Emergency Response Number	4. Document Tracking Number
NYD982537607	1	Rapid Response Inc. 888-788-3562	EWMI D360805

Generator

5. Generator Name and Mailing Address

Irvington Rugs and Cleaners
53 Main Street
Irvington, NY 10533

Generator Phone 518-402-9662

Generator's Site Address (if different)

6. Transporter 1. Company Name: Environmental Waste Minimization, Inc.
US EPA ID Number (if applicable): PAR000501577

7. Transporter 2. Company Name
US EPA ID Number (if applicable)

8. Facility Name and Mailing Address

Cycle Chem, Inc.
550 Industrial Drive
Lewisberry, PA 17339

717-938-4700

Facility Phone

US EPA ID Number (if applicable): PAD067098822

9a HM	9b Material Description (Proper shipping name required if DOT Hazardous Material)	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit (Wt/Vol)	13. Waste Code
	1. Non-Hazardous Solids (Soil) DOT/RCRA Non-Regulated	001	DM	00150	P	
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1.) Approval #: 212984 ; ERG # IDW SOIL (1 x 55gal)

Job Number 117104

T-134

16. Generator/Offeror's Certification: I hereby declare that the contents of this document are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded and are in all respects in proper condition for transport according to applicable national governmental regulations.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	11	11	22

Transporter

17. Transporter 1. Acknowledgment of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Brandon Mohammed	[signature]	11	11	22

18. Transporter 2. Acknowledgment of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

Facility

19. Discrepancy (to be competed by Designated Facility)

20. Designated Facility: Certification of receipt of the materials covered by this shipping paper accepted as noted in item 18.

Printed/Typed Name	Signature	Month	Day	Year

Straight Bill of Lading

Please type or print

1. Generator EPA ID# (if applicable)	2. Page 1 of	3. Emergency Response Number	4. Document Tracking Number
NYD982537607	1	Rapid Response Inc. 888-788-4567	D350806

5. Generator Name and Mailing Address

Irvington Rugs and Cleaners
93 Main Street
Irvington, NY 10533

Generator Phone 518-402-9662

Generator's Site Address (if different)

6. Transporter 1. Company Name Environmental Waste Minimization, Inc.

US EPA ID Number (if applicable) PAR000501577

7. Transporter 2. Company Name

US EPA ID Number (if applicable)

8. Facility Name and Mailing Address

Cycle Chem, Inc.
217 South First St.
Elizabeth, NJ 07206

908-355-5800

Facility Phone

US EPA ID Number (if applicable) NJD002200046

Generator

9a HM	9b Material Description (Proper shipping name required if DOT Hazardous Material)	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit (Wt/Vol)	13. Waste Code
	1. Non-Hazardous Liquids (Groundwater) DOT/RCRA Non Regulated	002	DM	00300	P	
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1.) Approval #: 212984 ; ERG # PFAS IMPACTED GROUNDWATER (2x55gal)

Job Number 117106

T-139

16. Generator/Offeror's Certification: I hereby declare that the contents of this document are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded and are in all respects in proper condition for transport according to applicable national governmental regulations.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[signature]	11	11	22

Transporter

17. Transporter 1. Acknowledgment of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Boubou Mohammed	[signature]	11	11	22

18. Transporter 2. Acknowledgment of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

Facility

19. Discrepancy (to be competed by Designated Facility)

20. Designated Facility: Certification of receipt of the materials covered by this shipping paper accepted as noted in item 18.

Printed/Typed Name	Signature	Month	Day	Year

APPENDIX C

SURVEY DELIVERABLES

LAWSON SURVEYING & MAPPING

Robert J. Lawson, LS, Principal
New York State License No. 050086

W.O. 7265 SOIL VAPOR POINTS 55 MAIN STREET IRVINGTON, NY.
SURVEY DATE: MARCH 24, 2022. HORIZONTAL DATUM: NEW YORK SPCS EAST ZONE FEET.
VERTICAL DATUM: NAVD 88 FEET.

POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
200	804139.9539	665857.7050	82.20	GV-016 GROUND
201	804114.5726	665854.7525	81.72	DP-016 GROUND
			82.99	TOP CASING
202	804249.2866	665874.9162	83.24	DP-010 GROUND
203	804252.8755	665875.2874	83.34	GV-010 GROUND
204	804303.1584	665884.3637	84.07	DP-009 GROUND
			84.69	TOP CASING
205	804202.1280	665729.3762	72.41	DP-015 TOP GRATE
206	804204.3684	665730.1011	72.28	GV-015 TOP GRATE
207	804073.2720	665589.1078	68.81	DP-014 GROUND
208	804310.1746	665665.6871	69.32	GV-012 GROUND
209	804313.1803	665667.4532	69.53	DP-012 GROUND
			69.34	TOP CASING
210	804381.0031	665678.0860	73.03	GV-011 GROUND
211	804385.9716	665679.4949	73.23	DP-011 GROUND
			75.39	TOP CASING
212	804336.8010	665878.5680	84.67	GV-009 GROUND
213	804327.4484	665948.5455	86.54	GV-008 GROUND
214	804325.7675	665951.4447	86.67	DP-008 GROUND
215	804074.5272	665846.1984	81.48	GV-017 GROUND
216	804073.4326	665845.8864	81.45	DP-017 GROUND
			82.00	TOP CASING

Company: Lawson Surveying and Mapping

Surveyor Signature/Seal

Robert J. Lawson, L.S. NY#50086

April 14, 2022

PO Box 1098, 5546 State Highway 7, Suite 1, Oneonta, New York 13820
Phone: 607-432-3300 Fax: 607-432-8313
EMAIL: INFO@LAWSONSURVEY.COM
WEBSITE: WWW.LAWSONSURVEY.COM

APPENDIX D
FIELD DATA RECORDS

APPENDIX D
FIELD DATA RECORDS

D.1 49 MAIN STREET FIELD REPORT

D.2 BEDROCK WELL INSTALLTION

D.3 GROUNDWATER SAMPLING

D.3.1 MARCH 2022

D.3.2 MAY 2022

D.3.3 JUNE 2022

D.3.4 MARCH 2024

D.4 SOIL SAMPLING

D.4.1 SEPTEMBER 2022

D.4.2 OCTOBER 2023

D.5 EXTERIOR SOIL VAPOR SAMPLING

D.1

49 MAIN STREET FIELD REPORT

Daily Field Activities Summary
NYSDEC-Irvington Rugs and Cleaners
53 Main St,
Irvington, NY

1/12/22

8:06 a.m. (Michael Ladny) MACTEC Engineering and Geology (MACTEC) on-sight. MACTEC called Andrew, building maintenance manager, to let him know MACTEC was on-sight and how to access basement.

> Blood Hound (GPR/Utilities Mark-out)-Bill Moskal from Blood Hound was on-sight at 7:45 a.m. to conduct GPR in basement around 2'x2' brick sump. MACTEC conducted tailgate/scope of work(SOW)/health and safety (H&S) with Blood Hound. Blood Hound conducted floor scan. He did find an unknown anomaly that was 7' east of the sum but it seemed to be in-line with the sump (Photo #1). The unknown anomaly was roughly 2' in length. Blood Hound had no other finding under the basement slab. Blood Hound then connected power to the 3" cast iron pipe that is in the bottom of sump. He was able to trace the 3" pipe outside of building on N. Dutcher St. He was able to trace it from the outside of the building, across the sidewalk and onto N. Dutcher St (Photo #2, #3). The signal was lost on the other side of the N. Dutcher St. Blood Hound was off-site 10:30 a.m.

9:00 a.m. MACTEC (Mike) met with Steve Taylor for Radon Mitigation Corporation of America (RMCA), to conduct a walkthrough of the building to obtain a quote from RMCA to install a sub-slab depressurization system (SSDS) in basement. Steve suggested that they would put the blower outside in the northern corner of building and run exhaust pipe along back of building, extending past the roof line. There is a dumb waiter in middle of building, but it doesn't extend to roof, it stops at third floor. MACTEC also asked RMCA to include a price to remove concrete depression, back fill, and re-pour slab to match grade in boiler room.

MACTEC Collected water sample out of the 3" iron pipe in sump. The water was clear, no odor or sheen. MACTEC collected a water sample at a low flow rate; all new tubing was used. Tubing was inserted into pipe roughly 5". (Photo #4 & #5)

Sample ID- 360175-GW002-14

Sample Time- 10:30 a.m.

Aztech/Labella

Frank and Lewis, Aztech, were on-site @ 9:00 a.m. MACTEC conducted Tailgate/SOW/H&S meeting. After MACTEC collected water sample out of the 3" iron pipe, Aztech/Labella vacuumed out 2'x2' sump, exposing a brick bottom to the sump. They next vacuumed out the 3" iron pipe, they were able to remove all water from pipe, instantly there was a sewer/septic smell coming from pipe. This told us that the pipe is connected to a sewer/septic line and that it is not clogged. The sump constantly fills with ground water. When trying to snake the line, the snake went down then up, indicating a trap. The snake couldn't get passed the trap. There is a clean-out on top of the trap in sump, but it is rusted shut and unable to open. (Photo #6, #7)

MACTEC was able to collect a soil sample directly under the brick sump. MACTEC was able to remove a brick at bottom of sump and using a clean hand auger and collect a 0"-8" soil sample. Ground water was constantly running into sump and draining into 3" pipe. MACTEC was unable to collect a sample at the 2' interval due to encountering rocks and gravel with hand auger(refusal).

Sample ID- 360175-HA001001, 360175-HA001001D, 360175-HA001001MS, 360175-HA001001MD

Sample Time- 11:00 a.m.

Soil Lithology- Wet, med brown fine to coarse sand and silt with cobbles, pebbles.

PID- 1510 part per billion (ppb)

Aztech/Labella removed debris in concrete depression, shoveled out sediment and then vacuumed out water. Ground water immediately filled back in the depression through the cracks. They scrubbed and vac-out the depression again to remove as much sediment as possible. (Photo #8)

MACTEC then collected a ground water sample out of the concrete depression. The water was clear, no odor or sheen. MACTEC used low flow method to collect a water sample, all new tubing was used.

Sample ID- 360175-GW002-13

Sample Time- 12:00 p.m.

Depression Measurements

Top of slope 8'x 12'6"

Bottom of slope 6'x10'

Aztech/Labella cored the basement slab in two locations. Location 1 - was 2' North and 2' East of the unknown anomaly, roughly 12' East of the brick sump. Location 2 -was roughly 18' East of the sump. Directly between the concrete depression and the brick sump. Location 2 is roughly 2' off the opposite foundation wall, before concrete step. Both locations are in the same concrete slab as the brick sump.

Location 1- Core thickness 7.5" (1 ½" of concrete then 3" gravel layer then 3" of concrete) (Photo #9)

After coring location 1, ground water was 1" below bottom of slab (Photo #10). After 30 Minute ground water was 5" below grade (Photo #11). MACTEC collected both a sub-slab soil and ground water sample.

The ground water that was sampled out of the core hole (location 1) was clear, no odor or sheen. MACTEC collected a water sample at a low flow rate; all new tubing was used.

Sample ID- 360175-GW002-15

Sample Time- 15:45 p.m.

The soil sample was taken by a clean hand auger directly below the concrete slab.

Sample ID- 360175-HA002001

Sample Time- 14:40 p.m.

Soil Lithology- Wet, med brown fine to coarse sand and silt with cobbles, pebbles.

PID- 1549ppb

Location 2- Core thickness 7.5" (1 ½" of concrete then 3" gravel layer then 3" of concrete) (Photo #12)

After coring location 2, ground water was at bottom of slab (Photo #13). MACTEC noticed a heating oil-like odor as well as a yellowish substance on top of ground water in the core hole. The head space in the core hole was 34.68 ppm. (Photo #13, #14) MACTEC collected both a sub-slab soil and ground water sample from core location.

The ground water that was sampled out of the core hole (location 2) had a yellowish substance on top of the ground water, it had a heating oil-like odor. MACTEC collected a water sample at a low flow rate; all new tubing was used.

Sample ID- 360175-GW002-16

Sample Time- 16:00 p.m.

The soil sample was taken by hand directly below the concrete slab. It was very difficult to get a sample due to numerous bigger rocks under slab.

Sample ID- 360175-HA003001

Sample Time- 15:30 p.m.

Soil Lithology- Wet, med brown medium to coarse sand and silt with cobbles, pebbles, Trace of rocks.

PID- 68.4 ppm

DRUMS ON-SIGHT= (1) open top. Drum has 7" of water and 2" of sediment on bottom. Total 9" of water/sediment. Total drum height is 32". Roughly 1/3 is full. Drum is labeled. (Photo #15)

Photo #16- sketch of basement

MACTEC off-site @17:15

SAFTEY MOMENT -Site Lighting

Aztech/Labella brought a free-standing work light to make sure there was enough lighting to work safely. Before the job started, site lighting was discussed as a safety concern and that extra lighting should be brought to the site. Even though the basement had lights, some were missing blubs or some just didn't work. The extra lighting gave us plenty of light to conduct the work and to help see in those shadow/dark areas, where the overhead lights couldn't reach. This seems like a small thing but having ample light is critical to conducting work safety. Site lighting is something that should be discussed when there is a possibility of working in low light conditions.

Photos

Photo #1

Photo #2

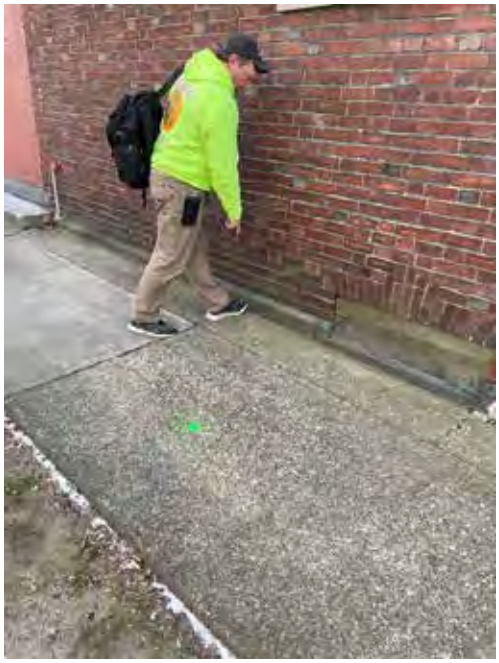


Photo #3

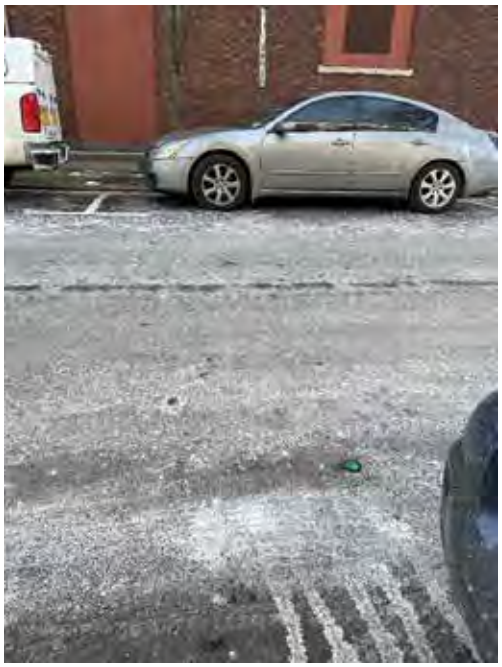


Photo #4

Photo #5

Photo #6

Photo #7

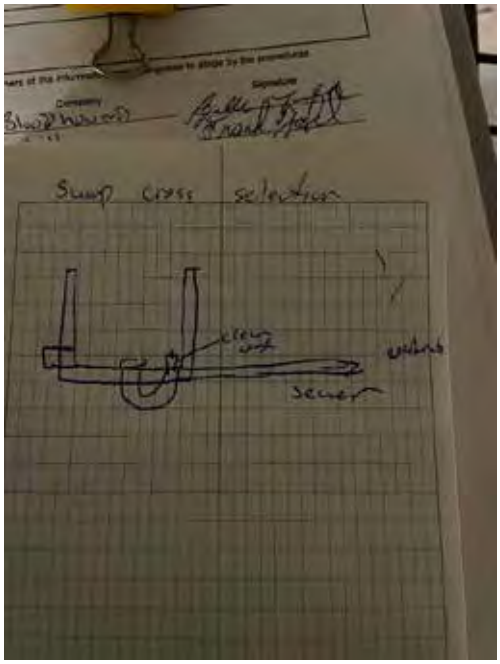


Photo #8

Photo #9

Photo #10

Photo #11

Photo #12

Photo #13

Photo #14

Photo #15

Photo #16

D.2

BEDROCK WELL INSTALLTION

MAY 2022

SOIL BORING LOG

MACTEC

511 Congress Street, Portland Maine 04101

Project Name:	NYSDEC Irvington Cleaners			Boring ID:	MW-03D
Project Location:	Irvington, NY			Page No.	1
Project No.:	3616216144	Client:	NYSDEC	of:	2
Boring Location:	MW-03D	Refusal Depth:	NA	Total Depth:	29.3'	Bore Hole OD:	3"
Weather:	Sunny, 70s	Soil Drilled:	~19'	Drilling Method:	Direct Push	Casing Size:	3"
Subcontractor:	LaBella	Rock Drilled:	~9.3'	Protection Level:	D	Sampler:	Macrocore
Driller:	Ray Hammond	Date Started:	5/24/2022	Date Completed:	5/25/2022	Sampler ID/OD:	1.25/2.25
Rig Type/Model:	7822DT	Logged By:	JJM	Checked By:			
Reference Elevation:	UNK	Water Level:	5'-6'	Time:			

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-5	NS	2.3/5	NA	NA	0.1	NS	NS	3" Asphalt Patch 3"-1.3' Brown, fine silty Sand, trace rounded cobbles 1.3'-2.3' filter pack sand	Fill SW GW	
5-10	NS	5'/5'	NA	NA	0.6	NS	NS	5'-6.3' Gray, filter pack sand. Slight earthy odor. 6.3-8.2 Saturated, gray fine Sand, with silt, trace gravel 8.2-10 Brown fine Sand, with silt, trace gravel	GW SM/GM GM/GP	
10-15	NS	5'/5'	NA	NA	0.0	NS	NS	10-13.6 heavy saturation, brown silty fine Sand 13.6-15 Brown fine Sand, with silt, trace gravel	SW SW/GW	
15-20	NS	4'/5'	NA	NA	0.0	NS	NS	0-4' brown, silty Sand, trace angular gravel Bedrock at 19'	SW/GW	

NOTES:

ROCK CORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name:	NYSDEC Irvington Cleaners			Boring ID:	MW-03D
Project Location:	Irvington NY			Page No.	1
Project No.:	3616216144	Client:	NYSDEC	of:	2
Boring Location:	MW-03D	Top of Rock:	NA	Total Depth:	29.3
Weather:	Sunny, 70s	Casing Depth:	~19	Drilling Method:	Nx Coring
Subcontractor:	LaBella	Rock Drilled:	~9.3	Protection Level:	D
Driller:	Ray Hammond	Date Started:	5/24/2022	Date Completed:	5/25/2022
Rig Type/Model:	7822DT	Logged By:	JJM	Checked By:	
Reference Elevation:	UNK	Water Level:	6-May	Time:	

Casing Type:	Steel
Casing Size:	3"
Core Barrel Type:	Nx
Core Size:	2"
Core Length:	60"

Drilling Information				Sample Quality				Sample Description and Classification	Lithologic Type	Remarks
Depth (feet bgs)	Run Number	Run Length (ft) / Recovery (ft)	Penetration Rate (ft/min)	RQD (%)	Fracture Depth (feet)	Fracture Type	Fracture Angle			
19'-26.3'	1	4.3'/5'	1ft/1.50 min	73	19.1-19.4	N/WB	38	Light gray, hard stone. Dark gray lensing throughout, reddish brown at water bearing fractures. Mica present, water bearing seam at bottom.	Fordham Gneiss	
					19.10	M	0			
					20.1-20.5	N	154			
					20.7	N/WB	0			
					22.25	M	14			
					23.5	N/WB	0			
26.3-29.3	2	3'/3'	1ft/1.50 min	86	26.3-26.4	N/WB	0	water bearing seam in top 1", Light gray hard stone with darger gray lensing throughout. Mica through core	Fordham Gneiss	
					27.32	M	0			

NOTES:

WELL/PIEZOMETER CONSTRUCTION RECORD
STICKUP

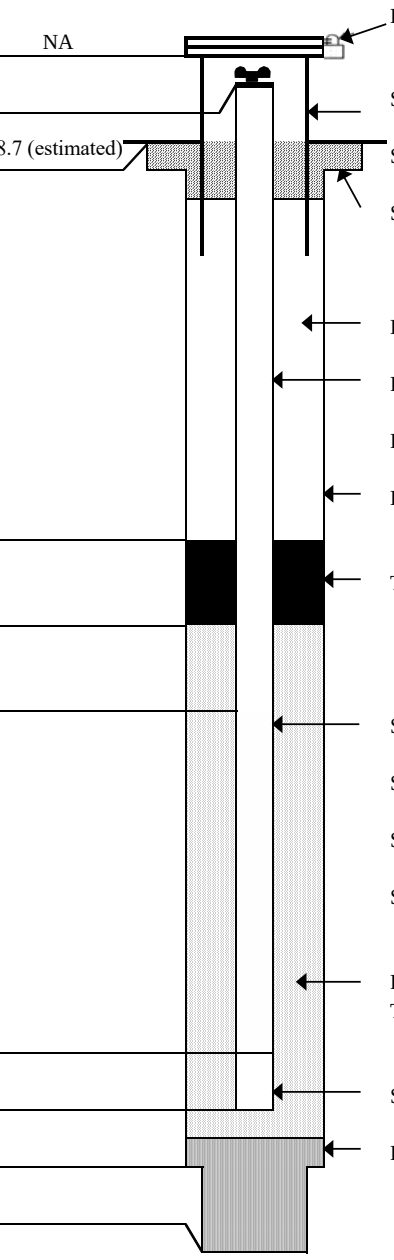
LOCATION ID: MW-03D

Project Name:	NYSDEC Irvington Cleaners			Date Started: 24-May	Date Completed 5/25/2022
Project Location:	Irvington NY			Logged By: JJM	
Project Number:	3616216144	Task Number	2	Checked By: CRS	Checked Date: 7/1/2022
Subcontractor:	LaBella	Drilling Method	DP/NX Coring		
Development Method:	Surge/Peristaltic	Development Date:	5/26/2022		
Bucking Posts/Ballards:	NA				
Notes:					

Measuring Point Information

Measuring Point (MP) Type:	Top Of Riser
MP Elevation (ft):	UNK

Item	Depth BMP (ft)	Elevation (ft)
Stickup	NA	NA
Riser Pipe (Top)		
Ground Surface Elevatio	UNK	88.7 (estimated)
Top of Well Seal	18	
Top of Sand Pack	19	
Top of Screen	20.65	
Base of Screen	25.65	
End Cap	25.85	
Drilled Depth	29.3	
Bottom of Exploration	29.3	
Bedrock Surface	19'	



Description	
Lock Identification	NA
Stickup Casing Type:	NA
Stickup Casing Diameter:	4"
Surface Seal Type:	Concrete
Backfill/Grout Type:	Sand
Riser Pipe Type:	PVC (1")
Riser Pipe ID:	NA
Borehole Diameter:	3"
Type of Seal:	Bentonite chip
Screen Type:	PVC
Screen ID:	NA
Screen Slot Size:	No.2
Screen Length:	5
Filter/Sand Pack Type:	No. 2 Sand
Sump:	NA
Fallback/Backfill:	3.54

NOT TO SCALE

MACTEC
511 Congress Street, Portland Maine 04101

D.3
GROUNDWATER SAMPLING

D.3.1
GROUNDWATER SAMPLING
MARCH 2022

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NSTGC Irvington
PROJECT NUMBER: 3616216149
SAMPLE ID: DP0304
SAMPLE TIME: 1525

DP-002

DATE: 3/22/22
START TIME: 1430
END TIME: 1530
SITE NAME/INSTALLATION:
PAGE: 1 OF 1

WELL DIAMETER (IN.): ☐ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER
TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER
MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP		☒	
CASING	☒		
LOCKED			☒
COLLAR	☒		

INITIAL DTW (BMP)	3.80 FT	FINAL DTW (BMP)	4.45 FT	PROT. CASING STICKUP (AGS)	NM FT	TOC/TOR DIFFERENCE	NM FT
WELL DEPTH (BMP)	12.15 FT	SCREEN INTERVAL	10' FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	8.35 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	0.03 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter^2 X 0.041)	0.342 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.12 GAL	DRAWDOWN/ TOTAL PURGED	0.009	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1430	BEGIN PURGING									
1450	4.45	2200	12.08	0.645	1.73	7.25	1.9	69.0		
1455	4.45		12.10	0.643	1.64	7.23	4.3	17.5		
1500	4.45		12.07	0.643	1.66	7.23	5.0	8.24		
1505	4.45		12.08	0.643	1.99	7.21	6.9	7.44		
1510	4.45		12.10	06.44	2.07	7.20	9.1	6.38		
1515	4.45		12.16	0.644	2.04	7.20	10.4	6.22		
1530	pump off									

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	12	0.64	2.0	7.2	10.4	6.2

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: ☐ PERISTALTIC ☐ SUBMERSIBLE ☐ BLADDER ☐ WATTERA ☐ OTHER ☐ OTHER

DECON FLUIDS USED: ☐ ALCONOX ☐ DEIONIZED WATER ☐ POTABLE WATER ☐ NITRIC ACID ☐ HEXANE ☐ METHANOL ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS: ☒ SILICON TUBING ☐ HDPE TUBING ☐ LDPE TUBING ☐ OTHER ☐ OTHER

☐ S. STEEL PUMP MATERIAL ☐ PVC PUMP MATERIAL ☐ GEOPROBE SCREEN ☐ OTHER ☐ OTHER ☐ OTHER

EQUIPMENT USED: ☐ WL METER M200-68 ☐ PID ☐ WQ METER MQ15-06 ☐ TURB. METER MQ19-26 ☐ PUMP ☐ OTHER ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
VOC	8260	TOT.	N	HCL	80mL	~~FD/MS/MSD~~ SM
SVOC	8270			UNP	x2 1L amb	
Pesticides	608					
PCB	8082					
Mercury/Metals	6010/7470/7471			HNO3	200 mL	
PFAS	537			UNP	200mL	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO
NO-PURGE METHOD UTILIZED: ☐ YES ☐ NO
NUMBER OF GALLONS GENERATED: 3.12

NOTES: Stable

DEVIATIONS FROM THE WORK PLAN

Sampler Signature: [signature] Print Name: S. M
Checked By: [signature] Date: 4/4/22

REV. 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC Irvington
PROJECT NUMBER	3816216144
SAMPLE ID	OP04011
SAMPLE TIME	1355
LOCATION ID	OP04011
DATE	~~1230~~ 3/23
START TIME	1230
END TIME	1930
SITE NAME/INSTALLATION	
PAGE	1 OF 1

WELL DIAMETER (IN.) ☐ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES) ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP) ☐ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED			X
COLLAR	X		

INITIAL DTW (BMP)	5.80 FT	FINAL DTW (BMP)	7.80 FT	PROT. CASING STICKUP (AGS)	NM FT	TOC/TOR DIFFERENCE	NM FT
WELL DEPTH (BMP)	14.05 FT	SCREEN INTERVAL	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	8.25 FT	DRAWDOWN VOLUME (final DTW - initial DTW X well diam. squared X 0.041)	0.082 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter^2 X 0.041)	0.34 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	6.24 GAL	DRAWDOWN/ TOTAL PURGED	0.0131	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1230	BEGIN PURGING									
1235	6.70	~~200~~	11.19	0.923	0.99	7.15	-104.2	62.2		
1240	7.80		11.42	0.890	0.24	7.19	-91.8	33.3		
1245	—	—	—	—	—	—	—	~~18.6~~		
1250	7.80		11.64	0.874	1.59	7.20	-71.9	18.6		
1255	7.80		11.73	0.859	2.03	7.19	-68.5	12.8		
1300	7.80		11.80	0.850	2.50	7.18	-69.7	13.8		
1305	7.80		11.81	0.846	2.42	7.17	-63.7	37.9		Turb sp. Hz, allowed to drop
1330	7.80		11.84	0.830	2.49	7.20	-56.7	12.6		
1335	7.80		11.80	0.822	2.46	7.18	-58.2	7.51		
1340	7.80		11.80	0.822	2.45	7.19	-58.0	7.55		
1345	7.80		11.74	0.818	2.46	7.17	-56.0	7.80		Stable

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	11.7	0.81	2.5	7.2	-56	7.5

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
☐ PERISTALTIC
☐ SUBMERSIBLE
☐ BLADDER
☐ WATTERA
☐ OTHER
☐ OTHER

DECON FLUIDS USED
☐ ALCONOX
☐ DEIONIZED WATER
☐ POTABLE WATER
☐ NITRIC ACID
☐ HEXANE
☐ METHANOL
☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
☐ SILICON TUBING
☐ HDPE TUBING
☐ LDPE TUBING
☐ OTHER
☐ OTHER
☐ S. STEEL PUMP MATERIAL
☐ PVC PUMP MATERIAL
☐ GEOPROBE SCREEN
☐ OTHER
☐ OTHER
☐ OTHER

EQUIPMENT USED
☐ WL METER MMW-68
☐ PID
☐ WQ METER MQ15-06
☐ TURB. METER MQ22-26
☐ PUMP Peri
☐ OTHER
☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
VOC	8260		N	HCl	60mL	N
SVOC	8270			UNP	~~2 HCl 2L~~	
Pesticides	8081				2L	
PCB	8082				2L	
Metals/Misc.	6010/7470/7471			HNO3	200mL	
PFAS	537			UNP	200mL	

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☒	☐
NO-PURGE METHOD UTILIZED	☐	☐

NUMBER OF GALLONS GENERATED: 6.24

NOTES: 1420 Pump off

Sampler Signature: Print Name: SM

Checked By: Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN

REV. 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC
511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC Remington
PROJECT NUMBER	360175-DP005011 D/MS/MSD
SAMPLE ID	3616216144
SAMPLE TIME	0950
LOCATION ID	DP-05
DATE	3/22/22
START TIME	0842
END TIME	12:20
SITE NAME/INSTALLATION	
PAGE	1 OF 1

WELL DIAMETER (IN.): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER
TUBING ID (INCHES): [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER
MEASUREMENT POINT (MP): [ ] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED	X		
COLLAR	X		X

INITIAL DTW (BMP)	7.65 FT	FINAL DTW (BMP)	8.00 FT	PROT. CASING STICKUP (AGS)	NM FT	TOC/TOR DIFFERENCE	NM FT
WELL DEPTH (BMP)	13.30 FT	SCREEN INTERVAL	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	7.45 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	0.006 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter^2 X 0.041)	0.305 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	5.91 GAL	DRAWDOWN/ TOTAL PURGED	0.001	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
0842	BEGIN PURGING									
0850	8.00	160	13.12	0.653	10.33	7.27	38.0	150		
0855	8.05		13.52	0.629	8.45	7.15	-20.2	174		
0900	—	—	—	—	—	—	—	—		Missed readings
0905	8.00		13.81	0.631	7.05	7.00	-17.5	170		
—	—	—	Waiting for turbidity drop				—	—		
0930	8.00		13.79	0.651	7.03	6.74	5.6	32.8		
0935	8.00		13.74	0.651	7.03	6.73	5.5	10.4		
0940	8.00		13.72	0.651	6.92	6.73	6.1	6.56		
0945	8.00		13.79	0.649	6.98	6.73	6.7	5.28		
1000	Pump off									

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	13.8	0.65	7.00	6.7	6.7	5.3

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER ____ [ ] WATTERA [ ] OTHER ____ [ ] OTHER ____

DECON FLUIDS USED: [ ] ALCONOX [X] DEIONIZED WATER [ ] POTABLE WATER [ ] NITRIC ACID [ ] HEXANE [ ] METHANOL [ ] OTHER ____

TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [ ] HDPE TUBING [ ] LDPE TUBING [ ] OTHER ____ [ ] OTHER ____
[ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] OTHER ____ [ ] OTHER ____ [ ] OTHER ____

EQUIPMENT USED: [ ] WL METER M20068 [ ] PID [X] WQ METER 20150106 [X] TURB. METER M0294-26 [ ] PUMP [ ] OTHER [ ] FILTERS NO. ____ TYPE ____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
[X]	VOC	8260		N	HCL	80mL	Y
[X]	SVOC	8270			UNP	2L	
[X]	Pesticides	8081				2L	
[X]	PCB	8082				2L	
[X]	Metals/Merc.	Multi.			HNO3	500mL	
[X]	PFAS	537			UNP	500mL	
[ ]							

PURGE OBSERVATIONS
PURGE WATER CONTAINERIZED: [X] YES [ ] NO
NO-PURGE METHOD UTILIZED: [ ] YES [ ] NO
NUMBER OF GALLONS GENERATED: 5.91

NOTES

Sampler Signature: [signature] Print Name: S. Mirek
Checked By: [signature] Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN

REV. 3/29/2019

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners, NYSDEC			Boring ID: DP008
Project Location: Irvington NY			Page No. 1
Project No.:	Client: NYSDEC		of:
Boring Location: DP008	Refusal Depth: NA	Total Depth: 15	Bore Hole OD: 3.5
Weather: Sunny, 50	Soil Drilled: 15'	Drilling Method: Geoprobe	Casing Size: 3.5
Subcontractor: Aztec/Cabella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: RT	Date Started: 3/22/22	Date Completed: 3/22/22	Sampler ID/OD: 1.5
Rig Type/Model: HC/Geoprobe	Logged By: JM/ML	Checked By:	
Reference Elevation: NA	Water Level: 5.65	Time: 1040	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
								1.5" Asphalt		
0-5	NS	5'	NA	NA	0.0			0-4 Br. medium SAND w/gravels and bricks 4-4.5 D. Br. medium SAND / gravels 4.5-5 Tan, silty SAND, Damp	Fill/SP/SM	3/22 0845-0900
5-10	NS	3'	N	A	4.8 1.5			5-7 Tan to grey, fine silty SAND, SAT 7-10 SAT w/ trace gravel and 3" br. fine SAND	SM/SP	3/22 0930
10-15	NS	3'			0.0			10-15 Br. fine SAND, tr. silt	SM	0945

NOTES: Temp well set, Scr. 3-13, Sampled for VOC + PFAS
DTW → 7.65 (TOR) Riser is ≈ 2' above ground, so adj
DTW is ≈ 5.65

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC INMS10
PROJECT NUMBER	3616216144
SAMPLE ID	360175-DP00801
SAMPLE TIME	~~1030~~ 1045
LOCATION ID	DP-008
DATE	3/23/22
START TIME	1030
END TIME	1045
SITE NAME/INSTALLATION	
PAGE	1 OF 1

SAMPLE TYPE: ☑ GROUNDWATER ☐ SURFACE WATER ☐ STORM WATER ☐ DRINKING WATER ☐ PORE WATER ☐ OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
~~1035~~	5.65	200	10.84	0.839	8.99	6.99	-160	870	~11	

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	10.8	0.84	9.00	7.0	-16	870

TEMP: nearest degree (ex. 10.1 = 10)
COND: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☑ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ PDB
- ☐ HYDRASLEEVE
- ☐ OTHER

DECON FLUIDS USED
- ☑ ALCONOX
- ☐ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☐ HEXANE
- ☐ METHANOL
- ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
- ☑ SILICON TUBING
- ☐ HDPE TUBING
- ☐ LDPE TUBING
- ☐ OTHER
- ☐ ~~OTHER~~
- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ OTHER
- ☐ OTHER
- ☐ OTHER

EQUIPMENT USED
- ☐ WL METER A20-68
- ☐ PID
- ☐ WQ METER Aq15-06
- ☐ TURB. METER M124-26
- ☐ PUMP SUB-32
- ☐ OTHER
- ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
☑	VOC	8260		N	HCL	x2 40mL	N
	PFAS	3537		N	None	250 mL	N

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☑	☐
NO-PURGE METHOD UTILIZED	☐	☐

NUMBER OF GALLONS GENERATED: ~1 gal

NOTES:
purged ~1 gal
~~SM~~ 1" temp well, scr. 3-13 fbg

Sampler Signature: _____ Print Name: S.M

Checked By: _____ Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN:

REV. 3/29/2019

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners SDEC			Boring ID: DP009
Project Location: Irvington NY			Page No.
Project No.: 3616216444 Client: NYSDEC			of:
Boring Location: DP009	Refusal Depth: 10'	Total Depth: 10'	Bore Hole OD: 3.5
Weather: Cloudy, 50	Soil Drilled: 10'	Drilling Method: DP	Casing Size: 3.5
Subcontractor: Aztech Laboratory	Rock Drilled: NA	Protection Level: D	Sampler: Microcore
Driller: KJ	Date Started: 3/23/22	Date Completed: 3/23/22	Sampler ID/OD: 1.5"
Rig Type/Model: Geoprobe 7822DT	Logged By: SM	Checked By: (MW)	
Reference Elevation: NA	Water Level: ~4.50	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-5		Hand clear 5'	NA	-	0.0	NS	NS	Mixed brown Fine sand + silt with Trace cobbles	fill / SM	
5-10		3'	NA	-	0.4	NS	NS	5-7 SAA 7-10 Damp, reddish brn silty SAND, trace gravel, SAA in bottom 2"	SM / CMST	
								Eob @ 10' large cobble encountered		

NOTES: After discussion w/ PM, decided to install scr, wait ~1-2 hrs and see what recharge looks like

GW VOC Sampled 1445

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC Irvington	LOCATION ID: DP009
PROJECT NUMBER: 3816216144	DATE: 3/23/22
SAMPLE ID: 360175-DP009709	SAMPLE TIME: 1445
START TIME: 1030	END TIME: 1500
SITE NAME/INSTALLATION	PAGE: 1 OF 1

SAMPLE TYPE: [x] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
No	Parameters		3/23							

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max. (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER _____
- [ ] PDB
- [ ] HYDRASLEEVE _____
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] ALCONOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [ ] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [ ] WL METER M200-65
- [ ] PID
- [ ] WQ METER MC15-0
- [ ] TURB. METER M029-26
- [ ] PUMP SCS-35
- [ ] OTHER
- FILTERS NO ___ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
[x]	VOC	8260		N	HCL	80mL	N
[x]	PFAS	537		N	None	250mL	N
[ ]							
[ ]							
[ ]							
[ ]							
[ ]							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[x]	[ ]
NO-PURGE METHOD UTILIZED	[ ]	[ ]

NUMBER OF GALLONS GENERATED: _____

NOTES:

VOC & PFAS collected @ different times

Sampler Signature: [signature] Print Name: [redacted] SM

Checked By: [signature] Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN:

No parameters due to poor recharge

REV 3/29/2019

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: DP10
Project Location: Irvington NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: DP15	Refusal Depth: 10	Total Depth: 10'	Bore Hole OD: 3.5
Weather: Cloudy, 50-70	Soil Drilled: 10'	Drilling Method: HC/DP	Casing Size: 3.5
Subcontractor: LaBella	Rock Drilled: NA	Protection Level: D	Sampler: Geo
Driller:	Date Started: 3/23	Date Completed: 3/23	Sampler ID/OD:
Rig Type/Model: Geoprobe	Logged By: JM	Checked By: MW	
Reference Elevation: UNK	Water Level:	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-5	NS	3'	NA→		0.0	NA	NS	0-2 Brn, med. SAND, w/cobbles 2-5 Crushed stone/cobbles/rocks	Fill	
5-10	NS	1.5'	NA		0.0	NS	NA	5-9 SAA, Damp in middle section	GP/SP	
								9-10 Crushed stone	GP/SP	
								Eob @ 10'		

NOTES:

Well set @ 11 ft

Sampled 1520

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC Irvington		LOCATION ID: DPOW	DATE: 3/22-23/22
PROJECT NUMBER: 3616216144		START TIME: 1500	END TIME: 1530
SAMPLE ID: 3616-75-DPOW09	SAMPLE TIME: 1520	SITE NAME/INSTALLATION: —	PAGE: 1 OF 1

SAMPLE TYPE: ☐ GROUNDWATER ☐ SURFACE WATER ☐ STORM WATER ☐ DRINKING WATER ☐ PORE WATER ☐ OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1525	7.65	~200	12.35	1.424	8.82	7.86	35.3	800+	~9	

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	12.3	1.4	8.8	7.9	-35	800+

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☐ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ PDB
- ☐ HYDRASLEEVE
- ☐ OTHER

DECON FLUIDS USED
- ☐ ALCONOX
- ☐ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☐ HEXANE
- ☐ METHANOL
- ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
- ☐ SILICON TUBING
- ☐ HDPE TUBING
- ☐ LDPE TUBING
- ☐ OTHER
- ☐ OTHER

- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ OTHER
- ☐ OTHER
- ☐ OTHER

EQUIPMENT USED
- ☐ WL METER M200-68
- ☐ PID
- ☐ WQ METER MyS-10
- ☐ TURB. METER
- ☐ PUMP [redacted] MP24-2
- ☐ OTHER
- ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
☐	VOC	8260	Tot	N	HCL	80mL	N
☐	OFAS	537		N	None	250mL	N
☐							
☐							
☐							
☐							
☐							
☐							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☑	☐
NO-PURGE METHOD UTILIZED	☐	☐

NUMBER OF GALLONS GENERATED: _____

NOTES:

Dump @ 8-9 FBG in boring ~3M DTW: 7.65 DTB: 11.05 ~~Sampled~~

Sampler Signature: _____ Print Name: J.M

Checked By: _____ Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN:

REV 3/29/2019

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name:	Irvington ~~SMU~~ Cleaners		Boring ID: DPW11
Project Location:	Irvington NY		Page No. 1
Project No.:	3616216140	Client: NYSDEC	of: 1
Boring Location:	DPW11	Refusal Depth: 9'	Total Depth: 9'
Weather:	Sunny, 40-50	Soil Drilled: 9'	Drilling Method: DP
Subcontractor:	Labella	Rock Drilled: NA	Protection Level: D
Driller:	MT	Date Started: 3/24/22	Date Completed: 3/24/22
Rig Type/Model:	MC/GP	Logged By: SM	Checked By: (MC)
Reference Elevation:	UNK	Water Level: ~7.5	Time:

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-3	NS	3'	NA	UN	UA	NS	NS	Light Br, fine SAND, tr. silt, w/cobbles 3-5 Crushed stone	F,G ~~GW~~ GP	
5-10	NS	3.5'	NA	UO	UA	NS	NS	5-8.5 SAA, refusal @ 9' Sd. @ ~7.5-8'	GP/SP	

NOTES:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC Livingston
PROJECT NUMBER	3616216144
SAMPLE ID	360175-DP0108
SAMPLE TIME	0745
LOCATION ID	DP011
DATE	3/25/22
START TIME	0730
END TIME	0750
SITE NAME/INSTALLATION	
PAGE	1 OF 1

SAMPLE TYPE: ☒ GROUNDWATER ☐ SURFACE WATER ☐ STORM WATER ☐ DRINKING WATER ☐ PORE WATER ☐ OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
0745	6.60		9.51	0.355	9.75	8.08	49.2	900+		

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	9.5	.35	9.7	8.08	49.2	900+

TEMP: nearest degree (ex. 10.1 = 10)
COND: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP:
☒ PERISTALTIC
☐ SUBMERSIBLE
☐ BLADDER _____
☐ PDB
☐ HYDRASLEEVE _____
☐ OTHER _____

DECON FLUIDS USED:
☐ ALCONOX
☒ DEIONIZED WATER
☐ POTABLE WATER
☐ NITRIC ACID
☐ HEXANE
☐ METHANOL
☐ OTHER _____

TUBING/PUMP/BLADDER MATERIALS:
☒ SILICON TUBING
☐ HDPE TUBING
☐ LDPE TUBING
☐ OTHER _____
☐ OTHER _____

☐ S. STEEL PUMP MATERIAL
☐ PVC PUMP MATERIAL
☐ GEOPROBE SCREEN
☐ OTHER _____
☐ OTHER _____
☐ OTHER _____

EQUIPMENT USED:
☐ WL METER M200 - 68
☐ PID
☒ WQ METER MMS-376
☒ TURB. METER MICRO-36
☒ PUMP SOCS-38
☐ OTHER _____
FILTERS NO ___ TYPE _____

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
VOC	8260	Tot. list	N	HCl	80mL	N

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: ☒ YES ☐ NO
NO-PURGE METHOD UTILIZED: ☐ YES ☐ NO
NUMBER OF GALLONS GENERATED: _____

NOTES:

DTW: 8.65 (2" riser)
DTB: 9.90
adj: 6.65
7.90

Sampler Signature: _____ Print Name: S. Munard
Checked: _____ Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN:

REV. 3/29/2019

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: DPW2
Project Location: Irvington NY			Page No.: 1
Project No.: 3616216M	Client: NYSDEC		of: 1
Boring Location: DPW2	Refusal Depth: 7'	Total Depth: 7'	Bore Hole OD: 3.5
Weather: Cloudy, 30-40	Soil Drilled: 7'	Drilling Method: DP	Casing Size: 3.5
Subcontractor: Labella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: KJ	Date Started: 3/24/22	Date Completed: 3/24/22	Sampler ID/OD: 1.5
Rig Type/Model: HC/Geoprobe	Logged By: SM	Checked By: (MW)	
Reference Elevation: UNK	Water Level: ~5-6	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-3 3-5	NS	5'	NA	NA	0.1	NS	NS	Light br. fine SAND crushed rock, damp in bottom 2"	FILL/ SM	
5-7	NS	3'	NA	NA	0.0	NS	NS	5-7' light br. damp fine silty sand. crushed rock in bottom refusal @ 7' Sat @ ~5-6'	SM	

NOTES: Screen installed, will attempt VOC Samples

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC Ilion		LOCATION ID: DP012	DATE: 3/24/22
PROJECT NUMBER: 3616216144		START TIME: 1550	END TIME: 1610
SAMPLE ID: ~~DP~~ 360175-DP01206	SAMPLE TIME: 1600	SITE NAME/INSTALLATION:	PAGE: 1 OF 1

SAMPLE TYPE: [x] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1610	5.50	~200	10.63	1.046	5.26	7.74	224	900+	~5	

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	10.6	1.04	5.2	7.7	224	900+

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP:
- [x] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] ALCONOX
- [x] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS:
- [x] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED:
- [x] WL METER M200.65
- [x] PID —
- [x] WQ METER Mo55-26
- [x] TURB. METER M034-26
- [x] PUMP 5005-35
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
[x]	VOC	8260	Tot.	N	HCl	80mL	NA
[ ]							
[ ]							
[ ]							
[ ]							
[ ]							
[ ]							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[x]	[ ]
NO-PURGE METHOD UTILIZED	[ ]	[ ]

NUMBER OF GALLONS GENERATED: _____

NOTES:

DTW 4.20
DTB 5.11

Sampler Signature: [signature] Print Name: S. Marcel

Checked By: [signature] Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: DPU13
Project Location: Irvington NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: DU13	Refusal Depth: 3	Total Depth: 3	Bore Hole OD: 3"
Weather: Cloudy, 40	Soil Drilled: 3	Drilling Method: HC	Casing Size: NA
Subcontractor: Labella	Rock Drilled: NA	Protection Level: D	Sampler: NA
Driller: KT	Date Started: 3/23/22	Date Completed: 3/23/22	Sampler ID/OD: NA
Rig Type/Model: HC/	Logged By: SM	Checked By: (MJ)	
Reference Elevation: NNR	Water Level:	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-3	NS	3'	NA		0.0	NS	NS	0-3 med, Br SAND, w/ cobbles Refusal @ 3'		

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: DP017
Project Location: Irvington NY			Page No. 1
Project No.: 3616256149	Client: NYSDEC		of: 1
Boring Location: DP017	Refusal Depth: 9	Total Depth: 9	Bore Hole OD: 3.5
Weather: Cloudy, 40	Soil Drilled: 9'	Drilling Method: Direct Push	Casing Size: 3.5
Subcontractor: Aztec/Labella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: KT	Date Started: 3/24/22	Date Completed: 3/24/22	Sampler ID/OD: 1.5
Rig Type/Model: Hydroprobe	Logged By: JM	Checked By: (MJ)	
Reference Elevation: N/A	Water Level: NA	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-3								0-3 Br, med SAND w/cobbles		
3-5	NS	3'	N/A		0.0	NS	NA	3-5 Cobbles/crushed rock	Fill/GP	
5-10								SAA refusal @ 9'		

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: DP015
Project Location: Irvington, NY			Page No. 1
Project No.:	Client: NYSDEC		of: 1
Boring Location: DP015	Refusal Depth: 10	Total Depth: 10'	Bore Hole OD: 3.5
Weather:	Soil Drilled: 10	Drilling Method: DP	Casing Size: 3.5
Subcontractor: LaBella	Rock Drilled: N/A	Protection Level: D	Sampler: sleeve
Driller: Matt	Date Started: 3/23/22	Date Completed: 3/23/22	Sampler ID/OD:
Rig Type/Model: Geoprobe	Logged By: JM	Checked By: MD	
Reference Elevation:	Water Level: 9'	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-5		5'	-	-	0.0			HC Br. Medium SAND w/ cobbles	Fill/SP/GP	
5-10		3.5'	-	-	0.0			5-8 Lt Brn, Med to Coarse SAND w/ crushed stone 8-9 SAA, Damp, Satn bottom 2" 9-10 Crushed stone	GP/SP GP/SP GP	
								EOB @ ~~10~~ 9'		

NOTES: well set @ ~~10.5~~ 9-4
DTW, 9.30 DTB 9.95 2' riser (1.3'

~~8.00~~ 8.65

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC - Dru[illegible]ton		LOCATION ID: DP015	DATE: 3/23/20
PROJECT NUMBER: 3616216122		START TIME: 1650	END TIME:
SAMPLE ID: 360175-DP[illegible]8	SAMPLE TIME: 1650	SITE NAME/INSTALLATION:	PAGE: 1 OF 1

SAMPLE TYPE: [x] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

TEMP: nearest degree (ex. 10.1 = 10)
COND: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER _____
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] ALCONOX
- [x] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [ ] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [ ] WL METER MJU - 45
- [ ] PID
- [ ] WQ METER MU15 - 0W
- [ ] TURB. METER [illegible] 005 - 34
- [ ] PUMP mdly - 2C
- [ ] OTHER
- [ ] FILTERS NO. ____ TYPE ____

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
VOCS	8260		N	HCL	80 m	N
PFAS	537		N	Nma	250 n	N

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [x] NO [ ]
NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NUMBER OF GALLONS GENERATED: _____

NOTES:

Samples collected, due to poor recharge no parameters recorded
2" s/up above ground

Sampler Signature: [signature] Print Name:

Checked By: [signature] Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN:

no parameters

REV. 3/29/2019

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners		Boring ID: SB06/DP16
Project Location: NY		Page No. 1
Project No.: 3616261447	Client: WESDEC	of: 1
Boring Location: DP16	Refusal Depth: 13'	Total Depth: 13	Bore Hole OD: 3.5
Weather: Cool, 250	Soil Drilled: 13'	Drilling Method: DP	Casing Size: 3.5
Subcontractor: Cubella / AZTEC	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Steven / KT	Date Started: 3/24/22	Date Completed: 3/24/22	Sampler ID/OD: 1.5
Rig Type/Model: Geoprobe 6620DT	Logged By: JM	Checked By: (JM)	
Reference Elevation: UNK	Water Level: ~7.5-8	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-5	NS	5'	NA	NA	0.0	NA	N.S	0-5 Light brn fine sand, w/ cobbles	Fill / SP	
5-10	NS	2.5'	NA	NA	0.0	NA	N.S	5-10 Light brn, fine SAND, w/ cobbles, SAT @ 5.5'	SP	
10-15		~~2.5~~ 3'	NA	NA	0.0	NA	NS	~~10-12.5 SM~~ 10-12' Br., medium SAND, w/cobbles	SM	
								12-13 Light brn, Med to coarse SAND, w/ cobbles, Crushed stone in bottom 13'	SP	

NOTES:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: Irving 4or, NYSDEC		LOCATION ID: DP06	DATE: 3/25/22
PROJECT NUMBER: 6361626144		START TIME: 0800	END TIME: 0845
SAMPLE ID: 300175-DP06014	SAMPLE TIME: 0800	SITE NAME/INSTALLATION:	PAGE: 1 OF 1

SAMPLE TYPE: [X] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
0830	6.00	200	11.50	4.34	9.04	9.03	1.3	OR		Overrange Turb

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	11.5	44	9.00	9.00	1.3	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (34.1 = 34, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP:
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER

DECON FLUIDS USED:
- [ ] ALCONOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS:
- [X] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED:
- [X] WL METER: M200 68
- [ ] PID
- [X] WQ METER: MU13 06
- [X] TURB. METER: MU24 26
- [ ] PUMP: SAM 38
- [ ] OTHER
- [ ] FILTERS: NO ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
[ ]							
[ ]							
[ ]							
[ ]							
[ ]							
[ ]							
[ ]							

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [ ] NO [ ]
NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]
NUMBER OF GALLONS GENERATED: _____

NOTES:

GW reference unable to
Secure VOAs

DTW 7.70 ⅔ adj for 1" riser
TB 13.05 ⅔

Sampler Signature: _____ Print Name: S. M

Checked By: _____ Date: 4/4/22

DEVIATIONS FROM THE WORK PLAN:

REV. 3/29/2019

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Laundry Tex Cleaners			Boring ID: DP017
Project Location: Trucks for NY			Page No. 1
Project No.: 3676256179	Client: NYSDEC		of: 1
Boring Location: DP017	Refusal Depth: 14.5	Total Depth: 14.5	Bore Hole OD: 3.5
Weather: Cloudy 30-40°	Soil Drilled: 14.5	Drilling Method: DP	Casing Size: 3.5
Subcontractor: LaBella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: KF	Date Started: 3/24/22	Date Completed: 3/24/22	Sampler ID/OD: 1-5
Rig Type/Model: HC/DP	Logged By: SM	Checked By: (AW)	
Reference Elevation: UNK	Water Level: ≈ 9-10	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-5	-			-	0.0	NA	-	Lt Brn SAND, w/ cobbles	F, N	
5-10	-			-	6.0	NA	-	5-10, gray-brn, dense f-m SAND, tr silt, w/ gravel, damp in bottom 2"	GP/SP	
10-14	-			-	0.0	NA		reddish-brn, c. SAND, tr. silt, SAT @ ≈ 9-10 ftbg	GP/SP	
								Refusal @ 14.5		
								Scr 14-4		

NOTES:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC Irvington
PROJECT NUMBER	3616216147
SAMPLE ID	3E0175-DP017014
SAMPLE TIME	0820
LOCATION ID	DP017
DATE	3/25/20
START TIME	0800
END TIME	0815
SITE NAME/INSTALLATION	
PAGE	1 OF 1

SAMPLE TYPE: ☒ GROUNDWATER ☐ SURFACE WATER ☐ STORM WATER ☐ DRINKING WATER ☐ PORE WATER ☐ OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
0815	10.00	~200	11.46	1.525	8.87	7.64	5.7	874		

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

11.5	1.5	8.9	7.6	5.7	874	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☐ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ PDB
- ☐ HYDRASLEEVE
- ☐ OTHER

DECON FLUIDS USED
- ☐ ALCONOX
- ☐ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☐ HEXANE
- ☐ METHANOL
- ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
- ☐ SILICON TUBING
- ☐ HDPE TUBING
- ☐ LDPE TUBING
- ☐ OTHER
- ☐ OTHER

- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ OTHER
- ☐ OTHER
- ☐ OTHER

EQUIPMENT USED
- ☐ WL METER M200-68
- ☐ PID
- ☐ WQ METER M015-00
- ☐ TURB METER M034-20
- ☐ PUMP Solinst 75
- ☐ OTHER
- ☐ FILTERS NO ___ TYPE ___

ANALYTICAL PARAMETERS

PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED ☒ YES ☐ NO

NO-PURGE METHOD UTILIZED ☐ YES ☐ NO

NUMBER OF GALLONS GENERATED _____

NOTES:

DTW 9.00
DTB 14.28

Sampler Signature: [signature] Print Name: J. M

Checked By: Date:

DEVIATIONS FROM THE WORK PLAN:

REV 3/29/2019

D.3.2
GROUNDWATER SAMPLING
MAY 2022

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME		LOCATION ID	DATE
NYSDEC IRVINGTON CLEANERS		DAC 8	6/24/22
PROJECT NUMBER		**START TIME**	**END TIME**
3616216144		1440	1448
SAMPLE ID	**SAMPLE TIME**	**SITE NAME/INSTALLATION**	**PAGE**
~~DAC~~ 36475-GPU060422	1440	Irvington Cleaners	1 OF 1

SAMPLE TYPE: [X] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1440	TOR 8.430	~200	18.35	0.995	9.40	6.29	144.3	OR	~11'	OR: overrange

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER _____
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER _____

DECON FLUIDS USED
- [X] ALCONOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [ ] SILICON TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [ ] WL METER _____
- [ ] PID _____
- [ ] WQ METER _____
- [ ] TURB. METER _____
- [ ] PUMP _____
- [ ] OTHER _____
- [ ] FILTERS NO. ___ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
X	VOCs	8260		N	HCL	x3 40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [X] NO [ ]
NUMBER OF GALLONS GENERATED: ~.25
NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NOTES:
TOR to ground: 1'
Scr 5-15, Sand 4-3', Bent to 3.5, Sand dry

Sampler Signature: [signature] Print Name: J. Minard

Checked By: C Staples Date: 6/24/22

DEVIATIONS FROM THE WORK PLAN:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC IRVINGTON CLEANERS	LOCATION ID: DP-10
PROJECT NUMBER: 3616216144	DATE: 6/24/22
SAMPLE ID: 360175-DP01009	SAMPLE TIME: 1645
START TIME: 1645	END TIME: 1650
SITE NAME/INSTALLATION: Irvington Cleaners	PAGE: 1 OF 1

SAMPLE TYPE: [X] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1645	TOR 8.10	≤200	—	—	—	—	—	—	≈9	Not run through cell

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER

DECON FLUIDS USED
- [X] ALCONOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
X	VOCs	8260		N	HCL	x3 40ml	

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	X	
NO-PURGE METHOD UTILIZED		

NUMBER OF GALLONS GENERATED: ≤25

NOTES: Scr. 10-1, sand to grade
TOR to gr. = 5.5'

Sampler Signature: [signature] Print Name: J. Munard

Checked By: C Staples Date: 6/24/22

DEVIATIONS FROM THE WORK PLAN:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC IRVINGTON CLEANERS	LOCATION ID: DP-11
PROJECT NUMBER: 3616216144	DATE: 6/25/22
SAMPLE ID: B60175-DP110508 (SA duplicate)	START TIME: 1430
SAMPLE TIME: 1430	END TIME: 1445
SITE NAME/INSTALLATION: Irvington Cleaners	PAGE: 1 OF 1

SAMPLE TYPE: [ ] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1430	9.30	~200	—	—	—	—	—	—	~8	

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	—	—	—	—	—	—

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER

DECON FLUIDS USED
- [x] ALCONOX
- [x] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [x] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
X	VOCs	8260		N	HCL	x3 40ml	

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	X	
NO-PURGE METHOD UTILIZED		

NUMBER OF GALLONS GENERATED: ~.25

NOTES: Scr. & 40 gr, Sand 20 gr. Tor to gr. ~2!

DEVIATIONS FROM THE WORK PLAN:

Samplor Signature: [signature] Print Name: S. Mundi

Checked By: C Staples Date: 6/24/22

GRAB SAMPLING RECORD - WATER

MACTEC
511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME		LOCATION ID	DATE
Irvington Rugs and Cleaners		DP-012	5/26/2022
PROJECT NUMBER		**START TIME**	**END TIME**
3616216144		1000	1020
SAMPLE ID	**SAMPLE TIME**	**SITE NAME/INSTALLATION**	**PAGE**
360175-DP01206	1010		1 OF 1

SAMPLE TYPE: [X] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE FAP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1010	collect sample.	No Parameters								
FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)										

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER _____
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] ALCONOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [ ] SILICON TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [X] WL METER _____
- [ ] PID _____
- [ ] WQ METER _____
- [ ] TURB. METER _____
- [ ] PUMP _____
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
X	VOCS	8260		No	HCL	40 ml	No

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [X] NO [ ]
NUMBER OF GALLONS GENERATED _____
NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NOTES:
Installed temporary well on 5/25 at 1411-1537. Boring installed to 6 ft below ground.
Well was dry when installed - left overnight to recharge.

Josh Minardi
Sampler Signature: Print Name: Josh Minardi

Checked By: C. Staples Date: 6/23/2023

DEVIATIONS FROM THE WORK PLAN:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME		LOCATION ID	DATE
NYSDEC IRVINGTON CLEANERS		OP-15	5/24/22
PROJECT NUMBER		**START TIME**	**END TIME**
3616216144		1700	1710
SAMPLE ID	**SAMPLE TIME**	**SITE NAME/INSTALLATION**	**PAGE**
DP 360175-OP015000 DP01+2012	1700	Irvington Cleaners	1 OF 1

SAMPLE TYPE: [X] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1700	6.70 TOR	200	—	—	—	—	—	—	10	

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	—	—	—	—	—	—

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER _____
- [ ] PDB
- [ ] HYDRASLEEVE _____
- [ ] OTHER _____

DECON FLUIDS USED
- [X] ALCONOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [ ] WL METER _____
- [ ] PID _____
- [ ] WQ METER _____
- [ ] TURB. METER _____
- [ ] PUMP _____
- [ ] OTHER _____
- [ ] FILTERS NO. ___ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
X	VOCs	8260		N	HCL	x3 40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [X] NO [ ]
NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]
NUMBER OF GALLONS GENERATED: 1.25

NOTES: Scr. 9-gr., Sand 9 gr.
TOR flush w/ ground.

Sampler Signature: _____ Print Name: J. Minard

Checked By: C Staples Date: 6/24/22

DEVIATIONS FROM THE WORK PLAN:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC IRVINGTON CLEANERS
PROJECT NUMBER	3616216144
SAMPLE ID	360178-DP016012
SAMPLE TIME	1722
LOCATION ID	DP-16
DATE	5/29/22
START TIME	1722
END TIME	1728
SITE NAME/INSTALLATION	Irvington Cleaners
PAGE	1 OF 1

SAMPLE TYPE: [X] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QPP)

TIME	DTW (FT) TOR	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1722	12.05	~200	✓	✓	✓	✓	✓	✓	~12	

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	✓	✓	✓	✓	✓	✓

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER

DECON FLUIDS USED
- [X] ALCONOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER
- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
X	VOCs	8260		N	HCL	x3 40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [X] NO [ ]
NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]
NUMBER OF GALLONS GENERATED: ~.25

NOTES: Scr. 12-2, Send to grade
POR to gr. ~2

Sampler Signature: [signature] Print Name: S. Minors

Checked By: C Staples Date: 6/24/22

DEVIATIONS FROM THE WORK PLAN:

GRAB SAMPLING RECORD - WATER

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC IRVINGTON CLEANERS	LOCATION ID: DP-1517
PROJECT NUMBER: 3616216144	DATE: 6/25/22
SAMPLE ID: B60175-DP01702	START TIME: DM 1700 / SM 1745
SAMPLE TIME: 1700-1745	END TIME: SM 1710-1760
SITE NAME/INSTALLATION: Irvington Cleaners	PAGE: OF

SAMPLE TYPE: [X] GROUNDWATER [ ] SURFACE WATER [ ] STORM WATER [ ] DRINKING WATER [ ] PORE WATER [ ] OTHER: _____

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1745 1700	6.70	≤200	—	—	—	—	—	—	≈11.50	not run through CCN

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	—	—	—	—	—	—

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure (SF) max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [ ] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] PDB
- [ ] HYDRASLEEVE
- [ ] OTHER

DECON FLUIDS USED
- [X] ALCONOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [ ] WL METER
- [ ] PID
- [ ] WQ METER
- [ ] TURB. METER
- [ ] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
X	VOCs	8260		N	HCL	x3 40ml	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [X] NO [ ]
NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]
NUMBER OF GALLONS GENERATED: ≈.25

NOTES: SCR. 12-2, Sand pack
DM SM TOR to ground. ≈2.6

Sampler Signature: [signature] Print Name: J. Menard

Checked By: C Staples Date: 6/24/22

DEVIATIONS FROM THE WORK PLAN:

D.3.3
GROUNDWATER SAMPLING
JUNE 2022

FIELD INSTRUMENT CALIBRATION RECORD

PROJECT NAME: NYSDEC Nunston Cleaners
PROJECT NUMBER: 36162614
PROJECT LOCATION: Nunston NY
WEATHER CONDITIONS (AM): Sunny, 85
WEATHER CONDITIONS (PM): Sunny 85
TASK NO: 02 DATE: 6/14/22
MACTEC CREW: S. Mancuso
SAMPLER NAME:
SAMPLER SIGNATURE:
CHECKED BY: DATE: 6/28/22

MULTI-PARAMETER WATER QUALITY METER

METER TYPE YSI
MODEL NO. 556 MPS
UNIT ID NO. M015-07

AM CALIBRATION Start Time 0810 /End Time 0830

POST CALIBRATION CHECK Start Time 1155 /End Time 1208

	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
pH (4)	SU	4.0	4.00	+/- 0.1 pH Units			
pH (7)	SU	7.0	7.01	+/- 0.1 pH Units	7.0	7.00	+/- 0.3 pH Units
pH (10)	SU	10.0	—	+/- 0.1 pH Units			
Redox	+/- mV	240	240	+/- 10 mV	240	238	+/- 10 mV
Conductivity	mS/cm	1.413	1.413	+/- 0.5 % of standard	1.413	1.413	+/- 5% of standard
DO (saturated)	%	100	98.2	+/- 2% of standard			
DO (saturated)	mg/L[1] (see Chart 1)	9.35	9.40	+/- 0.2 mg/L	7.6	8.0	+/- 0.5 mg/L of standard
DO (<0.1)	mg/L	<0.1	—	< 0.5 mg/L			
Temperature	°C		17.3			30.25	
Baro. Press.	mmHg		766.1			766.1	

TURBIDITY METER

METER TYPE Hach
MODEL NO. 2100Q
UNIT ID NO. M024-29

	Units	Standard Value	Meter Value	Standard Value	Meter Value	*Acceptance Criteria (PM)
<0.1 Standard	NTU	10 <0.1	8.92	10 <0.1	10.2	+/- 0.3 NTU of stan.
20 Standard	NTU	20	20.1	20	21.1	+/- 5% of standard
100 Standard	NTU	100	101	100	108	+/- 5% of standard
800 Standard	NTU	800	795	800	802	+/- 5% of standard

PHOTOIONIZATION DETECTOR

METER TYPE NA
MODEL NO.
UNIT ID NO.

Background	ppmv	<0.1		<0.1		within 5 ppmv of BG
Span Gas	ppmv	100		100		+/- 10% of standard

O_2-LEL 4 GAS METER

METER TYPE NA
MODEL NO.
UNIT ID NO.

Methane	%	50		50		+/- 10% of standard
O_2	%	20.9		20.9		+/- 10% of standard
H_2S	ppmv	25		25		+/- 10% of standard
CO	ppmv	50		50		+/- 10% of standard

OTHER METER

METER TYPE
MODEL NO.
UNIT ID NO.

See Notes Below for Additional Information

☑ Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
☐ Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source: Portland FOS
Lot#/Date Produced:
Trip Blank Source: Laboratory provided
Sample Preservatives Source: Laboratory provided
Disposable Filter Type: in-line 0.45µm cellulose
Calibration Fluids / Standard Source:
- DO Calibration Fluid (<0.1 mg/L) Portland FOS
- Other
- Other
- Other

	Cal. Standard Lot Number	Exp. Date
pH (4)	164614	23-Nov
pH (7)	165124	23-Oct
pH (10)	—	—
ORP	164536	22-Aug
Conductivity	165479	22-Oct
<0.1 Turb. Stan.	A2040	7/23
20 Turb. Stan.	A2015	6/23
100 Turb. Stan.	A2034	5/23
800 Turb. Stan.	A2091	7/23
PID Span Gas	—	—
O_2-LEL Span Gas		
Other	—	—

NOTES:

* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-FieldCalibrat) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additonal acceptance criteria obtained from instrument specific manufacturer recommendations.
** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.
1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-FieldCalibrat), dated 1/19/2010.

MACTEC
511 Congress Street Portland Maine 04101

FIELD INSTRUMENT CALIBRATION RECORD

LOW-FLOW GROUNDWATER SAMPLING RECORD

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC Irvington
PROJECT NUMBER	3616236144
SAMPLE ID	360175-DP020U
SAMPLE TIME	1200
LOCATION ID	DP-02
DATE	6/14/22
START TIME	1050
END TIME	1210
SITE NAME/INSTALLATION	—
PAGE	1 OF 1

WELL DIAMETER (IN.): ☑ 1 ☐ 2 ☑ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☑ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☑ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED			✓
COLLAR	✓		

INITIAL DTW (BMP)	3.65 FT	FINAL DTW (BMP)	3.70 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	NM FT
WELL DEPTH (BMP)	12.15 FT	SCREEN INTERVAL	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	8.50 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	0.002 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter² X 0.041)	0.35 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	2.50 GAL	DRAWDOWN/ TOTAL PURGED	0.0008	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1050	BEGIN PURGING									
1140	3.70	150	17.67	0.751	3.98	6.96	46.8	5.25		
1145	3.70		14.56	0.718	4.23	6.93	48.2	5.04		
1150	3.70		17.25	0.698	4.03	6.91	49.7	4.88		
1155	3.70		17.11	0.696	3.98	6.90	47.9	4.22		
1200										

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	17.1	0.70	3.0	6.9	48	4.2

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☑ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ WATTERA
- ☐ OTHER
- ☐ OTHER

DECON FLUIDS USED
- ☑ ALCONOX
- ☑ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☐ HEXANE
- ☐ METHANOL
- ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
- ☑ SILICON TUBING
- ☐ HDPE TUBING
- ☐ LDPE TUBING
- ☐ OTHER
- ☐ OTHER

- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ OTHER
- ☐ OTHER
- ☐ OTHER

EQUIPMENT USED
- ☐ WL METER M200-67
- ☐ PID
- ☑ WQ METER AQ15-07
- ☑ TURB. METER M15-39
- ☐ PUMP
- ☐ OTHER
- ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
☑	PFAS	537	—	—	None	250 mL	—

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	☑	☐
NO-PURGE METHOD UTILIZED	☐	☐

NUMBER OF GALLONS GENERATED: 2.5

NOTES

Sampler Signature: [signature] Print Name: SSM

Checked By: [signature] Date: 6/28/22

DEVIATIONS FROM THE WORK PLAN

REV 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC Irvington		LOCATION ID: MW-03D	DATE: 6/14/22
PROJECT NUMBER: 3616256144		START TIME: 1014	END TIME: 1140
SAMPLE ID: 360175-MW003D020	SAMPLE TIME: 1130	SITE NAME/INSTALLATION:	PAGE: 1 OF 1

WELL DIAMETER (IN.): ☑ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☑ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ T ORISER (TOR) ☑ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED			✓
COLLAR	✓		

INITIAL DTW (BMP)	4.20 FT	FINAL DTW (BMP)	9.35 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	~~NA~~ FT
WELL DEPTH (BMP)	25.95 FT	SCREEN INTERVAL	10 FT	PID AMBIENTAIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	16.75 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	0.006 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter² X 0.041)	0.69 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	8.91 GAL	DRAWDOWN/ TOTAL PURGED	0.0002	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O₂ (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1014	BEGIN PURGING									
1055	4.35	130	16.78	0.847	4.22	7.21	7.9	2.95		
1100	4.35		17.26	0.844	4.12	7.20	11.4	2.08		
1105	4.35		17.56	0.845	4.14	7.21	19.0	1.58		
1110	4.35		17.43	0.845	4.12	7.20	24.8	1.02		
1115	4.35		17.26	0.845	4.22	7.19	32.7	1.01		
1120	4.35		17.20	0.846	4.15	7.19	35.3	1.00		
1125	4.35		17.10	0.847	4.23	7.20	35.8	0.88		
1130										

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	17	0.85	4.2	7.2	36	0.9

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max. nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (-14.1 = -14, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☑ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ WATTERA
- ☐ OTHER
- ☐ OTHER

DECON FLUIDS USED
- ☑ ALCONOX
- ☑ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☐ HEXANE
- ☐ METHANOL
- ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
- ☑ SILICON TUBING
- ☐ HDPE TUBING
- ☐ LDPE TUBING
- ☐ OTHER
- ☐ OTHER

- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ OTHER
- ☐ OTHER
- ☐ OTHER

EQUIPMENT USED
- ☑ WL METER MA200.67
- ☐ PID
- ☑ WQ METER MU15707
- ☑ TURB. METER MA200-67
- ☐ PUMP
- ☐ OTHER
- ☐ FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
✓	PFAS	537	—	—	None	250 mL	—

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	✓	
NO-PURGE METHOD UTILIZED		

NUMBER OF GALLONS GENERATED: 29L

NOTES:

Sampler Signature: [signature] Print Name: JSM

Checked By: [signature] Date: 6/28/22

DEVIATIONS FROM THE WORK PLAN

REV. 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: Irvington, NYSDEC		LOCATION ID: DP-04	DATE: 6/14/22
PROJECT NUMBER: 3616216144		START TIME: ~~0755~~ 0810	END TIME: 1045
SAMPLE ID: DP04-360175-060422011	SAMPLE TIME: 1035	SITE NAME/INSTALLATION:	PAGE: 1 OF 1

WELL DIAMETER (IN.): ☑ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☑ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED			✓
COLLAR	✓		

INITIAL DTW (BMP)	5.95 FT	FINAL DTW (BMP)	7.05 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	NM FT
WELL DEPTH (BMP)	14.05 FT	SCREEN INTERVAL	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	8.1 FT	DRAWDOWN VOLUME (final DTW - initial DTW X well diam. squared X 0.041)	0.065 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter² X 0.041)	0.35 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	~~5.09~~ 5.64 GAL	DRAWDOWN/ TOTAL PURGED	0.011	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
0755	BEGIN PURGING									
1005	7.05	150	16.55	0.888	1.71	7.01	-100.9	5.17		
1020	7.05		16.46	0.863	1.67	7.01	-95.2	4.26		
1025	7.05		16.36	0.845	1.69	7.02	-92.1	4.12		
1030	7.05		16.47	0.840	1.68	7.02	-88.9	3.99		
1035	7.05		16.46	0.830	1.71	7.02	-86.9	3.28		
1040										
1045										
1050										

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	16	0.83	1.7	7.0	-87	3.3

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max. nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (-44.1 = -44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☑ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ WATTERA
- ☐ OTHER
- ☐ OTHER

DECON FLUIDS USED
- ☐ ALCONOX
- ☐ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☐ HEXANE
- ☐ METHANOL
- ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
- ☑ SILICON TUBING
- ☐ HDPE TUBING
- ☐ LDPE TUBING
- ☐ OTHER
- ☐ OTHER

- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ OTHER
- ☐ OTHER
- ☐ OTHER

EQUIPMENT USED
- ☑ WL METER M20 - 67
- ☐ PID
- ☑ WQ METER M45-07
- ☑ TURB METER M29-62
- ☐ PUMP
- ☐ OTHER
- ☐ FILTERS NO ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
✓	PFAS	537	—			250mL	

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	✓	
NO-PURGE METHOD UTILIZED		

NUMBER OF GALLONS GENERATED: 5.64

NOTES: Tubing replaced, possible product observed

Sampler Signature: Print Name: SSM

Checked By: Date: 6/28/22

DEVIATIONS FROM THE WORK PLAN

REV. 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: Ingalton		LOCATION ID: DP05	DATE: 6/14/22
PROJECT NUMBER: 3M 3616 216144		START TIME: 0752 0810 0752	END TIME: 1003
SAMPLE ID: DP05 360175-DP05SW	SAMPLE TIME: 0953	SITE NAME/INSTALLATION: —	PAGE: 1 OF 1

WELL DIAMETER (IN.): ☒ 1 ☐ 2 ☐ 4 ☐ 6 ☐ 8 ☐ OTHER

TUBING ID (INCHES): ☐ 1/8 ☒ 1/4 ☐ 3/8 ☐ 1/2 ☐ 5/8 ☐ OTHER

MEASUREMENT POINT (MP): ☐ TOP OF RISER (TOR) ☐ TOP OF CASING (TOC) ☐ OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING			
LOCKED			✓
COLLAR	✓		

INITIAL DTW (BMP)	6.90 FT	FINAL DTW (BMP)	8.00 FT	PROT. CASING STICKUP (AGS)	NM FT	TOC/TOR DIFFERENCE	JM ~~0~~ FT
WELL DEPTH (BMP)	15.30 FT	SCREEN INTERVAL	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	8.4 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	0.045 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter^2 X 0.041)	0.347 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	4.09 GAL	DRAWDOWN/ TOTAL PURGED	0.011	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME ~~0752~~ 0757	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% and <10 ntu or 3 values <5 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
0752	BEGIN PURGING									
0908	8.00	120	17.20	0.693	6.26	6.95	109.5	270		
0913	8.00		17.20	0.693	4.64	6.96	108.4	170		
0918	8.00		17.19	0.693	4.04	6.97	107.8	112		
0923	8.00		17.23	0.693	3.80	6.97	106.3	81.4		
0928			17.21	0.695	3.61	6.98	102.7	77.3		
SM 0933	—	—	—	—	—	—	—	—		Wait for turb to settle
0943 0936	8.00		17.24	0.695	3.34	6.99	99.6	23.3		
0948	8.00		17.26	0.696	3.34	6.99	92.2	23.6		
0953	8.00		17.26	0.695	3.30	6.99	90.7	23.1		

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

	17	0.69	3.3	7.0	91	23.1

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max. nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- ☒ PERISTALTIC
- ☐ SUBMERSIBLE
- ☐ BLADDER
- ☐ WATTERA
- ☐ OTHER
- ☐ OTHER

DECON FLUIDS USED
- ☐ ALCONOX
- ☐ DEIONIZED WATER
- ☐ POTABLE WATER
- ☐ NITRIC ACID
- ☐ HEXANE
- ☐ METHANOL
- ☐ OTHER

TUBING/PUMP/BLADDER MATERIALS
- ☒ SILICON TUBING
- ☐ HDPE TUBING
- ☐ LDPE TUBING
- ☐ OTHER
- ☐ OTHER

- ☐ S. STEEL PUMP MATERIAL
- ☐ PVC PUMP MATERIAL
- ☐ GEOPROBE SCREEN
- ☐ OTHER
- ☐ OTHER
- ☐ OTHER

EQUIPMENT USED
- ☒ WL METER Mod-67
- ☐ PID
- ☒ WQ METER Mod-07
- ☒ TURB METER Mod-21
- ☐ PUMP
- ☐ OTHER
- ☐ FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
☐	PFAS	537	—	—	None	250mL	360175-DP05SW D/US/MSD
☐							
☐							
☐							
☐							
☐							
☐							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	✓	
NO-PURGE METHOD UTILIZED		

NUMBER OF GALLONS GENERATED: 4.09

NOTES

Sampler Signature: Print Name: SM

Checked By: Date: 6/28/22

DEVIATIONS FROM THE WORK PLAN

REV. 3/29/2019

D.3.4
GROUNDWATER SAMPLING
MARCH 2024

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC
511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME: NYSDEC Irvington		LOCATION ID: DP-04	DATE: 3/8/24
PROJECT NUMBER: 3616216144.02		START TIME: 1152	END TIME: 1245
SAMPLE ID: 360175-DP004012	SAMPLE TIME: 1245	SITE NAME/INSTALLATION: Irvington R&C	PAGE: 1 OF 1

WELL DIAMETER (IN.): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER
TUBING ID (INCHES): [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER
MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	✓		
CASING	✓		✓
LOCKED	✓		✓
COLLAR	✓		

INITIAL DTW (BMP)	4.44 FT	FINAL DTW (BMP)	6.05 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	1.55 FT
WELL DEPTH (BMP)	13.98 FT	SCREEN INTERVAL	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	9.54 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam. squared X 0.041)	0.0660 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter² X 0.041)	0.391 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	1.791 GAL	DRAWDOWN/ TOTAL PURGED	0.0368	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1152	BEGIN PURGING									
1200	6.30	130	10.4	0.620	4.13	7.03	-96.1	NA	~12	
1205	6.03	130	10.6	0.571	7.46	7.32	-99.0	11.5	~12	
1210	6.02	130	10.6	0.564	7.80	7.34	-101.4	17.0	~12	
1215	6.02	130	10.6	0.564	8.20	7.37	-105.7	11.04	~12	
1220	6.03	130	10.5	0.553	8.89	7.43	-111.5	18.2	~12	
1225	6.03	130	10.4	0.550	9.11	7.45	-112.4	16.9	~12	
1230	6.04	130	10.4	0.550	9.25	7.46	-112.6	16.0	~12	
1235	6.05	130	10.4	0.547	9.36	7.48	-113.1	16.8	~12	
1245	sample									

FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)

10	0.547	9.4	7.5	-110	16.8	

TEMP: nearest degree (ex. 10.1 = 10)
COND: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: [X] PERISTALTIC [ ] SUBMERSIBLE [ ] BLADDER [ ] WATTERA [ ] OTHER [ ] OTHER
DECON FLUIDS USED: [X] ALCONOX [X] DEIONIZED WATER [ ] POTABLE WATER [ ] NITRIC ACID [ ] HEXANE [ ] METHANOL [ ] OTHER
TUBING/PUMP/BLADDER MATERIALS: [X] SILICON TUBING [X] HDPE TUBING [ ] LDPE TUBING [ ] OTHER [ ] OTHER; [ ] S. STEEL PUMP MATERIAL [ ] PVC PUMP MATERIAL [ ] GEOPROBE SCREEN [ ] OTHER [ ] OTHER [ ] OTHER
EQUIPMENT USED: [X] WL METER FA04028 [ ] PID [X] WQ METER FA013550 [X] TURB. METER FA003S7 [X] PUMP BaroPUMP FA03466 [ ] OTHER [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	QC COLLECTED
[X]	PFAS	1633	PFAS	N	None	500 mL x 2 125 mL	Yes. MS/MSD.
						500mL x 2, 125 mL	MS
						500mL x 2, 125 mL	MSD

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO
NUMBER OF GALLONS GENERATED: ~1.8
NO-PURGE METHOD UTILIZED: [ ] YES [ ] NO

NOTES: MS, MSD collected. MS: 360175-DP004012MS
MSD: 360175-DP004012MSD

Sampler Signature: Merl McBenny Print Name: MERL MCBENNY
Checked By: Date:

DEVIATIONS FROM THE WORK PLAN

REV 3/29/2019

LOW FLOW GROUNDWATER SAMPLING RECORD

MACTEC

511 Congress Street
Suite 200
Portland, Maine 04101

PROJECT NAME	NYSDEC Irvington
PROJECT NUMBER	3646216144.02
SAMPLE ID	360175-MW003D027
SAMPLE TIME	1545
LOCATION ID	MW-3D
DATE	3/8/24
START TIME	1445
END TIME	1540
SITE NAME/INSTALLATION	Irvington R&C
PAGE	1 OF 1

WELL DIAMETER (IN.): [X] 1 [ ] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER
TUBING ID (INCHES): [ ] 1/8 [ ] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER
MEASUREMENT POINT (MP): [X] TOP OF RISER (TOR) [ ] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY	YES	NO	N/A
CAP	✓		
CASING	✓		
LOCKED			✓
COLLAR	✓		

INITIAL DTW (BMP)	9.10 FT	FINAL DTW (BMP)	9.41 FT	PROT. CASING STICKUP (AGS)	NA FT	TOC/TOR DIFFERENCE	0.17 FT
WELL DEPTH (BMP)	25.9 FT	SCREEN INTERVAL	10 FT	PID AMBIENT AIR	NA PPM	REFILL TIMER SETTING	NA SEC
WATER COLUMN	16.8 FT	DRAWDOWN VOLUME (final DTW- initial DTW X well diam squared X 0.041)	0.0127 GAL	PID WELL MOUTH	NA PPM	DISCHARGE TIMER SETTING	NA SEC
CALCULATED GAL/VOL (water column X well diameter² X 0.041)	0.68 GAL	TOTAL VOL. PURGED (mL per minute X total minutes X 0.00026 gal/mL)	3.57 GAL	DRAWDOWN/ TOTAL PURGED	0.0035	PRESSURE TO PUMP	NA PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA

TIME	DTW (FT)	PURGE RATE (mL/min)	TEMP. (°C) ±3%	SP. CONDUCTANCE (mS/cm) ±3%	DISS. O_2 (mg/L) ±10% or 3 values <0.5 mg/L	pH (units) ±0.1	REDOX (mv) ±10 mv	TURBIDITY (ntu) ±10% or <10 ntu	PUMP INTAKE DEPTH (ft)	COMMENTS
1445	BEGIN PURGING									
1455	9.38	250	13.4	0.584	4.37	7.31	-47.7	2.16	24.9	
1500	9.39	250	13.4	0.586	4.10	7.30	-32.0	1.87	24.9	
1505	9.40	250	13.5	0.588	4.06	7.29	10.9	2.19	24.9	
1510	9.40	250	13.5	0.589	3.97	7.29	30.3	1.12	24.9	
1515	9.40	250	13.4	0.591	3.88	7.29	51.5	1.19	24.9	
1520	9.41	250	13.4	0.592	4.03	7.29	62.6	1.16	24.9	
1525	9.41	250	13.5	0.593	3.97	7.29	67.6	0.96	24.9	
1530	9.41	250	13.5	0.594	3.94	7.29	75.1	0.49	24.9	
1535	9.42	250	13.5	0.596	3.96	7.29	79.4	1.31	24.9	
1540	9.41	250	13.4	0.597	3.96	7.29	84.3	0.69	24.9	
FINAL STABILIZED FIELD PARAMETERS (rounded to appropriate significant figures)			13	0.597	4.0	7.3	84	0.7		

TEMP: nearest degree (ex. 10.1 = 10)
COND: 3 significant figure max (ex. 1.686 = 1.69)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] WATTERA
- [ ] OTHER
- [ ] OTHER

DECON FLUIDS USED
- [X] ALCONOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER
- [ ] S STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [X] WL METER FA04028
- [ ] PID
- [X] WQ METER FA03160
- [X] TURB. METER FA00857
- [X] PUMP FA02466
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	ANALYTE LIST	FIELD FILTERED	PRESERVATION METHOD (NA)	VOLUME REQUIRED	QC COLLECTED
[X]	PFAS	1633	PFAS	N	500mL x2		NO
					125 mL		

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: [X] YES [ ] NO
NUMBER OF GALLONS GENERATED: ~35
NO-PURGE METHOD UTILIZED: [ ] YES [ ] NO

NOTES

Sampler Signature: Merl Mendy Print Name: MERIL M BENNY
Checked By: Date:

DEVIATIONS FROM THE WORK PLAN

REV 3/29/2019

DUP-03152024

D.4
SOIL SAMPLING

D.4.1
SOIL SAMPLING
SEPTEMBER 2022

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Rugs and Cleaners			Boring ID: SB01
Project Location: Irvington, NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: SB-001	Refusal Depth: NA	Total Depth: 2.0ft bgs	Bore Hole OD: 4"
Weather: 69°F	Soil Drilled: 2.0ft bgs	Drilling Method: Hang Auger	Casing Size: NA
Subcontractor: NA	Rock Drilled: NA	Protection Level: Level D	Sampler: M.Benny
Driller: M.Benny, J.Feng	Date Started: 9/27/22	Date Completed: 9/27/22	Sampler ID/OD: 4"
Rig Type/Model: Hang Auger	Logged By: M.Benny	Checked By: R.Dugal	
Reference Elevation: Ground surface	Water Level: NA	Time: 1345	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0 - 3 in								Asphalt		
0.0								Brown, damp, sandy soil with well graded gravel 360175-SB001-0.17	SW	
0.17 ft								Dark and light brow sandy soil with well graded gravel (>1/8")	SW	
0.17 ft								360175-SB001-1.0		
1.0 ft								gray-light brown poorly graded gravelly sand (coarse)	SP-SM	
2.0 ft										

NOTES:
Sample time 1438

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Rugs and Cleanes			Boring ID: SB-2
Project Location: Irvington, NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: SB-002	Refusal Depth: NA	Total Depth: 2.0ft bgs	Bore Hole OD: 4"
Weather: 68°f	Soil Drilled: 2.0ft bgs	Drilling Method: Hand Auger	Casing Size: NA
Subcontractor: NA	Rock Drilled: NA	Protection Level: Level D	Sampler: M.Benny
Driller: M.Benny, J.Feng	Date Started: 9/27/22	Date Completed: 9/27/22	Sampler ID/OD: 4"
Rig Type/Model: Hang Auger	Logged By: M.Benny	Checked By: R.Dugal	
Reference Elevation: Ground surface	Water Level: NA	Time: 1300	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0								Asphalt		
3" / 0	X							Brown sandy soil with poorly graded gravel., damp soil. low plasticity	SP	
0.17 ft	X							Darker brown sandy soil with P well graded gravel. moist low plasticity	SW	
1.0 ft	X							Darker brown sandy soil with well graded gravel moist low plasticity	SW	
2.0	X									

NOTES: 1430 Sample time 1330.

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Rugs and Cleaners			Boring ID: SB-003
Project Location: Irvington			Page No.: 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: SB-03	Refusal Depth: 2.4ft bgs	Total Depth: 2.4ft bgs	Bore Hole OD: 4"
Weather: 59° f	Soil Drilled: 2.4ft bgs	Drilling Method: Hand Auger	Casing Size: NA
Subcontractor: NA	Rock Drilled: NA	Protection Level: Level D	Sampler: M. Benny
Driller: Jack Feng / Meril Benny	Date Started: 09/27/22	Date Completed: 9/27/22	Sampler ID/OD: 4"
Rig Type/Model: Hand Auger / Geoprobe	Logged By: M. Benny	Checked By: R. Dugal	
Reference Elevation: Ground surface	Water Level: NA	Time: 1050	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0								Asphalt drilled / cored through		
3 in										
0								well graded gravel, brown moist soil coarse sand, subangular gravel 360175-SB00B-0.17 well graded gravel with sand	GW	
0.17 ft								well graded soil and gravel brown, moist, with 3in cobbles low plasticity. well graded gravel with sand 360175-SB003-1.0	GW	
1.0										
1.0								Brown, moist sand soil with some well graded gravel; low plasticity, white shell like particles. 360175-SB003-2.0	SW	
2.0										

NOTES: unable to get past 2ft 5", unable to take 6ft sample.

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Rugs and Cleaners			Boring ID: SB-004
Project Location: Irvington, NY			Page No. 1
Project No.: 3616216144 Client: NYSDEC			of: 1
Boring Location: SB-04	Refusal Depth: NA	Total Depth: 2.0ft bgs	Bore Hole OD: 4"
Weather: 59° f	Soil Drilled: 2.0ft bgs	Drilling Method: Hand Auger	Casing Size: NA
Subcontractor: NA	Rock Drilled: NA	Protection Level: Level D	Sampler: M. Benny
Driller: Jack Fung / MMB	Date Started: 9/27/22	Date Completed: 9/27/22	Sampler ID/OD: 4"
Rig Type/Model: Hang Auger.	Logged By: M. Benny	Checked By: R. Dugal	
Reference Elevation: Ground Surface	Water Level: NA	Time: 930	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
ft 0	x						0 - 0.17	GrP poorly graded gravel, gravel sand mixtures, low plasticity, moist soft., brown 360175-SB004-0.17, D	GrP	Dupe collected
0.17	x						0.17 - 1.0	sandy, poorly graded gravel moist, brown and lighter brown soil soft. low plasticity. 360175-SB004-1.0, MS, MD	GrP	MS, MD collected.
1.0	x						1.0 - 2.0	brown, Well graded sandy gravel, moist Silty grovel, gravel, sand silt mixture. Shell like white particles. ~~Roots~~ Forms can form, ~~it~~ ~~crumbles~~ into a ball. 360175-SB0042.0	GM	
2.0	x									

NOTES:

Sample time 1000 Duplicate sample taken (0.17)
MS, MD samples taken (@1.0)

D.4.2
SOIL SAMPLING
OCTOBER 2023

Sampler:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington cleaners			Boring ID: SB-1A
Project Location: Irvington NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: Irvington Cleaners Driveway	Refusal Depth: NA	Total Depth: 6'	Bore Hole OD: 3"
Weather: Sunny, 60s	Soil Drilled: 6	Drilling Method: DirectPush	Casing Size: 3"
Subcontractor: La Bella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Austin/Austin	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 1.5"
Rig Type/Model: 6610 DT	Logged By: JM	Checked By:	
Reference Elevation: ~NA	Water Level: @ 5½-6'	Time:	

Drilling Information					Sample Information			Sample Description and Classification	USCS Classification	Remarks
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)			
0-3		2'						1-1.5' D. Br gv br. fine SAND, w gravel 1.5-2-3 Tannish-br. fine SAND, w/ gravel, brick pcs/fill		
3-6		2½'						3-4. Br. fine SAND, w/ gravel + coal ash 4-6 Br. fine to Med. SAND w/ gravel, SAT @ 5.5 brick dust layer @ 5.7-5.10		

NOTES:

Sampler:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: SB-2A
Project Location: Irvington NY			Page No.: 1
Project No.: 3616161144	Client: NYSDEC		of: 1
Boring Location: Irvington Cleaners Driveway	Refusal Depth: N/A	Total Depth: 6'	Bore Hole OD: 3"
Weather: Sunny, 60s	Soil Drilled: 6'	Drilling Method: Direct Push	Casing Size: 3"
Subcontractor: LaBella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Austin/Austin	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 1.5"
Rig Type/Model: 6610DT	Logged By: SM	Checked By:	
Reference Elevation: UNK	Water Level: UNK	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-3		0-2.7ft						2" Asphalt 2"-1' fill material brown, fine-med SAND, w/ angular pebbles 1'-3' Br fine SAND, w/ cobbles wood ash band @ 2.5'-2.7'		
3-6		2.5'						3-3.5 ~~Silt~~ SAA w/ brick material 3.5-6 Br fine SAND, lr silt.		

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: SB-3A
Project Location: Irvington, NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: Irvington Cleaners Backyard	Refusal Depth: NA	Total Depth: 6'	Bore Hole OD: 3"
Weather: Sunny, 60s	Soil Drilled: 6'	Drilling Method: DirectPush	Casing Size: 3"
Subcontractor: La Bella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Austin/Austin	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 1.5"
Rig Type/Model: 6610 DT	Logged By: JM	Checked By:	
Reference Elevation: UNK	Water Level: ~6'	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-3		1.9'						0-5" Asphalt to ~~Tannish~~ Tanish Brown fine SAND, w/ gravel 5" - 3' Tanish - brown fine SAND w/ gravel		
3-6		2'						3-3.2" SAA ~~w~~ SM 3.2-3.4 Yellow fine SAND, w/ gravel 3.4-6 D. Br. fine SAND, Damp w/ cobbles + gravel, ~~brick~~ in bottom 2" brick dust SAT @ 6'		

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: SB-4
Project Location: Irvington, NY			Page No. 1
Project No.: 361626144	Client: NYSDEC		of: 1
Boring Location: 8 N. Dutcher Courtyard	Refusal Depth: NA	Total Depth: 6'	Bore Hole OD: 3"
Weather: Sunny, 60's	Soil Drilled: 6	Drilling Method: Direct Push	Casing Size: 3"
Subcontractor: La Bella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Aus4in / Aus4in	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 1.5"
Rig Type/Model: 420M	Logged By: JM	Checked By:	
Reference Elevation: UNK	Water Level: UNK	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-3		1.8'						0-1.5 Br. fine to med SAND, w/ gravel, tr. org 1.5-3 Br. Fine SAND, w/ gravel		
3-6		1.6'						~~1.5-3.5~~ on 3-5 SAA, tr. silt 5-6 gray, silty SAND, Damp		

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: ~~36014~~ SB-5
Project Location: Irvington, NY			Page No. 1
Project No.: 3616261449	Client: NYSDEC		of: 1
Boring Location: Irvington Cleaners Driveway	Refusal Depth: ~~6~~ NA	Total Depth: 6'	Bore Hole OD: 3"
Weather: Sunny, 60's	Soil Drilled: ~~NA~~ 6	Drilling Method: Direct Push	Casing Size: 3"
Subcontractor: La Bella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Austin/Austin	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 1, 5
Rig Type/Model: 6610 DT	Logged By: MBarry JMirandi	Checked By:	36017-SB-5-6
Reference Elevation: CNK	Water Level: ~> 6'	Time: ~~0900~~ PM	

Drilling Information					Sample Information			Sample Description and Classification	USCS Classification	Remarks
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)			
0-2"		0-2.9A						asphalt		
2"-3'		2.9'						Br. to med br. fine SAND, layer of black charcoal material @ 1.2-1.4. Dump - Brick @ 3'		
3-6		2.3'						3-3.5 Br., fine to med. SAND, Dump, w/ brick chunks 3.5-6 ~~Br. f to f~~ PM Tannish, Br., fine SAND, Sat, tr silt		

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: SB-6
Project Location: Irvington NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: 8 N. Dutcher Courts	Refusal Depth: NA	Total Depth: 6'	Bore Hole OD: 3"
Weather: Sunny, 60s	Soil Drilled: 6	Drilling Method: Direct Push	Casing Size: 3"
Subcontractor: Labella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Austin/Austin	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 1.5"
Rig Type/Model: 420M	Logged By: JM	Checked By:	
Reference Elevation: UNK	Water Level: UNK	Time:	

Drilling Information					Sample Information			Sample Description and Classification	USCS Classification	Remarks
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)			
0-1		1'						0-0.2 D. Br. Med to fine SAND, tr org. 0.2-1 SAA + tr. gravel		
1-3		2'						1-2 Br, Med. Silty SAND tr org 2-3 SAA		
3-6		1'						3-5 SAA 5-6 Gray fine SAND, tr. odor		

NOTES:

Weather: | Soil Drilled: | Sampler:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: SB-7
Project Location: Irvington NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: SB-7	Refusal Depth: 7'	Total Depth: 6' 1.5'	Bore Hole OD: 3.5'
Weather: Sunny, 60s	Soil Drilled: 7.5'	Drilling Method: H. Auger	Casing Size: NA
Subcontractor: ~~by Bill~~ 3M NA	Rock Drilled: 5'	Protection Level: D	Sampler: H. Auger
Driller: M. Barry, J. Manuel	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 3.5'
Rig Type/Model: H. Auger	Logged By: 3M	Checked By:	
Reference Elevation: UNK	Water Level: UNK	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-0.5 ft					/	/		Light brown to dark brown ~~moist~~ MB damp soil, fine grained loam with some gravel	GM	
0.5-1.5 ft								Light brown moist ~~sand~~ fine Sand, w/ gravel + brick	GM	

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: SB6
Project Location: Irvington NY			Page No. 1
Project No: 3616216149	Client: NYSDEC		of: 1
Boring Location: 6 N. Dutcher Courtyard	Refusal Depth: NA	Total Depth: 6'	Bore Hole OD: 3"
Weather: Sunny, 60s	Soil Drilled: 6'	Drilling Method: Direct Push	Casing Size: 3"
Subcontractor: La Bella	Rock Drilled: NA	Protection Level: D	Sampler: Macrocore
Driller: Austin/Austin	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 1.5
Rig Type/Model: 420M	Logged By: JM	Checked By:	
Reference Elevation: UNK	Water Level: UNK	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-1		1'						0-0.2 Br fine SAND, w/ gravel + fr. silt 0.2-1 SAA, w/ brick/fill material, ~~to~~ wood ash remains		
1-3		1.1						Br. fine SAND w/ trg gravel + fr silt		
3-6		9"						SAA, bottom 2" gray, fine SAND, fr odor		

NOTES:

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: 30162161144.02			Boring ID: SB-4
Project Location: Irvington NY (NYSDEC)			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: N. Exchar St	Refusal Depth: NA	Total Depth: 2	Bore Hole OD: 3.5"
Weather: Sunny, 60s	Soil Drilled: 2	Drilling Method: Hand Auger	Casing Size: NA
Subcontractor: NA	Rock Drilled: NA	Protection Level: D	Sampler: H. Auger
Driller: J. Minardi	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 3.5"
Rig Type/Model: Hand Auger	Logged By: JM	Checked By:	
Reference Elevation: UNK	Water Level: UNK	Time:	

Drilling Information					Sample Information					
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)	Sample Description and Classification	USCS Classification	Remarks
0-0.2		4"						0-0.2' Br. med. SAND, tr. gravel		
0.2-1		1.5'						0.2-1.0 SAA		
1-2								1.0-2 Lgt Br. fine Silty sand, tr gravel		

NOTES: Sampled 0-0.2 and 1-2

SOIL BORING LOG

MACTEC
511 Congress Street, Portland Maine 04101

Project Name: Irvington Cleaners			Boring ID: SB-10
Project Location: Irvington NY			Page No. 1
Project No.: 3616216144	Client: NYSDEC		of: 1
Boring Location: ~~10~~ N. Dutcher tree belt	Refusal Depth: NA	Total Depth: 2'	Bore Hole OD: 3.5"
Weather: Sunny, 60s	Soil Drilled: 2'	Drilling Method: H. Auger	Casing Size: ~~3.5"~~ NA
Subcontractor: NA	Rock Drilled: NA	Protection Level: D	Sampler: H. Auger
Driller: S. Minard	Date Started: 10/18/23	Date Completed: 10/18/23	Sampler ID/OD: 3.5"
Rig Type/Model: H. Auger	Logged By: SM	Checked By:	
Reference Elevation: UNK	Water Level: UNK	Time:	

Drilling Information					Sample Information			Sample Description and Classification	USCS Classification	Remarks
Depth (feet bgs)	Sample Number	Penetration (ft) / Recovery (ft)	Blow Counts	N Value	PID Field Screening (ppm)	PID Head Space Reading (ppm)	Analytical Sample Depth (ft)			
0-0.2		9"						0-0.2 Brn Med SAND, tr. gravel, tr. org.		
0.2-1		10"						0.2-1.5 AA		
1-2		12"						1-2 Light Br. fine silty SAND, tr. gravel		

NOTES:

D.5
EXTERIOR SOIL VAPOR SAMPLING
MARCH 2022

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irvington		LOCATION (CITY, STATE): Irvington, NY	AOC NAME / NUMBER:
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/23/22 12:15	LOGGED BY: M
SAMPLE ID: 360175-GV008005	SAMPLE TIME: 12:38 - 13:38	ACTIVITY END DATE&TIME: 3/23/22 13:40	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 031460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000, ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	Used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	12:29	PRE-PURGE TRACE GAS CHAMBER READING	86.8	% (>50%)	
TIME BEGIN PURGING	12:32	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	12:36	POST-PURGE TRACE GAS CHAMBER READING	72.6	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:	PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$		Convert $in.^3$ to Liters:		
0.5 liters / min	R=radius of probe/tubing (in.), L=length of probe/tubing (in.)		_____ $(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	1931	BATCH CERT ID #		FLOW CONTROLLER ID #	4248
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1 hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/23/22 12:38	INIT CANISTER VACUUM	-30
SAMPLE END DATE&TIME	3/23/22 13:38	FINAL CANISTER VACUUM	-9
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0.0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV008005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED JSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irvington		LOCATION (CITY, STATE): Irvington, NY	AOC NAME / NUMBER:
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/24/22 10:00	LOGGED BY: M
SAMPLE ID: 360175-GV0040050 / 360175-GV0040005	SAMPLE TIME: 11:00 - 12:00	ACTIVITY END DATE&TIME: 3/24/22 12:00	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000, ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	Used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	10:10	PRE-PURGE TRACE GAS CHAMBER READING	89.4	% (>50%)	
TIME BEGIN PURGING	10:13	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	10:17	POST-PURGE TRACE GAS CHAMBER READING	78.3	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:	PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$		Convert $in.^3$ to Liters:		
0.5 liters / min	R=radius of probe/tubing (in.), L=length of probe/tubing (in.)		_____ $(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	2042 / 1734	BATCH CERT ID #		FLOW CONTROLLER ID #	4413
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1 hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA — SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/24/22 11:00	INIT CANISTER VACUUM	-28
SAMPLE END DATE&TIME	3/24/22 12:00	FINAL CANISTER VACUUM	-3
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0.0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	DUP	360175-GV0040051
TO15 low level	TO15	6L	Y	—	360175-GV0040005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED ~~[illegible]~~ SSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irvington		LOCATION (CITY, STATE): Irvington, NY	AOC NAME / NUMBER: —
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/24/22 10:20	LOGGED BY: M
SAMPLE ID: 360175-GV010005	SAMPLE TIME: 10:35 - 11:35	ACTIVITY END DATE&TIME: 3/24/22 11:40	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPB RAE 3000 ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	used P.I.D
AIR TEMP °C:	BAROMETRIC PRESSURE mmHg:

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	10:25	PRE-PURGE TRACE GAS CHAMBER READING	92.7	% (>50%)	
TIME BEGIN PURGING	10:27	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	10:31	POST-PURGE TRACE GAS CHAMBER READING	81.7	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:		PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$	Convert $in.^3$ to Liters:		
0.5 liters / min		R=radius of probe/tubing (in.), L=length of probe/tubing (in.)	_____ $(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	2193	BATCH CERT ID #		FLOW CONTROLLER ID #	4353
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1 hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/24/22 10:35	INIT CANISTER VACUUM	-29
SAMPLE END DATE&TIME	3/24/22 11:35	FINAL CANISTER VACUUM	-3
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV010005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED SSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irington		LOCATION (CITY, STATE): Irington, NY	AOC NAME / NUMBER: —
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/24/22 14:40	LOGGED BY: M
SAMPLE ID: 360175-GV011005	SAMPLE TIME: 15:00 - 16:00	ACTIVITY END DATE&TIME: 3/24/22 16:20	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000, ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	Used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	14:48	PRE-PURGE TRACE GAS CHAMBER READING	88.2	% (>50%)	
TIME BEGIN PURGING	14:50	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	14:54	POST-PURGE TRACE GAS CHAMBER READING	79.8	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:		PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$	Convert $in.^3$ to Liters:		
0.5 liters / min		R=radius of probe/tubing (in.), L=length of probe/tubing (in.)	____$(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	1176	BATCH CERT ID #		FLOW CONTROLLER ID #	4121
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	@1 hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA — SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/24/22 15:00	INIT CANISTER VACUUM	-29
SAMPLE END DATE&TIME	3/24/22 16:00	FINAL CANISTER VACUUM	-8
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV011005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED SSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irington		LOCATION (CITY, STATE): Irington, NY	AOC NAME / NUMBER: —
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/24/22 13:20	LOGGED BY: M
SAMPLE ID: 360175-GV012005	SAMPLE TIME: 13:33 - 14:33	ACTIVITY END DATE&TIME: 3/24/22 15:00	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000, ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	Used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	13:23	PRE-PURGE TRACE GAS CHAMBER READING	86.4	% (>50%)	
TIME BEGIN PURGING	13:25	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	13:29	POST-PURGE TRACE GAS CHAMBER READING	69.1	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:	PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$		Convert $in.^3$ to Liters:		
0.5 liters / min	R=radius of probe/tubing (in.), L=length of probe/tubing (in.)		____$(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	1924	BATCH CERT ID #		FLOW CONTROLLER ID #	4329
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1 hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA

SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/24/22 13:33	INIT CANISTER VACUUM	-27
SAMPLE END DATE&TIME	3/24/22 14:33	FINAL CANISTER VACUUM	-4
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV012005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED SSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irvington		LOCATION (CITY, STATE): Irvington, NY	AOC NAME / NUMBER: —
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/25/22 7:25	LOGGED BY: M
SAMPLE ID: 360175-GV014005	SAMPLE TIME: 7:40 - 8:40	ACTIVITY END DATE&TIME: 3/25/22 8:50	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000, ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	Used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB
TIME TRACE GAS APPLIED	7:28	PRE-PURGE TRACE GAS CHAMBER READING	84.7	% (>50%)
TIME BEGIN PURGING	7:31	POST-PURGE TRACE GAS SOIL READING	0	%
TIME END PURGING	7:35	POST-PURGE TRACE GAS CHAMBER READING	64.9	% (>50%)
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb
PURGE DURATION	5 min x rate ____ L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE: 0.5 liters / min	PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$ R=radius of probe/tubing (in.), L=length of probe/tubing (in.)	Convert $in.^3$ to Liters: ____ $(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	1139	BATCH CERT ID #		FLOW CONTROLLER ID #	4335
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/25/22 7:40	INIT CANISTER VACUUM	-29
SAMPLE END DATE&TIME	3/25/22 8:40	FINAL CANISTER VACUUM	-4
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV014005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED JSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irvington		LOCATION (CITY, STATE): Irvington, NY	AOC NAME / NUMBER: —
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/24/22 (11:30)	LOGGED BY: M
SAMPLE ID: 360175-GV015005	SAMPLE TIME: 11:55 - 12:55	ACTIVITY END DATE&TIME: 3/24/22 13:05	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000, ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	11:45	PRE-PURGE TRACE GAS CHAMBER READING	87.5	% (>50%)	
TIME BEGIN PURGING	11:47	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	11:51	POST-PURGE TRACE GAS CHAMBER READING	70.9	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:	PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$		Convert $in.^3$ to Liters:		
0.5 liters / min	R=radius of probe/tubing (in.), L=length of probe/tubing (in.)		_____ $(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	1452	BATCH CERT ID #		FLOW CONTROLLER ID #	4354
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA — SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/24/22 11:55	INIT CANISTER VACUUM	-30
SAMPLE END DATE&TIME	3/24/22 12:55	FINAL CANISTER VACUUM	-3
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV015005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED JSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irvington		LOCATION (CITY, STATE): Irvington, NY	AOC NAME / NUMBER:
PROJECT NUMBER: 36162161144.02		ACTIVITY START DATE&TIME: 3/23/22 15:15	LOGGED BY: M
SAMPLE ID: 360175-GV016005	SAMPLE TIME: 15:28 - 16:28	ACTIVITY END DATE&TIME: 3/23/22 16:30	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: UN1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000, ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	Used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	15:20	PRE-PURGE TRACE GAS CHAMBER READING	82.0	% (>50%)	
TIME BEGIN PURGING	15:22	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	15:26	POST-PURGE TRACE GAS CHAMBER READING	70.1	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:	PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$		Convert $in.^3$ to Liters:		
0.5 liters / min	R=radius of probe/tubing (in.), L=length of probe/tubing (in.)		____$(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	1853	BATCH CERT ID #		FLOW CONTROLLER ID #	4252
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1 hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA — SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/23/22 15:28	INIT CANISTER VACUUM	-30
SAMPLE END DATE&TIME	3/23/22 16:28	FINAL CANISTER VACUUM	-27
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0.0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP, MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV016005

COMMENTS / NOTES / WEATHER CONDITIONS

* possibly a bad reg/or possible pulled moisture. Wouldn't not get below -27 after an hour.

SIGNATURE [signature] CHECKED 5/12/22 JSM

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

SOIL VAPOR (WITH TRACE GAS) SUMMA CANISTER SAMPLE RECORD

PROJECT NAME: NYSDEC - Irvington		LOCATION (CITY, STATE): Irvington, NY	AOC NAME / NUMBER: —
PROJECT NUMBER: 361621614.02		ACTIVITY START DATE&TIME: 3/24/22 8:30	LOGGED BY: M
SAMPLE ID: 360175-GV017005	SAMPLE TIME: 8:40 - 9:40	ACTIVITY END DATE&TIME: 3/24/22 10:00	PAGE: 1 OF 1

GENERAL INFORMATION

TRACE GAS TYPE, LOT #, EXPIRATION DATE	Helium ID: un1046
TRACE GAS DETECTOR (MAKE, MODEL, UNIT I.D.)	Dielectric MGD-2002 ID: 051460
PHOTO IONIZATION DETECTOR (MAKE, MODEL, UNIT I.D.)	PPb RAE 3000 . ID: 14924
PURGE PUMP (MAKE, MODEL, UNIT ID, FLOW RATE)	used P.I.D
AIR TEMP °C	BAROMETRIC PRESSURE mmHg

PURGE DATA

INITIAL BACKGROUND AIR PID READING	0.0 ppb	SAMPLE DEPTH	4.5	BGS/SUB-SLAB	
TIME TRACE GAS APPLIED	8:30	PRE-PURGE TRACE GAS CHAMBER READING	88.4	% (>50%)	
TIME BEGIN PURGING	8:31	POST-PURGE TRACE GAS SOIL READING	0	%	
TIME END PURGING	8:35	POST-PURGE TRACE GAS CHAMBER READING	69.2	% (>50%)	
PID USED AS PURGE PUMP?	Yes	POST-PURGE PID SOIL READING	0.0	ppb	
PURGE DURATION	5 min x rate	L/min =	TOTAL VOLUME PURGED		liters
MINIRAE 2000 FLOWRATE:		PURGE VOL CALC FORMULA: $3\pi R^2L=Vol(in.^3)$	Convert $in.^3$ to Liters:		
0.5 liters / min		R=radius of probe/tubing (in.), L=length of probe/tubing (in.)	____$(in.^3)$ x 0.01639 = Liters		

SUMMA CANISTER / FLOW CONTROLLER DATA

SUMMA CANISTER ID #	1146	BATCH CERT ID #		FLOW CONTROLLER ID #	4139
SUMMA CANISTER SIZE	6L	DATE CLEANED	Unknown	FLOW CONTROLLER RATE	1 hr
		LAB VAC CHECK	Unknown	VAC GAGE ZERO READING mmHg	0

SAMPLE COLLECTION DATA — SAMPLE TYPE (Circle One): (OUTDOOR SOIL VAPOR) INDOOR SOIL VAPOR

SAMPLE START DATE&TIME	3/24/22 8:40	INIT CANISTER VACUUM	-26
SAMPLE END DATE&TIME	3/24/22 9:40	FINAL CANISTER VACUUM	-5
SAMPLE DURATION	60 hrs:mns	POST SAMPLING PID READING	0.0

ANALYSIS

PARAMETER	METHOD NUMBER	VOLUME REQUIRED	SAMPLE COLLECTED	DUP. MS, MSD	SAMPLE ID
TO15 low level	TO15	6L	Y	—	360175-GV017005

COMMENTS / NOTES / WEATHER CONDITIONS

SIGNATURE [signature] CHECKED SSM 5/12/22

MACTEC
511 Congress Street, Ste 200
Portland, ME 04101

APPENDIX E

CLIMATE SCREENING CHECKLIST

Climate Screening Checklist

Background Information

- Project Manager: Justin Starr (NYSDEC) Chuck Staples (EEE&G)
- Site Name: Irvington Rugs and Cleaners
- Site Number: 360175
- Site Location: Irvington, NY
- Site Elevation (average above sea level): 90 ft (Site well survey)
- ClimAID Region (Responding Climate Change in New York State (ClimAID) - NYSERDA):
    - 5 - East Hudson and Mohawk River Valleys
- Remedial Stage/site classification: Class 2 Site. Remedial Investigation/Feasibility Study

- Contamination - Media Impacted/ Contaminants of Concern: Chlorinated compounds (primarily PCE) in soil, groundwater and soil vapor. PFAS in soil and groundwater.

- Proposed/Current Remedy:

- What is the predicted timeframe of the remedy? Will components of the remedy still be in place in 10+ years?: It is anticipated that sub-slab depressurization systems will still be in operation in 10 years.

- Is the site in proximity to any sensitive receptors? (e.g. wetlands, waterbodies, residential properties, hospitals, schools, drinking water supplies, etc.): Yes - property is in proximity to residential properties and mixed use (residential/commercial) properties.

Is the site in a disadvantaged community (DAC) or potential environmental justice area (PEJA) (Use DECinfolocator: DECinfo Locator (ny.gov))?

☐ **Yes** ■ **No**

If the site is in a DAC or PEJA, will climate impacts be magnified? If yes, list how and why.

☐ **Yes** ☐ **No**

Should thresholds of concern be lowered to account for magnification of impacts? If yes, indicate how lower thresholds will be used in the screening.

☐ **Yes** ■ **No**

Climate Screening Table*

Potential Climate Hazards	**Relevant to the Site Location** (Y/N/NA)[1]	**Projected Change** (Reference data source/Model)[3]	**Potential to Impact Remedy** (Y/N)	**Is remedy/site already resilient?** (Y/N)[4]
Precipitation	Y		N	Y
Temperature[2] (Extreme Heat or Cold Weather Impacts)	Y	1.7 to 3.7 degree NYSERDA ClimAID report	N	Y
Sea Level Rise	N			
Flooding	N			
Storm Surge	N			
Wildfire	N			
Drought	N			
Storm Severity	Y	NYSERDA ClimAID report	N	Y
Landslides	N			
Other Hazards:				

* Links to potential data sources can be found on the following page

[1] If the first column is N --> The rest of the columns will be N/A, the hazard is not applicable to the site.

[2] Extreme Heat: periods of three or more days above 90°F- Extreme Cold: Individual days with minimum temperatures at or below 0 degrees F (NYSERDA ClimAID report)

[3] List the projected change in specific terms or units e.g. inches of rain fall, feet of sea level rise, etc.

[4] If final column is Y, provide reasoning, if the final column is N --> Climate Vulnerability Assessment (CVA) required.

Required Next Steps (If no further action is required, provide justification):

No further action needed. Site is covered in pavement and building and above river or flooding potential. Extreme heat or precipitation is not expected to adversely impact the remedy; however, if extreme weather events cause power outages, the operating SSDSs would temporarily lose power.

Potential Data Sources (not an exhaustive list)- from Superfund Climate Resilience: Vulnerability Assessment | US EPA

NYSERDA ClimAID report- Responding Climate Change in New York State (ClimAID) - NYSERDA

FEMA- National Flood Hazard Layer | FEMA.gov

NOAA- National Storm Surge Risk Maps - Version 3 (noaa.gov)

Department of Agriculture Forest Service Wildfire Risk to Communities

EPA Climate Change Indicators in the United States

EPA Climate Resilience Evaluation & Awareness Tool (CREAT) | U.S. Climate Resilience Toolkit

EPA National Stormwater Calculator

National Integrated Drought Information System U.S. Drought Portal

National Interagency Coordination Center National Interagency Fire Center

National Oceanic and Atmospheric Administration Coastal Services Digital Coast

- Resources to help communities assess coastal hazards, such as the Sea Level Rise Viewer for visualizing community-level impacts of flooding or sea level rise and downloadable LIDAR data

National Oceanic and Atmospheric Administration National Centers for Environmental Information website

National Oceanic and Atmospheric Administration Sea Level Trends

National Weather Service Climate Prediction Center

National Weather Service National Hurricane Center

National Weather Service Sea, Lake, and Overland Surges from Hurricanes (SLOSH)

National Weather Service Storm Surge Hazard Maps

U.S. Federal Government Climate Resilience Toolkit: The Climate Explorer

U.S. Army Corps of Engineers Climate Prepardness and Resilience

U.S. Geological Survey Coastal Change Hazards Portal

U.S. Geological Survey Landslide Hazards Program

U.S. Geological Survey National Ground-water Monitoring Network Data Portal

U.S. Geological Survey National Climate Change Viewer

U.S. Geological Survey National Water Dashboard

U.S. Geological Survey StreamStats

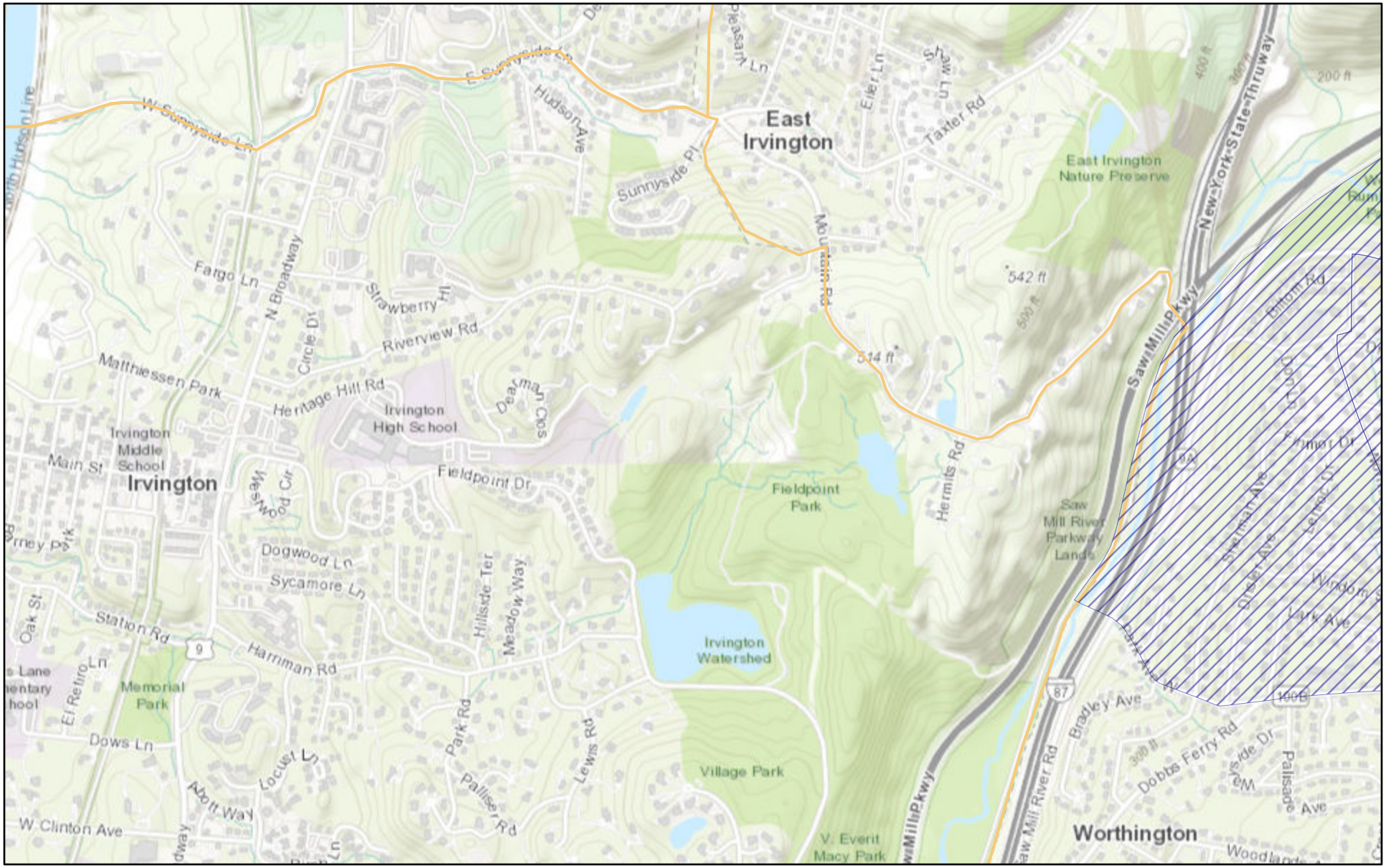
NYS Department of State- Assess | Department of State (ny.gov)

NYSERDA NY Costal Floodplain Mapper- Home Page (ny.gov)

NYSDEC Costal Erosion Hazards- Coastal Areas Regulated By The CEHA Permit Program - NYDEC

NYSDOH Heat Index- health.ny.gov/environmental/weather/vulnerability_index/county_maps.htm

Irvington Rugs and Cleaners Site-DECInfo



April 16, 2025

Public Involvement

- Potential Environmental Justice Areas
- Disadvantaged Communities (DAC)

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

County of Westchester, Esri, HERE, Garmin, INCREMENT P, USGS, METI/ NASA, EPA, USDA

NYS Department of Environmental Conservation

Not a legal document

APPENDIX F

DATA USABILITY SUMMARY REPORTS (DUSR)

DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

1.0 INTRODUCTION

Groundwater, soil, and air samples were collected in January, March, May, and/or June 2022 at the Irvington Rugs and Cleaners Site in Irvington, New York, and shipped to Con-test Laboratory located in East Longmeadow, MA, for analysis. Samples were analyzed by the following methods:

- Volatile Organic Compounds (VOCs) by USEPA Method 8260D
- VOCs by USEPA Method TO-15
- Semivolatile Organic Compounds (SVOCs) by USEPA Method 8270E
- Pesticides by USEPA Method 8081B
- Polychlorinated Biphenyls by USEPA Method 8082A
- Total Metals by USEPA Methods 6010D/7470A
- Per- and Polyfluorinated Alkyl Substances (PFAS) by Methods SOP-454 PFAS and SOP-466 PFAS
- Total Solids by Method SM2540G

Results were reported in the following sample delivery groups (SDGs):

- 22A0721
- 22C1692
- 22C1815
- 22C1819
- 22E1903
- 22F0915
- 22F1625

A Data Usability Summary Report (DUSR) review was completed based on the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance (NYSDEC, 2010). Sample event information included in this DUSR is presented in the following tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Qualification Action Summary

A summary of table notes applicable to Tables 1, 2, and 3 is presented just before Table 1.

Laboratory deliverables included:

- Category B deliverables as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations. A table of the project control limits for VOCs, SVOCs, Pesticides, PCBs, metals, and PFAS is presented in Attachment A. DUSR review checklists and applicable laboratory QC summary forms are included in Attachment B to document QC outliers associated with qualification actions.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- Instrument Calibration (report narrative/lab-qualifier evaluation)
- QC Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- Surrogate Spikes (if applicable)
- Internal Standards (if applicable)
- Field Duplicates
- Target Analyte Identification and Quantitation
- Raw Data (chromatograms), Calculation Checks and Transcription Verifications
- Reporting Limits
- Electronic Data Qualification and Verification

Data qualification actions were based on general procedures identified in the NYSDEC validation guideline for PFAS (NYSDEC, 2019) and USEPA validation guidelines (USEPA, 2014; USEPA, 2016a; USEPA, 2016b).The following laboratory or data review qualifiers are used in the final data presentation:

U = target analyte is not detected above the reported detection limit
J = concentration is estimated
UJ = target analyte is not detected, value is estimated
J+ = concentration is estimated and potentially biased high
J- = concentration is estimated and potentially biased low
R = result is rejected

Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

2.0 EXECUTIVE SUMMARY

Based on the DUSR review the majority of sample results are interpreted to be usable as reported by the laboratory. Results for a subset of samples were qualified estimated due to holding time exceedances, calibration percent differences, blank contamination, internal standard recoveries, LCS/LCSD percent recoveries and MS/MSD percent recoveries. Non-detect results for benzoic acid in samples 360175-DP005011 and 360175-DP005011D were qualified rejected based on MS/MSD percent recoveries less than 10 and are interpreted to be unusable for project objectives. Non-detect results for PFAS in a subset of samples were qualified rejected based on extracted internal standard percent recoveries less than 10 and are interpreted to be unusable for project objectives.

3.0 DATA QUALIFICATION ACTIONS AND OBSERVATIONS

VOCs by 8260D

22C1692 – Sample 360175-DP002011 was incorrectly written on the COC and logged by the laboratory as 360175-DP003011. The sample ID has been corrected in the database.

22A0721 - Tetrachloroethene in samples 360175-GW002-14, 360175-HA001001, 360175-HA001001D, and 360175-GW002-16 was reported from analyses performed 21 days after expiration of the 14-day holding time. Samples were collected on January 12, 2022 were diluted and reanalyzed for tetrachloroethene on February 16, 2022. Results for tetrachloroethene were qualified as estimated (J). Qualified results are included in Table 2 with reason code HTG.

22A0721 - Reporting limits for bromomethane in samples 360175-GW002-14, 360175-GW002-13, 360175-HA001001, 360175-HA001001D, 360175-HA002001, 360175-GW002-15, and 360175-GW002-16 and chloromethane in samples 360175-GW002-14, 360175-GW002-13, 360175-GW002-15, and 360175-GW002-16 were qualified as estimated (UJ) based on initial calibration verification (ICV) standard percent differences greater than the control limit and indicating potential low bias. Qualified results are included in Table 3 with reason code ICV%D.

22A0721 - Reporting limits for 1,2-dibromo-3-chloropropane, 2-butanone, benzene, bromomethane, chloromethane, methyl acetate, and naphthalene in a subset of samples were qualified as estimated (UJ) based on continuing calibration verification (CCV) standard percent differences greater than control limit and indicating potential low bias. Qualified results are included in Table 3 with reason code CCV%D.

22A0721 - The results for methylene chloride in sample 360175-GW002-14 and tetrachloroethene in samples 360175-GW002-13 and 360175-GW002-15 were qualified as estimated with potential high bias (J+) based on CCV standard percent differences greater than the control limit and indicating potential high bias. Qualified results are included in Table 3 with reason code CCV%D.

22C1692 - Reporting limits and results for 1,4-dioxane, 2-butanone, 2-hexanone, acetone, acrylonitrile, naphthalene, and tert-butyl alcohol in samples 360175-DP002011, 360175-DP004011, 360175-DP005011, 360175-DP005011D, 360175-DW001-1, and 360175-DW002-2 were qualified as estimated with potential low bias (J-/UJ) based on CCV standard percent differences greater than the control limit and indicating potential low bias. Qualified results are included in Table 3 with reason code CCV%D.

22E1903 - Reporting limits and results for 2-butanone, 2-hexanone, methylene chloride, and tert-butyl alcohol in samples 360175-DP08011, 360175-DP01009, 360175-DP015010, 360175-DP016012, 360175-DP017012, 360175-DP01108, and 360175-DP01206 were qualified as estimated with potential low bias (J-/UJ) based on CCV standard percent differences greater than the control limit and indicating potential low bias. Qualified results are included in Table 3 with reason code CCV%D.

22F1625 - Reporting limits for 1,4-dioxane, 2-butanone, 2-hexanone, acetone, acrylonitrile, naphthalene, and tert-butyl alcohol in samples 360175-MW0030020 and

360175-MW0030020 Dup were qualified as estimated (UJ) based on CCV standard percent differences greater than the control limit and indicating potential low bias. Qualified results are included in Table 3 with reason code CCV%D.

22A0721 - TB20220112 had a detection of toluene (0.51 J ug/L) below the reporting limit. The result for toluene in sample 360175-GW002-14 was qualified as non-detect (U) at the reporting limit. The qualified result is included in Table 3 with reason code BL2.

22F1625 – 360175-TB624 had a detection of methylene chloride (0.29 J ug/L) below the reporting limit. The results for methylene chloride in samples 360175-MW0030020 and 360175-MW0030020 Dup were qualified as non-detect (U) at the reporting limit. Qualified results are included in Table 3 with reason code BL2.

22A0721 - Reporting limits for methyl acetate in samples 360175-HA001001, 360175-HA001001D, and 360175-HA002001 were qualified as estimated (UJ) based on percent recoveries in the LCS/LCSD that were less than the lower control limit. Qualified results are included in Table 3 with reason code LCSL.

22A0721 - Reporting limits for chloromethane in samples 360175-GW002-14, 360175-GW002-13, 360175-GW002-15, and 360175-GW002-16 were qualified as estimated (UJ) based on percent recoveries in the LCS/LCSD that were less than the lower control limit. Qualified results are included in Table 3 with reason code LCSL.

22E1903 - Reporting limits for naphthalene in samples 360175-DP08011, 360175-DP01009, 360175-DP015010, 360175-DP016012, 360175-DP017012, 360175-DP01108, and 360175-DP01206 were qualified as estimated (UJ) based on a percent recovery in the LCS that was less than the lower control limit. Qualified results are included in Table 3 with reason code LCSL.

22F1625 - Reporting limits for naphthalene and t-butyl alcohol in samples 360175-MW0030020 and 360175-MW0030020 Dup were qualified as estimated (UJ) based on percent recoveries in the LCS/LCSD that were less than the lower control limit. Qualified results are included in Table 3 with reason code LCSL.

22A0721 - Reporting limits for bromomethane, 2-butanone, chloromethane, 1,4-dioxane, and methyl acetate in sample 360175-HA001001 and its field duplicate 360175-HA001001D were qualified as estimated (UJ) based on percent recoveries in the associated MS/MSD that were less than the lower control limit. Qualified results are included in Table 3 with reason code MSL.

22C1692 - Reporting limits for naphthalene, acetone, tert-butyl alcohol, 1,2-dibromo-3-chloropropane, and 2-hexanone in sample 360175-DP005011 and its field duplicate 360175-DP005011D were qualified as estimated (UJ) based on percent recoveries in the associated MS/MSD that were less than the lower control limit. Qualified results are included in Table 3 with reason code MSL.

22A0721 and 22C1692 - Reporting limits in samples 360175-HA003001 (50X) and 360175-DW001-1 (2X) are elevated due to dilutions as indicated in Table 2.

VOCs by TO-15

22C1819 - Reporting limits for 1,2,4-trichlorobenzene in samples 360175-GV008005, 360175-GV009005D, 360175-GV009005, and 360175-GV016005 were qualified as estimated (UJ) based on a percent recovery in the associated LCS that was less than the lower control limit. Qualified results are included in Table 3 with reason code LCSL.

22C1819 – Reporting limits in all samples are elevated due to dilutions (4X) as indicated in Table 2.

SVOCs by 8270E

22C1692 – Sample 360175-DP002011 was incorrectly written on the COC and logged by the laboratory as 360175-DP003011. The sample ID has been corrected in the database.

22C1692 - Reporting limits for benzidine in samples 360175-DP002011, 360175-DP004011, 360175-DP005011, and 360175-DP005011D were qualified as estimated (UJ) based on initial calibration relative standard deviation (RSD) that exceeded the control limit. Qualified results are included in Table 3 with reason code ICVRSD.

22C1692 - Reporting limits for 3,3-dichlorobenzidine and 4-chloroaniline in samples 360175-DP002011, 360175-DP004011, 360175-DP005011, and 360175-DP005011D were qualified as estimated (UJ) based on ICV percent differences greater than the control limit and indicating potential low bias. Qualified results are included in Table 3 with reason code ICV%D.

22C1692 - Reporting limits for aniline, benzidine, hexachlorocyclopentadiene, and pentachlorophenol in samples 360175-DP002011, 360175-DP004011, 360175-DP005011, and 360175-DP005011D were qualified as estimated (UJ) based on CCV percent differences greater than the control limit and indicating potential low bias. Qualified results are included in Table 3 with reason code CCV%D.

22C1692 - Reporting limits for benzidine, benzoic acid, hexachlorocyclopentadiene, hexachloroethane, n-nitrosodimethylamine, phenol, and pyridine were qualified as estimated (UJ) based on percent recoveries in the LCS/LCSD that exceeded the lower control limit. LCS/LCSD recoveries for benzidine and pyridine also exceeded the LCS/LCSD RPD limit. Qualified results are included in Table 3 with reason codes LCSL and LCSRPD. Non-detect results for benzoic acid in sample 360175-DP005011 and associated field duplicate 360175-DP005011D were subsequently qualified as rejected based on MS/MSD recoveries as described below.

22C1692 – The non-detect results for benzoic acid in sample 360175-DP005011 and its field duplicate 360175-DP005011D were qualified as rejected (R) based on the associated MS percent recovery (7.7) that was less than the rejection limit of 10. Benzoic acid MS/MSD percent recoveries also exceeded the MS/MSD relative percent difference (RPD) limit. Qualified results are included in Table 3 with reason codes MSL and MSRPD.

22C1692 - Reporting limits for n-nitrosodimethylamine, phenol, and pyridine in sample 360175-DP005011 and its field duplicate 360175-DP005011D were qualified as

estimated (UJ) based on percent recoveries in the associated MS/MSD that were less than the lower control limit. Qualified results are included in Table 3 with reason code MSL.

Pesticides by 8081B

22C1692 – Sample 360175-DP002011 was incorrectly written on the COC and logged by the laboratory as 360175-DP003011. The sample ID has been corrected in the database.

PCBs by 8282A

22C1692 – Sample 360175-DP002011 was incorrectly written on the COC and logged by the laboratory as 360175-DP003011. The sample ID has been corrected in the database.

Metals

22C1692 – Sample 360175-DP002011 was incorrectly written on the COC and logged by the laboratory as 360175-DP003011. The sample ID has been corrected in the database.

22C1692 - The method blank has a detection of mercury (0.000093 J mg/L) below the reporting limit. The results for mercury in samples 360175-DP002011, 360175-DP004011, and 360175-DP005011D were qualified as non-detect (U) at the reporting limit. Qualified results are summarized in Table 3 with reason code BL1.

PFAS

22C1815 - Sample 360175-DP01009 was incorrectly logged by the laboratory as DP01009. The sample ID has been corrected in the database.

22F0915 - Sample 360175-DP005011 was incorrectly logged by the laboratory as 360175-DP005011-MS/MSD. The sample ID has been corrected in the database.

22C1815 – The COC for samples 360175-DP01009 and 360175-DP00909 did not indicate that PFAS analysis was requested; however, sample containers were submitted to the lab and analyzed. The project manager confirmed that the correct analysis was performed.

22C1815 - Reporting limits for 4:2 fluorotelomersulfonic acid (4:2FTS) in samples 360175-DP008011, 360175-DP01009, and 360175-DP01508 were qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC (NYSDEC, 2019). Qualified results are included in Table 3 with reason code ISL.

22C1815 – Positive and non-detect results for 6:2 fluorotelomersulfonic acid (6:2FTS) and 8:2 fluorotelomersulfonic acid (8:2FTS) in samples 360175-DP008011 and 360175-DP01009 were qualified estimated (J/UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22C1815 - Reporting limits for perfluorododecanoic acid (PFDoA), N-EtFOSAA and N-MeFOSAA in samples 360175-DP008011 and 360175-DP01508 were qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22C1815 – Positive and non-detect results for perfluorooctanesulfonamide (FOSA) and perfluorobutanoic acid (PFBA) in samples 360175-DP00909 and 360175-DP01508 were qualified estimated (J/UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22C1815 - Reporting limits for perfluorotetradecanoic acid (PFTeDA) in samples 360175-DP008011, 360175-DP01009, and 360175-DP00909 were qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22C1815 – The non-detect result for PFTeDA in sample 360175-DP01508 was qualified rejected (R) based on percent recovery of the associated extracted internal standard less than the rejection limit of 10. The qualified result is included in Table 3 with reason code ISL.

22F0915 - Results for N-EtFOSAA, PFBA, and FOSA in sample 360175-DP004011 were qualified estimated (J) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22F0915 - Reporting limits for 4:2FTS and 6:2FTS in samples 360175-MW003D020 and 360175-DP002011 were qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22F0915 - Reporting limits for N-MeFOSAA and perfluoroundecanoic acid (PFUnDA) in samples 360175-DP004011 and 360175-DP005011 were qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22F0915 - Reporting limits for 4:2FTS, 8:2FTS, and N-EtFOSAA in sample 360175-DP005011 were qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22F0915 - Reporting limits for PFDoA and FOSA in sample 360175-DP005011-DUP were qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 control limits specified by NYSDEC. Qualified results are included in Table 3 with reason code ISL.

22F0915 – Non-detect results for PFTeDA in samples 360175-DP004011, 360175-DP005011, and 360175-DP005011-DUP were qualified rejected (R) based on percent recovery of the associated extracted internal standard less than the rejection limit. Qualified results are included in Table 3 with reason code ISL.

22F0915 – Non-detect results for PFDoA in samples 360175-DP004011 and 360175-DP005011 were qualified rejected (R) based on percent recovery of the associated extracted internal standard less than the rejection limit. Qualified results are included in Table 3 with reason code ISL.

22F0915 – The non-detect result for FOSA in sample 360175-DP005011 was qualified rejected (R) based on percent recovery of the associated extracted internal standard less than the rejection limit. The qualified result is included in Table 3 with reason code ISL.

22F0915 – The result for N-EtFOSAA in sample 360175-DP004011 was qualified as estimated with potential high bias (J+) based on a percent recovery in the LCS that was greater than the upper control limit. The qualified result is included in Table 3 with reason code LCSH.

22F0915 - Results for PFBA, perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and perfluoropentanoic acid (PFPeA) in sample 360175-DP005011 and its field duplicate 360175-DP005011-DUP were qualified as estimated with potential high bias (J+) based on percent recoveries in the associated MSD that were greater than the upper control limit. Qualified results are included in Table 3 with reason code MSH.

Reference:

NYSDEC, 2005. "Analytical Services Protocols"; July 2005.

NYSDEC, 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

NYSDEC, 2019. “Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids; October 2019.

USEPA, 2014. "Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B and 8260C”; HW-24, Revision 4; USEPA Region II Hazardous Waste Support Section; September 2014.

USEPA, 2016a. “Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15”; HW-31, Revision 6; Hazardous Waste Support Section; September 2016.

USEPA, 2016b. “ICP-AES Data Validation”; HW-3a, Revision 1; USEPA Region II Hazardous Waste Support Section; September 2016.

Data Validator: Gabrielle Davis

August 23, 2022

Reviewed by: Julie Ricardi

September 9, 2022

Standard Table Notes:

Sample Type (QC Code)

FS – field sample

FD – field duplicate

TB – trip blank

EB – equipment blank

FB – field blank

Matrix

GW – ground water

BW – blank water

TW – tap water

SV – soil vapor

SED - sediment

Units

mg/L – milligrams per liter

ng/L – nanograms per liter

µg/L – micrograms per liter

mg/kg – milligrams per kilogram

µg/kg – micrograms per kilogram

µg/m^3 – micrograms per cubic meter

Qualifiers

U – not detected above quantitation limit

J – estimated quantity

J+ - estimated quantity, biased high

J- - estimated quantity, biased low

R – data unusable

Fraction

T – total

D – dissolved

N – normal

Qualification Reason Codes

BL1 – method blank qualifier

BL2 – field or trip blank qualifier

CCV – continuing calibration verification recovery outside limits

CCV%D – continuing calibration verification percent difference exceeds goal

CCVRRF – continuing calibration relative response factor low

CI – chromatographic interference present

DCPD – dual column percent difference exceeds limit

E – result exceeds calibration range

FD – field duplicate precision goal exceeded

FP – false positive interference

HT – holding time for prep or analysis exceeded

HTG – holding time for prep or analysis grossly exceeded

ICV – initial calibration verification recovery outside limit

ICVRRF – initial calibration verification relative response factor low

ICVRSD – initial calibration verification % relative standard deviation exceeds goal

ISH – internal standard response greater than limit

ISL – internal standard response less than limit

LCSH – laboratory control sample recovery high

LCSL – laboratory control sample recovery low

LCSRPD – laboratory control sample/duplicate relative % difference precision goal exceeded

LD – lab duplicate precision goal exceeded

MSH – matrix spike and/or MS duplicate recovery high

MSL – matrix spike and/or MS duplicate recovery low

MSRPD – matrix spike/duplicate relative % difference precision goal exceeded

N – analyte identification is not certain

PEM – performance evaluation mixture exceeds limit

PM – sample percent moisture exceeds EPA guideline

SD – serial dilution result exceeds percent difference limit

SP – sample preservation/collection does not meet method requirement

SSH – surrogate recovery high

SSL – surrogate recovery low

TD – dissolved concentration exceeds total

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

					Method Class	VOCs	VOCs	SVOCs	Pesticides	PCBs	Metals	Mercury	PFAS	PFAS	Total Solids
					Analysis Method	8260D	TO15	8270E	8081B	8082A	6010D	7470A	SOP-454 PFAS	SOP-466 PFAS	SM2540G
					Fraction	N	N	N	N	N	N	N	N	N	N
SDG	**Location**	**Field Sample ID**	**Media**	**Sample Date**	**QC Code**	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters
22A0721	GW-02-13	360175-GW002-13	GW	1/12/2022	FS	60									
22A0721	GW-02-14	360175-GW002-14	GW	1/12/2022	FS	60									
22A0721	GW-02-15	360175-GW002-15	GW	1/12/2022	FS	60									
22A0721	GW-02-16	360175-GW002-16	GW	1/12/2022	FS	60									
22A0721	Drum-S	WC Drum	D (ug/L)	1/12/2022	FS	60									
22A0721	Drum-S	WC Drum	D (mg/kg)	1/12/2022	FS	59									
22A0721	HA-01	360175-HA001001	SOIL	1/12/2022	FS	59									1
22A0721	HA-01	360175-HA001001D	SOIL	1/12/2022	FD	59									1
22A0721	HA-02	360175-HA002001	SOIL	1/12/2022	FS	59									1
22A0721	HA-03	360175-HA003001	SOIL	1/12/2022	FS	60									1
22A0721	QC	TB20220112	BW	1/12/2022	TB	60									
22C1692	DP-02	360175-DP002011	GW	3/22/2022	FS	78		74	22	9	22	1			
22C1692	DP-04	360175-DP004011	GW	3/22/2022	FS	78		74	22	9	22	1			
22C1692	DP-05	360175-DP005011	GW	3/22/2022	FS	78		74	22	9	22	1			
22C1692	DP-05	360175-DP005011D	GW	3/22/2022	FD	78		74	22	9	22	1			
22C1692	QC	360175-TB32222	BW	3/22/2022	TB	78									
22C1692	DW-01	360175-DW001-1	SW	3/22/2022	FS	78									
22C1692	DW-02	360175-DW002-2	SW	3/22/2022	FS	78									
22C1815	DP-008	360175-DP008011	GW	3/23/2022	FS								34		
22C1815	DP-009	360175-DP00909	GW	3/23/2022	FS								34		
22C1815	DP-010	360175-DP01009	GW	3/23/2022	FS								34		
22C1815	DP-015	360175-DP01508	GW	3/23/2022	FS								34		
22C1815	PRB	360175-PRB	GW	3/24/2022	FS								34		
22C1819	GV-008	360175-GV008005	SV	3/23/2022	FS		62								
22C1819	GV-009	360175-GV009005	SV	3/23/2022	FS		62								
22C1819	GV-009	360175-GV009005D	SV	3/23/2022	FD		62								
22C1819	GV-010	360175-GV010005	SV	3/24/2022	FS		62								
22C1819	GV-011	360175-GV011005	SV	3/24/2022	FS		62								
22C1819	GV-012	360175-GV012005	SV	3/24/2022	FS		62								
22C1819	GV-014	360175-GV014005	SV	3/25/2022	FS		62								
22C1819	GV-015	360175-GV015005	SV	3/24/2022	FS		62								
22C1819	GV-016	360175-GV016005	SV	3/23/2022	FS		62								
22C1819	GV-017	360175-GV017005	SV	3/24/2022	FS		62								
22E1903	DP-010-09	360175-DP01009	GW	5/24/2022	FS	78									
22E1903	DP-011-08	360175-DP01108	GW	5/25/2022	FS	78									
22E1903	DP-012-06	360175-DP01206	GW	5/26/2022	FS	78									
22E1903	DP-015-010	360175-DP015010	GW	5/24/2022	FS	78									
22E1903	DP-016-012	360175-DP016012	GW	5/24/2022	FS	78									
22E1903	DP-017-012	360175-DP017012	GW	5/24/2022	FS	78									

Created by: KLD 8/10/22
Checked by: GTD 8/22/2022

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

					Method Class	VOCs	VOCs	SVOCs	Pesticides	PCBs	Metals	Mercury	PFAS	PFAS	Total Solids
					Analysis Method	8260D	TO15	8270E	8081B	8082A	6010D	7470A	SOP-454 PFAS	SOP-466 PFAS	SM2540G
					Fraction	N	N	N	N	N	N	N	N	N	N
SDG	**Location**	**Field Sample ID**	**Media**	**Sample Date**	**QC Code**	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters	Parameters
22E1903	DP-08-011	360175-DP08011	GW	5/24/2022	FS	78									
22E1903	QC	360175-TB522	BW	5/26/2022	TB	78									
22F0915	DP-02	360175-DP002011	GW	6/14/2022	FS								34		
22F0915	DP-04	360175-DP004011	GW	6/14/2022	FS								34		
22F0915	DP-05	360175-DP005011	GW	6/14/2022	FS								34		
22F0915	DP-05	360175-DP005011-DUP	GW	6/14/2022	FD								34		
22F0915	MW-03D	360175-MW003D020	GW	6/14/2022	FS								34		
22F0915	WC	360175-WC	SOIL	6/14/2022	FS									34	1
22F1625	MW-03	360175-MW0030020	GW	6/24/2022	FS	78									
22F1625	MW-03	360175-MW0030020 Dup	GW	6/24/2022	FD	78									
22F1625	QC	360175-TB624	BW	6/24/2022	TB	78									

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	Drum-S		GW-02-13		GW-02-14	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	WC Drum		360175-GW002-13		360175-GW002-14	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L						
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	1	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloropropene	UG/L						
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	5	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L						
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	U	5	UJ	5	UJ
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L						
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichloropropane	UG/L						
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	U	50	U	50	U
L	8260D	2,2-Dichloropropane	UG/L						
L	8260D	2-Butanone	UG/L	20	U	20	U	20	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	Drum-S		GW-02-13		GW-02-14	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	WC Drum		360175-GW002-13		360175-GW002-14	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L						
L	8260D	2-Hexanone	UG/L	10	U	10	U	10	U
L	8260D	4-Chlorotoluene	UG/L						
L	8260D	4-iso-Propyltoluene	UG/L	1	U	1	U	1	U
L	8260D	4-Methyl-2-pentanone	UG/L	10	U	10	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L	1	U	1	U	1	U
L	8260D	Acetone	UG/L	7.1	J	50	U	50	U
L	8260D	Acrylonitrile	UG/L						
L	8260D	Benzene	UG/L	1	U	1	U	1	U
L	8260D	Bromobenzene	UG/L						
L	8260D	Bromochloromethane	UG/L	1	U	1	U	1	U
L	8260D	Bromodichloromethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Bromoform	UG/L	1	U	1	U	1	U
L	8260D	Bromomethane	UG/L	5	U	5	UJ	5	UJ
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L						
L	8260D	Carbon disulfide	UG/L	5	U	5	U	5	U
L	8260D	Carbon tetrachloride	UG/L	5	U	5	U	5	U
L	8260D	Chlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	Chloroethane	UG/L	2	U	2	U	2	U
L	8260D	Chloroform	UG/L	2	U	2	U	2	U
L	8260D	Chloromethane	UG/L	2	U	2	UJ	2	UJ
L	8260D	cis-1,2-Dichloroethene	UG/L	2.3		1	U	3.6	
L	8260D	cis-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Cyclohexane	UG/L	5	U	5	U	5	U
L	8260D	Dibromochloromethane	UG/L	0.5	U	0.5	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	Drum-S		GW-02-13		GW-02-14	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	WC Drum		360175-GW002-13		360175-GW002-14	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L						
L	8260D	Dichlorodifluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Diethyl ether	UG/L						
L	8260D	Ethyl-t-Butyl Ether	UG/L						
L	8260D	Ethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Hexachlorobutadiene	UG/L						
L	8260D	Isopropyl ether	UG/L						
L	8260D	Isopropylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Methyl cyclohexane	UG/L	1	U	1	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L	1	U	1	U	1	U
L	8260D	Methylene chloride	UG/L	5	U	5	U	1.3	J+
L	8260D	n-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Naphthalene	UG/L	0.47	J	2	UJ	2	UJ
L	8260D	Propylbenzene	UG/L	1	U	1	U	1	U
L	8260D	sec-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Styrene	UG/L	1	U	1	U	1	U
L	8260D	t-Butyl alcohol	UG/L						
L	8260D	tert-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Tetrachloroethene	UG/L	65		3.6	J+	220	J
L	8260D	Tetrahydrofuran	UG/L						
L	8260D	Toluene	UG/L	1	U	1	U	1	U
L	8260D	trans-1,2-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L						
L	8260D	Trichloroethene	UG/L	1.2		1	U	4	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	Drum-S		GW-02-13		GW-02-14	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	WC Drum		360175-GW002-13		360175-GW002-14	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	2	U	2	U
L	8260D	Xylene, o	UG/L	1	U	1	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	2	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	GW-02-15		GW-02-16		QC	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	360175-GW002-15		360175-GW002-16		TB20220112	
			Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L						
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	1	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloropropene	UG/L						
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	5	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L						
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	UJ	5	UJ	5	U
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L						
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichloropropane	UG/L						
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	U	50	U	50	U
L	8260D	2,2-Dichloropropane	UG/L						
L	8260D	2-Butanone	UG/L	20	U	20	U	20	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	GW-02-15		GW-02-16		QC	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	360175-GW002-15		360175-GW002-16		TB20220112	
			Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L						
L	8260D	2-Hexanone	UG/L	10	U	10	U	10	U
L	8260D	4-Chlorotoluene	UG/L						
L	8260D	4-iso-Propyltoluene	UG/L	1	U	1	U	1	U
L	8260D	4-Methyl-2-pentanone	UG/L	10	U	10	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L	1	U	1	U	1	U
L	8260D	Acetone	UG/L	50	U	50	U	50	U
L	8260D	Acrylonitrile	UG/L						
L	8260D	Benzene	UG/L	1	U	1	U	1	U
L	8260D	Bromobenzene	UG/L						
L	8260D	Bromochloromethane	UG/L	1	U	1	U	1	U
L	8260D	Bromodichloromethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Bromoform	UG/L	1	U	1	U	1	U
L	8260D	Bromomethane	UG/L	5	UJ	5	UJ	5	U
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L						
L	8260D	Carbon disulfide	UG/L	5	U	5	U	5	U
L	8260D	Carbon tetrachloride	UG/L	5	U	5	U	5	U
L	8260D	Chlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	Chloroethane	UG/L	2	U	2	U	2	U
L	8260D	Chloroform	UG/L	2	U	2	U	2	U
L	8260D	Chloromethane	UG/L	2	UJ	2	UJ	2	U
L	8260D	cis-1,2-Dichloroethene	UG/L	4.8		20		1	U
L	8260D	cis-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Cyclohexane	UG/L	5	U	5	U	5	U
L	8260D	Dibromochloromethane	UG/L	0.5	U	0.5	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	GW-02-15		GW-02-16		QC	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	360175-GW002-15		360175-GW002-16		TB20220112	
			Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L						
L	8260D	Dichlorodifluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Diethyl ether	UG/L						
L	8260D	Ethyl-t-Butyl Ether	UG/L						
L	8260D	Ethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Hexachlorobutadiene	UG/L						
L	8260D	Isopropyl ether	UG/L						
L	8260D	Isopropylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Methyl cyclohexane	UG/L	1	U	1	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L	1	U	1	U	1	U
L	8260D	Methylene chloride	UG/L	5	U	5	U	5	U
L	8260D	n-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Naphthalene	UG/L	2	UJ	2	UJ	2	U
L	8260D	Propylbenzene	UG/L	1	U	1	U	1	U
L	8260D	sec-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Styrene	UG/L	1	U	1	U	1	U
L	8260D	t-Butyl alcohol	UG/L						
L	8260D	tert-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Tetrachloroethene	UG/L	120	J+	2500	J	1	U
L	8260D	Tetrahydrofuran	UG/L						
L	8260D	Toluene	UG/L	1	U	1	U	0.51	J
L	8260D	trans-1,2-Dichloroethene	UG/L	1		1	U	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L						
L	8260D	Trichloroethene	UG/L	8.2		28		1	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	GW-02-15		GW-02-16		QC	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	360175-GW002-15		360175-GW002-16		TB20220112	
			Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	2	U	2	U
L	8260D	Xylene, o	UG/L	1	U	1	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	2	U	0.27	J

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	1	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloropropene	UG/L	2	U	2	U	2	U
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	5	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L	2	U	2	U	2	U
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	2.9		1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	U	5	U	5	UJ
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	0.53	J	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	UJ	50	UJ	50	UJ
L	8260D	2,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	2-Butanone	UG/L	20	UJ	20	UJ	20	UJ

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	2-Hexanone	UG/L	10	UJ	10	UJ	10	UJ
L	8260D	4-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	4-iso-Propyltoluene	UG/L	1	U	0.38	J	1	U
L	8260D	4-Methyl-2-pentanone	UG/L	10	U	10	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L	1	U	1	U	1	U
L	8260D	Acetone	UG/L	50	UJ	50	UJ	50	UJ
L	8260D	Acrylonitrile	UG/L	5	UJ	5	UJ	5	UJ
L	8260D	Benzene	UG/L	1	U	1	U	1	U
L	8260D	Bromobenzene	UG/L	1	U	1	U	1	U
L	8260D	Bromochloromethane	UG/L	1	U	1	U	1	U
L	8260D	Bromodichloromethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Bromoform	UG/L	1	U	1	U	1	U
L	8260D	Bromomethane	UG/L	2	U	2	U	2	U
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Carbon disulfide	UG/L	5	U	5	U	5	U
L	8260D	Carbon tetrachloride	UG/L	5	U	5	U	5	U
L	8260D	Chlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	Chloroethane	UG/L	2	U	2	U	2	U
L	8260D	Chloroform	UG/L	0.53	J	2	U	2	U
L	8260D	Chloromethane	UG/L	2	U	2	U	2	U
L	8260D	cis-1,2-Dichloroethene	UG/L	1	U	1.3		0.27	J
L	8260D	cis-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Cyclohexane	UG/L						
L	8260D	Dibromochloromethane	UG/L	0.5	U	0.5	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22C1692		22C1692		22C1692	
				Location	DP-02		DP-04		DP-05	
				Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
				Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011	
				Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**		Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L		1	U	1	U	1	U
L	8260D	Dichlorodifluoromethane	UG/L		2	U	2	U	2	U
L	8260D	Diethyl ether	UG/L		2	U	2	U	2	U
L	8260D	Ethyl-t-Butyl Ether	UG/L		0.5	U	0.5	U	0.5	U
L	8260D	Ethylbenzene	UG/L		1	U	1	U	1	U
L	8260D	Hexachlorobutadiene	UG/L		0.6	U	0.6	U	0.6	U
L	8260D	Isopropyl ether	UG/L		0.5	U	0.5	U	0.5	U
L	8260D	Isopropylbenzene	UG/L		1	U	0.33	J	1	U
L	8260D	Methyl cyclohexane	UG/L		1	U	1	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L		1	U	1	U	1	U
L	8260D	Methylene chloride	UG/L		5	U	5	U	5	U
L	8260D	n-Butylbenzene	UG/L		1	U	0.68	J	1	U
L	8260D	Naphthalene	UG/L		2	UJ	0.61	J-	2	UJ
L	8260D	Propylbenzene	UG/L		1	U	0.42	J	1	U
L	8260D	sec-Butylbenzene	UG/L		1	U	0.99	J	1	U
L	8260D	Styrene	UG/L		1	U	1	U	1	U
L	8260D	t-Butyl alcohol	UG/L		20	UJ	92	J-	20	UJ
L	8260D	tert-Butylbenzene	UG/L		1	U	1	U	1	U
L	8260D	Tetrachloroethene	UG/L		0.5	J	1	U	0.94	J
L	8260D	Tetrahydrofuran	UG/L		10	U	10	U	10	U
L	8260D	Toluene	UG/L		1	U	1	U	1	U
L	8260D	trans-1,2-Dichloroethene	UG/L		1	U	1	U	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L		0.5	U	0.5	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L		2	U	2	U	2	U
L	8260D	Trichloroethene	UG/L		1	U	0.31	J	0.28	J

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	2	U	2	U
L	8260D	Xylene, o	UG/L	1	U	1	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	2	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692	
			Location	DP-05		DW-01		DW-02	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP005011D		360175-DW001-1		360175-DW002-2	
			Qc Code	FD		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L	1	U	2	U	1	U
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	2	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	1	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	2	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	2	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	2	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	2	U	1	U
L	8260D	1,1-Dichloropropene	UG/L	2	U	4	U	2	U
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	10	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L	2	U	4	U	2	U
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	2	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	2	U	1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	UJ	10	U	5	U
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	1	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	2	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	2	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	2	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L	1	U	2	U	1	U
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	2	U	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	2	U	1	U
L	8260D	1,3-Dichloropropane	UG/L	0.5	U	1	U	0.5	U
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	2	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	UJ	100	UJ	50	UJ
L	8260D	2,2-Dichloropropane	UG/L	1	U	2	U	1	U
L	8260D	2-Butanone	UG/L	20	UJ	40	UJ	20	UJ

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692	
			Location	DP-05		DW-01		DW-02	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP005011D		360175-DW001-1		360175-DW002-2	
			Qc Code	FD		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L	1	U	2	U	1	U
L	8260D	2-Hexanone	UG/L	10	UJ	20	UJ	10	UJ
L	8260D	4-Chlorotoluene	UG/L	1	U	2	U	1	U
L	8260D	4-iso-Propyltoluene	UG/L	1	U	2	U	1	U
L	8260D	4-Methyl-2-pentanone	UG/L	10	U	20	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L	1	U	2	U	1	U
L	8260D	Acetone	UG/L	50	UJ	100	UJ	50	UJ
L	8260D	Acrylonitrile	UG/L	5	UJ	10	UJ	5	UJ
L	8260D	Benzene	UG/L	1	U	2	U	1	U
L	8260D	Bromobenzene	UG/L	1	U	2	U	1	U
L	8260D	Bromochloromethane	UG/L	1	U	2	U	1	U
L	8260D	Bromodichloromethane	UG/L	0.5	U	1	U	0.5	U
L	8260D	Bromoform	UG/L	1	U	2	U	1	U
L	8260D	Bromomethane	UG/L	2	U	4	U	2	U
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L	0.5	U	1	U	0.5	U
L	8260D	Carbon disulfide	UG/L	5	U	10	U	5	U
L	8260D	Carbon tetrachloride	UG/L	5	U	10	U	5	U
L	8260D	Chlorobenzene	UG/L	1	U	2	U	1	U
L	8260D	Chloroethane	UG/L	2	U	4	U	2	U
L	8260D	Chloroform	UG/L	2	U	4	U	2	U
L	8260D	Chloromethane	UG/L	2	U	4	U	2	U
L	8260D	cis-1,2-Dichloroethene	UG/L	1	U	2	U	8.3	
L	8260D	cis-1,3-Dichloropropene	UG/L	0.5	U	1	U	0.5	U
L	8260D	Cyclohexane	UG/L						
L	8260D	Dibromochloromethane	UG/L	0.5	U	1	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692	
			Location	DP-05		DW-01		DW-02	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP005011D		360175-DW001-1		360175-DW002-2	
			Qc Code	FD		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L	1	U	2	U	1	U
L	8260D	Dichlorodifluoromethane	UG/L	2	U	4	U	2	U
L	8260D	Diethyl ether	UG/L	2	U	4	U	2	U
L	8260D	Ethyl-t-Butyl Ether	UG/L	0.5	U	1	U	0.5	U
L	8260D	Ethylbenzene	UG/L	1	U	2	U	1	U
L	8260D	Hexachlorobutadiene	UG/L	0.6	U	1.2	U	0.6	U
L	8260D	Isopropyl ether	UG/L	0.5	U	1	U	0.5	U
L	8260D	Isopropylbenzene	UG/L	1	U	2	U	1	U
L	8260D	Methyl cyclohexane	UG/L	1	U	2	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L	1	U	2	U	1	U
L	8260D	Methylene chloride	UG/L	5	U	10	U	5	U
L	8260D	n-Butylbenzene	UG/L	1	U	2	U	1	U
L	8260D	Naphthalene	UG/L	2	UJ	4	UJ	2	UJ
L	8260D	Propylbenzene	UG/L	1	U	2	U	1	U
L	8260D	sec-Butylbenzene	UG/L	1	U	2	U	1	U
L	8260D	Styrene	UG/L	1	U	2	U	1	U
L	8260D	t-Butyl alcohol	UG/L	20	UJ	40	UJ	20	UJ
L	8260D	tert-Butylbenzene	UG/L	1	U	2	U	1	U
L	8260D	Tetrachloroethene	UG/L	0.86	J	150		2	
L	8260D	Tetrahydrofuran	UG/L	10	U	20	U	10	U
L	8260D	Toluene	UG/L	1	U	2	U	1	U
L	8260D	trans-1,2-Dichloroethene	UG/L	1	U	2	U	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L	0.5	U	1	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L	2	U	4	U	2	U
L	8260D	Trichloroethene	UG/L	0.31	J	0.66	J	5.2	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692	
			Location	DP-05		DW-01		DW-02	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP005011D		360175-DW001-1		360175-DW002-2	
			Qc Code	FD		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	4	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	4	U	2	U
L	8260D	Xylene, o	UG/L	1	U	2	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	4	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22E1903		22E1903	
			Location	QC		DP-010-09		DP-011-08	
			Field Sample Date	3/22/2022		5/24/2022		5/25/2022	
			Field Sample ID	360175-TB32222		360175-DP01009		360175-DP01108	
			Qc Code	TB		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	1	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloropropene	UG/L	2	U	2	U	2	U
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	5	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L	2	U	2	U	2	U
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	U	5	U	5	U
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	U	50	U	50	U
L	8260D	2,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	2-Butanone	UG/L	20	U	2.3	J-	20	UJ

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22E1903		22E1903	
			Location	QC		DP-010-09		DP-011-08	
			Field Sample Date	3/22/2022		5/24/2022		5/25/2022	
			Field Sample ID	360175-TB32222		360175-DP01009		360175-DP01108	
			Qc Code	TB		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	2-Hexanone	UG/L	10	U	10	UJ	10	UJ
L	8260D	4-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	4-iso-Propyltoluene	UG/L	1	U	1	U	1	U
L	8260D	4-Methyl-2-pentanone	UG/L	10	U	10	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L	1	U	1	U	1	U
L	8260D	Acetone	UG/L	50	U	12	J	2.8	J
L	8260D	Acrylonitrile	UG/L	5	U	5	U	5	U
L	8260D	Benzene	UG/L	1	U	1	U	1	U
L	8260D	Bromobenzene	UG/L	1	U	1	U	1	U
L	8260D	Bromochloromethane	UG/L	1	U	1	U	1	U
L	8260D	Bromodichloromethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Bromoform	UG/L	1	U	1	U	1	U
L	8260D	Bromomethane	UG/L	2	U	2	U	2	U
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Carbon disulfide	UG/L	5	U	5	U	5	U
L	8260D	Carbon tetrachloride	UG/L	5	U	5	U	5	U
L	8260D	Chlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	Chloroethane	UG/L	2	U	2	U	2	U
L	8260D	Chloroform	UG/L	2	U	2	U	2	U
L	8260D	Chloromethane	UG/L	2	U	2	U	2	U
L	8260D	cis-1,2-Dichloroethene	UG/L	1	U	0.23	J	0.2	J
L	8260D	cis-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Cyclohexane	UG/L						
L	8260D	Dibromochloromethane	UG/L	0.5	U	0.5	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22E1903		22E1903	
			Location	QC		DP-010-09		DP-011-08	
			Field Sample Date	3/22/2022		5/24/2022		5/25/2022	
			Field Sample ID	360175-TB32222		360175-DP01009		360175-DP01108	
			Qc Code	TB		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L	1	U	1	U	1	U
L	8260D	Dichlorodifluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Diethyl ether	UG/L	2	U	2	U	2	U
L	8260D	Ethyl-t-Butyl Ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Ethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Hexachlorobutadiene	UG/L	0.6	U	0.6	U	0.6	U
L	8260D	Isopropyl ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Isopropylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Methyl cyclohexane	UG/L	1	U	1	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L	1	U	1	U	1	U
L	8260D	Methylene chloride	UG/L	5	U	5	UJ	5	UJ
L	8260D	n-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Naphthalene	UG/L	2	U	2	UJ	2	UJ
L	8260D	Propylbenzene	UG/L	1	U	1	U	1	U
L	8260D	sec-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Styrene	UG/L	1	U	1	U	1	U
L	8260D	t-Butyl alcohol	UG/L	20	U	20	UJ	20	UJ
L	8260D	tert-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Tetrachloroethene	UG/L	1	U	7.3		0.59	J
L	8260D	Tetrahydrofuran	UG/L	10	U	10	U	10	U
L	8260D	Toluene	UG/L	1	U	0.3	J	1	U
L	8260D	trans-1,2-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L	2	U	2	U	2	U
L	8260D	Trichloroethene	UG/L	1	U	0.25	J	0.21	J

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22E1903		22E1903	
			Location	QC		DP-010-09		DP-011-08	
			Field Sample Date	3/22/2022		5/24/2022		5/25/2022	
			Field Sample ID	360175-TB32222		360175-DP01009		360175-DP01108	
			Qc Code	TB		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	2	U	2	U
L	8260D	Xylene, o	UG/L	1	U	1	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	2	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22E1903		22E1903		22E1903
			Location	DP-012-06		DP-015-010		DP-016-012
			Field Sample Date	5/26/2022		5/24/2022		5/24/2022
			Field Sample ID	360175-DP01206		360175-DP015010		360175-DP016012
			Qc Code	FS		FS		FS
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	1	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloropropene	UG/L	2	U	2	U	2	U
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	5	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L	2	U	2	U	2	U
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	U	5	U	5	U
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	U	50	U	50	U
L	8260D	2,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	2-Butanone	UG/L	20	UJ	20	UJ	20	UJ

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22E1903		22E1903		22E1903	
			Location	DP-012-06		DP-015-010		DP-016-012	
			Field Sample Date	5/26/2022		5/24/2022		5/24/2022	
			Field Sample ID	360175-DP01206		360175-DP015010		360175-DP016012	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	2-Hexanone	UG/L	10	UJ	10	UJ	10	UJ
L	8260D	4-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	4-iso-Propyltoluene	UG/L	1	U	1	U	1	U
L	8260D	4-Methyl-2-pentanone	UG/L	10	U	10	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L	1	U	1	U	1	U
L	8260D	Acetone	UG/L	3.2	J	8.3	J	7.2	J
L	8260D	Acrylonitrile	UG/L	5	U	5	U	5	U
L	8260D	Benzene	UG/L	1	U	1	U	1	U
L	8260D	Bromobenzene	UG/L	1	U	1	U	1	U
L	8260D	Bromochloromethane	UG/L	1	U	1	U	1	U
L	8260D	Bromodichloromethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Bromoform	UG/L	1	U	1	U	1	U
L	8260D	Bromomethane	UG/L	2	U	2	U	2	U
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Carbon disulfide	UG/L	5	U	5	U	5	U
L	8260D	Carbon tetrachloride	UG/L	5	U	5	U	5	U
L	8260D	Chlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	Chloroethane	UG/L	2	U	2	U	2	U
L	8260D	Chloroform	UG/L	2	U	2	U	2	U
L	8260D	Chloromethane	UG/L	2	U	2	U	2	U
L	8260D	cis-1,2-Dichloroethene	UG/L	1	U	1	U	0.89	J
L	8260D	cis-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Cyclohexane	UG/L						
L	8260D	Dibromochloromethane	UG/L	0.5	U	0.5	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22E1903		22E1903		22E1903	
			Location	DP-012-06		DP-015-010		DP-016-012	
			Field Sample Date	5/26/2022		5/24/2022		5/24/2022	
			Field Sample ID	360175-DP01206		360175-DP015010		360175-DP016012	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L	1	U	1	U	1	U
L	8260D	Dichlorodifluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Diethyl ether	UG/L	2	U	2	U	2	U
L	8260D	Ethyl-t-Butyl Ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Ethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Hexachlorobutadiene	UG/L	0.6	U	0.6	U	0.6	U
L	8260D	Isopropyl ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Isopropylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Methyl cyclohexane	UG/L	1	U	1	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L	1	U	1	U	1	U
L	8260D	Methylene chloride	UG/L	5	UJ	5	UJ	5	UJ
L	8260D	n-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Naphthalene	UG/L	2	UJ	2	UJ	2	UJ
L	8260D	Propylbenzene	UG/L	1	U	1	U	1	U
L	8260D	sec-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Styrene	UG/L	1	U	1	U	1	U
L	8260D	t-Butyl alcohol	UG/L	20	UJ	20	UJ	20	UJ
L	8260D	tert-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Tetrachloroethene	UG/L	1	U	1	U	4.7	
L	8260D	Tetrahydrofuran	UG/L	10	U	10	U	10	U
L	8260D	Toluene	UG/L	1	U	1	U	1	U
L	8260D	trans-1,2-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L	2	U	2	U	2	U
L	8260D	Trichloroethene	UG/L	1	U	1	U	1.1	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22E1903		22E1903		22E1903	
			Location	DP-012-06		DP-015-010		DP-016-012	
			Field Sample Date	5/26/2022		5/24/2022		5/24/2022	
			Field Sample ID	360175-DP01206		360175-DP015010		360175-DP016012	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	2	U	2	U
L	8260D	Xylene, o	UG/L	1	U	1	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	2	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22E1903		22E1903		22E1903	
			Location	DP-017-012		DP-08-011		QC	
			Field Sample Date	5/24/2022		5/24/2022		5/26/2022	
			Field Sample ID	360175-DP017012		360175-DP08011		360175-TB522	
			Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	1	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloropropene	UG/L	2	U	2	U	2	U
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	5	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L	2	U	2	U	2	U
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	U	5	U	5	U
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	U	50	U	50	U
L	8260D	2,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	2-Butanone	UG/L	20	UJ	20	UJ	20	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22E1903		22E1903		22E1903	
				Location	DP-017-012		DP-08-011		QC	
				Field Sample Date	5/24/2022		5/24/2022		5/26/2022	
				Field Sample ID	360175-DP017012		360175-DP08011		360175-TB522	
				Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**		Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L		1	U	1	U	1	U
L	8260D	2-Hexanone	UG/L		10	UJ	10	UJ	10	U
L	8260D	4-Chlorotoluene	UG/L		1	U	1	U	1	U
L	8260D	4-iso-Propyltoluene	UG/L		1	U	1	U	1	U
L	8260D	4-Methyl-2-pentanone	UG/L		10	U	10	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L		1	U	1	U	1	U
L	8260D	Acetone	UG/L		8.1	J	3.2	J	50	U
L	8260D	Acrylonitrile	UG/L		5	U	5	U	5	U
L	8260D	Benzene	UG/L		1	U	1	U	1	U
L	8260D	Bromobenzene	UG/L		1	U	1	U	1	U
L	8260D	Bromochloromethane	UG/L		1	U	1	U	1	U
L	8260D	Bromodichloromethane	UG/L		0.5	U	0.5	U	0.5	U
L	8260D	Bromoform	UG/L		1	U	1	U	1	U
L	8260D	Bromomethane	UG/L		2	U	2	U	2	U
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L		0.5	U	0.5	U	0.5	U
L	8260D	Carbon disulfide	UG/L		5	U	5	U	5	U
L	8260D	Carbon tetrachloride	UG/L		5	U	5	U	5	U
L	8260D	Chlorobenzene	UG/L		1	U	1	U	1	U
L	8260D	Chloroethane	UG/L		2	U	2	U	2	U
L	8260D	Chloroform	UG/L		2	U	2	U	2	U
L	8260D	Chloromethane	UG/L		2	U	2	U	2	U
L	8260D	cis-1,2-Dichloroethene	UG/L		1	U	7.1		1	U
L	8260D	cis-1,3-Dichloropropene	UG/L		0.5	U	0.5	U	0.5	U
L	8260D	Cyclohexane	UG/L							
L	8260D	Dibromochloromethane	UG/L		0.5	U	0.5	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Lab SDG	22E1903		22E1903		22E1903	
		Location	DP-017-012		DP-08-011		QC	
		Field Sample Date	5/24/2022		5/24/2022		5/26/2022	
		Field Sample ID	360175-DP017012		360175-DP08011		360175-TB522	
		Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L	1	U	1	U	1	U
L	8260D	Dichlorodifluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Diethyl ether	UG/L	2	U	2	U	2	U
L	8260D	Ethyl-t-Butyl Ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Ethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Hexachlorobutadiene	UG/L	0.6	U	0.6	U	0.6	U
L	8260D	Isopropyl ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Isopropylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Methyl cyclohexane	UG/L	1	U	1	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L	1	U	1	U	1	U
L	8260D	Methylene chloride	UG/L	5	UJ	5	UJ	5	U
L	8260D	n-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Naphthalene	UG/L	2	UJ	2	UJ	2	U
L	8260D	Propylbenzene	UG/L	1	U	1	U	1	U
L	8260D	sec-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Styrene	UG/L	1	U	1	U	1	U
L	8260D	t-Butyl alcohol	UG/L	20	UJ	20	UJ	20	U
L	8260D	tert-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Tetrachloroethene	UG/L	1.2		7.5		1	U
L	8260D	Tetrahydrofuran	UG/L	1.8	J	10	U	10	U
L	8260D	Toluene	UG/L	0.29	J	1	U	1	U
L	8260D	trans-1,2-Dichloroethene	UG/L	1	U	0.7	J	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L	2	U	2	U	2	U
L	8260D	Trichloroethene	UG/L	1	U	6.2		1	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22E1903		22E1903		22E1903	
			Location	DP-017-012		DP-08-011		QC	
			Field Sample Date	5/24/2022		5/24/2022		5/26/2022	
			Field Sample ID	360175-DP017012		360175-DP08011		360175-TB522	
			Qc Code	FS		FS		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	2	U	2	U
L	8260D	Xylene, o	UG/L	1	U	1	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	2	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F1625		22F1625		22F1625	
			Location	MW-03		MW-03		QC	
			Field Sample Date	6/24/2022		6/24/2022		6/24/2022	
			Field Sample ID	360175-MW0030020		360175-MW0030020 Dup		360175-TB624	
			Qc Code	FS		FD		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	1,1,1,2-Tetrachloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,1-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/L	1	U	1	U	1	U
L	8260D	1,1,2-Trichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	1,1-Dichloropropene	UG/L	2	U	2	U	2	U
L	8260D	1,2,3-Trichlorobenzene	UG/L	5	U	5	U	5	U
L	8260D	1,2,3-Trichloropropane	UG/L	2	U	2	U	2	U
L	8260D	1,2,4-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2,4-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dibromo-3-chloropropane	UG/L	5	U	5	U	5	U
L	8260D	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,2-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloroethane	UG/L	1	U	1	U	1	U
L	8260D	1,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3,5-Trimethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,3-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	1,4-Dichlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	1,4-Dioxane	UG/L	50	UJ	50	UJ	50	U
L	8260D	2,2-Dichloropropane	UG/L	1	U	1	U	1	U
L	8260D	2-Butanone	UG/L	20	UJ	20	UJ	20	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Lab SDG	22F1625		22F1625		22F1625	
		Location	MW-03		MW-03		QC	
		Field Sample Date	6/24/2022		6/24/2022		6/24/2022	
		Field Sample ID	360175-MW0030020		360175-MW0030020 Dup		360175-TB624	
		Qc Code	FS		FD		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	2-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	2-Hexanone	UG/L	10	UJ	10	UJ	10	U
L	8260D	4-Chlorotoluene	UG/L	1	U	1	U	1	U
L	8260D	4-iso-Propyltoluene	UG/L	1	U	1	U	1	U
L	8260D	4-Methyl-2-pentanone	UG/L	10	U	10	U	10	U
L	8260D	Acetic acid, methyl ester	UG/L	1	U	1	U	1	U
L	8260D	Acetone	UG/L	50	UJ	50	UJ	50	U
L	8260D	Acrylonitrile	UG/L	5	UJ	5	UJ	5	U
L	8260D	Benzene	UG/L	1	U	1	U	1	U
L	8260D	Bromobenzene	UG/L	1	U	1	U	1	U
L	8260D	Bromochloromethane	UG/L	1	U	1	U	1	U
L	8260D	Bromodichloromethane	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Bromoform	UG/L	1	U	1	U	1	U
L	8260D	Bromomethane	UG/L	2	U	2	U	2	U
L	8260D	Butane, 2-methoxy-2-methyl-	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Carbon disulfide	UG/L	5	U	5	U	5	U
L	8260D	Carbon tetrachloride	UG/L	5	U	5	U	5	U
L	8260D	Chlorobenzene	UG/L	1	U	1	U	1	U
L	8260D	Chloroethane	UG/L	2	U	2	U	2	U
L	8260D	Chloroform	UG/L	2	U	0.22	J	2	U
L	8260D	Chloromethane	UG/L	2	U	2	U	2	U
L	8260D	cis-1,2-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	cis-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Cyclohexane	UG/L						
L	8260D	Dibromochloromethane	UG/L	0.5	U	0.5	U	0.5	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F1625		22F1625		22F1625	
			Location	MW-03		MW-03		QC	
			Field Sample Date	6/24/2022		6/24/2022		6/24/2022	
			Field Sample ID	360175-MW0030020		360175-MW0030020 Dup		360175-TB624	
			Qc Code	FS		FD		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Dibromomethane	UG/L	1	U	1	U	1	U
L	8260D	Dichlorodifluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Diethyl ether	UG/L	2	U	2	U	2	U
L	8260D	Ethyl-t-Butyl Ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Ethylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Hexachlorobutadiene	UG/L	0.6	U	0.6	U	0.6	U
L	8260D	Isopropyl ether	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	Isopropylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Methyl cyclohexane	UG/L	1	U	1	U	1	U
L	8260D	Methyl Tertbutyl Ether	UG/L	1	U	1	U	1	U
L	8260D	Methylene chloride	UG/L	5	U	5	U	0.29	J
L	8260D	n-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Naphthalene	UG/L	2	UJ	2	UJ	2	U
L	8260D	Propylbenzene	UG/L	1	U	1	U	1	U
L	8260D	sec-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Styrene	UG/L	1	U	1	U	1	U
L	8260D	t-Butyl alcohol	UG/L	20	UJ	20	UJ	20	U
L	8260D	tert-Butylbenzene	UG/L	1	U	1	U	1	U
L	8260D	Tetrachloroethene	UG/L	1	U	1	U	1	U
L	8260D	Tetrahydrofuran	UG/L	10	U	10	U	10	U
L	8260D	Toluene	UG/L	1	U	1	U	1	U
L	8260D	trans-1,2-Dichloroethene	UG/L	1	U	1	U	1	U
L	8260D	trans-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
L	8260D	trans-1,4-Dichloro-2-butene	UG/L	2	U	2	U	2	U
L	8260D	Trichloroethene	UG/L	1	U	1	U	1	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F1625		22F1625		22F1625	
			Location	MW-03		MW-03		QC	
			Field Sample Date	6/24/2022		6/24/2022		6/24/2022	
			Field Sample ID	360175-MW0030020		360175-MW0030020 Dup		360175-TB624	
			Qc Code	FS		FD		TB	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8260D	Trichlorofluoromethane	UG/L	2	U	2	U	2	U
L	8260D	Vinyl chloride	UG/L	2	U	2	U	2	U
L	8260D	Xylene, o	UG/L	1	U	1	U	1	U
L	8260D	Xylenes (m&p)	UG/L	2	U	2	U	2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	HA-01		HA-01		HA-02	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	360175-HA001001		360175-HA001001D		360175-HA002001	
			Qc Code	FS		FD		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
S	8260D	1,1,1-Trichloroethane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,1,2,2-Tetrachloroethane	MG/KG	0.00051	U	0.00043	U	0.00065	U
S	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	MG/KG	0.0051	U	0.0043	U	0.0065	U
S	8260D	1,1,2-Trichloroethane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,1-Dichloroethane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,1-Dichloroethene	MG/KG	0.0021	U	0.0017	U	0.0026	U
S	8260D	1,2,3-Trichlorobenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,2,4-Trichlorobenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,2,4-Trimethylbenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,2-Dibromo-3-chloropropane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,2-Dibromoethane	MG/KG	0.00051	U	0.00043	U	0.00065	U
S	8260D	1,2-Dichlorobenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,2-Dichloroethane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,2-Dichloropropane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,3,5-Trimethylbenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,3-Dichlorobenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,4-Dichlorobenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	1,4-Dioxane	MG/KG	0.051	UJ	0.043	UJ	0.065	U
S	8260D	2-Butanone	MG/KG	0.021	UJ	0.017	UJ	0.026	UJ
S	8260D	2-Hexanone	MG/KG	0.01	U	0.0085	U	0.013	U
S	8260D	4-iso-Propyltoluene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	4-Methyl-2-pentanone	MG/KG	0.01	U	0.0085	U	0.013	U
S	8260D	Acetic acid, methyl ester	MG/KG	0.001	UJ	0.00085	UJ	0.0013	UJ
S	8260D	Acetone	MG/KG	0.051	U	0.043	U	0.065	U
S	8260D	Benzene	MG/KG	0.001	UJ	0.00085	UJ	0.0013	UJ

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721		22A0721	
			Location	HA-01		HA-01		HA-02	
			Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
			Field Sample ID	360175-HA001001		360175-HA001001D		360175-HA002001	
			Qc Code	FS		FD		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
S	8260D	Bromochloromethane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Bromodichloromethane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Bromoform	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Bromomethane	MG/KG	0.0051	UJ	0.0043	UJ	0.0065	UJ
S	8260D	Carbon disulfide	MG/KG	0.0051	U	0.0043	U	0.0065	U
S	8260D	Carbon tetrachloride	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Chlorobenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Chloroethane	MG/KG	0.01	U	0.0085	U	0.013	U
S	8260D	Chloroform	MG/KG	0.0021	U	0.0017	U	0.0026	U
S	8260D	Chloromethane	MG/KG	0.0051	UJ	0.0043	UJ	0.0065	U
S	8260D	cis-1,2-Dichloroethene	MG/KG	0.00053	J	0.0004	J	0.00084	J
S	8260D	cis-1,3-Dichloropropene	MG/KG	0.00051	U	0.00043	U	0.00065	U
S	8260D	Cyclohexane	MG/KG						
S	8260D	Dibromochloromethane	MG/KG	0.00051	U	0.00043	U	0.00065	U
S	8260D	Dichlorodifluoromethane	MG/KG	0.01	U	0.0085	U	0.013	U
S	8260D	Ethylbenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Isopropylbenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Methyl cyclohexane	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Methyl Tertbutyl Ether	MG/KG	0.0021	U	0.0017	U	0.0026	U
S	8260D	Methylene chloride	MG/KG	0.01	U	0.0085	U	0.013	U
S	8260D	n-Butylbenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Naphthalene	MG/KG	0.0021	U	0.0017	U	0.0026	U
S	8260D	Propylbenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	sec-Butylbenzene	MG/KG	0.001	U	0.00085	U	0.0013	U
S	8260D	Styrene	MG/KG	0.001	U	0.00085	U	0.0013	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22A0721		22A0721		22A0721	
				Location	HA-01		HA-01		HA-02	
				Field Sample Date	1/12/2022		1/12/2022		1/12/2022	
				Field Sample ID	360175-HA001001		360175-HA001001D		360175-HA002001	
				Qc Code	FS		FD		FS	
Matrix	**Method**	**Parameter**	**Units**		Result	Qualifier	Result	Qualifier	Result	Qualifier
S	8260D	tert-Butylbenzene	MG/KG		0.0021	U	0.0017	U	0.0026	U
S	8260D	Tetrachloroethene	MG/KG		3.4	J	4.7	J	0.14	
S	8260D	Toluene	MG/KG		0.001	U	0.00085	U	0.0013	U
S	8260D	trans-1,2-Dichloroethene	MG/KG		0.001	U	0.00085	U	0.0013	U
S	8260D	trans-1,3-Dichloropropene	MG/KG		0.00051	U	0.00043	U	0.00065	U
S	8260D	Trichloroethene	MG/KG		0.0013		0.0011		0.0026	
S	8260D	Trichlorofluoromethane	MG/KG		0.0051	U	0.0043	U	0.0065	U
S	8260D	Vinyl chloride	MG/KG		0.0051	U	0.0043	U	0.0065	U
S	8260D	Xylene, o	MG/KG		0.001	U	0.00085	U	0.0013	U
S	8260D	Xylenes (m&p)	MG/KG		0.0021	U	0.0017	U	0.0026	U
S	SM2540G	Percent Solids	% BY WT.		83.9		83.9		84.1	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721	
			Location	HA-03		Drum-S	
			Field Sample Date	1/12/2022		1/12/2022	
			Field Sample ID	360175-HA003001		WC Drum	
			Qc Code	FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier
S	8260D	1,1,1-Trichloroethane	MG/KG	0.065	U	0.0022	U
S	8260D	1,1,2,2-Tetrachloroethane	MG/KG	0.033	U	0.0011	U
S	8260D	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	MG/KG	0.065	U	0.011	U
S	8260D	1,1,2-Trichloroethane	MG/KG	0.065	U	0.0022	U
S	8260D	1,1-Dichloroethane	MG/KG	0.065	U	0.0022	U
S	8260D	1,1-Dichloroethene	MG/KG	0.065	U	0.0044	U
S	8260D	1,2,3-Trichlorobenzene	MG/KG	0.33	U	0.0022	U
S	8260D	1,2,4-Trichlorobenzene	MG/KG	0.065	U	0.0022	U
S	8260D	1,2,4-Trimethylbenzene	MG/KG	0.07	U	0.0022	U
S	8260D	1,2-Dibromo-3-chloropropane	MG/KG	0.33	U	0.0022	U
S	8260D	1,2-Dibromoethane	MG/KG	0.033	U	0.0011	U
S	8260D	1,2-Dichlorobenzene	MG/KG	0.065	U	0.0022	U
S	8260D	1,2-Dichloroethane	MG/KG	0.065	U	0.0022	U
S	8260D	1,2-Dichloropropane	MG/KG	0.065	U	0.0022	U
S	8260D	1,3,5-Trimethylbenzene	MG/KG	0.07	U	0.0022	U
S	8260D	1,3-Dichlorobenzene	MG/KG	0.065	U	0.0022	U
S	8260D	1,4-Dichlorobenzene	MG/KG	0.065	U	0.0022	U
S	8260D	1,4-Dioxane	MG/KG	3.3	U	0.11	U
S	8260D	2-Butanone	MG/KG	1.3	U	0.044	U
S	8260D	2-Hexanone	MG/KG	0.65	U	0.022	U
S	8260D	4-iso-Propyltoluene	MG/KG	0.07	U	0.0022	U
S	8260D	4-Methyl-2-pentanone	MG/KG	0.65	U	0.022	U
S	8260D	Acetic acid, methyl ester	MG/KG	0.65	U	0.0022	U
S	8260D	Acetone	MG/KG	3.3	U	0.013	J
S	8260D	Benzene	MG/KG	0.07	U	0.00071	J

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22A0721		22A0721	
			Location	HA-03		Drum-S	
			Field Sample Date	1/12/2022		1/12/2022	
			Field Sample ID	360175-HA003001		WC Drum	
			Qc Code	FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier
S	8260D	Bromochloromethane	MG/KG	0.065	U	0.0022	U
S	8260D	Bromodichloromethane	MG/KG	0.065	U	0.0022	U
S	8260D	Bromoform	MG/KG	0.065	U	0.0022	U
S	8260D	Bromomethane	MG/KG	0.13	UJ	0.011	U
S	8260D	Carbon disulfide	MG/KG	0.33	U	0.011	U
S	8260D	Carbon tetrachloride	MG/KG	0.065	U	0.0022	U
S	8260D	Chlorobenzene	MG/KG	0.065	U	0.0022	U
S	8260D	Chloroethane	MG/KG	0.13	U	0.022	U
S	8260D	Chloroform	MG/KG	0.13	U	0.0044	U
S	8260D	Chloromethane	MG/KG	0.13	UJ	0.011	U
S	8260D	cis-1,2-Dichloroethene	MG/KG	0.71		0.0062	
S	8260D	cis-1,3-Dichloropropene	MG/KG	0.033	U	0.0011	U
S	8260D	Cyclohexane	MG/KG	0.13	U		
S	8260D	Dibromochloromethane	MG/KG	0.033	U	0.0011	U
S	8260D	Dichlorodifluoromethane	MG/KG	0.13	U	0.022	U
S	8260D	Ethylbenzene	MG/KG	0.07	U	0.0022	U
S	8260D	Isopropylbenzene	MG/KG	0.07	U	0.0022	U
S	8260D	Methyl cyclohexane	MG/KG	0.065	U	0.0022	U
S	8260D	Methyl Tertbutyl Ether	MG/KG	0.07	U	0.0044	U
S	8260D	Methylene chloride	MG/KG	0.33	U	0.022	U
S	8260D	n-Butylbenzene	MG/KG	0.07	U	0.0022	U
S	8260D	Naphthalene	MG/KG	0.14	U	0.00082	J
S	8260D	Propylbenzene	MG/KG	0.07	U	0.0022	U
S	8260D	sec-Butylbenzene	MG/KG	0.07	U	0.0022	U
S	8260D	Styrene	MG/KG	0.065	U	0.0022	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22A0721		22A0721	
				Location	HA-03		Drum-S	
				Field Sample Date	1/12/2022		1/12/2022	
				Field Sample ID	360175-HA003001		WC Drum	
				Qc Code	FS		FS	
Matrix	**Method**	**Parameter**	**Units**		Result	Qualifier	Result	Qualifier
S	8260D	tert-Butylbenzene	MG/KG		0.07	U	0.0044	U
S	8260D	Tetrachloroethene	MG/KG		5.6		0.19	
S	8260D	Toluene	MG/KG		0.07	U	0.0022	U
S	8260D	trans-1,2-Dichloroethene	MG/KG		0.015	J	0.0022	U
S	8260D	trans-1,3-Dichloropropene	MG/KG		0.033	U	0.0011	U
S	8260D	Trichloroethene	MG/KG		0.16		0.0054	
S	8260D	Trichlorofluoromethane	MG/KG		0.13	U	0.011	U
S	8260D	Vinyl chloride	MG/KG		0.13	U	0.011	U
S	8260D	Xylene, o	MG/KG		0.07	U	0.0022	U
S	8260D	Xylenes (m&p)	MG/KG		0.14	U	0.0044	U
S	SM2540G	Percent Solids	% BY WT.		76.6			

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819		22C1819		22C1819	
			Location	GV-008		GV-009		GV-009	
			Field Sample Date	3/23/2022		3/23/2022		3/23/2022	
			Field Sample ID	360175-GV008005		360175-GV009005		360175-GV009005D	
			Qc Code	FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	1,1,1-Trichloroethane	UG/M3	1.1	U	1.1	U	1.1	U
G	TO15	1,1,2,2-Tetrachloroethane	UG/M3	1.4	U	1.4	U	1.4	U
G	TO15	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/M3	6.1	U	6.1	U	6.1	U
G	TO15	1,1,2-Trichloroethane	UG/M3	1.1	U	1.1	U	1.1	U
G	TO15	1,1-Dichloroethane	UG/M3	0.81	U	0.81	U	0.81	U
G	TO15	1,1-Dichloroethene	UG/M3	0.79	U	0.79	U	0.79	U
G	TO15	1,2,4-Trichlorobenzene	UG/M3	1.5	UJ	1.5	UJ	1.5	UJ
G	TO15	1,2,4-Trimethylbenzene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	1,2-Dibromoethane	UG/M3	1.5	U	1.5	U	1.5	U
G	TO15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	1.4	U	1.4	U	1.4	U
G	TO15	1,2-Dichlorobenzene	UG/M3	1.2	U	1.2	U	1.2	U
G	TO15	1,2-Dichloroethane	UG/M3	0.81	U	0.81	U	0.81	U
G	TO15	1,2-Dichloropropane	UG/M3	0.92	U	0.92	U	0.92	U
G	TO15	1,3,5-Trimethylbenzene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	1,3-Butadiene	UG/M3	0.44	U	0.44	U	0.44	U
G	TO15	1,3-Dichlorobenzene	UG/M3	3		1.8		2.3	
G	TO15	1,4-Dichlorobenzene	UG/M3	1.2	U	1.2	U	1.2	U
G	TO15	1,4-Dioxane	UG/M3	7.2	U	7.2	U	7.2	U
G	TO15	2-Butanone	UG/M3	24	U	24	U	24	U
G	TO15	2-Hexanone	UG/M3	0.82	U	0.82	U	0.82	U
G	TO15	2-Propanol	UG/M3	5.4	J	4.8	J	5.1	J
G	TO15	4-Ethyltoluene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	4-Methyl-2-pentanone	UG/M3	0.82	U	0.82	U	0.82	U
G	TO15	Acetone	UG/M3	57		32		31	
G	TO15	Benzene	UG/M3	0.64	U	0.64	U	0.64	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819		22C1819		22C1819	
			Location	GV-008		GV-009		GV-009	
			Field Sample Date	3/23/2022		3/23/2022		3/23/2022	
			Field Sample ID	360175-GV008005		360175-GV009005		360175-GV009005D	
			Qc Code	FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	Benzyl chloride	UG/M3	1	U	1	U	1	U
G	TO15	Bromodichloromethane	UG/M3	1.3	U	1.3	U	1.3	U
G	TO15	Bromoform	UG/M3	2.1	U	2.1	U	2.1	U
G	TO15	Bromomethane	UG/M3	0.78	U	0.78	U	0.78	U
G	TO15	Carbon disulfide	UG/M3	6.2	U	6.2	U	6.2	U
G	TO15	Carbon tetrachloride	UG/M3	1.3	U	1.3	U	1.3	U
G	TO15	Chlorobenzene	UG/M3	0.92	U	0.92	U	0.92	U
G	TO15	Chloroethane	UG/M3	0.53	U	0.53	U	0.53	U
G	TO15	Chloroform	UG/M3	2.4		0.98	U	0.98	U
G	TO15	Chloromethane	UG/M3	0.83	U	0.33	J	0.83	U
G	TO15	cis-1,2-Dichloroethene	UG/M3	86		0.79	U	0.79	U
G	TO15	cis-1,3-Dichloropropene	UG/M3	0.91	U	0.91	U	0.91	U
G	TO15	Cyclohexane	UG/M3	0.69	U	0.69	U	0.69	U
G	TO15	Dibromochloromethane	UG/M3	1.7	U	1.7	U	1.7	U
G	TO15	Dichlorodifluoromethane	UG/M3	1.9		2.3		2.1	
G	TO15	Ethanol	UG/M3	98		100		100	
G	TO15	Ethyl acetate	UG/M3	7.2	U	7.2	U	7.2	U
G	TO15	Ethylbenzene	UG/M3	0.64	J	0.87	U	0.87	U
G	TO15	Heptane	UG/M3	1.6		0.82	U	0.82	U
G	TO15	Hexachlorobutadiene	UG/M3	2.1	U	2.1	U	2.1	U
G	TO15	Hexane	UG/M3	28	U	28	U	28	U
G	TO15	Methyl Tertbutyl Ether	UG/M3	0.72	U	0.72	U	0.72	U
G	TO15	Methylene chloride	UG/M3	6.9	U	6.9	U	6.9	U
G	TO15	Naphthalene	UG/M3	1	U	1	U	1	U
G	TO15	Propylene	UG/M3	14	U	14	U	14	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22C1819		22C1819		22C1819	
				Location	GV-008		GV-009		GV-009	
				Field Sample Date	3/23/2022		3/23/2022		3/23/2022	
				Field Sample ID	360175-GV008005		360175-GV009005		360175-GV009005D	
				Qc Code	FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**		Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	Styrene	UG/M3		0.85	U	0.85	U	0.85	U
G	TO15	Tetrachloroethene	UG/M3		1,100		4.6		5	
G	TO15	Tetrahydrofuran	UG/M3		5.9	U	5.9	U	5.9	U
G	TO15	Toluene	UG/M3		4.5		1.9		1.9	
G	TO15	trans-1,2-Dichloroethene	UG/M3		8.7		0.79	U	0.79	U
G	TO15	trans-1,3-Dichloropropene	UG/M3		0.91	U	0.91	U	0.91	U
G	TO15	Trichloroethene	UG/M3		110		1.1	U	1.1	U
G	TO15	Trichlorofluoromethane	UG/M3		1.3	J	1.4	J	1.4	J
G	TO15	Vinyl acetate	UG/M3		14	U	14	U	14	U
G	TO15	Vinyl chloride	UG/M3		0.85		0.51	U	0.51	U
G	TO15	Xylene, o	UG/M3		0.8	J	0.49	J	0.45	J
G	TO15	Xylenes (m&p)	UG/M3		2		1.3	J	1.4	J

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819		22C1819		22C1819	
			Location	GV-010		GV-011		GV-012	
			Field Sample Date	3/24/2022		3/24/2022		3/24/2022	
			Field Sample ID	360175-GV010005		360175-GV011005		360175-GV012005	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	1,1,1-Trichloroethane	UG/M3	1.1	U	1.1	U	1.1	U
G	TO15	1,1,2,2-Tetrachloroethane	UG/M3	1.4	U	1.4	U	1.4	U
G	TO15	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/M3	6.1	U	6.1	U	6.1	U
G	TO15	1,1,2-Trichloroethane	UG/M3	1.1	U	1.1	U	1.1	U
G	TO15	1,1-Dichloroethane	UG/M3	0.81	U	0.81	U	0.81	U
G	TO15	1,1-Dichloroethene	UG/M3	0.79	U	0.79	U	0.79	U
G	TO15	1,2,4-Trichlorobenzene	UG/M3	1.5	U	1.5	U	1.5	U
G	TO15	1,2,4-Trimethylbenzene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	1,2-Dibromoethane	UG/M3	1.5	U	1.5	U	1.5	U
G	TO15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	1.4	U	1.4	U	1.4	U
G	TO15	1,2-Dichlorobenzene	UG/M3	1.2	U	1.2	U	1.2	U
G	TO15	1,2-Dichloroethane	UG/M3	0.81	U	0.81	U	0.81	U
G	TO15	1,2-Dichloropropane	UG/M3	0.92	U	0.92	U	0.92	U
G	TO15	1,3,5-Trimethylbenzene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	1,3-Butadiene	UG/M3	0.44	U	0.44	U	0.44	U
G	TO15	1,3-Dichlorobenzene	UG/M3	1.2	U	1.2	U	1.2	U
G	TO15	1,4-Dichlorobenzene	UG/M3	1.2	U	1.2	U	1.2	U
G	TO15	1,4-Dioxane	UG/M3	7.2	U	7.2	U	7.2	U
G	TO15	2-Butanone	UG/M3	24	U	24	U	24	U
G	TO15	2-Hexanone	UG/M3	0.82	U	0.82	U	0.82	U
G	TO15	2-Propanol	UG/M3	3.7	J	4.4	J	5.1	J
G	TO15	4-Ethyltoluene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	4-Methyl-2-pentanone	UG/M3	0.82	U	0.82	U	0.82	U
G	TO15	Acetone	UG/M3	73		210		150	
G	TO15	Benzene	UG/M3	0.64	U	0.64	U	0.64	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819		22C1819		22C1819	
			Location	GV-010		GV-011		GV-012	
			Field Sample Date	3/24/2022		3/24/2022		3/24/2022	
			Field Sample ID	360175-GV010005		360175-GV011005		360175-GV012005	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	Benzyl chloride	UG/M3	1	U	1	U	1	U
G	TO15	Bromodichloromethane	UG/M3	1.3	U	1.3	U	1.3	U
G	TO15	Bromoform	UG/M3	2.1	U	2.1	U	2.1	U
G	TO15	Bromomethane	UG/M3	0.78	U	0.78	U	0.78	U
G	TO15	Carbon disulfide	UG/M3	6.2	U	6.2	U	6.2	U
G	TO15	Carbon tetrachloride	UG/M3	1.3	U	1.3	U	1.3	U
G	TO15	Chlorobenzene	UG/M3	0.92	U	0.92	U	0.92	U
G	TO15	Chloroethane	UG/M3	0.53	U	0.53	U	0.53	U
G	TO15	Chloroform	UG/M3	0.98	U	1.2		1.2	
G	TO15	Chloromethane	UG/M3	0.83	U	0.83	U	0.83	U
G	TO15	cis-1,2-Dichloroethene	UG/M3	0.79	U	0.79	U	0.79	U
G	TO15	cis-1,3-Dichloropropene	UG/M3	0.91	U	0.91	U	0.91	U
G	TO15	Cyclohexane	UG/M3	0.69	U	0.69	U	0.69	U
G	TO15	Dibromochloromethane	UG/M3	1.7	U	1.7	U	1.7	U
G	TO15	Dichlorodifluoromethane	UG/M3	2.1		1.9		2	
G	TO15	Ethanol	UG/M3	160		67		180	
G	TO15	Ethyl acetate	UG/M3	7.2	U	7.2	U	7.2	U
G	TO15	Ethylbenzene	UG/M3	0.87	U	0.87	U	0.87	U
G	TO15	Heptane	UG/M3	0.66	J	0.75	J	0.84	
G	TO15	Hexachlorobutadiene	UG/M3	2.1	U	2.1	U	2.1	U
G	TO15	Hexane	UG/M3	28	U	28	U	28	U
G	TO15	Methyl Tertbutyl Ether	UG/M3	0.72	U	0.72	U	0.72	U
G	TO15	Methylene chloride	UG/M3	6.9	U	6.9	U	6.9	U
G	TO15	Naphthalene	UG/M3	1	U	1	U	1	U
G	TO15	Propylene	UG/M3	14	U	14	U	14	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22C1819		22C1819		22C1819	
				Location	GV-010		GV-011		GV-012	
				Field Sample Date	3/24/2022		3/24/2022		3/24/2022	
				Field Sample ID	360175-GV010005		360175-GV011005		360175-GV012005	
				Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**		Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	Styrene	UG/M3		0.85	U	0.85	U	0.85	U
G	TO15	Tetrachloroethene	UG/M3		7.9		4.1		7.1	
G	TO15	Tetrahydrofuran	UG/M3		5.9	U	5.9	U	5.9	U
G	TO15	Toluene	UG/M3		1.7		2.1		1.7	
G	TO15	trans-1,2-Dichloroethene	UG/M3		0.79	U	0.79	U	0.79	U
G	TO15	trans-1,3-Dichloropropene	UG/M3		0.91	U	0.91	U	0.91	U
G	TO15	Trichloroethene	UG/M3		1.1	U	1.1	U	1.1	U
G	TO15	Trichlorofluoromethane	UG/M3		4.5	U	4.5	U	4.5	U
G	TO15	Vinyl acetate	UG/M3		14	U	14	U	14	U
G	TO15	Vinyl chloride	UG/M3		0.51	U	0.51	U	0.51	U
G	TO15	Xylene, o	UG/M3		0.87	U	0.87	U	0.87	U
G	TO15	Xylenes (m&p)	UG/M3		1.7	U	1.7	U	1.7	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819		22C1819		22C1819	
			Location	GV-014		GV-015		GV-016	
			Field Sample Date	3/25/2022		3/24/2022		3/23/2022	
			Field Sample ID	360175-GV014005		360175-GV015005		360175-GV016005	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	1,1,1-Trichloroethane	UG/M3	1.1	U	1.1	U	1.1	U
G	TO15	1,1,2,2-Tetrachloroethane	UG/M3	1.4	U	1.4	U	1.4	U
G	TO15	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/M3	6.1	U	6.1	U	6.1	U
G	TO15	1,1,2-Trichloroethane	UG/M3	1.1	U	1.1	U	1.1	U
G	TO15	1,1-Dichloroethane	UG/M3	0.81	U	0.81	U	0.81	U
G	TO15	1,1-Dichloroethene	UG/M3	0.79	U	0.79	U	0.79	U
G	TO15	1,2,4-Trichlorobenzene	UG/M3	1.5	U	1.5	U	1.5	UJ
G	TO15	1,2,4-Trimethylbenzene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	1,2-Dibromoethane	UG/M3	1.5	U	1.5	U	1.5	U
G	TO15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	1.4	U	1.4	U	1.4	U
G	TO15	1,2-Dichlorobenzene	UG/M3	1.2	U	1.2	U	1.2	U
G	TO15	1,2-Dichloroethane	UG/M3	0.81	U	0.81	U	0.81	U
G	TO15	1,2-Dichloropropane	UG/M3	0.92	U	0.92	U	0.92	U
G	TO15	1,3,5-Trimethylbenzene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	1,3-Butadiene	UG/M3	0.44	U	0.44	U	0.44	U
G	TO15	1,3-Dichlorobenzene	UG/M3	1.2	U	0.84	J	1.2	U
G	TO15	1,4-Dichlorobenzene	UG/M3	1.2	U	1.2	U	1.2	U
G	TO15	1,4-Dioxane	UG/M3	7.2	U	7.2	U	7.2	U
G	TO15	2-Butanone	UG/M3	24	U	24	U	24	U
G	TO15	2-Hexanone	UG/M3	0.82	U	0.82	U	0.82	U
G	TO15	2-Propanol	UG/M3	34		23		210	
G	TO15	4-Ethyltoluene	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	4-Methyl-2-pentanone	UG/M3	0.82	U	0.82	U	0.82	U
G	TO15	Acetone	UG/M3	160		80		120	
G	TO15	Benzene	UG/M3	0.74		0.51	J	1.3	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819		22C1819		22C1819	
			Location	GV-014		GV-015		GV-016	
			Field Sample Date	3/25/2022		3/24/2022		3/23/2022	
			Field Sample ID	360175-GV014005		360175-GV015005		360175-GV016005	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	Benzyl chloride	UG/M3	1	U	1	U	1	U
G	TO15	Bromodichloromethane	UG/M3	1.3	U	1.3	U	1.3	U
G	TO15	Bromoform	UG/M3	2.1	U	2.1	U	2.1	U
G	TO15	Bromomethane	UG/M3	0.78	U	0.78	U	0.78	U
G	TO15	Carbon disulfide	UG/M3	6.2	U	6.2	U	6.2	U
G	TO15	Carbon tetrachloride	UG/M3	1.3	U	1.3	U	1.3	U
G	TO15	Chlorobenzene	UG/M3	0.92	U	0.92	U	0.92	U
G	TO15	Chloroethane	UG/M3	0.53	U	0.53	U	0.53	U
G	TO15	Chloroform	UG/M3	0.98	U	0.98	U	0.98	U
G	TO15	Chloromethane	UG/M3	0.83	U	0.83	U	1.5	
G	TO15	cis-1,2-Dichloroethene	UG/M3	0.79	U	0.79	U	0.79	U
G	TO15	cis-1,3-Dichloropropene	UG/M3	0.91	U	0.91	U	0.91	U
G	TO15	Cyclohexane	UG/M3	0.69	U	0.69	U	7.5	
G	TO15	Dibromochloromethane	UG/M3	1.7	U	1.7	U	1.7	U
G	TO15	Dichlorodifluoromethane	UG/M3	2		2		1.2	
G	TO15	Ethanol	UG/M3	100		100		790	
G	TO15	Ethyl acetate	UG/M3	7.2	U	7.2	U	7.2	U
G	TO15	Ethylbenzene	UG/M3	0.87	U	0.76	J	0.87	U
G	TO15	Heptane	UG/M3	0.66	J	1.6		2.9	
G	TO15	Hexachlorobutadiene	UG/M3	2.1	U	2.1	U	2.1	U
G	TO15	Hexane	UG/M3	28	U	7.6	J	310	
G	TO15	Methyl Tertbutyl Ether	UG/M3	0.72	U	0.72	U	0.72	U
G	TO15	Methylene chloride	UG/M3	6.9	U	6.9	U	6.9	U
G	TO15	Naphthalene	UG/M3	1	U	1	U	1	U
G	TO15	Propylene	UG/M3	14	U	14	U	14	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819		22C1819		22C1819	
			Location	GV-014		GV-015		GV-016	
			Field Sample Date	3/25/2022		3/24/2022		3/23/2022	
			Field Sample ID	360175-GV014005		360175-GV015005		360175-GV016005	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
G	TO15	Styrene	UG/M3	0.85	U	0.85	U	0.85	U
G	TO15	Tetrachloroethene	UG/M3	11		3.5		3	
G	TO15	Tetrahydrofuran	UG/M3	5.9	U	5.9	U	5.9	U
G	TO15	Toluene	UG/M3	1.6		6.5		5.2	
G	TO15	trans-1,2-Dichloroethene	UG/M3	0.79	U	0.79	U	0.79	U
G	TO15	trans-1,3-Dichloropropene	UG/M3	0.91	U	0.91	U	0.91	U
G	TO15	Trichloroethene	UG/M3	1.1	U	1.1	U	1.1	U
G	TO15	Trichlorofluoromethane	UG/M3	1.4	J	1.4	J	1.4	J
G	TO15	Vinyl acetate	UG/M3	14	U	14	U	14	U
G	TO15	Vinyl chloride	UG/M3	0.51	U	0.51	U	0.51	U
G	TO15	Xylene, o	UG/M3	0.87	U	1.1		0.82	J
G	TO15	Xylenes (m&p)	UG/M3	1.7	U	3.2		2.4	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819	
			Location	GV-017	
			Field Sample Date	3/24/2022	
			Field Sample ID	360175-GV017005	
			Qc Code	FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier
G	TO15	1,1,1-Trichloroethane	UG/M3	1.1	U
G	TO15	1,1,2,2-Tetrachloroethane	UG/M3	1.4	U
G	TO15	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	UG/M3	6.1	U
G	TO15	1,1,2-Trichloroethane	UG/M3	1.1	U
G	TO15	1,1-Dichloroethane	UG/M3	0.81	U
G	TO15	1,1-Dichloroethene	UG/M3	0.79	U
G	TO15	1,2,4-Trichlorobenzene	UG/M3	1.5	U
G	TO15	1,2,4-Trimethylbenzene	UG/M3	0.98	U
G	TO15	1,2-Dibromoethane	UG/M3	1.5	U
G	TO15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	1.4	U
G	TO15	1,2-Dichlorobenzene	UG/M3	1.2	U
G	TO15	1,2-Dichloroethane	UG/M3	0.81	U
G	TO15	1,2-Dichloropropane	UG/M3	0.92	U
G	TO15	1,3,5-Trimethylbenzene	UG/M3	0.59	J
G	TO15	1,3-Butadiene	UG/M3	0.44	U
G	TO15	1,3-Dichlorobenzene	UG/M3	1.2	U
G	TO15	1,4-Dichlorobenzene	UG/M3	1.2	U
G	TO15	1,4-Dioxane	UG/M3	7.2	U
G	TO15	2-Butanone	UG/M3	24	U
G	TO15	2-Hexanone	UG/M3	0.82	U
G	TO15	2-Propanol	UG/M3	32	
G	TO15	4-Ethyltoluene	UG/M3	0.98	U
G	TO15	4-Methyl-2-pentanone	UG/M3	0.82	U
G	TO15	Acetone	UG/M3	25	
G	TO15	Benzene	UG/M3	2.5	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819	
			Location	GV-017	
			Field Sample Date	3/24/2022	
			Field Sample ID	360175-GV017005	
			Qc Code	FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier
G	TO15	Benzyl chloride	UG/M3	1	U
G	TO15	Bromodichloromethane	UG/M3	1.3	U
G	TO15	Bromoform	UG/M3	2.1	U
G	TO15	Bromomethane	UG/M3	0.78	U
G	TO15	Carbon disulfide	UG/M3	6.2	U
G	TO15	Carbon tetrachloride	UG/M3	1.3	U
G	TO15	Chlorobenzene	UG/M3	0.92	U
G	TO15	Chloroethane	UG/M3	0.53	U
G	TO15	Chloroform	UG/M3	0.98	
G	TO15	Chloromethane	UG/M3	0.83	U
G	TO15	cis-1,2-Dichloroethene	UG/M3	0.79	U
G	TO15	cis-1,3-Dichloropropene	UG/M3	0.91	U
G	TO15	Cyclohexane	UG/M3	5.6	
G	TO15	Dibromochloromethane	UG/M3	1.7	U
G	TO15	Dichlorodifluoromethane	UG/M3	2.1	
G	TO15	Ethanol	UG/M3	200	
G	TO15	Ethyl acetate	UG/M3	7.2	U
G	TO15	Ethylbenzene	UG/M3	5	
G	TO15	Heptane	UG/M3	7.2	
G	TO15	Hexachlorobutadiene	UG/M3	2.1	U
G	TO15	Hexane	UG/M3	8.8	J
G	TO15	Methyl Tertbutyl Ether	UG/M3	0.72	U
G	TO15	Methylene chloride	UG/M3	6.9	U
G	TO15	Naphthalene	UG/M3	1	U
G	TO15	Propylene	UG/M3	14	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1819	
			Location	GV-017	
			Field Sample Date	3/24/2022	
			Field Sample ID	360175-GV017005	
			Qc Code	FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier
G	TO15	Styrene	UG/M3	0.85	U
G	TO15	Tetrachloroethene	UG/M3	5.3	
G	TO15	Tetrahydrofuran	UG/M3	5.9	U
G	TO15	Toluene	UG/M3	42	
G	TO15	trans-1,2-Dichloroethene	UG/M3	0.79	U
G	TO15	trans-1,3-Dichloropropene	UG/M3	0.91	U
G	TO15	Trichloroethene	UG/M3	1.1	U
G	TO15	Trichlorofluoromethane	UG/M3	1.5	J
G	TO15	Vinyl acetate	UG/M3	14	U
G	TO15	Vinyl chloride	UG/M3	0.51	U
G	TO15	Xylene, o	UG/M3	5.1	
G	TO15	Xylenes (m&p)	UG/M3	21	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
			Qc Code	FS		FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8270E	1,2,4,5-Tetrachlorobenzene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	1,2,4-Trichlorobenzene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	1,2-Dichlorobenzene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	1,2-Diphenylhydrazine	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	1,3-Dichlorobenzene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	1,4-Dichlorobenzene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	1-Methylnaphthalene	UG/L	4.8	U	3.9	J	4.9	U	5	U
L	8270E	2,2'-Dichlorodiisopropylether	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2,4,5-Trichlorophenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2,4,6-Trichlorophenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2,4-Dichlorophenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2,4-Dimethylphenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2,4-Dinitrophenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2,4-Dinitrotoluene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2,6-Dinitrotoluene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2-Chloronaphthalene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2-Chlorophenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2-Methylnaphthalene	UG/L	4.8	U	1.4	J	4.9	U	5	U
L	8270E	2-Methylphenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2-Nitroaniline	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	2-Nitrophenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	3 & 4 Methylphenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	3,3'-Dichlorobenzidine	UG/L	9.6	UJ	9.6	UJ	9.7	UJ	9.9	UJ
L	8270E	3-Nitroaniline	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	4,6-Dinitro-2-methylphenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
			Qc Code	FS		FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8270E	4-Bromophenyl phenyl ether	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	4-Chloro-3-methylphenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	4-Chloroaniline	UG/L	9.6	UJ	9.6	UJ	9.7	UJ	9.9	UJ
L	8270E	4-Chlorophenyl phenyl ether	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	4-Nitroaniline	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	4-Nitrophenol	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Acenaphthene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Acenaphthylene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Acetophenone	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Aniline	UG/L	4.8	UJ	4.8	UJ	4.9	UJ	5	UJ
L	8270E	Anthracene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Benzidine	UG/L	19	UJ	19	UJ	19	UJ	20	UJ
L	8270E	Benzo(a)anthracene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Benzo(a)pyrene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Benzo(b)fluoranthene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Benzo(ghi)perylene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Benzo(k)fluoranthene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Benzoic Acid	UG/L	9.6	UJ	9.6	UJ		R		R
L	8270E	Bis(2-Chloroethoxy)methane	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Bis(2-Chloroethyl)ether	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Bis(2-Ethylhexyl)phthalate	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Butylbenzylphthalate	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Carbazole	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Chrysene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Di-n-butylphthalate	UG/L	9.6	U	9.6	U	9.7	U	9.9	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
			Qc Code	FS		FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8270E	Di-n-octylphthalate	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Dibenz(a,h)anthracene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Dibenzofuran	UG/L	4.8	U	0.63	J	4.9	U	5	U
L	8270E	Diethylphthalate	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Dimethylphthalate	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Fluoranthene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Fluorene	UG/L	4.8	U	0.87	J	4.9	U	5	U
L	8270E	Hexachlorobenzene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Hexachlorobutadiene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Hexachlorocyclopentadiene	UG/L	9.6	UJ	9.6	UJ	9.7	UJ	9.9	UJ
L	8270E	Hexachloroethane	UG/L	9.6	UJ	9.6	UJ	9.7	UJ	9.9	UJ
L	8270E	Indeno(1,2,3-cd)pyrene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Isophorone	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	N-Nitrosodi-n-propylamine	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	N-Nitrosodimethylamine	UG/L	9.6	UJ	9.6	UJ	9.7	UJ	9.9	UJ
L	8270E	N-Nitrosodiphenylamine	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Naphthalene	UG/L	4.8	U	0.62	J	4.9	U	5	U
L	8270E	Nitrobenzene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Pentachloronitrobenzene	UG/L	9.6	U	9.6	U	9.7	U	9.9	U
L	8270E	Pentachlorophenol	UG/L	9.6	UJ	9.6	UJ	9.7	UJ	9.9	UJ
L	8270E	Phenanthrene	UG/L	4.8	U	1.1	J	4.9	U	5	U
L	8270E	Phenol	UG/L	9.6	UJ	9.6	UJ	9.7	UJ	9.9	UJ
L	8270E	Pyrene	UG/L	4.8	U	4.8	U	4.9	U	5	U
L	8270E	Pyridine	UG/L	4.8	UJ	4.8	UJ	4.9	UJ	5	UJ

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
			Qc Code	FS		FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8081B	4,4'-DDD	UG/L	0.04	U	0.04	U	0.043	U	0.04	U
L	8081B	4,4'-DDE	UG/L	0.04	U	0.04	U	0.043	U	0.04	U
L	8081B	4,4'-DDT	UG/L	0.04	U	0.04	U	0.043	U	0.04	U
L	8081B	Alachlor	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8081B	Aldrin	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Alpha-BHC	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Beta-BHC	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Chlordane	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8081B	Delta-BHC	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Dieldrin	UG/L	0.002	U	0.002	U	0.0022	U	0.002	U
L	8081B	Endosulfan I	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Endosulfan II	UG/L	0.08	U	0.08	U	0.086	U	0.08	U
L	8081B	Endosulfan sulfate	UG/L	0.08	U	0.08	U	0.086	U	0.08	U
L	8081B	Endrin	UG/L	0.08	U	0.08	U	0.086	U	0.08	U
L	8081B	Endrin aldehyde	UG/L	0.08	U	0.08	U	0.086	U	0.08	U
L	8081B	Endrin ketone	UG/L	0.08	U	0.08	U	0.086	U	0.08	U
L	8081B	Gamma-BHC/Lindane	UG/L	0.03	U	0.03	U	0.032	U	0.03	U
L	8081B	Heptachlor	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Heptachlor epoxide	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Hexachlorobenzene	UG/L	0.05	U	0.05	U	0.054	U	0.05	U
L	8081B	Methoxychlor	UG/L	0.5	U	0.5	U	0.54	U	0.5	U
L	8081B	Toxaphene	UG/L	1	U	1	U	1.1	U	1	U
L	8082A	Aroclor-1016	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8082A	Aroclor-1221	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8082A	Aroclor-1232	UG/L	0.2	U	0.2	U	0.22	U	0.2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
			Qc Code	FS		FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	8082A	Aroclor-1242	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8082A	Aroclor-1248	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8082A	Aroclor-1254	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8082A	Aroclor-1260	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8082A	Aroclor-1262	UG/L	0.2	U	0.2	U	0.22	U	0.2	U
L	8082A	Aroclor-1268	UG/L	0.2	U	0.2	U	0.22	U	0.2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1692		22C1692		22C1692		22C1692	
			Location	DP-02		DP-04		DP-05		DP-05	
			Field Sample Date	3/22/2022		3/22/2022		3/22/2022		3/22/2022	
			Field Sample ID	360175-DP002011		360175-DP004011		360175-DP005011		360175-DP005011D	
			Qc Code	FS		FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	6010D	Aluminum	MG/L	0.073		0.074		0.015	J	0.021	J
L	6010D	Antimony	MG/L	0.05	U	0.05	U	0.05	U	0.05	U
L	6010D	Arsenic	MG/L	0.01	U	0.018		0.01	U	0.01	U
L	6010D	Barium	MG/L	0.039	J	0.052		0.041	J	0.042	J
L	6010D	Beryllium	MG/L	0.004	U	0.004	U	0.004	U	0.004	U
L	6010D	Cadmium	MG/L	0.004	U	0.004	U	0.004	U	0.004	U
L	6010D	Calcium	MG/L	67		120		74		74	
L	6010D	Chromium	MG/L	0.01	U	0.01	U	0.01	U	0.01	U
L	6010D	Cobalt	MG/L	0.0016	J	0.0052	J	0.01	U	0.01	U
L	6010D	Copper	MG/L	0.01	U	0.01	U	0.01	U	0.01	U
L	6010D	Iron	MG/L	0.15		6.4		0.045	J	0.044	J
L	6010D	Lead	MG/L	0.01	U	0.01	U	0.01	U	0.01	U
L	6010D	Magnesium	MG/L	23		23		26		26	
L	6010D	Manganese	MG/L	0.053		1.5		0.019		0.019	
L	6010D	Nickel	MG/L	0.01	U	0.01	U	0.01	U	0.01	U
L	6010D	Potassium	MG/L	4.8		5.3		4.7		4.8	
L	6010D	Selenium	MG/L	0.05	U	0.05	U	0.05	U	0.05	U
L	6010D	Silver	MG/L	0.01	U	0.01	U	0.01	U	0.01	U
L	6010D	Sodium	MG/L	39		22		26		26	
L	6010D	Thallium	MG/L	0.05	U	0.05	U	0.05	U	0.05	U
L	6010D	Vanadium	MG/L	0.0076	J	0.0082	J	0.0067	J	0.0073	J
L	6010D	Zinc	MG/L	0.0051	J	0.005	J	0.0054	J	0.0047	J
L	7470A	Mercury	MG/L	0.0001	U	0.0001	U	0.0001	U	0.0001	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1815		22C1815		22C1815	
			Location	DP-008		DP-009		DP-010	
			Field Sample Date	3/23/2022		3/23/2022		3/23/2022	
			Field Sample ID	360175-DP008011		360175-DP00909		360175-DP01009	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	SOP-454 PFAS	11Cl-PF3OUdS (F53B Minor)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	4:2 Fluorotelomersulfonic acid (4:2FTS A)	NG/L	1.8	UJ	1.8	U	2.1	UJ
L	SOP-454 PFAS	6:2 Fluorotelomersulfonic acid (6:2FTS A)	NG/L	0.39	J	1.2	J	2.1	UJ
L	SOP-454 PFAS	8:2 Fluorotelomersulfonic acid (8:2FTS A)	NG/L	1.8	UJ	1.8	U	2.1	UJ
L	SOP-454 PFAS	9Cl-PF3ONS (F53B Major)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	N-EtFOSAA	NG/L	1.8	UJ	1.8	U	2.1	U
L	SOP-454 PFAS	N-MeFOSAA	NG/L	1.8	UJ	1.8	U	2.1	U
L	SOP-454 PFAS	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	Perfluoro-1-butanesulfonamide (FBSA)	NG/L	8.3		3.6		1.2	J
L	SOP-454 PFAS	Perfluoro-1-hexanesulfonamide (FHxSA)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	Perfluoro-4-oxapentanoic acid (PFMPA)	NG/L	1.8	U	1	J	2.1	U
L	SOP-454 PFAS	Perfluoro-5-oxahexanoic acid (PFMBA)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	Perfluorobutanesulfonic acid (PFBS)	NG/L	24		7.6		10	
L	SOP-454 PFAS	Perfluorobutanoic acid (PFBA)	NG/L	9.8		20	J	14	
L	SOP-454 PFAS	Perfluorodecanesulfonic acid (PFDS)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	Perfluorodecanoic acid (PFDA)	NG/L	1.8	U	5		6.4	
L	SOP-454 PFAS	Perfluorododecanoic acid (PFDoA)	NG/L	1.8	UJ	1.8	U	0.58	J
L	SOP-454 PFAS	Perfluoroheptanesulfonic acid (PFHpS)	NG/L	1.2	J	3.2		2.1	U
L	SOP-454 PFAS	Perfluoroheptanoic acid (PFHpA)	NG/L	12		17		11	
L	SOP-454 PFAS	Perfluorohexanesulfonic acid (PFHxS)	NG/L	10		3.8		3.3	
L	SOP-454 PFAS	Perfluorohexanoic acid (PFHxA)	NG/L	18		38		28	
L	SOP-454 PFAS	Perfluorononanesulfonic acid (PFNS)	NG/L	1.8	U	1.8	U	2.1	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1815		22C1815		22C1815	
			Location	DP-008		DP-009		DP-010	
			Field Sample Date	3/23/2022		3/23/2022		3/23/2022	
			Field Sample ID	360175-DP008011		360175-DP00909		360175-DP01009	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	SOP-454 PFAS	Perfluorononanoic acid (PFNA)	NG/L	9.2		48		9.2	
L	SOP-454 PFAS	Perfluorooctanesulfonamide (FOSA)	NG/L	1.8	U	1.8	UJ	2.1	U
L	SOP-454 PFAS	Perfluorooctanesulfonic acid (PFOS)	NG/L	23		160		30	
L	SOP-454 PFAS	Perfluorooctanoic acid (PFOA)	NG/L	56		95		46	
L	SOP-454 PFAS	Perfluoropentanoic acid (PFPeA)	NG/L	19		51		31	
L	SOP-454 PFAS	Perfluoropetanesulfonic acid (PFPeS)	NG/L	1	J	1.8	U	0.44	J
L	SOP-454 PFAS	Perfluorotetradecanoic acid (PFTA)	NG/L	1.8	UJ	1.8	UJ	2.1	UJ
L	SOP-454 PFAS	Perfluorotridecanoic acid (PFTrDA)	NG/L	1.8	U	1.8	U	2.1	U
L	SOP-454 PFAS	Perfluoroundecanoic acid (PFUnA)	NG/L	1.8	U	1.8	U	0.73	J

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1815		22C1815		22F0915	
			Location	DP-015		PRB		DP-02	
			Field Sample Date	3/23/2022		3/24/2022		6/14/2022	
			Field Sample ID	360175-DP01508		360175-PRB		360175-DP002011	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	SOP-454 PFAS	11Cl-PF3OUdS (F53B Minor)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	4:2 Fluorotelomersulfonic acid (4:2FTS A)	NG/L	2	UJ	1.8	U	1.8	UJ
L	SOP-454 PFAS	6:2 Fluorotelomersulfonic acid (6:2FTS A)	NG/L	2	U	0.63	J	1.8	UJ
L	SOP-454 PFAS	8:2 Fluorotelomersulfonic acid (8:2FTS A)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	9Cl-PF3ONS (F53B Major)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	N-EtFOSAA	NG/L	2	UJ	1.8	U	1.8	U
L	SOP-454 PFAS	N-MeFOSAA	NG/L	2	UJ	1.8	U	1.8	U
L	SOP-454 PFAS	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluoro-1-butanesulfonamide (FBSA)	NG/L	0.74	J	1.8	U	0.29	J
L	SOP-454 PFAS	Perfluoro-1-hexanesulfonamide (FHxSA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluoro-4-oxapentanoic acid (PFMPA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluoro-5-oxahexanoic acid (PFMBA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluorobutanesulfonic acid (PFBS)	NG/L	5.8		1.8	U	8.9	
L	SOP-454 PFAS	Perfluorobutanoic acid (PFBA)	NG/L	11	J	1.8	U	8.8	
L	SOP-454 PFAS	Perfluorodecanesulfonic acid (PFDS)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluorodecanoic acid (PFDA)	NG/L	13		1.8	U	1.8	U
L	SOP-454 PFAS	Perfluorododecanoic acid (PFDoA)	NG/L	2	UJ	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluoroheptanesulfonic acid (PFHpS)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluoroheptanoic acid (PFHpA)	NG/L	6.9		1.8	U	4.2	
L	SOP-454 PFAS	Perfluorohexanesulfonic acid (PFHxS)	NG/L	3.2		1.8	U	2.7	
L	SOP-454 PFAS	Perfluorohexanoic acid (PFHxA)	NG/L	19		1.8	U	7.5	
L	SOP-454 PFAS	Perfluorononanesulfonic acid (PFNS)	NG/L	2	U	1.8	U	1.8	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22C1815		22C1815		22F0915	
			Location	DP-015		PRB		DP-02	
			Field Sample Date	3/23/2022		3/24/2022		6/14/2022	
			Field Sample ID	360175-DP01508		360175-PRB		360175-DP002011	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	SOP-454 PFAS	Perfluorononanoic acid (PFNA)	NG/L	4.6		1.8	U	77	
L	SOP-454 PFAS	Perfluorooctanesulfonamide (FOSA)	NG/L	2	UJ	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluorooctanesulfonic acid (PFOS)	NG/L	31		1.8	U	12	
L	SOP-454 PFAS	Perfluorooctanoic acid (PFOA)	NG/L	20		1.8	U	17	
L	SOP-454 PFAS	Perfluoropentanoic acid (PFPeA)	NG/L	35		1.8	U	8.7	
L	SOP-454 PFAS	Perfluoropetanesulfonic acid (PFPeS)	NG/L	2	U	1.8	U	0.32	J
L	SOP-454 PFAS	Perfluorotetradecanoic acid (PFTA)	NG/L		R	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluorotridecanoic acid (PFTrDA)	NG/L	2	U	1.8	U	1.8	U
L	SOP-454 PFAS	Perfluoroundecanoic acid (PFUnA)	NG/L	0.45	J	1.8	U	1.8	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F0915		22F0915		22F0915	
			Location	DP-04		DP-05		DP-05	
			Field Sample Date	6/14/2022		6/14/2022		6/14/2022	
			Field Sample ID	360175-DP004011		360175-DP005011		360175-DP005011-DUP	
			Qc Code	FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	SOP-454 PFAS	11Cl-PF3OUdS (F53B Minor)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	4:2 Fluorotelomersulfonic acid (4:2FTS A)	NG/L	2	U	1.7	UJ	1.8	U
L	SOP-454 PFAS	6:2 Fluorotelomersulfonic acid (6:2FTS A)	NG/L	2	U	1.7	U	0.34	J
L	SOP-454 PFAS	8:2 Fluorotelomersulfonic acid (8:2FTS A)	NG/L	2	U	1.7	UJ	1.8	U
L	SOP-454 PFAS	9Cl-PF3ONS (F53B Major)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	N-EtFOSAA	NG/L	0.97	J+	1.7	UJ	1.8	U
L	SOP-454 PFAS	N-MeFOSAA	NG/L	2	UJ	1.7	UJ	1.8	U
L	SOP-454 PFAS	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Perfluoro-1-butanesulfonamide (FBSA)	NG/L	4		0.28	J	0.27	J
L	SOP-454 PFAS	Perfluoro-1-hexanesulfonamide (FHxSA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Perfluoro-4-oxapentanoic acid (PFMPA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Perfluoro-5-oxahexanoic acid (PFMBA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Perfluorobutanesulfonic acid (PFBS)	NG/L	14		8.4		7.9	
L	SOP-454 PFAS	Perfluorobutanoic acid (PFBA)	NG/L	14	J	9.1	J+	8	J+
L	SOP-454 PFAS	Perfluorodecanesulfonic acid (PFDS)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Perfluorodecanoic acid (PFDA)	NG/L	7.9		1.7	U	1.8	U
L	SOP-454 PFAS	Perfluorododecanoic acid (PFDoA)	NG/L		R		R	1.8	UJ
L	SOP-454 PFAS	Perfluoroheptanesulfonic acid (PFHpS)	NG/L	3.1		1.7	U	1	J
L	SOP-454 PFAS	Perfluoroheptanoic acid (PFHpA)	NG/L	17		4.6		4.7	
L	SOP-454 PFAS	Perfluorohexanesulfonic acid (PFHxS)	NG/L	9.6		2.6		2.6	
L	SOP-454 PFAS	Perfluorohexanoic acid (PFHxA)	NG/L	22		6.9		7.4	
L	SOP-454 PFAS	Perfluorononanesulfonic acid (PFNS)	NG/L	2	U	1.7	U	1.8	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F0915		22F0915		22F0915	
			Location	DP-04		DP-05		DP-05	
			Field Sample Date	6/14/2022		6/14/2022		6/14/2022	
			Field Sample ID	360175-DP004011		360175-DP005011		360175-DP005011-DUP	
			Qc Code	FS		FS		FD	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier
L	SOP-454 PFAS	Perfluorononanoic acid (PFNA)	NG/L	23		3.6		3.8	
L	SOP-454 PFAS	Perfluorooctanesulfonamide (FOSA)	NG/L	2.2	J		R	1.8	UJ
L	SOP-454 PFAS	Perfluorooctanesulfonic acid (PFOS)	NG/L	230		29	J+	34	J+
L	SOP-454 PFAS	Perfluorooctanoic acid (PFOA)	NG/L	42		16	J+	17	J+
L	SOP-454 PFAS	Perfluoropentanoic acid (PFPeA)	NG/L	32		7.7	J+	8.3	J+
L	SOP-454 PFAS	Perfluoropetanesulfonic acid (PFPeS)	NG/L	1.2	J	0.37	J	0.36	J
L	SOP-454 PFAS	Perfluorotetradecanoic acid (PFTA)	NG/L		R		R		R
L	SOP-454 PFAS	Perfluorotridecanoic acid (PFTrDA)	NG/L	2	U	1.7	U	1.8	U
L	SOP-454 PFAS	Perfluoroundecanoic acid (PFUnA)	NG/L	2	UJ	1.7	UJ	1.8	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F0915	
			Location	MW-03D	
			Field Sample Date	6/14/2022	
			Field Sample ID	360175-MW003D020	
			Qc Code	FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier
L	SOP-454 PFAS	11Cl-PF3OUdS (F53B Minor)	NG/L	1.7	U
L	SOP-454 PFAS	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/L	1.7	U
L	SOP-454 PFAS	4:2 Fluorotelomersulfonic acid (4:2FTS A)	NG/L	1.7	UJ
L	SOP-454 PFAS	6:2 Fluorotelomersulfonic acid (6:2FTS A)	NG/L	1.7	UJ
L	SOP-454 PFAS	8:2 Fluorotelomersulfonic acid (8:2FTS A)	NG/L	1.7	U
L	SOP-454 PFAS	9Cl-PF3ONS (F53B Major)	NG/L	1.7	U
L	SOP-454 PFAS	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/L	1.7	U
L	SOP-454 PFAS	N-EtFOSAA	NG/L	1.7	U
L	SOP-454 PFAS	N-MeFOSAA	NG/L	1.7	U
L	SOP-454 PFAS	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoro-1-butanesulfonamide (FBSA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoro-1-hexanesulfonamide (FHxSA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoro-4-oxapentanoic acid (PFMPA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoro-5-oxahexanoic acid (PFMBA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluorobutanesulfonic acid (PFBS)	NG/L	7.7	
L	SOP-454 PFAS	Perfluorobutanoic acid (PFBA)	NG/L	9.9	
L	SOP-454 PFAS	Perfluorodecanesulfonic acid (PFDS)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluorodecanoic acid (PFDA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluorododecanoic acid (PFDoA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoroheptanesulfonic acid (PFHpS)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoroheptanoic acid (PFHpA)	NG/L	4.9	
L	SOP-454 PFAS	Perfluorohexanesulfonic acid (PFHxS)	NG/L	2.5	
L	SOP-454 PFAS	Perfluorohexanoic acid (PFHxA)	NG/L	9.9	
L	SOP-454 PFAS	Perfluorononanesulfonic acid (PFNS)	NG/L	1.7	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F0915	
			Location	MW-03D	
			Field Sample Date	6/14/2022	
			Field Sample ID	360175-MW003D020	
			Qc Code	FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier
L	SOP-454 PFAS	Perfluorononanoic acid (PFNA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluorooctanesulfonamide (FOSA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluorooctanesulfonic acid (PFOS)	NG/L	2	
L	SOP-454 PFAS	Perfluorooctanoic acid (PFOA)	NG/L	17	
L	SOP-454 PFAS	Perfluoropentanoic acid (PFPeA)	NG/L	11	
L	SOP-454 PFAS	Perfluoropetanesulfonic acid (PFPeS)	NG/L	0.34	J
L	SOP-454 PFAS	Perfluorotetradecanoic acid (PFTA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluorotridecanoic acid (PFTrDA)	NG/L	1.7	U
L	SOP-454 PFAS	Perfluoroundecanoic acid (PFUnA)	NG/L	1.7	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22F0915	
			Location	WC	
			Field Sample Date	6/14/2022	
			Field Sample ID	360175-WC	
			Qc Code	FS	
Matrix	**Method**	**Parameter**	**Units**	Result	Qualifier
S	SOP-466 PFAS	11Cl-PF3OUdS (F53B Minor)	UG/KG	0.49	U
S	SOP-466 PFAS	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	UG/KG	0.49	U
S	SOP-466 PFAS	4:2 Fluorotelomersulfonic acid (4:2FTS A)	UG/KG	0.49	U
S	SOP-466 PFAS	6:2 Fluorotelomersulfonic acid (6:2FTS A)	UG/KG	0.49	U
S	SOP-466 PFAS	8:2 Fluorotelomersulfonic acid (8:2FTS A)	UG/KG	0.49	U
S	SOP-466 PFAS	9Cl-PF3ONS (F53B Major)	UG/KG	0.49	U
S	SOP-466 PFAS	Hexafluoropropylene oxide dimer acid (HFPO-DA)	UG/KG	0.49	U
S	SOP-466 PFAS	N-EtFOSAA	UG/KG	0.49	U
S	SOP-466 PFAS	N-MeFOSAA	UG/KG	0.49	U
S	SOP-466 PFAS	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoro-1-butanesulfonamide (FBSA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoro-1-hexanesulfonamide (FHxSA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoro-4-oxapentanoic acid (PFMPA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoro-5-oxahexanoic acid (PFMBA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorobutanesulfonic acid (PFBS)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorobutanoic acid (PFBA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorodecanesulfonic acid (PFDS)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorodecanoic acid (PFDA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorododecanoic acid (PFDoA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoroheptanesulfonic acid (PFHpS)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoroheptanoic acid (PFHpA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorohexanesulfonic acid (PFHxS)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorohexanoic acid (PFHxA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorononanesulfonic acid (PFNS)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorononanoic acid (PFNA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorooctanesulfonamide (FOSA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorooctanesulfonic acid (PFOS)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorooctanoic acid (PFOA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoropentanoic acid (PFPeA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoropetanesulfonic acid (PFPeS)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorotetradecanoic acid (PFTA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluorotridecanoic acid (PFTrDA)	UG/KG	0.49	U
S	SOP-466 PFAS	Perfluoroundecanoic acid (PFUnA)	UG/KG	0.49	U
S	SM2540G	Percent Solids	% BY WT.	85.6	

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Method	Lab Sample ID	Field Sample ID	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
22A0721	8260D	22A0721-01	360175-GW002-14	N	1,2-Dibromo-3-chloropropane	5	U	5	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-01	360175-GW002-14	N	Toluene	0.23	J	1	U	BL2	UG/L
22A0721	8260D	22A0721-01	360175-GW002-14	N	Bromomethane	5	U	5	UJ	ICV%D	UG/L
22A0721	8260D	22A0721-01	360175-GW002-14	N	Naphthalene	2	U	2	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-01	360175-GW002-14	N	Methylene chloride	1.3	J	1.3	J+	CCV%D	UG/L
22A0721	8260D	22A0721-01	360175-GW002-14	N	Chloromethane	2	U	2	UJ	ICV%D, CCV%D, LCSL	UG/L
22A0721	8260D	22A0721-01RE1	360175-GW002-14	N	Tetrachloroethene	220	D	220	J	HTG	UG/L
22A0721	8260D	22A0721-02	360175-GW002-13	N	Bromomethane	5	U	5	UJ	ICV%D	UG/L
22A0721	8260D	22A0721-02	360175-GW002-13	N	1,2-Dibromo-3-chloropropane	5	U	5	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-02	360175-GW002-13	N	Naphthalene	2	U	2	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-02	360175-GW002-13	N	Tetrachloroethene	3.6		3.6	J+	CCV%D	UG/L
22A0721	8260D	22A0721-02	360175-GW002-13	N	Chloromethane	2	U	2	UJ	ICV%D, CCV%D, LCSL	UG/L
22A0721	8260D	22A0721-03	360175-HA001001	N	Benzene	0.001	U	0.001	UJ	CCV%D	MG/KG
22A0721	8260D	22A0721-03	360175-HA001001	N	Tetrachloroethene	3.4	D	3.4	J	HTG	MG/KG
22A0721	8260D	22A0721-03	360175-HA001001	N	Acetic acid, methyl ester	0.001	U	0.001	UJ	CCV%D, LCSL, MSL	MG/KG
22A0721	8260D	22A0721-03	360175-HA001001	N	2-Butanone	0.021	U	0.021	UJ	CCV%D, MSL	MG/KG
22A0721	8260D	22A0721-03	360175-HA001001	N	Chloromethane	0.0051	U	0.0051	UJ	MSL	MG/KG
22A0721	8260D	22A0721-03	360175-HA001001	N	Bromomethane	0.0051	U	0.0051	UJ	ICV%D, MSL	MG/KG
22A0721	8260D	22A0721-03	360175-HA001001	N	1,4-Dioxane	0.051	U	0.051	UJ	MSL	MG/KG
22A0721	8260D	22A0721-04	360175-HA001001D	N	1,4-Dioxane	0.043	U	0.043	UJ	MSL	MG/KG
22A0721	8260D	22A0721-04	360175-HA001001D	N	Benzene	0.00085	U	0.00085	UJ	CCV%D	MG/KG
22A0721	8260D	22A0721-04	360175-HA001001D	N	Bromomethane	0.0043	U	0.0043	UJ	ICV%D, MSL	MG/KG
22A0721	8260D	22A0721-04	360175-HA001001D	N	Acetic acid, methyl ester	0.00085	U	0.00085	UJ	CCV%D, LCSL, MSL	MG/KG
22A0721	8260D	22A0721-04	360175-HA001001D	N	2-Butanone	0.017	U	0.017	UJ	CCV%D, MSL	MG/KG
22A0721	8260D	22A0721-04	360175-HA001001D	N	Tetrachloroethene	4.7	D	4.7	J	HTG	MG/KG
22A0721	8260D	22A0721-04	360175-HA001001D	N	Chloromethane	0.0043	U	0.0043	UJ	MSL	MG/KG
22A0721	8260D	22A0721-05	360175-HA002001	N	Bromomethane	0.0065	U	0.0065	UJ	ICV%D	MG/KG
22A0721	8260D	22A0721-05	360175-HA002001	N	2-Butanone	0.026	U	0.026	UJ	CCV%D	MG/KG
22A0721	8260D	22A0721-05	360175-HA002001	N	Benzene	0.0013	U	0.0013	UJ	CCV%D	MG/KG
22A0721	8260D	22A0721-05	360175-HA002001	N	Acetic acid, methyl ester	0.0013	U	0.0013	UJ	CCV%D, LCSL	MG/KG
22A0721	8260D	22A0721-06	360175-HA003001	N	Bromomethane	0.13	U	0.13	UJ	CCV%D	MG/KG
22A0721	8260D	22A0721-06	360175-HA003001	N	Chloromethane	0.13	U	0.13	UJ	CCV%D	MG/KG
22A0721	8260D	22A0721-07	360175-GW002-15	N	Chloromethane	2	U	2	UJ	ICV%D, CCV%D, LCSL	UG/L
22A0721	8260D	22A0721-07	360175-GW002-15	N	Bromomethane	5	U	5	UJ	ICV%D	UG/L
22A0721	8260D	22A0721-07	360175-GW002-15	N	Tetrachloroethene	120		120	J+	CCV%D	UG/L
22A0721	8260D	22A0721-07	360175-GW002-15	N	Naphthalene	2	U	2	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-07	360175-GW002-15	N	1,2-Dibromo-3-chloropropane	5	U	5	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-08	360175-GW002-16	N	Naphthalene	2	U	2	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-08	360175-GW002-16	N	1,2-Dibromo-3-chloropropane	5	U	5	UJ	CCV%D	UG/L
22A0721	8260D	22A0721-08	360175-GW002-16	N	Chloromethane	2	U	2	UJ	ICV%D, CCV%D, LCSL	UG/L
22A0721	8260D	22A0721-08	360175-GW002-16	N	Bromomethane	5	U	5	UJ	ICV%D	UG/L

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Method	Lab Sample ID	Field Sample ID	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
22A0721	8260D	22A0721-08RE1	360175-GW002-16	N	Tetrachloroethene	2500	D	2500	J	HTG	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	N-Nitrosodimethylamine	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Benzoic Acid	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Hexachloroethane	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Pentachlorophenol	9.6	U	9.6	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	3,3'-Dichlorobenzidine	9.6	U	9.6	UJ	ICV%D	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Benzidine	19	U	19	UJ	ICVRSD, CCV%D, LCSL, LCSRPD	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Aniline	4.8	U	4.8	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Hexachlorocyclopentadiene	9.6	U	9.6	UJ	CCV%D, LCSL	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Pyridine	4.8	U	4.8	UJ	LCSL, LCSRPD	UG/L
22C1692	7470A	22C1692-01	360175-DP002011	N	Mercury	0.000073	JB	0.0001	U	BL1	MG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	4-Chloroaniline	9.6	U	9.6	UJ	ICV%D	UG/L
22C1692	8260D	22C1692-01	360175-DP002011	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-01	360175-DP002011	N	Naphthalene	2	U	2	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-01	360175-DP002011	N	Acrylonitrile	5	U	5	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-01	360175-DP002011	N	Phenol	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8260D	22C1692-01	360175-DP002011	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-01	360175-DP002011	N	Acetone	50	U	50	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-01	360175-DP002011	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-01	360175-DP002011	N	1,4-Dioxane	50	U	50	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Benzoic Acid	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Hexachloroethane	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Hexachlorocyclopentadiene	9.6	U	9.6	UJ	CCV%D, LCSL	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	3,3'-Dichlorobenzidine	9.6	U	9.6	UJ	ICV%D	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Benzidine	19	U	19	UJ	ICVRSD, CCV%D, LCSL, LCSRPD	UG/L
22C1692	7470A	22C1692-02	360175-DP004011	N	Mercury	0.000078	JB	0.0001	U	BL1	MG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	N-Nitrosodimethylamine	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Pentachlorophenol	9.6	U	9.6	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Aniline	4.8	U	4.8	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Pyridine	4.8	U	4.8	UJ	LCSL, LCSRPD	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	Phenol	9.6	U	9.6	UJ	LCSL	UG/L
22C1692	8260D	22C1692-02	360175-DP004011	N	1,4-Dioxane	50	U	50	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-02	360175-DP004011	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-02	360175-DP004011	N	Acetone	50	U	50	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-02	360175-DP004011	N	Acrylonitrile	5	U	5	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-02	360175-DP004011	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-02	360175-DP004011	N	Naphthalene	0.61	J	0.61	J-	CCV%D	UG/L
22C1692	8270E	22C1692-02	360175-DP004011	N	4-Chloroaniline	9.6	U	9.6	UJ	ICV%D	UG/L
22C1692	8260D	22C1692-02	360175-DP004011	N	t-Butyl alcohol	92		92	J-	CCV%D	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	Benzidine	19	U	19	UJ	ICVRSD, CCV%D, LCSL, LCSRPD	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	N-Nitrosodimethylamine	9.7	U	9.7	UJ	LCSL, MSL	UG/L

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Method	Lab Sample ID	Field Sample ID	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
22C1692	8270E	22C1692-03	360175-DP005011	N	Benzoic Acid	9.7	U		R	LCSL, MSL, MSRPD	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	Hexachlorocyclopentadiene	9.7	U	9.7	UJ	CCV%D, LCSL	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	Pentachlorophenol	9.7	U	9.7	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	3,3'-Dichlorobenzidine	9.7	U	9.7	UJ	ICV%D	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	Aniline	4.9	U	4.9	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	Hexachloroethane	9.7	U	9.7	UJ	LCSL	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	Pyridine	4.9	U	4.9	UJ	LCSL, LCSRPD, MSL	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	Naphthalene	2	U	2	UJ	CCV%D, MSL	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	4-Chloroaniline	9.7	U	9.7	UJ	ICV%D	UG/L
22C1692	8270E	22C1692-03	360175-DP005011	N	Phenol	9.7	U	9.7	UJ	LCSL, MSL	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	Acrylonitrile	5	U	5	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	1,4-Dioxane	50	U	50	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	2-Hexanone	10	U	10	UJ	CCV%D, MSL	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	t-Butyl alcohol	20	U	20	UJ	CCV%D, MSL	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	1,2-Dibromo-3-chloropropane	5	U	5	UJ	MSL	UG/L
22C1692	8260D	22C1692-03	360175-DP005011	N	Acetone	50	U	50	UJ	CCV%D, MSL	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Benzoic Acid	9.9	U		R	LCSL, MSL, MSRPD	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	N-Nitrosodimethylamine	9.9	U	9.9	UJ	LCSL, MSL	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Hexachloroethane	9.9	U	9.9	UJ	LCSL	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Benzidine	20	U	20	UJ	ICVRSD, CCV%D, LCSL, LCSRPD	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Pentachlorophenol	9.9	U	9.9	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	3,3'-Dichlorobenzidine	9.9	U	9.9	UJ	ICV%D	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Aniline	5	U	5	UJ	CCV%D	UG/L
22C1692	7470A	22C1692-04	360175-DP005011D	N	Mercury	0.000073	JB	0.0001	U	BL1	MG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Hexachlorocyclopentadiene	9.9	U	9.9	UJ	CCV%D, LCSL	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Pyridine	5	U	5	UJ	LCSL, LCSRPD, MSL	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	Naphthalene	2	U	2	UJ	CCV%D, MSL	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	4-Chloroaniline	9.9	U	9.9	UJ	ICV%D	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	Acrylonitrile	5	U	5	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	1,4-Dioxane	50	U	50	UJ	CCV%D	UG/L
22C1692	8270E	22C1692-04	360175-DP005011D	N	Phenol	9.9	U	9.9	UJ	LCSL, MSL	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	2-Hexanone	10	U	10	UJ	CCV%D, MSL	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	t-Butyl alcohol	20	U	20	UJ	CCV%D, MSL	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	1,2-Dibromo-3-chloropropane	5	U	5	UJ	MSL	UG/L
22C1692	8260D	22C1692-04	360175-DP005011D	N	Acetone	50	U	50	UJ	CCV%D, MSL	UG/L
22C1692	8260D	22C1692-06	360175-DW001-1	N	2-Butanone	40	UD	40	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-06	360175-DW001-1	N	Naphthalene	4	UD	4	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-06	360175-DW001-1	N	t-Butyl alcohol	40	UD	40	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-06	360175-DW001-1	N	Acrylonitrile	10	UD	10	UJ	CCV%D	UG/L

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Method	Lab Sample ID	Field Sample ID	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
22C1692	8260D	22C1692-06	360175-DW001-1	N	2-Hexanone	20	UD	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-06	360175-DW001-1	N	Acetone	100	UD	100	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-06	360175-DW001-1	N	1,4-Dioxane	100	UD	100	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-07	360175-DW002-2	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-07	360175-DW002-2	N	Acrylonitrile	5	U	5	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-07	360175-DW002-2	N	1,4-Dioxane	50	U	50	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-07	360175-DW002-2	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-07	360175-DW002-2	N	Acetone	50	U	50	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-07	360175-DW002-2	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22C1692	8260D	22C1692-07	360175-DW002-2	N	Naphthalene	2	U	2	UJ	CCV%D	UG/L
22C1815	SOP-454 PFAS	22C1815-02	360175-DP008011	N	Perfluorododecanoic acid (PFDoA)	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-02	360175-DP008011	N	8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-02	360175-DP008011	N	N-EtFOSAA	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-02	360175-DP008011	N	4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-02	360175-DP008011	N	6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.39	J	0.39	J	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-02	360175-DP008011	N	Perfluorotetradecanoic acid (PFTA)	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-02	360175-DP008011	N	N-MeFOSAA	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-03	360175-DP01009	N	4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.1	U	2.1	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-03	360175-DP01009	N	8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.1	U	2.1	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-03	360175-DP01009	N	Perfluorotetradecanoic acid (PFTA)	2.1	U	2.1	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-03	360175-DP01009	N	6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.1	U	2.1	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-05	360175-DP00909	N	Perfluorooctanesulfonamide (FOSA)	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-05	360175-DP00909	N	Perfluorotetradecanoic acid (PFTA)	1.8	U	1.8	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-05	360175-DP00909	N	Perfluorobutanoic acid (PFBA)	20		20	J	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-06	360175-DP01508	N	4:2 Fluorotelomersulfonic acid (4:2FTS A)	2	U	2	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-06	360175-DP01508	N	Perfluorooctanesulfonamide (FOSA)	2	U	2	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-06	360175-DP01508	N	Perfluorobutanoic acid (PFBA)	11		11	J	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-06	360175-DP01508	N	Perfluorododecanoic acid (PFDoA)	2	U	2	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-06	360175-DP01508	N	N-EtFOSAA	2	U	2	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-06	360175-DP01508	N	N-MeFOSAA	2	U	2	UJ	ISL	NG/L
22C1815	SOP-454 PFAS	22C1815-06	360175-DP01508	N	Perfluorotetradecanoic acid (PFTA)	2	U		R	ISL	NG/L
22C1819	TO15	22C1819-01	360175-GV008005	N	1,2,4-Trichlorobenzene	1.5	UD	1.5	UJ	LCSL	UG/M3
22C1819	TO15	22C1819-02	360175-GV009005D	N	1,2,4-Trichlorobenzene	1.5	UD	1.5	UJ	LCSL	UG/M3
22C1819	TO15	22C1819-03	360175-GV009005	N	1,2,4-Trichlorobenzene	1.5	UD	1.5	UJ	LCSL	UG/M3
22C1819	TO15	22C1819-04	360175-GV016005	N	1,2,4-Trichlorobenzene	1.5	UD	1.5	UJ	LCSL	UG/M3
22E1903	8260D	22E1903-01	360175-DP08011	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-01	360175-DP08011	N	Methylene chloride	5	U	5	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-01	360175-DP08011	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-01	360175-DP08011	N	Naphthalene	2	U	2	UJ	LCSL	UG/L
22E1903	8260D	22E1903-01	360175-DP08011	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-02	360175-DP01009	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Method	Lab Sample ID	Field Sample ID	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
22E1903	8260D	22E1903-02	360175-DP01009	N	Methylene chloride	5	U	5	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-02	360175-DP01009	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-02	360175-DP01009	N	Naphthalene	2	U	2	UJ	LCSL	UG/L
22E1903	8260D	22E1903-02	360175-DP01009	N	2-Butanone	2.3	J	2.3	J-	CCV%D	UG/L
22E1903	8260D	22E1903-03	360175-DP015010	N	Methylene chloride	5	U	5	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-03	360175-DP015010	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-03	360175-DP015010	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-03	360175-DP015010	N	Naphthalene	2	U	2	UJ	LCSL	UG/L
22E1903	8260D	22E1903-03	360175-DP015010	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-04	360175-DP016012	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-04	360175-DP016012	N	Methylene chloride	5	U	5	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-04	360175-DP016012	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-04	360175-DP016012	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-04	360175-DP016012	N	Naphthalene	2	U	2	UJ	LCSL	UG/L
22E1903	8260D	22E1903-05	360175-DP017012	N	Methylene chloride	5	U	5	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-05	360175-DP017012	N	Naphthalene	2	U	2	UJ	LCSL	UG/L
22E1903	8260D	22E1903-05	360175-DP017012	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-05	360175-DP017012	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-05	360175-DP017012	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-06	360175-DP01108	N	Naphthalene	2	U	2	UJ	LCSL	UG/L
22E1903	8260D	22E1903-06	360175-DP01108	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-06	360175-DP01108	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-06	360175-DP01108	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-06	360175-DP01108	N	Methylene chloride	5	U	5	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-07	360175-DP01206	N	t-Butyl alcohol	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-07	360175-DP01206	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-07	360175-DP01206	N	Naphthalene	2	U	2	UJ	LCSL	UG/L
22E1903	8260D	22E1903-07	360175-DP01206	N	Methylene chloride	5	U	5	UJ	CCV%D	UG/L
22E1903	8260D	22E1903-07	360175-DP01206	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22F0915	SOP-454 PFAS	22F0915-01	360175-MW003D020	N	4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.7	U	1.7	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-01	360175-MW003D020	N	6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.7	U	1.7	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-02	360175-DP002011	N	6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.8	U	1.8	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-02	360175-DP002011	N	4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.8	U	1.8	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-03	360175-DP004011	N	Perfluoroundecanoic acid (PFUnA)	2	U	2	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-03	360175-DP004011	N	N-MeFOSAA	2	U	2	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-03	360175-DP004011	N	N-EtFOSAA	0.97	J	0.97	J+	LCSH, ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-03	360175-DP004011	N	Perfluorobutanoic acid (PFBA)	14		14	J	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-03	360175-DP004011	N	Perfluorododecanoic acid (PFDoA)	2	U		R	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-03	360175-DP004011	N	Perfluorooctanesulfonamide (FOSA)	2.2		2.2	J	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-03	360175-DP004011	N	Perfluorotetradecanoic acid (PFTA)	2	U		R	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluorododecanoic acid (PFDoA)	1.7	U		R	ISL	NG/L

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Method	Lab Sample ID	Field Sample ID	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	N-EtFOSAA	1.7	U	1.7	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluoropentanoic acid (PFPeA)	7.7		7.7	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	N-MeFOSAA	1.7	U	1.7	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluorooctanoic acid (PFOA)	16		16	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.7	U	1.7	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluorobutanoic acid (PFBA)	9.1		9.1	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluorotetradecanoic acid (PFTA)	1.7	U		R	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.7	U	1.7	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluorooctanesulfonamide (FOSA)	1.7	U		R	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluorooctanesulfonic acid (PFOS)	29		29	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-04	360175-DP005011	N	Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-05	360175-DP005011-DUP	N	Perfluorooctanoic acid (PFOA)	17		17	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-05	360175-DP005011-DUP	N	Perfluorooctanesulfonic acid (PFOS)	34		34	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-05	360175-DP005011-DUP	N	Perfluoropentanoic acid (PFPeA)	8.3		8.3	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-05	360175-DP005011-DUP	N	Perfluorododecanoic acid (PFDoA)	1.8	U	1.8	UJ	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-05	360175-DP005011-DUP	N	Perfluorobutanoic acid (PFBA)	8		8	J+	MSH	NG/L
22F0915	SOP-454 PFAS	22F0915-05	360175-DP005011-DUP	N	Perfluorotetradecanoic acid (PFTA)	1.8	U		R	ISL	NG/L
22F0915	SOP-454 PFAS	22F0915-05	360175-DP005011-DUP	N	Perfluorooctanesulfonamide (FOSA)	1.8	U	1.8	UJ	ISL	NG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	Acetone	50	U	50	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	Methylene chloride	0.27	J	5	U	BL2	UG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	Naphthalene	2	U	2	UJ	CCV%D, LCSL	UG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	1,4-Dioxane	50	U	50	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	t-Butyl alcohol	20	U	20	UJ	CCV%D, LCSL	UG/L
22F1625	8260D	22F1625-01	360175-MW0030020	N	Acrylonitrile	5	U	5	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	2-Butanone	20	U	20	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	Acrylonitrile	5	U	5	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	1,4-Dioxane	50	U	50	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	2-Hexanone	10	U	10	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	Acetone	50	U	50	UJ	CCV%D	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	t-Butyl alcohol	20	U	20	UJ	CCV%D, LCSL	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	Naphthalene	2	U	2	UJ	CCV%D, LCSL	UG/L
22F1625	8260D	22F1625-02	360175-MW0030020 Dup	N	Methylene chloride	0.25	J	5	U	BL2	UG/L

ATTACHMENT A
SUMMARY OF VALIDATION QC LIMITS FOR SURROGATES, SPIKES, AND DUPLICATES
BASED ON THE REGION 2 VALIDATION GUIDELINES

PARAMETER	QC TEST	ANALYTE	Soil (%R)	Soil (RPD)	WATER (%R)	Water (RPD)
Volatiles	Surrogate	All Surrogate Compounds	70 - 130		80 - 120	
	LCS	All Target Compounds	70 - 130		70 - 130	
	MS/MSD	All Target Compounds	70 - 130	35	70 - 130	20
	Field Duplicate	All Target Compounds		100		50
Per- and Polyfluorinated Alkyl Substances (PFAS)	Surrogate (1)	All Surrogate Compounds	50 - 150		50 - 150	
	LCS	All Target Compounds	70 - 130		70 - 130	
	MS/MSD	All Target Compounds	70 - 130	30	70 - 130	30
	Field Duplicate	All Target Compounds		30		30
Semivolatiles	Surrogate	All BN Compounds	50 - 140		50 - 140	
		All Acid Compounds	30 - 140		30 - 140	
	LCS	All BN Compounds	50 - 140		50 - 140	
		All Acid Compounds	30 - 140		30 - 140	
	MS/MSD	All BN Compounds	50 - 140	35	50 - 140	20
		All Acid Compounds	30 - 140	35	30 - 140	20
	Field Duplicate	All Target Compounds		100		50
Pesticides	Surrogate	All Surrogate Compounds	30 - 150		30 - 150	
	LCS	All Target Compounds	Lab Limits		Lab Limits	
	MS/MSD	All Target Compounds	Lab Limits	Lab Limits	Lab Limits	Lab Limits
	Field Duplicate	All Target Compounds		100		50
PCBs	Surrogate	All Surrogate Compounds	30 - 150		30 - 150	
	LCS	All Target Analytes	50 - 150		50 - 150	
	MS/MSD[1]	All Target Analytes	29 - 135	20	29 - 135	20
	Field Duplicate	All Target Analytes		100		50
Inorganics-Metals	LCS	All Target Analytes	80 - 120		80 - 120	
	MS/MSD	All Target Analytes	75 -125	35	75 -125	20
	Lab Duplicate[2]	All Target Analytes		35		20
	Field Duplicate[2]	All Target Analytes		35		20

Notes:
(1) For PFAS, surrogate = extracted isotope dilution standard
LCS - Laboratory Control Sample
MS/MSD - Matrix spike/ Matrix Spike Duplicate
RPD = Relative percent difference
%R = percent recovery
QC Limits are based on USEPA Region II Data Validation Guidelines and Project QA/QC Objectives

DATA USABILITY SUMMARY REPORT
JANUARY, MARCH, MAY, AND JUNE 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

ATTACHMENT B

VOCs

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners January
Method: 8260C
Laboratory: Contest **SDG(s):** 22A0721R
Date: 3/9/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? Yes - see attached
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
2. ☑ **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. YES NO (circle one) See attached - subset J, HTG
3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)

   Are Trip blanks free of contamination? YES NO (circle one) See attached - U, BL2

   Are Rinse blanks free of contamination? YES NO NA (circle one)
4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed
5. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Initial Calibration %RSD = 20% **(30% for 1,1-DCE, chloroform, 1,2-DCP, toluene, ethylbenzene, VC)**
   Initial Avg RRF and Continuing RRF should be ≥ 0.05 and 0.10 for Chloromethane, 1,1-Dichloroethane, Bromoform and 0.30 for Chlorobenzene and 1,1,2,2-Tetrachloroethane

   Continuing Calibration %D = 20%

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO See attached - subsets UJ/J+, CCV%D and ICV%D
   If yes to above, use professional judgment to evaluate data and qualify results if needed
6. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL)
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed
7. ☑ **Surrogate Recovery** - Region II limits (water 80-120%, soil 70-130%)

   Were all results within Region II limits? YES NO (circle one) See attached - no quals
8. ☑ **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)

   Were MS/MSDs submitted/analyzed? YES NO See attached - subset UJ, MSL

   Were all results within the Region II limits? YES NO NA (circle one)

GTD 4/28/2022

9. ☑ **Duplicates** - Region II Limits (water RPD 50, soil RPD 100)

Were Field Duplicates submitted/analyzed? YES NO

Were all results within Region II limits? (soil RPD<100, water RPD<50) YES NO NA

10. ☑ **Laboratory Control Sample Results** - Region II (Water and soil 70-130%) See attached - UJ, LCSL

Were all results were within Region II control limits? YES NO (circle one)

11. ☑ **Reporting Limits:** Were samples analyzed at a dilution? YES NO (circle one)
Subset of samples analyzed at a dilution for tetrachloroethylene - all detections

12. ☑ **Raw Data Review and Calculation Checks**

See attached for calculations

13. ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? YES NO (circle one)

14. ☑ **Tables and TIC Review**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

Table 4 (TICs) Did lab report TICs? YES NO (circle one)

GTD 4/28/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

Per client, sample -03 percent solids results to be used for sample -04 as these samples are duplicates. Per client, sample -11 to be reported without percent solids data as no sample received. okay

REVISED 02-22-22: Per client request the 8260 results have been revised to report the 8260 TCL plus STARS. okay

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SW-846 8260D

Qualifications:

E

Reported result is estimated. Value reported over verified calibration range.

Analyte & Samples(s) Qualified:

Tetrachloroethylene

22A0721-01[360175-GW002-14], 22A0721-03[360175-HA001001], 22A0721-04[360175-HA001001D], 22A0721-08[360175-GW002-16]

Dilutions run within calibration range - outside of HT - J, HTG

H-04

Initial analysis within holding time. Reanalysis for the required dilution was past holding time.

Analyte & Samples(s) Qualified:

Tetrachloroethylene

22A0721-02RE1[360175-GW002-13], 22A0721-07RE1[360175-GW002-15], 22A0721-10RE1[WC Drum]

Original results used - no exceedances

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

See attached for LCS review

Bromomethane

B301293-BS1, B301293-BSD1, B301294-BS1, B301294-BSD1, B301313-BS1, B301313-BSD1, S068328-CCV1, S068349-CCV1

Trichlorofluoromethane (Freon 11)

B301293-BS1, B301293-BSD1

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

See attached for LCS review

Methyl Acetate

22A0721-03[360175-HA001001], 22A0721-04[360175-HA001001D], 22A0721-05[360175-HA002001], 22A0721- 11[WC Drum], B301293-BLK1, B301293-BS1, B301293-BSD1, B301293-MS1, B301293-MSD1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

See attached for LCS review

1,1,2-Trichloro-1,2,2-trifluoroethan

B301313-BSD1

MS-09

Matrix spike recovery and/or matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)

See attached for MS review

22A0721-03[360175-HA001001], B301293-MS1, B301293-MSD1

Methyl Acetate

22A0721-03[360175-HA001001], B301293-MS1, B301293-MSD1

MS-15

Matrix spike and matrix spike duplicate recoveries are outside of control limits. Data validation is not affected since results for this compound in this sample are "not detected", and recovery bias is on the high side.

Analyte & Samples(s) Qualified:

See attached for MS review

Trichlorofluoromethane (Freon 11)

B301293-MS1, B301293-MSD1

MS-19

Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.

Analyte & Samples(s) Qualified:

See attached for MS review

Tetrachloroethylene

22A0721-03[360175-HA001001], B301293-MS1, B301293-MSD1

MS-22

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

Bromomethane

See attached for MS review

B301293-MS1

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

MS-24

Either matrix spike or matrix spike duplicate is outside of control limits, but the other is within limits. Analysis is in control based on laboratory fortified blank recovery.

Analyte & Samples(s) Qualified:

See attached for MS review

1,4-Dioxane
B301293-MSD1

Chloromethane
B301293-MS1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

1,2,3-Trichlorobenzene
B301313-BLK1, B301313-BS1, B301313-BSD1, S068349-CCV1 Lab QC - no quals

1,2-Dibromo-3-chloropropane (DB
22A0721-01[360175-GW002-14], 22A0721-02[360175-GW002-13], 22A0721-07[360175-GW002-15], 22A0721-08[360175-GW002-16], 22A0721-09[TB 20220112], UJ, CCV%D
22A0721-10[WC Drum], B301294-BLK1, B301294-BS1, B301294-BSD1, S068328-CCV1

2-Butanone (MEK)
22A0721-03[360175-HA001001], 22A0721-04[360175-HA001001D], 22A0721-05[360175-HA002001], 22A0721- 11[WC Drum], B301293-BLK1, B301293-BS1, UJ, CCV%D
B301293-BSD1, B301293-MS1, B301293-MSD1, S068293-CCV1

Benzene
22A0721-03[360175-HA001001], 22A0721-04[360175-HA001001D], 22A0721-05[360175-HA002001], 22A0721- 11[WC Drum], B298959-BLK1, B298959-BS1, UJ, CCV%D
B298959-BSD1, B298959-MS1, B298959-MSD1, B301293-BLK1, B301293-BS1, B301293-BSD1, B301293-MS1, B301293-MSD1, S067381-CCV1, S068293-CCV1

Bromomethane
22A0721-06[360175-HA003001], B301315-BLK1, B301315-BS1, B301315-BSD1, S068298-CCV1 UJ, CCV%D

Chloromethane
22A0721-01[360175-GW002-14], 22A0721-02[360175-GW002-13], 22A0721-06[360175-HA003001], 22A0721-07[360175-GW002-15], 22A0721-08[360175-GW002-16], UJ, CCV%D
22A0721-09[TB20220112], 22A0721-10[WC Drum], B301294-BLK1, B301294-BS1, B301294-BSD1, B301313-BLK1, B301313-BS1, B301313-BSD1, B301315-BLK1,
B301315-BS1, B301315-BSD1, S068298-CCV1, S068328-CCV1, S068349-CCV1

Methyl Acetate
22A0721-03[360175-HA001001], 22A0721-04[360175-HA001001D], 22A0721-05[360175-HA002001], 22A0721- 11[WC Drum], B301293-BLK1, B301293-BS1, UJ, CCV%D
B301293-BSD1, B301293-MS1, B301293-MSD1, S068293-CCV1

Naphthalene
22A0721-01[360175-GW002-14], 22A0721-02[360175-GW002-13], 22A0721-07[360175-GW002-15], 22A0721-08[360175-GW002-16], 22A0721-09[TB 20220112], UJ, CCV%D
22A0721-10[WC Drum], B298943-BLK1, B298943-BS1, B298943-BSD1, S067413-CCV1, S068349-CCV1

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

Methylene Chloride
22A0721-01[360175-GW002-14], B301294-BS1, B301294-BSD1, S068328-CCV1 J+, CCV%D

Tetrachloroethylene
22A0721-01[360175-GW002-14], 22A0721-02[360175-GW002-13], 22A0721-07[360175-GW002-15], 22A0721-08[360175-GW002-16], 22A0721-10[WC Drum], Samples 2,7 J+, CCV%D Others RA results used - no quals
B301294-BS1, B301294-BSD1, S068328-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,1,2-Trichloro-1,2,2-trifluoroethan
B301313-BS1, B301313-BSD1, S068349-CCV1

1,1-Dichloroethylene
B301313-BS1, B301313-BSD1, S068349-CCV1

1,2-Dichloropropane
B301294-BS1, B301294-BSD1, S068328-CCV1 All lab QC - no quals

2-Hexanone (MBK)
B301294-BS1, B301294-BSD1, S068328-CCV1

4-Methyl-2-pentanone (MIBK)
B301294-BS1, B301294-BSD1, S068328-CCV1

Bromochloromethane
B301313-BS1, B301313-BSD1, B301315-BS1, B301315-BSD1, S068298-CCV1, S068349-CCV1

Bromomethane
B301293-BS1, B301293-BSD1, B301293-MS1, B301293-MSD1, B301294-BS1, B301294-BSD1, B301313-BS1, B301313-BSD1, S068293-CCV1, S068328-CCV1,
S068349-CCV1

Trichlorofluoromethane (Freon 11)
B301293-BS1, B301293-BSD1, B301293-MS1, B301293-MSD1, S068293-CCV1

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Bromomethane

22A0721-01[360175-GW002-14], 22A0721-02[360175-GW002-13], 22A0721-03[360175-HA001001], 22A0721-04[360175-HA001001D], 22A0721-05[360175-HA002001], 22A0721-07[360175-GW002-15], 22A0721-08[360175-GW002-16], 22A0721-09[TB 20220112], 22A0721-10[WC Drum], 22A0721-11[WC Drum], B301293-BLK1, B301293-BS1, B301293-BSD1, B301293-MS1, B301293-MSD1, B301294-BLK1, B301294-BS1, B301294-BSD1, B301313-BLK1, B301313-BS1, B301313-BSD1, S068293-CCV1, S068328-CCV1, S068349-CCV1

UJ, ICV%D

Chloromethane

22A0721-01[360175-GW002-14], 22A0721-02[360175-GW002-13], 22A0721-07[360175-GW002-15], 22A0721-08[360175-GW002-16], 22A0721-09[TB 20220112], 22A0721-10[WC Drum], B301294-BLK1, B301294-BS1, B301294-BSD1, B301313-BLK1, B301313-BS1, B301313-BSD1, S068328-CCV1, S068349-CCV1

UJ, ICV%D

V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

2-Hexanone (MBK)

B301293-BS1, B301293-BSD1, S068293-CCV1

Lab QC - no quals

Acetone

B301293-BS1, B301293-BSD1, S068293-CCV1

Z-01

Initial analysis within holding time. Reanalysis was past holding time.

okay

Analyte & Samples(s) Qualified:

22A0721-02RE1[360175-GW002-13], 22A0721-07RE1[360175-GW002-15], 22A0721-10RE1[WC Drum]

Z-01a

Reported value is possible carryover from a previous high level sample.

Analyte & Samples(s) Qualified:

okay - reran and those results confirm detections

Tetrachloroethylene

22A0721-02[360175-GW002-13], 22A0721-10[WC Drum]

GTD 3/9/2022

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

NYDEC_Wood - Portland, ME
511 Congress Street, Sutie 200
Portland, ME 04101
ATTN: Chuck R. Staples

REPORT DATE: 2/22/2022

PURCHASE ORDER NUMBER: 142890

PROJECT NUMBER: 3616216144.02

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22A0721

The results of analyses performed on the following samples submitted to Con-Test, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Irvington, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
360175-GW002-14 ✓	22A0721-01	Ground Water		SW-846 8260D	
360175-GW002-13 ✓	22A0721-02	Ground Water		SW-846 8260D	
360175-HA001001 ✓	22A0721-03	Soil		SM 2540G	
				SW-846 8260D	
360175-HA001001D ✓	22A0721-04	Soil		SM 2540G	
				SW-846 8260D	
360175-HA002001 ✓	22A0721-05	Soil		SM 2540G	
				SW-846 8260D	
360175-HA003001 ✓	22A0721-06	Soil		SM 2540G	
				SW-846 8260D	
360175-GW002-15 ✓	22A0721-07	Ground Water		SW-846 8260D	
360175-GW002-16 ✓	22A0721-08	Ground Water		SW-846 8260D	
TB20220112 ✓	22A0721-09	Ground Water		SW-846 8260D	
WC Drum	22A0721-10	Ground Water		SW-846 8260D	
WC Drum	22A0721-11	Soil		SW-846 8260D	

No validation for WC samples

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Irvington, NY | Sample Description: | Work Order: 22A0721

Date Received: 1/13/2022

Field Sample #: TB20220112 | Sampled: 1/12/2022 08:00

Sample ID: 22A0721-09

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	DF	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Styrene	ND	1.0	0.11	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
Tetrachloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
Toluene Sample 1 U @ RL, BL2	0.51	1.0	0.11	µg/L	1	J	SW-846 8260D	1/14/22	1/14/22 14:17	MFF
1,2,3-Trichlorobenzene	ND	5.0	0.30	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
1,2,4-Trichlorobenzene	ND	1.0	0.25	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
1,1,1-Trichloroethane	ND	1.0	0.17	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
1,1,2-Trichloroethane	ND	1.0	0.18	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
Trichloroethylene	ND	1.0	0.19	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	0.18	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	0.23	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
1,2,4-Trimethylbenzene	ND	1.0	0.10	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	MFF
1,3,5-Trimethylbenzene	ND	1.0	0.10	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	MFF
Vinyl Chloride	ND	2.0	0.21	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH
m+p Xylene Samples ND - no quals	0.27	2.0	0.18	µg/L	1	J	SW-846 8260D	1/14/22	1/14/22 14:17	MFF
o-Xylene	ND	1.0	0.090	µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	MFF
Xylenes (total)	0.0			µg/L	1		SW-846 8260D	1/14/22	1/14/22 14:17	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	83.1	70-130		1/14/22 14:17
1,2-Dichloroethane-d4	83.1	70-130		1/14/22 14:17
Toluene-d8	97.4	70-130		1/14/22 14:17
Toluene-d8	97.4	70-130		1/14/22 14:17
4-Bromofluorobenzene	100	70-130		1/14/22 14:17
4-Bromofluorobenzene	100	70-130		1/14/22 14:17

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B301293 - SW-846 5035												
LCS Dup (B301293-BSD1)				Prepared & Analyzed: 01/14/22								
1,1,2,2-Tetrachloroethane	0.0185	0.0010	0.00052	mg/Kg wet	0.0200		92.5		70-130	1.93	25	
Tetrachloroethylene	0.0217	0.0020	0.00066	mg/Kg wet	0.0200		109		70-130	0.739	25	
Toluene	0.0196	0.0020	0.00052	mg/Kg wet	0.0200		98.1		70-130	1.64	25	
1,2,3-Trichlorobenzene	0.0198	0.0020	0.00054	mg/Kg wet	0.0200		99.2		70-130	2.49	25	
1,2,4-Trichlorobenzene	0.0187	0.0020	0.00048	mg/Kg wet	0.0200		93.6		70-130	0.957	25	
1,1,1-Trichloroethane	0.0212	0.0020	0.00080	mg/Kg wet	0.0200		106		70-130	2.48	25	
1,1,2-Trichloroethane	0.0199	0.0020	0.00040	mg/Kg wet	0.0200		99.5		70-130	0.605	25	
Trichloroethylene	0.0196	0.0020	0.00060	mg/Kg wet	0.0200		97.8		70-130	1.96	25	
Trichlorofluoromethane (Freon 11)	0.0299	0.010	0.00048	mg/Kg wet	0.0200		**150**	*	70-130	4.30	25	L-02, V-20
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0231	0.010	0.00060	mg/Kg wet	0.0200		116		70-130	4.70	25	
Vinyl Chloride	0.0190	0.010	0.00064	mg/Kg wet	0.0200		95.1		40-130	3.21	25	†
m+p Xylene	0.0445	0.0040	0.0013	mg/Kg wet	0.0400		111		70-130	2.46	25	
o-Xylene	0.0222	0.0020	0.00042	mg/Kg wet	0.0200		111		70-130	2.74	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0524*			mg/Kg wet	0.0500		105		70-130			
Surrogate: Toluene-d8	*0.0494*			mg/Kg wet	0.0500		98.9		70-130			
Surrogate: 4-Bromofluorobenzene	*0.0533*			mg/Kg wet	0.0500		107		70-130			
Matrix Spike (B301293-MS1)				**Source: 22A0721-03** Prepared & Analyzed: 01/14/22								
Acetone	0.0796	0.052	0.0048	mg/Kg dry	0.105	ND	76.0		70-130			
Benzene	0.00780	0.0010	0.00026	mg/Kg dry	0.0105	ND	74.5		70-130			V-05
Bromochloromethane	0.00768	0.0010	0.00044	mg/Kg dry	0.0105	ND	73.4		70-130			
Bromodichloromethane	0.0112	0.0010	0.00026	mg/Kg dry	0.0105	ND	107		70-130			
Bromoform	0.0116	0.0010	0.00036	mg/Kg dry	0.0105	ND	111		70-130			
Bromomethane	0.00658	0.0052	0.00088	mg/Kg dry	0.0105	ND	**62.8**	*	70-130			UJ, MSL MS-22, V-20, V-34
2-Butanone (MEK)	0.0689	0.021	0.0030	mg/Kg dry	0.105	ND	**65.8**	*	70-130			UJ, MSL MS-09, V-05
Carbon Disulfide	0.00920	0.0052	0.0037	mg/Kg dry	0.0105	ND	87.9		70-130			
Carbon Tetrachloride	0.0112	0.0010	0.00044	mg/Kg dry	0.0105	ND	107		70-130			
Chlorobenzene	0.0103	0.0010	0.00036	mg/Kg dry	0.0105	ND	98.4		70-130			
Chlorodibromomethane	0.0117	0.00052	0.00036	mg/Kg dry	0.0105	ND	111		70-130			
Chloroethane	0.0104	0.010	0.00066	mg/Kg dry	0.0105	ND	98.9		70-130			J
Chloroform	0.00958	0.0021	0.00036	mg/Kg dry	0.0105	ND	91.5		70-130			
Chloromethane	0.00708	0.0052	0.00056	mg/Kg dry	0.0105	ND	**67.6**	*	70-130			UJ, MSL MS-24
Cyclohexane	0.00646	0.0052	0.0021	mg/Kg dry	0.0105	ND	**61.7**	*	70-130			Not reported for this sample - no qual
1,2-Dibromo-3-chloropropane (DBCP)	0.00998	0.0010	0.00044	mg/Kg dry	0.0105	ND	95.3		70-130			
1,2-Dibromoethane (EDB)	0.0108	0.00052	0.00036	mg/Kg dry	0.0105	ND	103		70-130			
1,2-Dichlorobenzene	0.0113	0.0010	0.00026	mg/Kg dry	0.0105	ND	108		70-130			
1,3-Dichlorobenzene	0.0110	0.0010	0.00026	mg/Kg dry	0.0105	ND	105		70-130			
1,4-Dichlorobenzene	0.0101	0.0010	0.00026	mg/Kg dry	0.0105	ND	96.5		70-130			
Dichlorodifluoromethane (Freon 12)	0.0127	0.010	0.00056	mg/Kg dry	0.0105	ND	122		70-130			

Qualified for sample and FD

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B301293 - SW-846 5035												
Matrix Spike (B301293-MS1)		**Source: 22A0721-03**			Prepared & Analyzed: 01/14/22							
1,1-Dichloroethane	0.00823	0.0010	0.0003	mg/Kg dry	0.0105	ND	78.6		70-130			
1,2-Dichloroethane	0.0119	0.0010	0.0003	mg/Kg dry	0.0105	ND	114		70-130			
1,1-Dichloroethylene	0.00941	0.0021	0.0003	mg/Kg dry	0.0105	ND	89.9		70-130			
cis-1,2-Dichloroethylene	0.00984	0.0010	0.0002	mg/Kg dry	0.0105	0.000534	88.9		70-130			
trans-1,2-Dichloroethylene	0.00846	0.0010	0.0003	mg/Kg dry	0.0105	ND	80.8		70-130			
1,2-Dichloropropane	0.00867	0.0010	0.0003	mg/Kg dry	0.0105	ND	82.8		70-130			
cis-1,3-Dichloropropene	0.00886	0.00052	0.0002	mg/Kg dry	0.0105	ND	84.6		70-130			
trans-1,3-Dichloropropene	0.00935	0.00052	0.0002	mg/Kg dry	0.0105	ND	89.3		70-130			
1,4-Dioxane	0.0758	0.052	0.019	mg/Kg dry	0.105	ND	72.4		70-130			
Ethylbenzene	0.0108	0.0010	0.0002	mg/Kg dry	0.0105	ND	103		70-130			
2-Hexanone (MBK)	0.0908	0.010	0.0030	mg/Kg dry	0.105	ND	86.7		70-130			
Isopropylbenzene (Cumene)	0.0114	0.0010	0.0003	mg/Kg dry	0.0105	ND	109		70-130			
Methyl Acetate	0.00646	0.0010	0.0007	mg/Kg dry	0.0105	ND	**61.7**	*	70-130			L-04, MS-09, V-05
Methyl tert-Butyl Ether (MTBE)	0.0106	0.0021	0.0001	mg/Kg dry	0.0105	ND	101		70-130			
Methyl Cyclohexane	0.0111	0.0010	0.0003	mg/Kg dry	0.0105	ND	106		70-130			
Methylene Chloride	0.00748	0.010	0.0007	mg/Kg dry	0.0105	ND	71.4		70-130			J
4-Methyl-2-pentanone (MIBK)	0.0967	0.010	0.0022	mg/Kg dry	0.105	ND	92.4		70-130			
Styrene	0.0111	0.0010	0.0002	mg/Kg dry	0.0105	ND	106		70-130			
1,1,2,2-Tetrachloroethane	0.00984	0.00052	0.0002	mg/Kg dry	0.0105	ND	94.0		70-130			
Tetrachloroethylene	0.187	0.0010	0.0003	mg/Kg dry	0.0105	0.378	**-1830**	*	70-130			MS-19
Toluene	0.0101	0.0010	0.0002	mg/Kg dry	0.0105	ND	96.8		70-130			
1,2,3-Trichlorobenzene	0.0115	0.0010	0.0002	mg/Kg dry	0.0105	ND	110		70-130			
1,2,4-Trichlorobenzene	0.0115	0.0010	0.0002	mg/Kg dry	0.0105	ND	110		70-130			
1,1,1-Trichloroethane	0.0110	0.0010	0.0004	mg/Kg dry	0.0105	ND	105		70-130			
1,1,2-Trichloroethane	0.0110	0.0010	0.0002	mg/Kg dry	0.0105	ND	105		70-130			
Trichloroethylene	0.0110	0.0010	0.0003	mg/Kg dry	0.0105	0.00134	92.1		70-130			
Trichlorofluoromethane (Freon 11)	0.0150	0.0052	0.0002	mg/Kg dry	0.0105	ND	**143**	*	70-130			MS-15, V-20
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0125	0.0052	0.0003	mg/Kg dry	0.0105	ND	120		70-130			
Vinyl Chloride	0.00914	0.0052	0.0003	mg/Kg dry	0.0105	ND	87.3		70-130			
m+p Xylene	0.0226	0.0021	0.0006	mg/Kg dry	0.0209	ND	108		70-130			
o-Xylene	0.0116	0.0010	0.0002	mg/Kg dry	0.0105	ND	110		70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0281*			mg/Kg dry	0.0262		107		70-130			
Surrogate: Toluene-d8	*0.0268*			mg/Kg dry	0.0262		102		70-130			
Surrogate: 4-Bromofluorobenzene	*0.0281*			mg/Kg dry	0.0262		107		70-130			
Matrix Spike Dup (B301293-MSD1)		**Source: 22A0721-03**			Prepared & Analyzed: 01/14/22							
Acetone	0.0869	0.054	0.0050	mg/Kg dry	0.109	ND	79.9		70-130	8.78	30	
Benzene	0.00856	0.0011	0.0003	mg/Kg dry	0.0109	ND	78.7		70-130	9.23	30	V-05
Bromochloromethane	0.00845	0.0011	0.0004	mg/Kg dry	0.0109	ND	77.7		70-130	9.44	30	
Bromodichloromethane	0.0117	0.0011	0.0002	mg/Kg dry	0.0109	ND	108		70-130	4.78	30	
Bromoform	0.0122	0.0011	0.0003	mg/Kg dry	0.0109	ND	112		70-130	4.74	30	
Bromomethane	0.00766	0.0054	0.0008	mg/Kg dry	0.0109	ND	70.5		70-130	15.3	30	V-20, V-34
2-Butanone (MEK)	0.0750	0.022	0.003	mg/Kg dry	0.109	ND	**69.0**	*	70-130	8.47	30	MS-09, V-05
Carbon Disulfide	0.0101	0.0054	0.003	mg/Kg dry	0.0109	ND	92.8		70-130	9.18	30	
Carbon Tetrachloride	0.0122	0.0011	0.0004	mg/Kg dry	0.0109	ND	112		70-130	8.78	30	
Chlorobenzene	0.0108	0.0011	0.0003	mg/Kg dry	0.0109	ND	99.5		70-130	4.87	30	
Chlorodibromomethane	0.0117	0.00054	0.0003	mg/Kg dry	0.0109	ND	108		70-130	0.376	30	

Qualified for sample and FD

UJ, MSL

Sample >4x spike- no qual

High bias, sample ND - no qual

<35

Already qual'd UJ, MSL

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B301293 - SW-846 5035												
Matrix Spike Dup (B301293-MSD1)		**Source: 22A0721-03**			Prepared & Analyzed: 01/14/22							
Chloroethane	0.0116	0.011	0.00066	mg/Kg dry	0.0109	ND	107		70-130	11.2	30	
Chloroform	0.0103	0.0022	0.00036	mg/Kg dry	0.0109	ND	95.2		70-130	7.72	30	
Chloromethane	0.00781	0.0054	0.00056	mg/Kg dry	0.0109	ND	71.8		70-130	9.78	30	
Cyclohexane	0.00731	0.0054	0.0022	mg/Kg dry	0.0109	ND	**67.2**	*	70-130	12.3	30	
1,2-Dibromo-3-chloropropane (DBCP)	0.0105	0.0011	0.00046	mg/Kg dry	0.0109	ND	96.4		70-130	4.90	30	
1,2-Dibromoethane (EDB)	0.0108	0.00054	0.00036	mg/Kg dry	0.0109	ND	99.2		70-130	0.0952	30	
1,2-Dichlorobenzene	0.0116	0.0011	0.00026	mg/Kg dry	0.0109	ND	107		70-130	3.29	30	
1,3-Dichlorobenzene	0.0115	0.0011	0.00025	mg/Kg dry	0.0109	ND	106		70-130	4.70	30	
1,4-Dichlorobenzene	0.0108	0.0011	0.00026	mg/Kg dry	0.0109	ND	99.6		70-130	6.92	30	
Dichlorodifluoromethane (Freon 12)	0.0137	0.011	0.00056	mg/Kg dry	0.0109	ND	126		70-130	7.38	30	
1,1-Dichloroethane	0.00898	0.0011	0.00036	mg/Kg dry	0.0109	ND	82.6		70-130	8.72	30	
1,2-Dichloroethane	0.0126	0.0011	0.00036	mg/Kg dry	0.0109	ND	116		70-130	5.58	30	
1,1-Dichloroethylene	0.0102	0.0022	0.00036	mg/Kg dry	0.0109	ND	93.8		70-130	8.00	30	
cis-1,2-Dichloroethylene	0.0103	0.0011	0.00036	mg/Kg dry	0.0109	0.000534	90.0		70-130	4.71	30	
trans-1,2-Dichloroethylene	0.00937	0.0011	0.00036	mg/Kg dry	0.0109	ND	86.2		70-130	10.2	30	
1,2-Dichloropropane	0.00902	0.0011	0.00036	mg/Kg dry	0.0109	ND	83.0		70-130	4.00	30	
cis-1,3-Dichloropropene	0.00957	0.00054	0.00026	mg/Kg dry	0.0109	ND	88.0		70-130	7.69	30	
trans-1,3-Dichloropropene	0.00945	0.00054	0.00026	mg/Kg dry	0.0109	ND	86.9		70-130	1.03	30	
1,4-Dioxane	0.0756	0.054	0.019	mg/Kg dry	0.109	ND	**69.6**	*	70-130	0.231	30	MS-24
Ethylbenzene	0.0115	0.0011	0.00026	mg/Kg dry	0.0109	ND	106		70-130	6.43	30	
2-Hexanone (MBK)	0.0948	0.011	0.0031	mg/Kg dry	0.109	ND	87.2		70-130	4.34	30	
Isopropylbenzene (Cumene)	0.0120	0.0011	0.00036	mg/Kg dry	0.0109	ND	110		70-130	4.85	30	
Methyl Acetate	0.00701	0.0011	0.00086	mg/Kg dry	0.0109	ND	**64.5**	*	70-130	8.19	30	L-04, MS-09, V-05
Methyl tert-Butyl Ether (MTBE)	0.0113	0.0022	0.00026	mg/Kg dry	0.0109	ND	104		70-130	7.26	30	
Methyl Cyclohexane	0.0113	0.0011	0.00046	mg/Kg dry	0.0109	ND	104		70-130	1.95	30	
Methylene Chloride	0.00803	0.011	0.00086	mg/Kg dry	0.0109	ND	73.9		70-130	7.20	30	J
4-Methyl-2-pentanone (MIBK)	0.100	0.011	0.0023	mg/Kg dry	0.109	ND	92.2		70-130	3.58	30	
Styrene	0.0114	0.0011	0.00026	mg/Kg dry	0.0109	ND	105		70-130	3.09	30	
1,1,2,2-Tetrachloroethane	0.0101	0.00054	0.00026	mg/Kg dry	0.0109	ND	93.2		70-130	2.90	30	
Tetrachloroethylene	0.203	0.0011	0.00036	mg/Kg dry	0.0109	0.378	**-1620**	*	70-130	8.04	30	MS-19
Toluene	0.0111	0.0011	0.00026	mg/Kg dry	0.0109	ND	102		70-130	9.08	30	
1,2,3-Trichlorobenzene	0.0109	0.0011	0.00026	mg/Kg dry	0.0109	ND	101		70-130	5.08	30	
1,2,4-Trichlorobenzene	0.0112	0.0011	0.00026	mg/Kg dry	0.0109	ND	103		70-130	2.70	30	
1,1,1-Trichloroethane	0.0119	0.0011	0.00046	mg/Kg dry	0.0109	ND	109		70-130	8.15	30	
1,1,2-Trichloroethane	0.0109	0.0011	0.00026	mg/Kg dry	0.0109	ND	100		70-130	0.922	30	
Trichloroethylene	0.0119	0.0011	0.00036	mg/Kg dry	0.0109	0.00134	97.4		70-130	8.32	30	
Trichlorofluoromethane (Freon 11)	0.0165	0.0054	0.00026	mg/Kg dry	0.0109	ND	**152**	*	70-130	9.52	30	MS-15, V-20
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0137	0.0054	0.00036	mg/Kg dry	0.0109	ND	126		70-130	9.04	30	
Vinyl Chloride	0.0104	0.0054	0.00036	mg/Kg dry	0.0109	ND	96.1		70-130	13.3	30	
m+p Xylene	0.0241	0.0022	0.00076	mg/Kg dry	0.0217	ND	111		70-130	6.41	30	
o-Xylene	0.0122	0.0011	0.00026	mg/Kg dry	0.0109	ND	112		70-130	5.37	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0284*			mg/Kg dry	0.0272		104		70-130			
Surrogate: Toluene-d8	*0.0272*			mg/Kg dry	0.0272		100		70-130			
Surrogate: 4-Bromofluorobenzene	*0.0288*			mg/Kg dry	0.0272		106		70-130			

Qualified for sample and FD

Not reported for this sample - no qual

UJ, MSL

Already qual'd UJ, MSL

Sample >4x spike - no qual

High bias, sample ND - no qual

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B301293 - SW-846 5035													
LCS (B301293-BS1) Associated with samples 3, 4, 5					Prepared & Analyzed: 01/14/22								
Bromomethane	0.0380	0.010	0.0016	mg/Kg wet	0.0200		**190**	*	40-130	High bias, samples ND - no quals		L-02, V-20, V-34	†
2-Butanone (MEK)	0.149	0.040	0.0057	mg/Kg wet	0.200		74.7		70-160			V-05	†
Carbon Disulfide	0.157	0.010	0.0070	mg/Kg wet	0.200		78.3		70-130				
Carbon Tetrachloride	0.0213	0.0020	0.0008	mg/Kg wet	0.0200		106		70-130				
Chlorobenzene	0.0197	0.0020	0.0005	mg/Kg wet	0.0200		98.5		70-130				
Chlorodibromomethane	0.0235	0.0010	0.0005	mg/Kg wet	0.0200		117		70-130				
Chloroethane	0.0223	0.020	0.0012	mg/Kg wet	0.0200		112		70-130				
Chloroform	0.0187	0.0040	0.0005	mg/Kg wet	0.0200		93.6		70-130				
Chloromethane	0.0168	0.010	0.0010	mg/Kg wet	0.0200		84.2		70-130				
Cyclohexane	0.0124	0.010	0.0041	mg/Kg wet	0.0200		**61.9**	*	70-130	Not reported for the associated samples - no quals			
1,2-Dibromo-3-chloropropane (DBCP)	0.0187	0.0020	0.0008	mg/Kg wet	0.0200		93.7		70-130				
1,2-Dibromoethane (EDB)	0.0209	0.0010	0.0006	mg/Kg wet	0.0200		105		70-130				
1,2-Dichlorobenzene	0.0207	0.0020	0.0004	mg/Kg wet	0.0200		103		70-130				
1,3-Dichlorobenzene	0.0199	0.0020	0.0005	mg/Kg wet	0.0200		99.3		70-130				
1,4-Dichlorobenzene	0.0187	0.0020	0.0005	mg/Kg wet	0.0200		93.7		70-130				
Dichlorodifluoromethane (Freon 12)	0.0189	0.020	0.0011	mg/Kg wet	0.0200		94.6		40-160			J	†
1,1-Dichloroethane	0.0159	0.0020	0.0006	mg/Kg wet	0.0200		79.6		70-130				
1,2-Dichloroethane	0.0231	0.0020	0.0006	mg/Kg wet	0.0200		115		70-130				
1,1-Dichloroethylene	0.0185	0.0040	0.0007	mg/Kg wet	0.0200		92.5		70-130				
cis-1,2-Dichloroethylene	0.0178	0.0020	0.0005	mg/Kg wet	0.0200		89.2		70-130				
trans-1,2-Dichloroethylene	0.0170	0.0020	0.0006	mg/Kg wet	0.0200		85.1		70-130				
1,2-Dichloropropane	0.0164	0.0020	0.0005	mg/Kg wet	0.0200		82.1		70-130				
cis-1,3-Dichloropropene	0.0185	0.0010	0.0005	mg/Kg wet	0.0200		92.7		70-130				
trans-1,3-Dichloropropene	0.0172	0.0010	0.0005	mg/Kg wet	0.0200		86.1		70-130				
1,4-Dioxane	0.172	0.10	0.035	mg/Kg wet	0.200		85.9		40-160				†
Ethylbenzene	0.0204	0.0020	0.0005	mg/Kg wet	0.0200		102		70-130				
2-Hexanone (MBK)	0.194	0.020	0.0057	mg/Kg wet	0.200		97.2		70-160			V-35	†
Isopropylbenzene (Cumene)	0.0213	0.0020	0.0007	mg/Kg wet	0.0200		107		70-130				
Methyl Acetate	0.0118	0.0020	0.0015	mg/Kg wet	0.0200		**59.1**	*	70-130	UJ, LCSL		L-04, V-05	
Methyl tert-Butyl Ether (MTBE)	0.0214	0.0040	0.0003	mg/Kg wet	0.0200		107		70-130				

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B301293 - SW-846 5035													
LCS (B301293-BS1) Associated with samples 3, 4, 5					Prepared & Analyzed: 01/14/22								
Methyl Cyclohexane	0.0197	0.0020	0.0007	mg/Kg wet	0.0200		98.4		70-130				
Methylene Chloride	0.0151	0.020	0.0015	mg/Kg wet	0.0200		75.3		40-160			J	†
4-Methyl-2-pentanone (MIBK)	0.193	0.020	0.0042	mg/Kg wet	0.200		96.7		70-160				†
Styrene	0.0209	0.0020	0.0004	mg/Kg wet	0.0200		104		70-130				
1,1,2,2-Tetrachloroethane	0.0189	0.0010	0.0005	mg/Kg wet	0.0200		94.3		70-130				
Tetrachloroethylene	0.0216	0.0020	0.0006	mg/Kg wet	0.0200		108		70-130				
Toluene	0.0193	0.0020	0.0005	mg/Kg wet	0.0200		96.5		70-130				
1,2,3-Trichlorobenzene	0.0203	0.0020	0.0005	mg/Kg wet	0.0200		102		70-130				
1,2,4-Trichlorobenzene	0.0189	0.0020	0.0004	mg/Kg wet	0.0200		94.5		70-130				
1,1,1-Trichloroethane	0.0207	0.0020	0.0008	mg/Kg wet	0.0200		104		70-130				
1,1,2-Trichloroethane	0.0198	0.0020	0.0004	mg/Kg wet	0.0200		98.9		70-130				
Trichloroethylene	0.0192	0.0020	0.0006	mg/Kg wet	0.0200		95.9		70-130				
Trichlorofluoromethane (Freon 11)	0.0287	0.010	0.0004	mg/Kg wet	0.0200		**143**	*	70-130			High bias, samples ND - no quals L-02, V-20	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0220	0.010	0.0006	mg/Kg wet	0.0200		110		70-130				
Vinyl Chloride	0.0184	0.010	0.0006	mg/Kg wet	0.0200		92.1		40-130				†
m+p Xylene	0.0434	0.0040	0.0013	mg/Kg wet	0.0400		108		70-130				
o-Xylene	0.0216	0.0020	0.0004	mg/Kg wet	0.0200		108		70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0525*			mg/Kg wet	0.0500		105		70-130				
Surrogate: Toluene-d8	*0.0507*			mg/Kg wet	0.0500		101		70-130				
Surrogate: 4-Bromofluorobenzene	*0.0529*			mg/Kg wet	0.0500		106		70-130				
LCS Dup (B301293-BSD1) Associated with samples 3, 4, 5					Prepared & Analyzed: 01/14/22								
Acetone	0.167	0.10	0.0092	mg/Kg wet	0.200		83.5		70-160	2.14	25	V-35	†
Benzene	0.0157	0.0020	0.0005	mg/Kg wet	0.0200		78.5		70-130	3.10	25	V-05	
Bromochloromethane	0.0157	0.0020	0.0008	mg/Kg wet	0.0200		78.7		70-130	4.02	25		
Bromodichloromethane	0.0218	0.0020	0.0004	mg/Kg wet	0.0200		109		70-130	0.915	25		
Bromoform	0.0221	0.0020	0.0006	mg/Kg wet	0.0200		110		70-130	3.29	25		
Bromomethane	0.0381	0.010	0.0016	mg/Kg wet	0.0200		**190**	*	40-130	0.263	25	High bias, samples ND - no quals L-02, V-20, V-34	†
2-Butanone (MEK)	0.147	0.040	0.0057	mg/Kg wet	0.200		73.7		70-160	1.28	25	V-05	†
Carbon Disulfide	0.161	0.010	0.0070	mg/Kg wet	0.200		80.4		70-130	2.64	25		
Carbon Tetrachloride	0.0218	0.0020	0.0008	mg/Kg wet	0.0200		109		70-130	2.50	25		

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B301293 - SW-846 5035													
LCS Dup (B301293-BSD1) Associated with samples 3, 4, 5					Prepared & Analyzed: 01/14/22								
Chlorobenzene	0.0198	0.0020	0.00055	mg/Kg wet	0.0200		98.8		70-130	0.304	25		
Chlorodibromomethane	0.0234	0.0010	0.00057	mg/Kg wet	0.0200		117		70-130	0.171	25		
Chloroethane	0.0227	0.020	0.0012	mg/Kg wet	0.0200		114		70-130	1.87	25		
Chloroform	0.0189	0.0040	0.00055	mg/Kg wet	0.0200		94.4		70-130	0.851	25		
Chloromethane	0.0169	0.010	0.0010	mg/Kg wet	0.0200		84.4		70-130	0.237	25		
Cyclohexane	0.0125	0.010	0.0041	mg/Kg wet	0.0200		**62.7**	*	70-130	1.28	25	Not reported for the associated samples - no quals	
1,2-Dibromo-3-chloropropane (DBCP)	0.0187	0.0020	0.00087	mg/Kg wet	0.0200		93.7		70-130	0.00	25		
1,2-Dibromoethane (EDB)	0.0209	0.0010	0.00067	mg/Kg wet	0.0200		104		70-130	0.191	25		
1,2-Dichlorobenzene	0.0204	0.0020	0.00044	mg/Kg wet	0.0200		102		70-130	1.17	25		
1,3-Dichlorobenzene	0.0199	0.0020	0.00050	mg/Kg wet	0.0200		99.6		70-130	0.302	25		
1,4-Dichlorobenzene	0.0190	0.0020	0.00053	mg/Kg wet	0.0200		95.2		70-130	1.59	25		
Dichlorodifluoromethane (Freon 12)	0.0199	0.020	0.0011	mg/Kg wet	0.0200		99.7		40-160	5.25	25	J	†
1,1-Dichloroethane	0.0160	0.0020	0.00065	mg/Kg wet	0.0200		80.1		70-130	0.626	25		
1,2-Dichloroethane	0.0230	0.0020	0.00066	mg/Kg wet	0.0200		115		70-130	0.260	25		
1,1-Dichloroethylene	0.0191	0.0040	0.00071	mg/Kg wet	0.0200		95.6		70-130	3.30	25		
cis-1,2-Dichloroethylene	0.0184	0.0020	0.00050	mg/Kg wet	0.0200		91.9		70-130	2.98	25		
trans-1,2-Dichloroethylene	0.0176	0.0020	0.00067	mg/Kg wet	0.0200		88.2		70-130	3.58	25		
1,2-Dichloropropane	0.0165	0.0020	0.00050	mg/Kg wet	0.0200		82.3		70-130	0.243	25		
cis-1,3-Dichloropropene	0.0186	0.0010	0.00051	mg/Kg wet	0.0200		92.8		70-130	0.108	25		
trans-1,3-Dichloropropene	0.0174	0.0010	0.00050	mg/Kg wet	0.0200		87.1		70-130	1.15	25		
1,4-Dioxane	0.171	0.10	0.035	mg/Kg wet	0.200		85.6		40-160	0.338	50		† ‡
Ethylbenzene	0.0206	0.0020	0.00054	mg/Kg wet	0.0200		103		70-130	0.877	25		
2-Hexanone (MBK)	0.193	0.020	0.0057	mg/Kg wet	0.200		96.4		70-160	0.765	25	V-35	†
Isopropylbenzene (Cumene)	0.0216	0.0020	0.00071	mg/Kg wet	0.0200		108		70-130	1.49	25		
Methyl Acetate	0.0127	0.0020	0.0015	mg/Kg wet	0.0200		**63.5**	*	70-130	7.18	25	L-04, V-05 UJ, LCSL	
Methyl tert-Butyl Ether (MTBE)	0.0225	0.0040	0.00036	mg/Kg wet	0.0200		112		70-130	4.74	25		
Methyl Cyclohexane	0.0202	0.0020	0.00075	mg/Kg wet	0.0200		101		70-130	2.51	25		
Methylene Chloride	0.0155	0.020	0.0015	mg/Kg wet	0.0200		77.3		40-160	2.62	25	J	†
4-Methyl-2-pentanone (MIBK)	0.191	0.020	0.0042	mg/Kg wet	0.200		95.4		70-160	1.43	25		†
Styrene	0.0211	0.0020	0.00041	mg/Kg wet	0.0200		106		70-130	1.33	25		

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B301293 - SW-846 5035												
LCS Dup (B301293-BSD1) Associated with samples 3, 4, 5				Prepared & Analyzed: 01/14/22								
1,1,2,2-Tetrachloroethane	0.0185	0.0010	0.00052	mg/Kg wet	0.0200		92.5		70-130	1.93	25	
Tetrachloroethylene	0.0217	0.0020	0.00066	mg/Kg wet	0.0200		109		70-130	0.739	25	
Toluene	0.0196	0.0020	0.00052	mg/Kg wet	0.0200		98.1		70-130	1.64	25	
1,2,3-Trichlorobenzene	0.0198	0.0020	0.00054	mg/Kg wet	0.0200		99.2		70-130	2.49	25	
1,2,4-Trichlorobenzene	0.0187	0.0020	0.00048	mg/Kg wet	0.0200		93.6		70-130	0.957	25	
1,1,1-Trichloroethane	0.0212	0.0020	0.00080	mg/Kg wet	0.0200		106		70-130	2.48	25	
1,1,2-Trichloroethane	0.0199	0.0020	0.00040	mg/Kg wet	0.0200		99.5		70-130	0.605	25	
Trichloroethylene	0.0196	0.0020	0.00066	mg/Kg wet	0.0200		97.8		70-130	1.96	25	High bias, samples ND - no quals
Trichlorofluoromethane (Freon 11)	0.0299	0.010	0.00048	mg/Kg wet	0.0200		**150**	*	70-130	4.30	25	L-02, V-20
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0231	0.010	0.00066	mg/Kg wet	0.0200		116		70-130	4.70	25	
Vinyl Chloride	0.0190	0.010	0.00064	mg/Kg wet	0.0200		95.1		40-130	3.21	25	†
m+p Xylene	0.0445	0.0040	0.0013	mg/Kg wet	0.0400		111		70-130	2.46	25	
o-Xylene	0.0222	0.0020	0.00043	mg/Kg wet	0.0200		111		70-130	2.74	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0524*			mg/Kg wet	0.0500		105		70-130			
Surrogate: Toluene-d8	*0.0494*			mg/Kg wet	0.0500		98.9		70-130			
Surrogate: 4-Bromofluorobenzene	*0.0533*			mg/Kg wet	0.0500		107		70-130			
Matrix Spike (B301293-MS1)		**Source: 22A0721-03**		Prepared & Analyzed: 01/14/22								
Acetone	0.0796	0.052	0.0048	mg/Kg dry	0.105	ND	76.0		70-130			
Benzene	0.00780	0.0010	0.00026	mg/Kg dry	0.0105	ND	74.5		70-130			V-05
Bromochloromethane	0.00768	0.0010	0.00044	mg/Kg dry	0.0105	ND	73.4		70-130			
Bromodichloromethane	0.0112	0.0010	0.00026	mg/Kg dry	0.0105	ND	107		70-130			
Bromoform	0.0116	0.0010	0.00036	mg/Kg dry	0.0105	ND	111		70-130			
Bromomethane	0.00658	0.0052	0.00088	mg/Kg dry	0.0105	ND	**62.8**	*	70-130			MS-22, V-20, V-34
2-Butanone (MEK)	0.0689	0.021	0.0030	mg/Kg dry	0.105	ND	**65.8**	*	70-130			MS-09, V-05
Carbon Disulfide	0.00920	0.0052	0.0037	mg/Kg dry	0.0105	ND	87.9		70-130			
Carbon Tetrachloride	0.0112	0.0010	0.00044	mg/Kg dry	0.0105	ND	107		70-130			
Chlorobenzene	0.0103	0.0010	0.00036	mg/Kg dry	0.0105	ND	98.4		70-130			
Chlorodibromomethane	0.0117	0.00052	0.00036	mg/Kg dry	0.0105	ND	111		70-130			
Chloroethane	0.0104	0.010	0.00066	mg/Kg dry	0.0105	ND	98.9		70-130			J
Chloroform	0.00958	0.0021	0.00036	mg/Kg dry	0.0105	ND	91.5		70-130			
Chloromethane	0.00708	0.0052	0.00056	mg/Kg dry	0.0105	ND	**67.6**	*	70-130			MS-24
Cyclohexane	0.00646	0.0052	0.0021	mg/Kg dry	0.0105	ND	**61.7**	*	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	0.00998	0.0010	0.00044	mg/Kg dry	0.0105	ND	95.3		70-130			
1,2-Dibromoethane (EDB)	0.0108	0.00052	0.00036	mg/Kg dry	0.0105	ND	103		70-130			
1,2-Dichlorobenzene	0.0113	0.0010	0.00026	mg/Kg dry	0.0105	ND	108		70-130			
1,3-Dichlorobenzene	0.0110	0.0010	0.00026	mg/Kg dry	0.0105	ND	105		70-130			
1,4-Dichlorobenzene	0.0101	0.0010	0.00026	mg/Kg dry	0.0105	ND	96.5		70-130			
Dichlorodifluoromethane (Freon 12)	0.0127	0.010	0.00056	mg/Kg dry	0.0105	ND	122		70-130			

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B301294 - SW-846 5035													
Blank (B301294-BLK1)					Prepared & Analyzed: 01/14/22								
Vinyl Chloride	ND	2.0	0.21	µg/L									
m+p Xylene	ND	2.0	0.46	µg/L									
o-Xylene	ND	1.0	0.23	µg/L									
Xylenes (total)	0.0			µg/L									
Surrogate: 1,2-Dichloroethane-d4	*20.9*			µg/L	25.0		83.4		70-130				
Surrogate: Toluene-d8	*24.0*			µg/L	25.0		96.1		70-130				
Surrogate: 4-Bromofluorobenzene	*25.7*			µg/L	25.0		103		70-130				
LCS (B301294-BS1) Associated with samples 1, 2, 7, 8					Prepared & Analyzed: 01/14/22				70-130				
Acetone	110	50	2.0	µg/L	100		110		70-160				†
Benzene	9.63	1.0	0.20	µg/L	10.0		96.3		70-130				
Bromochloromethane	11.7	1.0	0.31	µg/L	10.0		117		70-130				
Bromodichloromethane	10.1	0.50	0.18	µg/L	10.0		101		70-130				
Bromoform	10.8	1.0	0.38	µg/L	10.0		108		70-130				
Bromomethane	17.3	2.0	1.5	µg/L	10.0		**173**	*	40-160	High bias, samples ND - no quals		V-34, L-02, V-20	†
2-Butanone (MEK)	113	20	1.6	µg/L	100		113		40-160				†
Carbon Disulfide	83.9	5.0	1.4	µg/L	100		83.9		70-130				
Carbon Tetrachloride	9.64	5.0	0.16	µg/L	10.0		96.4		70-130				
Chlorobenzene	11.5	1.0	0.11	µg/L	10.0		115		70-130				
Chlorodibromomethane	11.3	0.50	0.22	µg/L	10.0		113		70-130				
Chloroethane	10.6	2.0	0.32	µg/L	10.0		106		70-130				
Chloroform	8.67	2.0	0.17	µg/L	10.0		86.7		70-130				
Chloromethane	6.18	2.0	0.52	µg/L	10.0		61.8		40-160	UJ, LCSL		V-05, V-34	†
Cyclohexane	12.8	5.0	1.8	µg/L	10.0		128		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	8.95	5.0	0.80	µg/L	10.0		89.5		70-130			V-05	
1,2-Dibromoethane (EDB)	10.6	0.50	0.17	µg/L	10.0		106		70-130				
1,2-Dichlorobenzene	10.6	1.0	0.12	µg/L	10.0		106		70-130				
1,3-Dichlorobenzene	10.6	1.0	0.12	µg/L	10.0		106		70-130				
1,4-Dichlorobenzene	10.5	1.0	0.13	µg/L	10.0		105		70-130				
Dichlorodifluoromethane (Freon 12)	9.08	2.0	0.19	µg/L	10.0		90.8		40-160				†
1,1-Dichloroethane	11.2	1.0	0.14	µg/L	10.0		112		70-130				
1,2-Dichloroethane	11.0	1.0	0.31	µg/L	10.0		110		70-130				
1,1-Dichloroethylene	11.8	1.0	0.14	µg/L	10.0		118		70-130				
cis-1,2-Dichloroethylene	11.5	1.0	0.15	µg/L	10.0		115		70-130				
trans-1,2-Dichloroethylene	12.2	1.0	0.17	µg/L	10.0		122		70-130				
1,2-Dichloropropane	12.6	1.0	0.18	µg/L	10.0		126		70-130			V-20	
cis-1,3-Dichloropropene	10.2	0.50	0.16	µg/L	10.0		102		70-130				
trans-1,3-Dichloropropene	9.76	0.50	0.17	µg/L	10.0		97.6		70-130				
1,4-Dioxane	98.4	50	21	µg/L	100		98.4		40-130				†
Ethylbenzene	10.7	1.0	0.21	µg/L	10.0		107		70-130				
2-Hexanone (MBK)	129	10	1.1	µg/L	100		129		70-160			V-20	†
Isopropylbenzene (Cumene)	11.2	1.0	0.11	µg/L	10.0		112		70-130				
Methyl Acetate	10.5	1.0	0.45	µg/L	10.0		105		70-130				
Methyl tert-Butyl Ether (MTBE)	9.44	1.0	0.17	µg/L	10.0		94.4		70-130				
Methyl Cyclohexane	10.6	1.0	0.24	µg/L	10.0		106		70-130				
Methylene Chloride	12.0	5.0	0.23	µg/L	10.0		120		70-130			V-06	
4-Methyl-2-pentanone (MIBK)	135	10	1.3	µg/L	100		135		70-160	High bias, samples ND - no quals		V-20	†
Styrene	11.4	1.0	0.11	µg/L	10.0		114		70-130				
1,1,2,2-Tetrachloroethane	10.2	0.50	0.13	µg/L	10.0		102		70-130				
Tetrachloroethylene	12.2	1.0	0.19	µg/L	10.0		122		70-130			V-06	

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B301294 - SW-846 5035													
LCS (B301294-BS1)					Prepared & Analyzed: 01/14/22								
Toluene	10.3	1.0	0.22	µg/L	10.0		103		70-130				
1,2,3-Trichlorobenzene	9.20	5.0	0.30	µg/L	10.0		92.0		70-130				
1,2,4-Trichlorobenzene	10.0	1.0	0.25	µg/L	10.0		100		70-130				
1,1,1-Trichloroethane	9.18	1.0	0.17	µg/L	10.0		91.8		70-130				
1,1,2-Trichloroethane	10.8	1.0	0.18	µg/L	10.0		108		70-130				
Trichloroethylene	10.8	1.0	0.19	µg/L	10.0		108		70-130				
Trichlorofluoromethane (Freon 11)	8.67	2.0	0.18	µg/L	10.0		86.7		70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.4	1.0	0.23	µg/L	10.0		104		70-130				
Vinyl Chloride	11.4	2.0	0.21	µg/L	10.0		114		40-160				†
m+p Xylene	21.9	2.0	0.46	µg/L	20.0		109		70-130				
o-Xylene	10.6	1.0	0.23	µg/L	10.0		106		70-130				
Xylenes (total)	32.4			µg/L	30.0		108		0-200				
Surrogate: 1,2-Dichloroethane-d4	*19.9*			µg/L	25.0		79.6		70-130				
Surrogate: Toluene-d8	*24.4*			µg/L	25.0		97.6		70-130				
Surrogate: 4-Bromofluorobenzene	*25.2*			µg/L	25.0		101		70-130				
LCS Dup (B301294-BSD1) Associated with samples 1, 2, 7, 8					Prepared & Analyzed: 01/14/22				70-130				
Acetone	111	50	2.0	µg/L	100		111		70-160	0.406	25		†
Benzene	9.77	1.0	0.20	µg/L	10.0		97.7		70-130	1.44	25		
Bromochloromethane	12.0	1.0	0.31	µg/L	10.0		120		70-130	2.28	25		
Bromodichloromethane	9.77	0.50	0.18	µg/L	10.0		97.7		70-130	3.12	25	High bias, samples ND - no quals	
Bromoform	11.0	1.0	0.38	µg/L	10.0		110		70-130	1.84	25		
Bromomethane	16.1	2.0	1.5	µg/L	10.0		**161**	*	40-160	6.88	25	V-34, L-02, V-20	†
2-Butanone (MEK)	115	20	1.6	µg/L	100		115		40-160	1.00	25		†
Carbon Disulfide	85.3	5.0	1.4	µg/L	100		85.3		70-130	1.63	25		
Carbon Tetrachloride	9.75	5.0	0.16	µg/L	10.0		97.5		70-130	1.13	25		
Chlorobenzene	11.4	1.0	0.11	µg/L	10.0		114		70-130	0.523	25		
Chlorodibromomethane	11.3	0.50	0.22	µg/L	10.0		113		70-130	0.531	25		
Chloroethane	11.3	2.0	0.32	µg/L	10.0		113		70-130	6.32	25		
Chloroform	9.07	2.0	0.17	µg/L	10.0		90.7		70-130	4.51	25	Already qual'd - UJ, LCSL	
Chloromethane	6.12	2.0	0.52	µg/L	10.0		61.2		40-160	0.976	25	V-05, V-34	†
Cyclohexane	13.1	5.0	1.8	µg/L	10.0		**131**	*	70-130	2.24	25	High bias, samples ND - no quals	
1,2-Dibromo-3-chloropropane (DBCP)	7.66	5.0	0.80	µg/L	10.0		76.6		70-130	15.5	25	V-05	
1,2-Dibromoethane (EDB)	10.2	0.50	0.17	µg/L	10.0		102		70-130	3.28	25		
1,2-Dichlorobenzene	10.3	1.0	0.12	µg/L	10.0		103		70-130	3.26	25		
1,3-Dichlorobenzene	10.6	1.0	0.12	µg/L	10.0		106		70-130	0.0946	25		
1,4-Dichlorobenzene	10.1	1.0	0.13	µg/L	10.0		101		70-130	3.78	25		
Dichlorodifluoromethane (Freon 12)	9.50	2.0	0.19	µg/L	10.0		95.0		40-160	4.52	25		†
1,1-Dichloroethane	11.3	1.0	0.14	µg/L	10.0		113		70-130	0.801	25		
1,2-Dichloroethane	11.2	1.0	0.31	µg/L	10.0		112		70-130	2.26	25		
1,1-Dichloroethylene	11.5	1.0	0.14	µg/L	10.0		115		70-130	2.57	25		
cis-1,2-Dichloroethylene	11.5	1.0	0.15	µg/L	10.0		115		70-130	0.696	25		
trans-1,2-Dichloroethylene	12.1	1.0	0.17	µg/L	10.0		121		70-130	1.15	25		
1,2-Dichloropropane	12.7	1.0	0.18	µg/L	10.0		127		70-130	0.554	25	V-20	
cis-1,3-Dichloropropene	10.0	0.50	0.16	µg/L	10.0		100		70-130	1.98	25		
trans-1,3-Dichloropropene	9.91	0.50	0.17	µg/L	10.0		99.1		70-130	1.53	25		
1,4-Dioxane	102	50	21	µg/L	100		102		40-130	3.49	50		† ‡
Ethylbenzene	10.7	1.0	0.21	µg/L	10.0		107		70-130	0.374	25		
2-Hexanone (MBK)	124	10	1.1	µg/L	100		124		70-160	3.29	25	V-20	†

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B301294 - SW-846 5035											
LCS Dup (B301294-BSD1) Associated with samples 1, 2, 7, 8					Prepared & Analyzed: 01/14/22			70-130			
Isopropylbenzene (Cumene)	11.1	1.0	0.11	µg/L	10.0		111	70-130	0.538	25	
Methyl Acetate	9.89	1.0	0.45	µg/L	10.0		98.9	70-130	5.79	25	
Methyl tert-Butyl Ether (MTBE)	9.57	1.0	0.17	µg/L	10.0		95.7	70-130	1.37	25	
Methyl Cyclohexane	9.98	1.0	0.24	µg/L	10.0		99.8	70-130	6.03	25	
Methylene Chloride	12.2	5.0	0.23	µg/L	10.0		122	70-130	1.24	25	V-06
4-Methyl-2-pentanone (MIBK)	131	10	1.3	µg/L	100		131	70-160	2.41	25	V-20 †
Styrene	11.4	1.0	0.11	µg/L	10.0		114	70-130	0.702	25	
1,1,2,2-Tetrachloroethane	10.0	0.50	0.13	µg/L	10.0		100	70-130	2.17	25	
Tetrachloroethylene	12.3	1.0	0.19	µg/L	10.0		123	70-130	0.489	25	V-06
Toluene	10.4	1.0	0.22	µg/L	10.0		104	70-130	0.772	25	
1,2,3-Trichlorobenzene	8.58	5.0	0.30	µg/L	10.0		85.8	70-130	6.97	25	
1,2,4-Trichlorobenzene	9.56	1.0	0.25	µg/L	10.0		95.6	70-130	4.80	25	
1,1,1-Trichloroethane	9.41	1.0	0.17	µg/L	10.0		94.1	70-130	2.47	25	
1,1,2-Trichloroethane	10.8	1.0	0.18	µg/L	10.0		108	70-130	0.185	25	
Trichloroethylene	11.0	1.0	0.19	µg/L	10.0		110	70-130	2.57	25	
Trichlorofluoromethane (Freon 11)	8.98	2.0	0.18	µg/L	10.0		89.8	70-130	3.51	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.7	1.0	0.23	µg/L	10.0		107	70-130	2.28	25	
Vinyl Chloride	11.7	2.0	0.21	µg/L	10.0		117	40-160	2.33	25	†
m+p Xylene	21.8	2.0	0.46	µg/L	20.0		109	70-130	0.550	25	
o-Xylene	10.5	1.0	0.23	µg/L	10.0		105	70-130	0.379	25	
Xylenes (total)	32.3			µg/L	30.0		108	0-200	0.494		
Surrogate: 1,2-Dichloroethane-d4	*20.7*			µg/L	25.0		82.9	70-130			
Surrogate: Toluene-d8	*24.5*			µg/L	25.0		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	*25.5*			µg/L	25.0		102	70-130			
Batch B301313 - SW-846 5035											
Blank (B301313-BLK1)					Prepared & Analyzed: 02/16/22						
Acetone	ND	50	2.0	µg/L							
Benzene	ND	1.0	0.20	µg/L							
Bromochloromethane	ND	1.0	0.31	µg/L							
Bromodichloromethane	ND	0.50	0.18	µg/L							
Bromoform	ND	1.0	0.38	µg/L							
Bromomethane	ND	2.0	1.5	µg/L							V-34
2-Butanone (MEK)	ND	20	1.6	µg/L							
Carbon Disulfide	ND	5.0	1.4	µg/L							
Carbon Tetrachloride	ND	5.0	0.16	µg/L							
Chlorobenzene	ND	1.0	0.11	µg/L							
Chlorodibromomethane	ND	0.50	0.22	µg/L							
Chloroethane	ND	2.0	0.32	µg/L							
Chloroform	ND	2.0	0.17	µg/L							
Chloromethane	ND	2.0	0.52	µg/L							V-05, V-34
Cyclohexane	ND	5.0	1.8	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	0.80	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	0.17	µg/L							
1,2-Dichlorobenzene	ND	1.0	0.12	µg/L							
1,3-Dichlorobenzene	ND	1.0	0.12	µg/L							
1,4-Dichlorobenzene	ND	1.0	0.13	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	0.19	µg/L							
1,1-Dichloroethane	ND	1.0	0.14	µg/L							

High bias, samples ND - no quals

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B301313 - SW-846 5035												
Blank (B301313-BLK1)					Prepared & Analyzed: 02/16/22							
1,2-Dichloroethane	ND	1.0	0.31	µg/L								
1,1-Dichloroethylene	ND	1.0	0.14	µg/L								
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L								
trans-1,2-Dichloroethylene	ND	1.0	0.17	µg/L								
1,2-Dichloropropane	ND	1.0	0.18	µg/L								
cis-1,3-Dichloropropene	ND	0.50	0.16	µg/L								
trans-1,3-Dichloropropene	ND	0.50	0.17	µg/L								
1,4-Dioxane	ND	50	21	µg/L								
Ethylbenzene	ND	1.0	0.21	µg/L								
2-Hexanone (MBK)	ND	10	1.1	µg/L								
Isopropylbenzene (Cumene)	ND	1.0	0.11	µg/L								
Methyl Acetate	ND	1.0	0.45	µg/L								
Methyl tert-Butyl Ether (MTBE)	ND	1.0	0.17	µg/L								
Methyl Cyclohexane	ND	1.0	0.24	µg/L								
Methylene Chloride	ND	5.0	0.23	µg/L								
4-Methyl-2-pentanone (MIBK)	ND	10	1.3	µg/L								
Styrene	ND	1.0	0.11	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L								
Tetrachloroethylene	ND	1.0	0.19	µg/L								
Toluene	ND	1.0	0.22	µg/L								
1,2,3-Trichlorobenzene	ND	5.0	0.30	µg/L							V-05	
1,2,4-Trichlorobenzene	ND	1.0	0.25	µg/L								
1,1,1-Trichloroethane	ND	1.0	0.17	µg/L								
1,1,2-Trichloroethane	ND	1.0	0.18	µg/L								
Trichloroethylene	ND	1.0	0.19	µg/L								
Trichlorofluoromethane (Freon 11)	ND	2.0	0.18	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	0.23	µg/L								
Vinyl Chloride	ND	2.0	0.21	µg/L								
m+p Xylene	ND	2.0	0.46	µg/L								
o-Xylene	ND	1.0	0.23	µg/L								
Xylenes (total)	0.0			µg/L								
Surrogate: 1,2-Dichloroethane-d4	*23.0*			µg/L	25.0		92.1	70-130				
Surrogate: Toluene-d8	*23.8*			µg/L	25.0		95.1	70-130				
Surrogate: 4-Bromofluorobenzene	*24.7*			µg/L	25.0		98.7	70-130				
LCS (B301313-BS1) Associated with samples 1RE, 2RE, 7RE, 8RE					Prepared & Analyzed: 02/16/22							
Acetone Only reanalyzed for tetrachloroethylene	107	50	2.0	µg/L	100		107	70-160				†
Benzene	10.4	1.0	0.20	µg/L	10.0		104	70-130				
Bromochloromethane	12.4	1.0	0.31	µg/L	10.0		124	70-130			V-20	
Bromodichloromethane	10.7	0.50	0.18	µg/L	10.0		107	70-130				
Bromoform	10.9	1.0	0.38	µg/L	10.0		109	70-130				
Bromomethane Not reanalyzed - no quals	21.8	2.0	1.5	µg/L	10.0		**218**	* 40-160			L-02, V-20, V-34	†
2-Butanone (MEK)	99.1	20	1.6	µg/L	100		99.1	40-160				†
Carbon Disulfide	101	5.0	1.4	µg/L	100		101	70-130				
Carbon Tetrachloride	11.4	5.0	0.16	µg/L	10.0		114	70-130				
Chlorobenzene	10.6	1.0	0.11	µg/L	10.0		106	70-130				
Chlorodibromomethane	11.0	0.50	0.22	µg/L	10.0		110	70-130				
Chloroethane	11.7	2.0	0.32	µg/L	10.0		117	70-130				
Chloroform	11.1	2.0	0.17	µg/L	10.0		111	70-130				

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B301313 - SW-846 5035													
LCS Dup (B301313-BSD1) Associated with samples 1RE, 2RE, 7RE, 8RE					Prepared & Analyzed: 02/16/22				70-130				
Acetone Only reanalyzed for tetrachloroethylene	111	50	2.0	µg/L	100		111		70-160	3.37	25		†
Benzene	10.7	1.0	0.20	µg/L	10.0		107		70-130	2.84	25		
Bromochloromethane	12.6	1.0	0.31	µg/L	10.0		126		70-130	0.961	25	V-20	
Bromodichloromethane	11.2	0.50	0.18	µg/L	10.0		112		70-130	4.49	25		
Bromoform	11.0	1.0	0.38	µg/L	10.0		110		70-130	0.183	25		
Bromomethane Not reanalyzed - no quals	22.7	2.0	1.5	µg/L	10.0		**227**	*	40-160	4.13	25	L-02, V-20, V-34	†
2-Butanone (MEK)	103	20	1.6	µg/L	100		103		40-160	3.62	25		†
Carbon Disulfide	102	5.0	1.4	µg/L	100		102		70-130	1.12	25		
Carbon Tetrachloride	11.5	5.0	0.16	µg/L	10.0		115		70-130	1.22	25		
Chlorobenzene	10.8	1.0	0.11	µg/L	10.0		108		70-130	1.87	25		
Chlorodibromomethane	11.3	0.50	0.22	µg/L	10.0		113		70-130	2.51	25		
Chloroethane	12.4	2.0	0.32	µg/L	10.0		124		70-130	5.74	25		
Chloroform	11.0	2.0	0.17	µg/L	10.0		110		70-130	1.09	25		
Chloromethane Not reanalyzed - no quals	4.82	2.0	0.52	µg/L	10.0		48.2		40-160	3.38	25	V-05, V-34	†
Cyclohexane	11.6	5.0	1.8	µg/L	10.0		116		70-130	2.70	25		
1,2-Dibromo-3-chloropropane (DBCP)	8.70	5.0	0.80	µg/L	10.0		87.0		70-130	3.27	25		
1,2-Dibromoethane (EDB)	11.0	0.50	0.17	µg/L	10.0		110		70-130	4.36	25		
1,2-Dichlorobenzene	9.83	1.0	0.12	µg/L	10.0		98.3		70-130	0.406	25		
1,3-Dichlorobenzene	9.92	1.0	0.12	µg/L	10.0		99.2		70-130	0.708	25		
1,4-Dichlorobenzene	9.87	1.0	0.13	µg/L	10.0		98.7		70-130	0.807	25		
Dichlorodifluoromethane (Freon 12)	10.0	2.0	0.19	µg/L	10.0		100		40-160	2.73	25		†
1,1-Dichloroethane	11.3	1.0	0.14	µg/L	10.0		113		70-130	0.178	25		
1,2-Dichloroethane	11.7	1.0	0.31	µg/L	10.0		117		70-130	2.43	25		
1,1-Dichloroethylene	12.5	1.0	0.14	µg/L	10.0		125		70-130	2.02	25	V-20	
cis-1,2-Dichloroethylene	11.7	1.0	0.15	µg/L	10.0		117		70-130	0.428	25		
trans-1,2-Dichloroethylene	11.8	1.0	0.17	µg/L	10.0		118		70-130	1.84	25		
1,2-Dichloropropane	10.9	1.0	0.18	µg/L	10.0		109		70-130	0.914	25		
cis-1,3-Dichloropropene	10.0	0.50	0.16	µg/L	10.0		100		70-130	2.08	25		
trans-1,3-Dichloropropene	9.98	0.50	0.17	µg/L	10.0		99.8		70-130	2.13	25		
1,4-Dioxane	116	50	21	µg/L	100		116		40-130	11.2	50		† ‡
Ethylbenzene	10.4	1.0	0.21	µg/L	10.0		104		70-130	0.0959	25		
2-Hexanone (MBK)	104	10	1.1	µg/L	100		104		70-160	5.38	25		†
Isopropylbenzene (Cumene)	10.4	1.0	0.11	µg/L	10.0		104		70-130	1.26	25		
Methyl Acetate	8.77	1.0	0.45	µg/L	10.0		87.7		70-130	3.48	25		
Methyl tert-Butyl Ether (MTBE)	11.2	1.0	0.17	µg/L	10.0		112		70-130	1.89	25		
Methyl Cyclohexane	10.9	1.0	0.24	µg/L	10.0		109		70-130	2.50	25		
Methylene Chloride	11.2	5.0	0.23	µg/L	10.0		112		70-130	2.34	25		
4-Methyl-2-pentanone (MIBK)	108	10	1.3	µg/L	100		108		70-160	3.83	25		†
Styrene	10.7	1.0	0.11	µg/L	10.0		107		70-130	0.753	25		
1,1,2,2-Tetrachloroethane	9.97	0.50	0.13	µg/L	10.0		99.7		70-130	0.500	25		
Tetrachloroethylene	11.5	1.0	0.19	µg/L	10.0		115		70-130	0.00	25		
Toluene	10.8	1.0	0.22	µg/L	10.0		108		70-130	1.22	25		
1,2,3-Trichlorobenzene	8.26	5.0	0.30	µg/L	10.0		82.6		70-130	6.37	25	V-05	
1,2,4-Trichlorobenzene	8.85	1.0	0.25	µg/L	10.0		88.5		70-130	1.59	25		
1,1,1-Trichloroethane	11.5	1.0	0.17	µg/L	10.0		115		70-130	3.90	25		
1,1,2-Trichloroethane	10.7	1.0	0.18	µg/L	10.0		107		70-130	3.32	25		
Trichloroethylene	11.2	1.0	0.19	µg/L	10.0		112		70-130	3.45	25		
Trichlorofluoromethane (Freon 11)	10.7	2.0	0.18	µg/L	10.0		107		70-130	2.28	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) Not reanalyzed - no quals	13.2	1.0	0.23	µg/L	10.0		**132**	*	70-130	2.22	25	L-07, V-20	

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B298943 - SW-846 5030B												
Blank (B298943-BLK1)					Prepared & Analyzed: 01/14/22							
Benzene	ND	1.0	0.13	µg/L								
n-Butylbenzene	ND	1.0	0.14	µg/L								
sec-Butylbenzene	ND	1.0	0.10	µg/L								
tert-Butylbenzene	ND	1.0	0.090	µg/L								
Ethylbenzene	ND	1.0	0.090	µg/L								
Isopropylbenzene (Cumene)	ND	1.0	0.10	µg/L								
p-Isopropyltoluene (p-Cymene)	ND	1.0	0.090	µg/L								
Methyl tert-Butyl Ether (MTBE)	ND	1.0	0.17	µg/L								
Naphthalene	ND	2.0	0.15	µg/L							V-05	
n-Propylbenzene	ND	1.0	0.080	µg/L								
Toluene	ND	1.0	0.11	µg/L								
1,2,4-Trimethylbenzene	ND	1.0	0.10	µg/L								
1,3,5-Trimethylbenzene	ND	1.0	0.10	µg/L								
m+p Xylene	ND	2.0	0.18	µg/L								
o-Xylene	ND	1.0	0.090	µg/L								
Surrogate: 1,2-Dichloroethane-d4	*20.9*			µg/L	25.0		83.4	70-130				
Surrogate: Toluene-d8	*24.0*			µg/L	25.0		96.1	70-130				
Surrogate: 4-Bromofluorobenzene	*25.7*			µg/L	25.0		103	70-130				
LCS (B298943-BS1)					Prepared & Analyzed: 01/14/22							
Benzene	9.63	1.0	0.13	µg/L	10.0		96.3	70-130				
n-Butylbenzene	8.70	1.0	0.14	µg/L	10.0		87.0	70-130				
sec-Butylbenzene	9.68	1.0	0.10	µg/L	10.0		96.8	70-130				
tert-Butylbenzene	10.6	1.0	0.090	µg/L	10.0		106	70-130				
Ethylbenzene	10.7	1.0	0.090	µg/L	10.0		107	70-130				
Isopropylbenzene (Cumene)	11.2	1.0	0.10	µg/L	10.0		112	70-130				
p-Isopropyltoluene (p-Cymene)	10.3	1.0	0.090	µg/L	10.0		103	70-130				
Methyl tert-Butyl Ether (MTBE)	9.44	1.0	0.17	µg/L	10.0		94.4	70-130				
Naphthalene	8.51	2.0	0.15	µg/L	10.0		85.1	40-130			V-05	†
n-Propylbenzene	10.4	1.0	0.080	µg/L	10.0		104	70-130				
Toluene	10.3	1.0	0.11	µg/L	10.0		103	70-130				
1,2,4-Trimethylbenzene	9.89	1.0	0.10	µg/L	10.0		98.9	70-130				
1,3,5-Trimethylbenzene	11.0	1.0	0.10	µg/L	10.0		110	70-130				
m+p Xylene	21.9	2.0	0.18	µg/L	20.0		109	70-130				
o-Xylene	10.6	1.0	0.090	µg/L	10.0		106	70-130				
Surrogate: 1,2-Dichloroethane-d4	*19.9*			µg/L	25.0		79.6	70-130				
Surrogate: Toluene-d8	*24.4*			µg/L	25.0		97.6	70-130				
Surrogate: 4-Bromofluorobenzene	*25.2*			µg/L	25.0		101	70-130				
LCS Dup (B298943-BSD1)					Prepared & Analyzed: 01/14/22							
Benzene	9.77	1.0	0.13	µg/L	10.0		97.7	70-130	1.44	25		
n-Butylbenzene	8.47	1.0	0.14	µg/L	10.0		84.7	70-130	2.68	25		
sec-Butylbenzene	9.35	1.0	0.10	µg/L	10.0		93.5	70-130	3.47	25		
tert-Butylbenzene	10.4	1.0	0.090	µg/L	10.0		104	70-130	2.48	25		
Ethylbenzene	10.7	1.0	0.090	µg/L	10.0		107	70-130	0.374	25		
Isopropylbenzene (Cumene)	11.1	1.0	0.10	µg/L	10.0		111	70-130	0.538	25		
p-Isopropyltoluene (p-Cymene)	10.1	1.0	0.090	µg/L	10.0		101	70-130	2.15	25		
Methyl tert-Butyl Ether (MTBE)	9.57	1.0	0.17	µg/L	10.0		95.7	70-130	1.37	25		
Naphthalene	8.01	2.0	0.15	µg/L	10.0		80.1	40-130	6.05	25	V-05	†
n-Propylbenzene	10.4	1.0	0.080	µg/L	10.0		104	70-130	0.0960	25		

waters 80-120 limits - no quals
lab QC sample

GTD 3/9/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result		%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B301294 - SW-846 5035													
LCS (B301294-BS1)					Prepared & Analyzed: 01/14/22								
Toluene	10.3	1.0	0.22	µg/L	10.0			103	70-130				
1,2,3-Trichlorobenzene	9.20	5.0	0.30	µg/L	10.0			92.0	70-130				
1,2,4-Trichlorobenzene	10.0	1.0	0.25	µg/L	10.0			100	70-130				
1,1,1-Trichloroethane	9.18	1.0	0.17	µg/L	10.0			91.8	70-130				
1,1,2-Trichloroethane	10.8	1.0	0.18	µg/L	10.0			108	70-130				
Trichloroethylene	10.8	1.0	0.19	µg/L	10.0			108	70-130				
Trichlorofluoromethane (Freon 11)	8.67	2.0	0.18	µg/L	10.0			86.7	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.4	1.0	0.23	µg/L	10.0			104	70-130				
Vinyl Chloride	11.4	2.0	0.21	µg/L	10.0			114	40-160				†
m+p Xylene	21.9	2.0	0.46	µg/L	20.0			109	70-130				
o-Xylene	10.6	1.0	0.23	µg/L	10.0			106	70-130				
Xylenes (total)	32.4			µg/L	30.0			108	0-200				
Surrogate: 1,2-Dichloroethane-d4	*19.9*			µg/L	25.0			79.6	70-130			waters 80-120 limits - no quals lab QC sample	
Surrogate: Toluene-d8	*24.4*			µg/L	25.0			97.6	70-130				
Surrogate: 4-Bromofluorobenzene	*25.2*			µg/L	25.0			101	70-130				
LCS Dup (B301294-BSD1)					Prepared & Analyzed: 01/14/22							GTD 3/9/2022	
Acetone	111	50	2.0	µg/L	100			111	70-160	0.406	25		†
Benzene	9.77	1.0	0.20	µg/L	10.0			97.7	70-130	1.44	25		
Bromochloromethane	12.0	1.0	0.31	µg/L	10.0			120	70-130	2.28	25		
Bromodichloromethane	9.77	0.50	0.18	µg/L	10.0			97.7	70-130	3.12	25		
Bromoform	11.0	1.0	0.38	µg/L	10.0			110	70-130	1.84	25		
Bromomethane	16.1	2.0	1.5	µg/L	10.0			**161**	40-160	6.88	25	V-34, L-02, V-20	†
2-Butanone (MEK)	115	20	1.6	µg/L	100			115	40-160	1.00	25		†
Carbon Disulfide	85.3	5.0	1.4	µg/L	100			85.3	70-130	1.63	25		
Carbon Tetrachloride	9.75	5.0	0.16	µg/L	10.0			97.5	70-130	1.13	25		
Chlorobenzene	11.4	1.0	0.11	µg/L	10.0			114	70-130	0.523	25		
Chlorodibromomethane	11.3	0.50	0.22	µg/L	10.0			113	70-130	0.531	25		
Chloroethane	11.3	2.0	0.32	µg/L	10.0			113	70-130	6.32	25		
Chloroform	9.07	2.0	0.17	µg/L	10.0			90.7	70-130	4.51	25		
Chloromethane	6.12	2.0	0.52	µg/L	10.0			61.2	40-160	0.976	25	V-05, V-34	†
Cyclohexane	13.1	5.0	1.8	µg/L	10.0			**131**	70-130	2.24	25		
1,2-Dibromo-3-chloropropane (DBCP)	7.66	5.0	0.80	µg/L	10.0			76.6	70-130	15.5	25	V-05	
1,2-Dibromoethane (EDB)	10.2	0.50	0.17	µg/L	10.0			102	70-130	3.28	25		
1,2-Dichlorobenzene	10.3	1.0	0.12	µg/L	10.0			103	70-130	3.26	25		
1,3-Dichlorobenzene	10.6	1.0	0.12	µg/L	10.0			106	70-130	0.0946	25		
1,4-Dichlorobenzene	10.1	1.0	0.13	µg/L	10.0			101	70-130	3.78	25		
Dichlorodifluoromethane (Freon 12)	9.50	2.0	0.19	µg/L	10.0			95.0	40-160	4.52	25		†
1,1-Dichloroethane	11.3	1.0	0.14	µg/L	10.0			113	70-130	0.801	25		
1,2-Dichloroethane	11.2	1.0	0.31	µg/L	10.0			112	70-130	2.26	25		
1,1-Dichloroethylene	11.5	1.0	0.14	µg/L	10.0			115	70-130	2.57	25		
cis-1,2-Dichloroethylene	11.5	1.0	0.15	µg/L	10.0			115	70-130	0.696	25		
trans-1,2-Dichloroethylene	12.1	1.0	0.17	µg/L	10.0			121	70-130	1.15	25		
1,2-Dichloropropane	12.7	1.0	0.18	µg/L	10.0			127	70-130	0.554	25	V-20	
cis-1,3-Dichloropropene	10.0	0.50	0.16	µg/L	10.0			100	70-130	1.98	25		
trans-1,3-Dichloropropene	9.91	0.50	0.17	µg/L	10.0			99.1	70-130	1.53	25		
1,4-Dioxane	102	50	21	µg/L	100			102	40-130	3.49	50		† ‡
Ethylbenzene	10.7	1.0	0.21	µg/L	10.0			107	70-130	0.374	25		
2-Hexanone (MBK)	124	10	1.1	µg/L	100			124	70-160	3.29	25	V-20	†

RPD <100 - within limits

Sample ID: 360175-HA001001 / 360175-HA001001D

Compound	Result	LabQual	Dup	LabQual	RPD
Tetrachloroethylene	3.4		4.7		32.1
Trichloroethylene	0.0013		0.0011		16.7

GTD 3/9/2022

Response Factor Report GCMSVOA2

Method Path : Y:\1\METHODS\
Method File : B060920W.M
Title : 8260 CALIBRATION VOAMS 5973
Last Update : Wed Jun 10 07:48:28 2020
Response Via : Initial Calibration

Calibration Files
0.4 =B2016110.D 0.5 =B2016111.D 1.0 =B2016112.D 2.0 =B2016113.D 5.0 =B2016114.D 10 =B2016115.D 20 =B2016116.D
50 =B2016117.D 100 =B2016118.D 200 =B2016119.D

		Compound	0.4	0.5	1.0	2.0	5.0	10	20	50	100	200	Avg	%RSD
1)	I	PENTAFLUOROBENZENE...	ISTD											
2)	S	1,2-DICHLOROET...	0.796	0.799	0.793	0.775	0.787	0.776	0.775	0.756	0.745	0.729	0.773	2.98
3)	T	DICHLORODIFLOU...		0.635	0.632	0.669	0.680	0.646	0.656	0.514	0.505		0.617	11.06
4)		DIFLUOROCHLORO...	1.064	0.925	0.882	0.890	0.854	0.834	0.831	0.698	0.691		0.852	13.35
5)	P	CHLOROMETHANE	2.253	2.009	1.882	2.109	2.070	1.894	1.645	1.137			1.875	18.61
6)	C	VINYL CHLORIDE	0.815	0.752	0.732	0.756	0.733	0.731	0.711	0.621	0.619	0.534	0.700	11.93#
7)	T	BROMOMETHANE					0.132	0.139	0.112	0.173	0.200	0.200	0.159	23.41
8)		CHLOROETHANE	0.495	0.377	0.422	0.408	0.392	0.366	0.353	0.324	0.318		0.384	14.19
9)		FLUORODICHLORO...	1.090	1.035	0.988	0.985	0.993	0.966	0.959	0.905	0.902	0.798	0.962	8.32
10)	T	TRICHLOROFLUOR...	0.817	0.807	0.816	0.852	0.824	0.834	0.786	0.769	0.777	0.661	0.794	6.75
11)		ETHANOL					0.009	0.009	0.007	0.012	0.011	0.011	0.010	18.87
12)	T	DI ETHYL ETHER		0.418	0.411	0.435	0.398	0.404	0.421	0.397	0.394	0.365	0.405	4.91
13)		ACROLEIN		0.180	0.159	0.151	0.145	0.142	0.141	0.119	0.112		0.143	14.97
14)	T	ACETONE			0.262	0.241	0.209	0.213	0.208	0.199	0.192	0.178	0.213	12.63
15)	C	1,1-DICHLOROET...	0.805	0.805	0.845	0.821	0.849	0.833	0.835	0.775	0.769	0.664	0.800	6.87#
16)		1,1,2-TRICL-1,...	0.339	0.376	0.366	0.421	0.434	0.413	0.413	0.386	0.386	0.318	0.385	9.63
17)		IODOMETHANE	0.095	0.093	0.110	0.154	0.197	0.272	0.365	0.456	0.453	0.430	0.262	58.00
18)		METHYL ACETATE			0.840	0.821	0.620	0.638	0.625	0.614	0.644	0.585	0.674	14.67
19)		T-BUTYL ALCOHOL			0.066	0.081	0.076	0.071	0.076	0.077	0.075	0.075	0.075	5.87
20)		ACRYLONITRILE		0.200	0.221	0.240	0.234	0.244	0.254	0.243	0.243	0.232	0.234	6.78
21)	T	METHYLENE CHLO...	0.944	0.937	0.932	0.939	0.886	0.883	0.855	0.802	0.811	0.744	0.873	7.92
22)		CARBON DISULFIDE	1.409	1.363	1.317	1.397	1.378	1.365	1.315	1.123	1.119	0.924	1.271	12.68
23)	T	METHYL TERT-BU...	1.238	1.277	1.218	1.304	1.222	1.263	1.235	1.207	1.219	1.150	1.233	3.42
24)	T	TRANS 1,2-DICH...	0.766	0.752	0.718	0.800	0.799	0.800	0.792	0.742	0.748	0.675	0.759	5.41
25)	P	1,1-DICHLOROET...	0.974	1.003	0.901	0.950	0.945	0.963	0.960	0.913	0.916	0.838	0.936	4.95
26)		VINYL ACETATE	1.718	1.750	1.690	1.749	1.648	1.658	1.626	1.465	1.259	1.100	1.566	14.22
27)		DI ISOPROPYL E...	2.148	2.371	2.055	2.185	2.041	2.073	1.997	1.959	1.914	1.729	2.047	8.36
28)	T	2-BUTANONE	0.389	0.374	0.355	0.349	0.316	0.319	0.323	0.310	0.300	0.282	0.332	10.26
29)		T-BUTYL ETHYL ...	1.790	1.734	1.737	1.816	1.732	1.755	1.752	1.706	1.691	1.572	1.729	3.81 ✓
30)	T	CIS-1,2-DICHLO...	0.903	0.881	0.883	0.969	0.940	0.928	0.931	0.877	0.886	0.806	0.901 ✓	5.00 ✓
31)		2,2-DICHLOROPR...	0.745	0.808	0.742	0.774	0.754	0.727	0.725	0.690	0.694	0.622	0.728	7.03
32)		ETHYL ACETATE				0.805	0.728	0.760	0.731	0.724	0.698	0.651	0.728	6.62
33)		BROMOCHLOROMET...		0.156	0.204	0.221	0.216	0.222	0.220	0.204	0.170	0.152	0.196	14.58
34)	T	TETRAHYDROFURAN				0.259	0.210	0.213	0.201	0.199	0.196	0.183	0.209	11.60
35)		T-BUTYL FORMATE	0.475	0.555	0.508	0.593	0.536	0.534	0.536	0.543	0.522	0.533	0.534	5.69
36)	C	CHLOROFORM	0.859	0.885	0.837	0.887	0.847	0.849	0.858	0.827	0.828	0.766	0.844	4.08#
37)	T	1,1,1-TRICHLOR...	0.732	0.691	0.779	0.774	0.803	0.772	0.795	0.760	0.771	0.699	0.758	5.06
38)		CYCLOHEXANE					1.374	1.246	1.219	1.064	1.061	0.895	1.143	14.85
39)	T	CARBON TETRACH...	0.701	0.673	0.679	0.687	0.700	0.699	0.699	0.680	0.697	0.609	0.682	4.08
40)		1,1-DICHLOROPR...	0.642	0.598	0.665	0.702	0.694	0.688	0.696	0.640	0.654	0.578	0.656	6.45
41)	T	BENZENE	2.071	1.974	1.812	1.939	1.804	1.807	1.818	1.698	1.707	1.546	1.818	8.28
42)		T-AMYL ALCOHOL		0.049	0.051	0.056	0.052	0.055	0.056	0.058	0.057	0.063	0.055	7.71
43)		T-AMYLMETHYL E...	1.301	1.201	1.266	1.316	1.234	1.273	1.268	1.276	1.270	1.181	1.258	3.33

GTD 4/28/2022

349

Quantitation Report (QT Reviewed)

385

Data Path : \\Voa2\MSDChem\1\DATA\B060920\
Data File : B2016112.D
Acq On : 9 Jun 2020 10:12 am
Operator :
Sample : 8260 STD 1.0 PPB 2006068 Inst : GCMSVOA2
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 09 10:44:05 2020
Quant Method : C:\MSDCHEM\1\METHODS\B042720W.M
Quant Title : 8260 CALIBRATION VOAMS 5973
QLast Update : Tue Apr 28 08:24:11 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE - ISTD	4.287	168	92992	30.00	UG/L		0.00
44) 1,4-DIFLOUROBENZENE - ...	5.006	114	153151	30.00	UG/L		0.00
65) CHLOROBENZENE-D5 ISTD	7.839	82	83588	30.00	UG/L		0.00
84) 1,4-DICHLOROBENZENE-D4...	10.136	152	85042	30.00	UG/L		0.00
System Monitoring Compounds							
2) 1,2-DICHLOROETHANE-D4 SS	4.571	65	61418	26.97	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 107.88%				
45) TOLUENE-D8 SS	6.438	98	158673	25.63	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 102.52%				
66) 4-BROMOFLUROBENZENE SS	8.999	95	64304	24.83	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 99.32%				
Target Compounds							Qvalue
3) DICHLORODIFLOUROMETHANE	1.129	85	1958	0.92	UG/L		99
4) DIFLUOROCHLOROMETHANE	1.138	51	2734	0.69	UG/L	#	84
5) CHLOROMETHANE	1.243	50	5834	1.02	UG/L		97
6) VINYL CHLORIDE	1.308	62	2269	0.83	UG/L		92
8) CHLOROETHANE	1.578	64	1307	1.05	UG/L		97
9) FLUORODICHLOROMETHANE	1.701	67	3062	1.14	UG/L		91
10) TRICHLOROFLUOROMETHANE	1.732	101	2528	1.00	UG/L		97
12) DI ETHYL ETHER	1.928	59	1273	0.75	UG/L	#	80
13) ACROLEIN	2.036	56	4923	8.42	UG/L	#	95
14) ACETONE	2.150	43	8109m	9.02	UG/L		
15) 1,1-DICHLOROETHENE	2.096	61	2619	0.91	UG/L	#	91
16) 1,1,2-TRICL-1,2,2-TRIF...	2.090	101	1135	0.97	UG/L		96
17) IODOMETHANE	2.218	142	3407	1.76	UG/L		98
18) METHYL ACETATE	2.405	43	2605	0.85	UG/L	#	87
19) T-BUTYL ALCOHOL	2.607	59	2050	6.49	UG/L	#	58
20) ACRYLONITRILE	2.727	53	685	0.57	UG/L	#	78
21) METHYLENE CHLORIDE	2.491	49	2888	0.73	UG/L	#	76
22) CARBON DISULFIDE	2.266	76	40825	10.57	UG/L		100
23) METHYL TERT-BUTYL ETHE...	2.724	73	3777	0.97	UG/L	#	84
24) TRANS 1,2-DICHLOROETHENE	2.724	61	2227	0.78	UG/L	#	63
25) 1,1-DICHLOROETHANE	3.153	63	2793	0.83	UG/L	#	92
26) VINYL ACETATE	3.213	43	52376	7.66	UG/L	#	96
27) DI ISOPROPYL ETHER	3.215	45	6370	0.66	UG/L	#	68
28) 2-BUTANONE	3.781	43	11017	7.44	UG/L	#	93
29) T-BUTYL ETHYL ETHER	3.588	59	5385	0.74	UG/L	#	94
30) CIS-1,2-DICHLOROETHENE	3.744	61	2738	0.81	UG/L	#	86
31) 2,2-DICHLOROPROPANE	3.733	77	2299	1.10	UG/L	#	80
33) BROMOCHLOROMETHANE	3.986	128	631	0.99	UG/L	#	68
35) T-BUTYL FORMATE	4.133	59	1575	0.70	UG/L	#	85
36) CHLOROFORM	4.082	83	2595	1.05	UG/L		94
37) 1,1,1-TRICHLOROETHANE	4.239	97	2414	1.06	UG/L	#	79
38) CYCLOHEXANE	4.281	56	6375	1.20	UG/L	#	74
39) CARBON TETRACHLORIDE	4.398	117	2104	1.01	UG/L		87
40) 1,1-DICHLOROPROPENE	4.409	75	2061	1.08	UG/L		96
41) BENZENE	4.608	78	5617	1.06	UG/L		96
42) T-AMYL ALCOHOL	4.665	59	1581	6.78	UG/L	#	63
43) T-AMYLMETHYL ETHER	4.727	73	3924	1.00	UG/L		88
46) 1,2-DICHLOROETHANE	4.645	62	2418	0.76	UG/L	#	89
47) TRICHLOROETHENE	5.250	95	1426	0.93	UG/L		98
48) METHYLCYCLOHEXANE	5.412	83	2625	0.96	UG/L	#	79
49) 1,2-DICHLOROPROPANE	5.478	63	1669	0.78	UG/L		89
50) DIBROMOMETHANE	5.591	93	896	0.89	UG/L		93
52) BROMODICHLOROMETHANE	5.756	83	1859	0.85	UG/L	#	91

GTD 4/28/2022

Quantitation Report (QT Reviewed)

Data Path : \\Voa2\MSDChem\1\DATA\B011422\
Data File : B22V011433.D
Acq On : 14 Jan 2022 9:12 pm
Operator :
Sample : 22A0721-07 Inst : GCMSVOA2
Misc :
ALS Vial : 33 Sample Multiplier: 1

Quant Time: Jan 17 11:51:51 2022
Quant Method : C:\MSDCHEM\1\METHODS\B060920W.M
Quant Title : 8260 CALIBRATION VOAMS 5973
QLast Update : Thu Dec 30 11:16:32 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE - ISTD	4.281	168	78243	30.00	UG/L	0.00
44) 1,4-DIFLOUROBENZENE - ...	4.997	114	112328	30.00	UG/L	0.00
65) CHLOROBENZENE-D5 ISTD	7.831	82	59654	30.00	UG/L	0.00
84) 1,4-DICHLOROBENZENE-D4...	10.127	152	66459	30.00	UG/L	-0.01
System Monitoring Compounds						
2) 1,2-DICHLOROETHANE-D4 SS	4.560	65	40655	20.16	UG/L	-0.01
Spiked Amount 25.000	Range 70 - 130		Recovery = 80.64%			
45) TOLUENE-D8 SS	6.430	98	113441	24.16	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 96.64%			
66) 4-BROMOFLUROBENZENE SS	8.990	95	46781	25.27	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 101.08%			
Target Compounds						Qvalue
24) TRANS 1,2-DICHLOROETHENE	2.721	61	1989	1.00	UG/L	89
30) CIS-1,2-DICHLOROETHENE	3.741	61	11398 ✓	4.85	UG/L	97
47) TRICHLOROETHENE	5.242	95	8952	8.21	UG/L	92
61) TETRACHLOROETHENE	7.015	164	112102	118.42	UG/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

GTD 4/28/2022

DUSR Calculations Sheet

Sample ID: 360175-GW002-15
TC: cis-1,2-dichloroethylene
ICAL Level: 3
Val File Result for TC: 4.8 ug/L

Ical Calc

Area TC	2738	**1**	0.903
Area IS	92992	**2**	0.881
		3	0.883
Conc TC	1	**4**	0.969
Conc IS	30	**5**	0.94
		6	0.928
RRF =	0.883302	**7**	0.931
		8	0.877
		9	0.886
		10	0.806
		Avg RRF =	0.9004
		Std Dev =	0.045123
		%RSD =	5.011389

Sample Calc

Area TC	11398	**DF**	1
Area IS	78243		
Conc IS	30		
Avg RRF	0.9004		
Conc TC =	4.853655 µg/L	Conc TC =	4.853655

Notes:
Green = matched reported value
Red = did not match reported value

GTD 4/28/2022

Method Path : M:\1\methods\
Method File : GS012422.M
Title : 8260 SIM/SCAN 09/21/18

44)	T	Carbon tetrach...	0.411	0.453	0.330	0.403	0.447	0.423	0.435	0.515	0.492	0.499	0.441	12.30
45)	T	1,1-Dichloropr...	0.426	0.510	0.346	0.441	0.467	0.421	0.429	0.488	0.454	0.447	0.443	9.96
46)	T	Benzene	1.458	1.718	1.166	1.312	1.341	1.232	1.230	1.380	1.276	1.252	1.337	11.83
47)		t-Amyl alcohol											0.000	-1.00
48)	T	T-AMYLMETHYL E...	0.892	0.991	0.872	0.918	0.959	0.888	0.904	1.033	0.963	0.964	0.938	5.50
49)	I	1,4-Difluorobenzen...	----------ISTD----------											
50)	S	Toluene SS	1.152	1.158	1.143	1.137	1.134	1.133	1.129	1.182	1.181	1.196	1.155	2.09
51)	T	1,2-Dichloroet...	0.282	0.292	0.256	0.257	0.267	0.254	0.258	0.294	0.275	0.270	0.271	5.49
52)	T	Methyl methacr...											0.000	-1.00
53)	T	Trichloroethene	0.166	0.208	0.153	0.187	0.202	0.183	0.189	0.218	0.204	0.200	0.191	10.40
54)	T	Methylcyclohexane	0.243	0.299	0.197	0.254	0.275	0.251	0.253	0.288	0.271	0.256	0.259	10.83
55)	C	1,2-Dichloropr...	0.216	0.243	0.195	0.213	0.214	0.199	0.200	0.223	0.208	0.197	0.211	6.92#
56)	T	Dibromomethane	0.106	0.106	0.101	0.107	0.113	0.103	0.109	0.123	0.115	0.114	0.110	6.18
57)	T	1,4-Dioxane					0.002	0.002	0.002	0.003	0.003	0.003	0.003	9.55
58)	T	Bromodichlorom...	0.232	0.260	0.222	0.232	0.248	0.238	0.246	0.287	0.272	0.269	0.251	8.30
59)	T	2-Chloroethyl ...											0.000	-1.00
60)	T	MIBK	0.233	0.230	0.220	0.223	0.221	0.214	0.216	0.234	0.189		0.220	6.22
61)	T	cis-1,3-Dichlo...	0.279	0.309	0.288	0.289	0.311	0.288	0.296	0.317	0.300	0.305	0.298	4.12
62)	C	Toluene	0.939	1.037	0.724	0.813	0.801	0.742	0.740	0.870	0.839	0.806	0.831	11.68#
63)	T	trans-1,3-Dich...	0.228	0.247	0.231	0.244	0.260	0.251	0.261	0.289	0.261	0.263	0.254	6.94
64)	T	Ethyl methacry...											0.000	-1.00
65)	T	1,1,2-Trichlor...	0.155	0.165	0.148	0.153	0.161	0.149	0.158	0.178	0.165	0.163	0.159	5.63
66)	T	2-Hexanone (MBK)		0.165	0.156	0.166	0.163	0.157	0.156	0.170	0.137	0.114	0.154	11.46
67)	T	Tetrachloroethene	0.172	0.245	0.175	0.209	0.227	0.212	0.216	0.245	0.223	0.208	0.213	11.59
68)	T	1,3-Dichloropr...	0.266	0.284	0.266	0.279	0.285	0.268	0.271	0.300	0.271	0.255	0.274	4.63
69)	T	Dibromochlorom...	0.183	0.178	0.169	0.181	0.189	0.184	0.193	0.228	0.212	0.214	0.193	9.73
70)	T	1,2-Dibromoethane	0.159	0.161	0.150	0.155	0.165	0.154	0.160	0.184	0.167	0.166	0.162	5.83
71)	I	Chlorobenzene-d5 ...	----------ISTD----------											
72)	S	4-Bromofluorob...	0.907	0.909	0.917	0.911	0.906	0.899	0.898	0.884	0.885	0.865	0.898	1.77
73)	T	Chlorobenzene	1.074	1.258	1.000	1.141	1.176	1.100	1.130	1.254	1.165	1.099	1.140	6.93
74)	T	1,1,1,2-Tetrac...	0.351	0.390	0.349	0.387	0.404	0.388	0.408	0.456	0.425	0.403	0.396	8.02
75)	C	Ethylbenzene	1.860	2.279	1.666	1.996	2.006	1.896	1.934	2.115	1.926	1.783	1.946	8.76#
76)	T	m/p-Xylenes	1.569	1.812	1.376	1.582	1.577	1.500	1.511	1.626	1.458	1.305	1.532	9.13
77)	T	o-Xylene	1.559	1.817	1.453	1.596	1.622	1.521	1.546	1.691	1.536	1.409	1.575	7.41
78)	T	Styrene	1.290	1.431	1.172	1.267	1.301	1.228	1.226	1.335	1.196	1.072	1.252	7.82
79)	P	Bromoform	0.232	0.256	0.248	0.265	0.268	0.265	0.290	0.341	0.320	0.317	0.280	12.66
80)	T	Isopropylbenzene	1.842	2.186	1.653	1.968	2.062	1.925	1.943	2.177	1.996	1.830	1.958	8.27
81)	T	cis-1,4-Dichlo...											0.000	-1.00
82)	P	1,1,2,2-Tetrac...	0.448	0.491	0.449	0.480	0.455	0.441	0.459	0.508	0.442	0.399	0.457	6.67
83)	T	1,4-Dichloro-2...	0.152	0.167	0.150	0.154	0.164	0.161	0.173	0.198	0.176	0.166	0.166	8.50
84)	T	Bromobenzene	0.899	1.006	0.883	0.801	0.914	0.747	0.751	0.825	0.742	0.667	0.823	12.36
85)	T	1,2,3-Trichlor...	0.504	0.557	0.533	0.538	0.540	0.387	0.551	0.622	0.552	0.540	0.532	11.13
86)	T	n-Propylbenzene	2.150	2.561	1.971	2.331	2.402	2.230	2.230	2.453	2.175	1.879	2.238	9.39
87)	T	2-Chlorotoluene	1.251	1.524	1.190	1.324	1.360	1.274	1.288	1.420	1.277	1.138	1.305	8.49
88)	T	1,3,5-Trimethy...		1.772	1.446	1.643	1.677	1.572	1.585	1.737	1.544	1.383	1.595	8.02
89)	T	4-Chlorotoluene	1.634	1.832	1.499	1.648	1.648	1.532	1.543	1.674	1.493	1.340	1.584	8.41
90)	I	1,4-Dichlorobenzen...	----------ISTD----------											
91)	T	tert-Butylbenzene	1.399	1.667	1.225	1.482	1.570	1.458	1.503	1.753	1.691	1.713	1.546	10.67
92)	T	1,2,4-Trimethy...	1.611	1.837	1.525	1.644	1.686	1.600	1.608	1.864	1.781	1.795	1.695	6.86
93)	T	sec-Butylbenzene	1.926	2.259	1.749	2.083	2.191	2.062	2.116	2.464	2.353	2.354	2.156	10.01

GTD 4/28/2022

600

Quantitation Report (QT Reviewed)

Data Path : M:\1\data\G012422\
Data File : G22V024012.D
Acq On : 24 Jan 2022 10:03 am
Operator :
Sample : 8260 STD 1.0PPB Inst : GCMSVOA7
Misc :
ALS Vial : 12 Sample Multiplier: 1

619

Quant Time: Jan 24 10:25:34 2022
Quant Method : M:\1\methods\GS091521.M
Quant Title : 8260 SIM/SCAN 09/21/18
QLast Update : Fri Dec 03 12:41:03 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Pentafluorobenzene	5.723	168	714015	30.00	ug/L		0.00
49) 1,4-Difluorobenzene - ...	6.560	114	1228435	30.00	ug/L		0.00
71) Chlorobenzene-d5 ISTD	9.626	82	557828	30.00	ug/L		0.00
90) 1,4-Dichlorobenzene-d4...	11.980	152	558932	30.00	ug/L		0.00
System Monitoring Compounds							
2) 1,2-Dichloroethane-d4	6.013	65	339749	27.51	ug/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 110.04%				
50) Toluene SS	8.154	98	1169965	26.32	ug/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 105.28%				
72) 4-Bromofluorobenzene SS	10.817	95	426331	25.35	ug/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 101.40%				
Target Compounds							Qvalue
3) Dichlorodifluoromethane	1.292	85	9424	0.87	ug/L		91
4) Difluorochloromethane	1.308	51	13453	1.05	ug/L		94
5) Chloromethane	1.439	50	14942	1.35	ug/L		71
6) Vinyl chloride	1.536	62	9606	0.96	ug/L		96
7) Bromomethane	1.804	94	8462m	2.43	ug/L		
8) Chloroethane	1.901	64	4899	1.17	ug/L		89
9) Ethanol	2.347	45	1384	13.07	ug/L	#	54
10) Fluorodichloromethane	2.088	67	12984	0.95	ug/L		98
11) Trichlorofluoromethane	2.144	101	11018	0.77	ug/L		94
12) Diethyl ether	2.438	59	8371	1.13	ug/L		81
14) Acetone	2.722	43	38669	13.37	ug/L		96
15) 1,1-Dichloroethene	2.656	61	13492	0.83	ug/L		94
16) 1,1,2-TRICL-1,2,2-TRIF...	2.671	101	7524	0.76	ug/L		91
17) Iodomethane	2.805	142	87201	9.46	ug/L		94
19) Methyl acetate	3.115	43	8047	0.92	ug/L		85
20) t-Butyl alcohol	3.425	59	12901	18.17	ug/L	#	42
21) Acrylonitrile	3.525	53	3477	1.32	ug/L	#	76
22) Methylene chloride	3.206	49	13214	1.33	ug/L	#	71
23) Carbon disulfide	2.882	76	184207	8.12	ug/L	#	92
24) Methyl tert-butyl ethe...	3.615	73	20672	1.37	ug/L		89
25) TRANS 1,2-DICHLOROETHENE	3.567	61	10717	0.96	ug/L		85
26) 1,1-Dichloroethane	4.177	63	13410	0.96	ug/L		95
28) Vinyl acetate	4.305	43	181441	13.98	ug/L		88
30) Di isopropyl ether	4.357	45	28140	1.42	ug/L		82
31) 2-Butanone (MEK)	5.052	43	44203	11.87	ug/L		85
33) t-Butyl ethyl ether	4.874	59	26017	2.35	ug/L		92
34) cis-1,2-Dichloroethene	4.998	61	10120	1.03	ug/L		99
35) 2,2-Dichloropropane	4.998	77	8884	1.11	ug/L	#	100
36) Ethyl acetate	5.177	43	8113	1.39	ug/L		100
37) Bromochloromethane	5.297	49	5943	1.26	ug/L	#	73
38) Tetrahydrofuran	5.402	42	3229	1.54	ug/L	#	64
39) Chloroform	5.426	83	11888	0.83	ug/L	#	45
41) tert-Butyl formate	5.512	59	3785	4.22	ug/L	#	5
42) 1,1,1-Trichloroethane	5.646	97	9392	0.74	ug/L		97
43) Cyclohexane	5.718	56	24610	0.43	ug/L	#	2
44) Carbon tetrachloride	5.856	117	7864	0.68	ug/L	#	1
45) 1,1-Dichloropropene	5.851	75	8246	0.73	ug/L		97
46) Benzene	6.090	78	27742	0.82	ug/L		91
48) T-AMYLMETHYL ETHER	6.278	73	20750	2.82	ug/L		91
51) 1,2-Dichloroethane	6.105	62	10469	1.14	ug/L		88
53) Trichloroethene	6.847	95	6263	0.79	ug/L		98
54) Methylcyclohexane	7.065	83	8078	0.86	ug/L	#	62
55) 1,2-Dichloropropane	7.075	63	8001	1.08	ug/L	#	76

GTD 4/28/2022

Quantitation Report (QT Reviewed)

620

Data Path : M:\1\data\G012422\
Data File : G22V024012.D
Acq On : 24 Jan 2022 10:03 am
Operator :
Sample : 8260 STD 1.0PPB Inst : GCMSVOA7
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jan 24 10:25:34 2022
Quant Method : M:\1\methods\GS091521.M
Quant Title : 8260 SIM/SCAN 09/21/18
QLast Update : Fri Dec 03 12:41:03 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
56) Dibromomethane	7.200	93	4152	0.92	ug/L		99
57) 1,4-Dioxane	7.283	88	522m	4.56	ug/L		
58) Bromodichloromethane	7.385	83	9097	0.92	ug/L		95
59) 2-Chloroethyl vinyl ether	7.735	63	32471	11.26	ug/L		79
60) MIBK	8.052	43	89995	15.96	ug/L		91
61) cis-1,3-Dichloropropene	7.868	75	11784	1.02	ug/L		93
62) Toluene	8.225	91	29655	1.00	ug/L		98
63) trans-1,3-Dichloropropene	8.454	75	9458	1.29	ug/L		97
65) 1,1,2-Trichloroethane	8.633	97	6072	0.93	ug/L		92
66) 2-Hexanone (MBK)	8.916	43	63847	15.41	ug/L		92
67) Tetrachloroethene	8.797	166	7173	0.83	ug/L		95
68) 1,3-Dichloropropane	8.807	76	10892	1.00	ug/L		96
69) Dibromochloromethane	9.035	129	6936	0.87	ug/L		89
70) 1,2-Dibromoethane	9.145	107	6126	0.89	ug/L	#	99
73) Chlorobenzene	9.657	112	18597	0.80	ug/L		96
74) 1,1,1,2-Tetrachloroethane	9.743	131	6498	0.77	ug/L		96
75) Ethylbenzene	9.784	91	30970	0.89	ug/L		96
76) m/p-Xylenes	9.902	91	51178	1.93	ug/L		99
77) o-Xylene	10.300	91	27018	1.03	ug/L		97
78) Styrene	10.309	104	21797	0.96	ug/L		90
79) Bromoform	10.477	173	4617	0.77	ug/L		99
80) Isopropylbenzene	10.676	105	30734	0.87	ug/L		97
82) 1,1,2,2-Tetrachloroethane	10.961	83	8353	0.84	ug/L		97
83) 1,4-Dichloro-2-butene(...	11.020	53	2784	1.12	ug/L		87
84) Bromobenzene	10.966	77	16426	1.06	ug/L		80
85) 1,2,3-Trichloropropane	10.998	75	9905m	0.93	ug/L		
86) n-Propylbenzene	11.093	91	36651	0.92	ug/L		99
87) 2-Chlorotoluene	11.170	91	22131	0.93	ug/L		99
88) 1,3,5-Trimethylbenzene	11.274	105	26882	0.93	ug/L		97
89) 4-Chlorotoluene	11.278	91	27875	1.01	ug/L		90
91) tert-Butylbenzene	11.595	119	22825	0.85	ug/L		95
92) 1,2,4-Trimethylbenzene	11.645	105	28410	0.94	ug/L		85
93) sec-Butylbenzene	11.822	105	32594	0.85	ug/L		99
94) 1,3-Dichlorobenzene	11.917	146	17844	0.98	ug/L		99
95) p-Isopropyltoluene	11.967	119	29969	0.94	ug/L		96
96) 1,4-Dichlorobenzene	12.008	146	17824	0.93	ug/L	#	70
97) 1,2,3-Trimethylbenzene	12.066	105	29352	0.95	ug/L	#	100
98) n-Butylbenzene	12.379	91	27802	0.93	ug/L		97
99) 1,2-Dichlorobenzene	12.374	146	16723	1.00	ug/L		96
100) 1,2-Dibromo-3-chloropr...	13.149	75	1934	0.94	ug/L		94
101) 1,3,5-Trichlorobenzene	13.380	180	14142	0.98	ug/L		99
102) 1,2,4-Trichlorobenzene	13.995	180	14387	1.12	ug/L		97
103) Hexachlorobutadiene	14.181	225	6404	0.84	ug/L		99
104) Naphthalene	14.231	128	35219	1.05	ug/L		99
105) 1,2,3-Trichlorobenzene	14.475	180	14024	1.12	ug/L		100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

GTD 4/28/2022

Quantitation Report (QT Reviewed)

Data Path : M:\1\data\G011422\
Data File : G22V014015.D
Acq On : 14 Jan 2022 9:49 am
Operator :
Sample : 22A0721-05 Inst : GCMSVOA7
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jan 14 10:08:23 2022
Quant Method : M:\1\methods\GS091521.M
Quant Title : 8260 SIM/SCAN 09/21/18
QLast Update : Fri Dec 03 12:41:03 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Pentafluorobenzene	5.723	168	711459	30.00	ug/L	0.00
49) 1,4-Difluorobenzene - ...	6.560	114	1163115	30.00	ug/L	0.00
71) Chlorobenzene-d5 ISTD	9.630	82	476537	30.00	ug/L	0.00
90) 1,4-Dichlorobenzene-d4...	11.980	152	515255	30.00	ug/L	0.00
System Monitoring Compounds						
2) 1,2-Dichloroethane-d4	6.013	65	328916	26.73	ug/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 106.92%			
50) Toluene SS	8.154	98	1016083	24.15	ug/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 96.60%			
72) 4-Bromofluorobenzene SS	10.816	95	369178	25.70	ug/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 102.80%			
Target Compounds						Qvalue
7) Bromomethane	1.794	94	135	Below Cal	#	1
14) Acetone	2.727	43	5904	2.05	ug/L	97
17) Iodomethane	2.810	142	3336	0.36	ug/L	90
25) TRANS 1,2-DICHLOROETHENE	3.577	61	2514	0.22	ug/L	98
34) cis-1,2-Dichloroethene	4.998	61	6357	0.65	ug/L #	68
43) Cyclohexane	5.718	56	10800	Below Cal	#	1
53) Trichloroethene	6.847	95	14796	1.97	ug/L	93
67) Tetrachloroethene	8.797	166	861307	105.54	ug/L ✓	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

GTD 4/28/2022

DUSR Calculations Sheet

Sample ID: 360175-HA002001
TC: tetrachloroethylene
ICAL Level: 3
Val File Result for TC: 0.14 mg/kg

Ical Calc

Area TC	7173
Area IS	1228435
Conc TC	1
Conc IS	30
RRF =	0.175174

1	0.172
2	0.245
3	0.175
4	0.209
5	0.227
6	0.212
7	0.216
8	0.245
9	0.223
10	0.208
Avg RRF =	0.2132
Std Dev =	0.024765
%RSD =	11.6157

Sample Calc

Area TC	861307
Area IS	1163115
Conc IS	30
Avg RRF	0.2132
Conc TC =	104.2004 µg/L

DF	1
Solids	84.14
Initial Wt	9.17
Final Vol	0.01
Conc TC =	0.135051 mg/kg

Notes:
Green = matched reported value
Red = did not match reported value

GTD 4/28/2022

VOCs

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners March 2022
Method: 8260D
Laboratory: Con-test **SDG(s):** 22C1692
Date: 4/27/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? Yes, see attached
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
   Sample 22C1692-01 should be 360175-DP002011
2. ☑ **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. YES NO (circle one)
3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)

   Are Trip blanks free of contamination? YES NO (circle one)

   Are Rinse blanks free of contamination? YES NO NA (circle one)
4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed
5. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Initial Calibration %RSD = 20% **(30% for 1,1-DCE, chloroform, 1,2-DCP, toluene, ethylbenzene, VC)**
   Initial Avg RRF and Continuing RRF should be ≥ 0.05 and 0.10 for Chloromethane, 1,1-Dichloroethane, Bromoform and 0.30 for Chlorobenzene and 1,1,2,2-Tetrachloroethane

   Continuing Calibration %D = 20%

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO See attached - subset J-/UJ, CCV%D
   If yes to above, use professional judgment to evaluate data and qualify results if needed
6. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL)
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed
7. ☑ **Surrogate Recovery** - Region II limits (water 80-120%, soil 70-130%)

   Were all results within Region II limits? YES NO (circle one)
8. ☑ **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)

   Were MS/MSDs submitted/analyzed? YES NO

   Were all results within the Region II limits? YES NO NA (circle one) See attached - subset UJ, MSL

GTD 4/28/2022

9. ☑ **Duplicates** - Region II Limits (water RPD 50, soil RPD 100)

Were Field Duplicates submitted/analyzed? YES NO

Were all results within Region II limits? (soil RPD<100, water RPD<50) YES NO NA

Both ND or below RL for all results

10. ☑ **Laboratory Control Sample Results** - Region II (Water and soil 70-130%)

Were all results were within Region II control limits? YES NO (circle one)

11. ☑ **Reporting Limits:** Were samples analyzed at a dilution? YES NO (circle one)

Samples 360175-DW001-1 analyzed at 2X dilution - ND have elevated RLs

12. ☑ **Raw Data Review and Calculation Checks**

13. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? YES NO (circle one)

See attached

14. ☑ **Tables and TIC Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

Table 4 (TICs) Did lab report TICs? YES NO (circle one)

GTD 4/28/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SW-846 6010D

Qualifications:

MS-19

Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.

Analyte & Samples(s) Qualified:

Calcium
22C1692-03[360175-DP005011], B305111-MSD1

Magnesium
22C1692-03[360175-DP005011], B305111-MSD1

Sodium
22C1692-03[360175-DP005011], B305111-MSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Beryllium
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D]

Thallium
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D]

SW-846 7470A

Qualifications:

B

Analyte is found in the associated laboratory blank as well as in the sample.

Analyte & Samples(s) Qualified:

Mercury
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-04[360175-DP005011D], B305219-BLK1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Mercury
B305408-BSD1

SW-846 8081B

Qualifications:

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

Hexachlorobenzene
B304396-BS1, B304396-BSD1, B304396-MS1, B304396-MSD1

SW-846 8260D

Qualifications:

MS-07A

Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Naphthalene
22C1692-03[360175-DP005011], B304257-MS1, B304257-MSD1 okay - see attached for MS review

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

MS-24

Either matrix spike or matrix spike duplicate is outside of control limits, but the other is within limits. Analysis is in control based on laboratory fortified blank recovery.

Analyte & Samples(s) Qualified:

1,2-Dibromo-3-chloropropane (DB
B304257-MSD1 See attached for MS/MSD review

2-Hexanone (MBK)
B304257-MSD1

Acetone
B304257-MSD1

Bromomethane
B304257-MSD1

tert-Butyl Alcohol (TBA)
B304257-MSD1

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

2X DF - ND elevated RLs
22C1692-06[360175-DW001-1]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

1,4-Dioxane
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 UJ, CCV%D

2-Butanone (MEK)
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 UJ, CCV%D

2-Hexanone (MBK)
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 UJ, CCV%D

Acetone
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 UJ, CCV%D

Acrylonitrile
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 UJ, CCV%D

Naphthalene
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 J-/UJ, CCV%D

tert-Butyl Alcohol (TBA)
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 J-/UJ, CCV%D

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Bromomethane
B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1 Not associated with samples

SW-846 8270E

Qualifications:

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

N-Nitrosodimethylamine
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B304257 - SW-846 5030B												
Qual'd sample and FD												
Matrix Spike (B304257-MS1)		**Source: 22C1692-03**			Prepared & Analyzed: 03/28/22							
p-Isopropyltoluene (p-Cymene)	10.6	1.0	0.097	µg/L	10.0	ND	106		70-130			
Methyl Acetate	7.85	1.0	0.45	µg/L	10.0	ND	78.5		70-130			
Methyl tert-Butyl Ether (MTBE)	9.83	1.0	0.17	µg/L	10.0	ND	98.3		70-130			
Methyl Cyclohexane	11.0	1.0	0.24	µg/L	10.0	ND	110		70-130			
Methylene Chloride	9.51	5.0	0.23	µg/L	10.0	ND	95.1		70-130			
4-Methyl-2-pentanone (MIBK)	78.9	10	1.3	µg/L	100	ND	78.9		70-130			
Naphthalene UJ, MSL	6.14	2.0	0.24	µg/L	10.0	ND	**61.4**	*	70-130			MS-07A, V-05
n-Propylbenzene	10.9	1.0	0.086	µg/L	10.0	ND	109		70-130			
Styrene	11.5	1.0	0.11	µg/L	10.0	ND	115		70-130			
1,1,1,2-Tetrachloroethane	11.4	1.0	0.18	µg/L	10.0	ND	114		70-130			
1,1,2,2-Tetrachloroethane	9.94	0.50	0.13	µg/L	10.0	ND	99.4		70-130			
Tetrachloroethylene	12.4	1.0	0.19	µg/L	10.0	0.940	115		70-130			
Tetrahydrofuran	8.33	10	0.49	µg/L	10.0	ND	83.3		70-130			J
Toluene	11.4	1.0	0.22	µg/L	10.0	ND	114		70-130			
1,2,3-Trichlorobenzene	7.52	5.0	0.30	µg/L	10.0	ND	75.2		70-130			
1,2,4-Trichlorobenzene	7.95	1.0	0.25	µg/L	10.0	ND	79.5		70-130			
1,3,5-Trichlorobenzene	9.25	1.0	0.21	µg/L	10.0	ND	92.5		70-130			
1,1,1-Trichloroethane	11.1	1.0	0.17	µg/L	10.0	ND	111		70-130			
1,1,2-Trichloroethane	10.2	1.0	0.18	µg/L	10.0	ND	102		70-130			
Trichloroethylene	11.5	1.0	0.19	µg/L	10.0	0.280	112		70-130			
Trichlorofluoromethane (Freon 11)	10.9	2.0	0.18	µg/L	10.0	ND	109		70-130			
1,2,3-Trichloropropane	8.46	2.0	0.28	µg/L	10.0	ND	84.6		70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	12.4	1.0	0.23	µg/L	10.0	ND	124		70-130			
1,2,4-Trimethylbenzene	10.6	1.0	0.20	µg/L	10.0	ND	106		70-130			
1,3,5-Trimethylbenzene	11.2	1.0	0.11	µg/L	10.0	ND	112		70-130			
Vinyl Chloride	11.6	2.0	0.21	µg/L	10.0	ND	116		70-130			
m+p Xylene	22.4	2.0	0.46	µg/L	20.0	ND	112		70-130			
o-Xylene	11.3	1.0	0.23	µg/L	10.0	ND	113		70-130			
Surrogate: 1,2-Dichloroethane-d4	*21.2*			µg/L	25.0		85.0		70-130			
Surrogate: Toluene-d8	*24.7*			µg/L	25.0		98.8		70-130			
Surrogate: 4-Bromofluorobenzene	*24.1*			µg/L	25.0		96.3		70-130			
Matrix Spike Dup (B304257-MSD1)		**Source: 22C1692-03**			Prepared & Analyzed: 03/28/22							
Acetone UJ, MSL	67.5	50	2.0	µg/L	100	ND	**67.5**	*	70-130	4.77	30	MS-24, V-05
Acrylonitrile	7.33	5.0	0.55	µg/L	10.0	ND	73.3		70-130	2.96	30	V-05
tert-Amyl Methyl Ether (TAME)	10.6	0.50	0.14	µg/L	10.0	ND	106		70-130	2.47	30	
Benzene	11.2	1.0	0.20	µg/L	10.0	ND	112		70-130	3.82	30	
Bromobenzene	10.2	1.0	0.15	µg/L	10.0	ND	102		70-130	4.12	30	
Bromochloromethane	10.2	1.0	0.31	µg/L	10.0	ND	102		70-130	2.79	30	
Bromodichloromethane	10.5	0.50	0.18	µg/L	10.0	ND	105		70-130	5.08	30	
Bromoform	9.92	1.0	0.38	µg/L	10.0	ND	99.2		70-130	1.50	30	
Bromomethane High bias, sample ND - no qual	13.6	2.0	1.5	µg/L	10.0	ND	**136**	*	70-130	7.17	30	MS-24, V-20
2-Butanone (MEK)	70.3	20	1.6	µg/L	100	ND	70.3		70-130	6.15	30	V-05
tert-Butyl Alcohol (TBA) UJ, MSL	69.3	20	4.7	µg/L	100	ND	**69.3**	*	70-130	11.8	30	MS-24, V-05
n-Butylbenzene	10.0	1.0	0.15	µg/L	10.0	ND	100		70-130	4.69	30	
sec-Butylbenzene	11.3	1.0	0.11	µg/L	10.0	ND	113		70-130	2.78	30	
tert-Butylbenzene	11.8	1.0	0.13	µg/L	10.0	ND	118		70-130	4.59	30	
tert-Butyl Ethyl Ether (TBEE)	9.84	0.50	0.15	µg/L	10.0	ND	98.4		70-130	2.16	30	
Carbon Disulfide	123	5.0	1.4	µg/L	100	ND	123		70-130	4.18	30	

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B304257 - SW-846 5030B												
Matrix Spike Dup (B304257-MSD1)		**Source: 22C1692-03**			Prepared & Analyzed: 03/28/22							
Carbon Tetrachloride	11.3	5.0	0.16	µg/L	10.0	ND	113		70-130	2.33	30	
Chlorobenzene	11.8	1.0	0.11	µg/L	10.0	ND	118		70-130	0.0851	30	
Chlorodibromomethane	10.3	0.50	0.22	µg/L	10.0	ND	103		70-130	3.26	30	
Chloroethane	12.6	2.0	0.32	µg/L	10.0	ND	126		70-130	3.05	30	
Chloroform	10.6	2.0	0.17	µg/L	10.0	ND	106		70-130	1.91	30	
Chloromethane	11.3	2.0	0.52	µg/L	10.0	ND	113		70-130	5.00	30	
2-Chlorotoluene	11.2	1.0	0.11	µg/L	10.0	ND	112		70-130	3.46	30	
4-Chlorotoluene	10.8	1.0	0.12	µg/L	10.0	ND	108		70-130	1.69	30	
1,2-Dibromo-3-chloropropane (DBCP) UJ, MSL	6.96	5.0	0.80	µg/L	10.0	ND	**69.6**	*	70-130	15.4	30	MS-24
1,2-Dibromoethane (EDB)	9.63	0.50	0.17	µg/L	10.0	ND	96.3		70-130	0.834	30	
Dibromomethane	9.87	1.0	0.35	µg/L	10.0	ND	98.7		70-130	2.46	30	
1,2-Dichlorobenzene	11.4	1.0	0.12	µg/L	10.0	ND	114		70-130	4.86	30	
1,3-Dichlorobenzene	11.1	1.0	0.12	µg/L	10.0	ND	111		70-130	2.28	30	
1,4-Dichlorobenzene	10.7	1.0	0.13	µg/L	10.0	ND	107		70-130	1.89	30	
trans-1,4-Dichloro-2-butene	7.29	2.0	1.6	µg/L	10.0	ND	72.9		70-130	8.16	30	
Dichlorodifluoromethane (Freon 12)	11.1	2.0	0.19	µg/L	10.0	ND	111		70-130	4.04	30	
1,1-Dichloroethane	10.4	1.0	0.14	µg/L	10.0	ND	104		70-130	2.64	30	
1,2-Dichloroethane	9.07	1.0	0.31	µg/L	10.0	ND	90.7		70-130	1.56	30	
1,1-Dichloroethylene	11.2	1.0	0.14	µg/L	10.0	ND	112		70-130	1.35	30	
cis-1,2-Dichloroethylene	10.5	1.0	0.15	µg/L	10.0	0.270	103		70-130	3.97	30	
trans-1,2-Dichloroethylene	10.3	1.0	0.17	µg/L	10.0	ND	103		70-130	2.95	30	
1,2-Dichloropropane	10.4	1.0	0.18	µg/L	10.0	ND	104		70-130	4.31	30	
1,3-Dichloropropane	9.75	0.50	0.13	µg/L	10.0	ND	97.5		70-130	4.19	30	
2,2-Dichloropropane	9.33	1.0	0.33	µg/L	10.0	ND	93.3		70-130	4.49	30	
1,1-Dichloropropene	11.0	2.0	0.15	µg/L	10.0	ND	110		70-130	3.70	30	
cis-1,3-Dichloropropene	9.71	0.50	0.16	µg/L	10.0	ND	97.1		70-130	3.35	30	
trans-1,3-Dichloropropene	8.89	0.50	0.17	µg/L	10.0	ND	88.9		70-130	3.08	30	
Diethyl Ether	9.48	2.0	0.18	µg/L	10.0	ND	94.8		70-130	0.847	30	
Diisopropyl Ether (DIPE)	9.43	0.50	0.13	µg/L	10.0	ND	94.3		70-130	3.12	30	
1,4-Dioxane	70.8	50	21	µg/L	100	ND	70.8		70-130	11.9	30	V-05
Ethylbenzene	11.5	1.0	0.21	µg/L	10.0	ND	115		70-130	1.58	30	
Hexachlorobutadiene	10.9	0.60	0.46	µg/L	10.0	ND	109		70-130	8.71	30	
2-Hexanone (MBK) UJ, MSL	69.0	10	1.1	µg/L	100	ND	**69.0**	*	70-130	4.77	30	MS-24, V-05
Isopropylbenzene (Cumene)	12.0	1.0	0.11	µg/L	10.0	ND	120		70-130	1.85	30	
p-Isopropyltoluene (p-Cymene)	11.2	1.0	0.097	µg/L	10.0	ND	112		70-130	4.86	30	
Methyl Acetate	7.18	1.0	0.45	µg/L	10.0	ND	71.8		70-130	8.92	30	
Methyl tert-Butyl Ether (MTBE)	9.85	1.0	0.17	µg/L	10.0	ND	98.5		70-130	0.203	30	
Methyl Cyclohexane	11.5	1.0	0.24	µg/L	10.0	ND	115		70-130	4.27	30	
Methylene Chloride	9.65	5.0	0.23	µg/L	10.0	ND	96.5		70-130	1.46	30	
4-Methyl-2-pentanone (MIBK)	75.5	10	1.3	µg/L	100	ND	75.5		70-130	4.35	30	
Naphthalene Already qual'd UJ, MSL	6.45	2.0	0.24	µg/L	10.0	ND	**64.5**	*	70-130	4.92	30	MS-07A, V-05
n-Propylbenzene	11.3	1.0	0.086	µg/L	10.0	ND	113		70-130	3.79	30	
Styrene	11.9	1.0	0.11	µg/L	10.0	ND	119		70-130	2.91	30	
1,1,1,2-Tetrachloroethane	11.4	1.0	0.18	µg/L	10.0	ND	114		70-130	0.264	30	
1,1,2,2-Tetrachloroethane	9.73	0.50	0.13	µg/L	10.0	ND	97.3		70-130	2.14	30	
Tetrachloroethylene	12.9	1.0	0.19	µg/L	10.0	0.940	120		70-130	3.86	30	
Tetrahydrofuran	7.88	10	0.49	µg/L	10.0	ND	78.8		70-130	5.55	30	J
Toluene	11.8	1.0	0.22	µg/L	10.0	ND	118		70-130	3.18	30	
1,2,3-Trichlorobenzene	8.07	5.0	0.30	µg/L	10.0	ND	80.7		70-130	7.06	30	
1,2,4-Trichlorobenzene	8.24	1.0	0.25	µg/L	10.0	ND	82.4		70-130	3.58	30	

GTD 4/28/2022

Response Factor Report GCMSVOA3

Method Path : C:\msdchem\1\methods\
Method File : C051619.M
Title : 8260 WATER 5MLS VOAMS 5973 #3
Last Update : Fri May 17 05:29:37 2019
Response Via : Initial Calibration

Calibration Files
0.4 =C1913608.D 0.5 =C1913609.D 1.0 =C1913610.D 2.0 =C1913611.D 5.0 =C1913612.D 10 =C1913613.D 20 =C1913614.D
50 =C1913615.D 100 =C1913616.D 200 =C1913617.D

		Compound	0.4	0.5	1.0	2.0	5.0	10	20	50	100	200	Avg	%RSD
1)		PENTAFLUOROBENZENE...	----------ISTD----------											
2)	S	1,2-DICHLOROET...	0.570	0.573	0.559	0.566	0.578	0.571	0.565	0.552	0.559	0.550	0.564	1.65
3)		DICHLORODIFLUO...	0.487	0.551	0.558	0.536	0.502	0.447	0.475	0.470	0.432	0.433	0.489	9.55
4)		DIFLUOROCHLORO...	0.622	0.612	0.625	0.616	0.590	0.540	0.591	0.579	0.530	0.541	0.585	6.18
5)	P	CHLOROMETHANE			0.793	0.789	0.663	0.615	0.627	0.571	0.566	0.596	0.653	13.95
6)	C	VINYL CHLORIDE	0.566	0.556	0.545	0.547	0.518	0.484	0.513	0.522	0.472	0.492	0.522	6.12#
7)		BROMOMETHANE				0.337	0.321	0.248	0.233	0.288	0.266	0.301	0.285	13.40
8)		CHLOROETHANE		0.313	0.334	0.366	0.299	0.256	0.263	0.272	0.248	0.243	0.288	14.77
9)		FLUORODICHLORO...	0.828	0.861	0.843	0.832	0.766	0.736	0.773	0.784	0.715	0.747	0.788	6.32
10)		TRICHLOROFLUOR...	0.661	0.636	0.598	0.625	0.574	0.522	0.561	0.567	0.521	0.540	0.580	8.30
11)		ETHANOL				0.012	0.010	0.010	0.010	0.010	0.010	0.009	0.010	8.76
12)		DI ETHYL ETHER	0.452	0.392	0.368	0.373	0.362	0.349	0.359	0.362	0.333	0.352	0.370	8.82
13)		ACROLEIN	0.119	0.122	0.137	0.112	0.121	0.116	0.132	0.128	0.121	0.128	0.123	6.19
14)		ACETONE		0.234	0.211	0.188	0.177	0.170	0.192	0.176	0.168	0.177	0.188	11.56
15)	C	1,1-DICHLOROET...	0.596	0.605	0.602	0.631	0.594	0.542	0.568	0.583	0.535	0.551	0.581	5.35#
16)		1,1,2-TRICL-1,...	0.360	0.333	0.340	0.340	0.326	0.289	0.306	0.310	0.285	0.290	0.318	8.09
17)		IODOMETHANE	0.407	0.361	0.444	0.439	0.452	0.473	0.521	0.551	0.527	0.578	0.475	14.29
18)		ACETONITRILE											0.000	-1.00
19)		ALLYL CHLORIDE											0.000	-1.00
20)		METHYL ACETATE		0.647	0.769	0.546	0.531	0.541	0.579	0.554	0.520	0.558	0.583	13.54
21)		T-BUTYL ALCOHOL	0.079	0.082	0.078	0.068	0.067	0.065	0.073	0.068	0.068	0.077	0.072 ✓	8.39 ✓
22)		ACRYLONITRILE	0.336	0.262	0.238	0.233	0.225	0.230	0.250	0.237	0.226	0.248	0.248	13.28
23)		METHYLENE CHLO...	0.639	0.690	0.649	0.631	0.608	0.581	0.597	0.595	0.553	0.622	0.616	6.26
24)		CARBON DISULFIDE	1.219	1.196	1.135	1.157	1.125	1.069	1.136	1.107	1.020	1.035	1.120	5.76
25)		METHYL TERT-BU...	1.306	1.442	1.375	1.375	1.256	1.233	1.295	1.306	1.204	1.313	1.311	5.46
26)		TRANS 1,2-DICH...	0.687	0.636	0.600	0.621	0.569	0.568	0.590	0.600	0.553	0.589	0.601	6.49
27)	P	1,1-DICHLOROET...	0.872	0.842	0.806	0.830	0.780	0.777	0.797	0.806	0.747	0.792	0.805	4.42
28)		VINYL ACETATE	1.590	1.544	1.601	1.554	1.544	1.508	1.605	1.580	1.464	1.472	1.546	3.30
29)		DI ISOPROYL ETHER	1.803	1.733	1.898	1.760	1.669	1.664	1.727	1.761	1.638	1.759	1.741	4.34
30)		CHLOROPRENE											0.000	-1.00
31)		2-BUTANONE	0.348	0.349	0.346	0.327	0.330	0.318	0.360	0.333	0.319	0.348	0.338	4.18
32)		T-BUTYL ETHYL ...	1.473	1.564	1.518	1.474	1.397	1.364	1.432	1.455	1.366	1.470	1.451	4.42
33)		CIS-1,2-DICHLO...	0.678	0.704	0.728	0.741	0.690	0.670	0.700	0.715	0.665	0.713	0.700	3.56
34)		2,2-DICHLOROPR...	0.685	0.677	0.633	0.617	0.564	0.543	0.546	0.606	0.559	0.600	0.603	8.51
35)		ETHYL ACETATE		0.907	0.635	0.659	0.671	0.610	0.690	0.658	0.624	0.689	0.683	12.99
36)		PROPIONITRILE											0.000	-1.00
37)		METHACRYLONITRILE											0.000	-1.00
38)		BROMOCHLOROMET...	0.402	0.421	0.438	0.445	0.423	0.424	0.427	0.428	0.369	0.354	0.413	7.19
39)		TETRAHYDROFURAN	0.122	0.229	0.218	0.208	0.203	0.195	0.218	0.207	0.200	0.216	0.202	14.76
40)	C	CHLOROFORM	0.696	0.772	0.799	0.783	0.745	0.720	0.742	0.754	0.699	0.751	0.746	4.54#
41)		1,1,1-TRICHLOR...	0.580	0.642	0.592	0.621	0.591	0.571	0.594	0.610	0.564	0.599	0.596	3.93
42)		CYCLOHEXANE					0.814	0.689	0.700	0.709	0.650	0.673	0.706	8.09
43)		CARBON TETRACH...	0.468	0.488	0.535	0.525	0.496	0.477	0.493	0.519	0.480	0.515	0.500	4.55

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data_ARCHIVE_2019 RUN DATES\C051619\
Data File : C1913610.D
Acq On : 16 May 2019 11:05 am
Operator :
Sample : 8260STD 1.0PPB 1905273 Inst : GCMSVOA3
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 16 13:40:32 2019
Quant Method : C:\msdchem\1\methods\C053018.M
Quant Title : 8260 WATER 5MLS VOAMS 5973 #3
QLast Update : Wed Mar 13 07:34:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE - ISTD	4.194	168	160171	30.00	UG/L		0.00
48) 1,4-DIFLUOROBENZENE - ...	4.919	114	239266	30.00	UG/L		0.00
70) CHLOROBENZENE-D5 ISTD	7.755	82	119505	30.00	UG/L		0.00
89) 1,4-DICHLOROBENZENE-D4...	10.050	152	114678	30.00	UG/L	#	0.00
System Monitoring Compounds							
2) 1,2-DICHLOROETHANE-D4 SS	4.470	65	74574	18.15	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 72.60%				
49) TOLUENE SS	6.355	98	237299	23.89	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 95.56%				
71) 4-BROMOFLUOROBENZENE SS	8.912	95	89028	23.81	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 95.24%				
Target Compounds							Qvalue
3) DICHLORODIFLUOROMETHANE	1.087	85	2980	0.91	UG/L		91
4) DIFLUOROCHLOROMETHANE	1.095	51	3337	0.84	UG/L	#	100
5) CHLOROMETHANE	1.196	50	4235	1.11	UG/L	#	27
6) VINYL CHLORIDE	1.257	62	2909	0.93	UG/L	#	83
7) BROMOMETHANE	1.455	94	2116	0.75	UG/L		88
8) CHLOROETHANE	1.514	64	1784	0.93	UG/L	#	87
9) FLUORODICHLOROMETHANE	1.639	67	4501	0.95	UG/L		99
10) TRICHLOROFLUOROMETHANE	1.673	101	3192	0.79	UG/L		99
12) DI ETHYL ETHER	1.865	59	1967	0.82	UG/L	#	76
13) ACROLEIN	1.963	56	7306	11.07	UG/L		98
14) ACETONE	2.071	43	11261	9.08	UG/L		97
15) 1,1-DICHLOROETHENE	2.021	61	3213	0.81	UG/L	#	90
16) 1,1,2-TRICL-1,2,2-TRIF...	2.021	101	1815	0.96	UG/L		85
17) IODOMETHANE	2.141	142	23696	12.31	UG/L		99
20) METHYL ACETATE	2.320	43	4104	0.63	UG/L	#	86
21) T-BUTYL ALCOHOL	2.515	59	4170	9.01	UG/L	#	83
22) ACRYLONITRILE	2.615	53	1269	0.86	UG/L		98
23) METHYLENE CHLORIDE	2.395	49	3467	0.80	UG/L		95
24) CARBON DISULFIDE	2.191	76	60592	9.96	UG/L		99
25) METHYL TERT-BUTYL ETHE...	2.643	73	7341	0.92	UG/L		97
26) TRANS 1,2-DICHLOROETHENE	2.638	61	3206	0.84	UG/L		97
27) 1,1-DICHLOROETHANE	3.050	63	4304	0.88	UG/L	#	70
28) VINYL ACETATE	3.114	43	85473	11.16	UG/L		99
29) DI ISOPROYL ETHER	3.131	45	10131	0.98	UG/L		93
31) 2-BUTANONE	3.683	43	18483	9.15	UG/L	#	96
32) T-BUTYL ETHYL ETHER	3.508	59	8107	0.84	UG/L	#	83
33) CIS-1,2-DICHLOROETHENE	3.644	61	3886	0.81	UG/L		86
34) 2,2-DICHLOROPROPANE	3.636	77	3381	0.98	UG/L	#	47
35) ETHYL ACETATE	3.756	43	3390	1.65	UG/L	#	71
38) BROMOCHLOROMETHANE	3.884	49	2339	0.95	UG/L	#	78
39) TETRAHYDROFURAN	3.954	42	1163	1.01	UG/L	#	40
40) CHLOROFORM	3.979	83	4265	0.92	UG/L		91
41) 1,1,1-TRICHLOROETHANE	4.155	97	3160m	0.79	UG/L		
42) CYCLOHEXANE	4.196	56	6782	0.57	UG/L	#	67
43) CARBON TETRACHLORIDE	4.308	117	2859	0.84	UG/L		95
44) 1,1-DICHLOROPROPENE	4.316	75	3004	0.87	UG/L		93
45) BENZENE	4.520	78	9561	0.96	UG/L	#	1
47) T-AMYLMETHYL ETHER	4.654	73	7028	0.95	UG/L		94
50) 1,2-DICHLOROETHANE	4.551	62	3266	0.70	UG/L	#	74
51) TRICHLOROETHENE	5.161	95	2157	0.92	UG/L		95
52) METHYLCYCLOHEXANE	5.340	83	2990	1.01	UG/L		92
53) 1,2-DICHLOROPROPANE	5.387	63	2585	0.99	UG/L	#	91
54) DIBROMOMETHANE	5.504	93	1513	0.90	UG/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\C032822\
Data File : C22V08419.D
Acq On : 28 Mar 2022 12:14 pm
Operator :
Sample : 22C1692-02 Inst : GCMSVOA3
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Mar 29 08:03:12 2022
Quant Method : C:\msdchem\1\methods\C051619.M
Quant Title : 8260 WATER 5MLS VOAMS 5973 #3
QLast Update : Fri May 17 05:29:37 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE - ISTD	4.196	168	125298	30.00	UG/L	0.00
48) 1,4-DIFLUOROBENZENE - ...	4.919	114	190763	30.00	UG/L	0.00
70) CHLOROBENZENE-D5 ISTD	7.752	82	91872	30.00	UG/L	0.00
89) 1,4-DICHLOROBENZENE-D4...	10.047	152	88541	30.00	UG/L	# 0.00
System Monitoring Compounds						
2) 1,2-DICHLOROETHANE-D4 SS	4.470	65	50244	21.32	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 85.28%			
49) TOLUENE SS	6.352	98	189176	24.87	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 99.48%			
71) 4-BROMOFLUOROBENZENE SS	8.909	95	65180	23.92	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 95.68%			
Target Compounds						Qvalue
21) T-BUTYL ALCOHOL	2.506	59	27792	91.92	UG/L	# 93
33) CIS-1,2-DICHLOROETHENE	3.650	61	3684	1.26	UG/L	# 75
51) TRICHLOROETHENE	5.161	95	523	0.31	UG/L	# 46
79) ISOPROPYLBENZENE	8.770	105	2308	0.33	UG/L	# 48
85) N-PROPYLBENZENE	9.182	91	3488	0.42	UG/L	94
87) 1,3,5-TRIMETHYLBENZENE	9.294	105	3104	0.53	UG/L	# 63
90) TERT-BUTYLBENZENE	9.673	119	579	0.12	UG/L	# 20
91) 1,2,4-TRIMETHYLBENZENE	9.721	105	17517	2.90	UG/L	99
92) SEC-BUTYLBENZENE	9.888	105	6661	0.99	UG/L	98
94) P-ISOPROPYLTOLUENE	10.039	119	2207	0.38	UG/L	# 63
96) N-BUTYLBENZENE	10.448	91	3554	0.68	UG/L	# 46
102) NAPHTHALENE	12.283	128	4168	0.61	UG/L	# 80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

DUSR Calculations Sheet

Sample ID: 360175-DP004011
TC: Tert-butyl alcohol
ICAL Level:
Val File Result for TC: 92 ug/L

Ical Calc

Area TC	4170
Area IS	160171
Conc TC	10
Conc IS	30
RRF =	0.078104

1	0.078628
2	0.082147
3	0.078104
4	0.068261
5	0.066983
6	0.064578
7	0.072706
8	0.067547
9	0.06834
10	0.076592
Avg RRF =	0.072388
Std Dev =	0.006071
%RSD =	8.386342

Sample Calc

Area TC	27792	**DF**	1
Area IS	125298		
Conc IS	30		
Avg RRF	0.072388		
Conc TC =	91.92368 µg/L	Conc TC =	91.92368

Notes:
Green = matched reported value
Red = did not match reported value

SVOC

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners March 2022
Method: 8270E
Laboratory: Con-test **SDG(s):** 22C1692
Date: 4/27/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? Yes, see attached
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)

2. ☑ **Holding time and Sample Collection** Sample 22C1692-01 should be 360175-DP002011
   Soil: 14 days from collection to extraction; 40 days from extraction to analysis
   Water: 7 days from collection to extraction; 40 days from extraction to analysis
   Hold time met for all samples? YES NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)
   Are Rinse blanks free of contamination? YES NO NA (circle one)

4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO See attached - subsets UJ, CCV%D, ICV%D and ICVRSD
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Control Limits (Region II HW-22): Initial Calibration %RSD = 15%, Continuing Calibration %D = 20%
   Average RRF should be ≥ 0.05 (or reject NDs, J detects or use professional judgment to J/UJ)

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Surrogate Recovery** (water and soil limits: Base/Neutral 50-140%, Acid 30-140%)
   Were all results within limits? YES NO (circle one) See attached - only 1 surrogate out for A fraction - no quals
   Were any recoveries < 10%? (Reject fraction compounds if recoveries are < 10%) Some QC outside limits - no quals

8. ☑ **Matrix Spike** (water & soil limits: Base/Neutral 50-140%, Acid 30-140%) (RPD soil=35,water=20)
   Were MS/MSDs submitted/analyzed? YES NO

   Were all results within limits? YES NO NA (circle one) See attached - subsets UJ and R, MSL, MSRPD

GTD 4/28/2022

9. ☑ **Duplicates** (RPD limits = water:50, soil:100)
Were Field Duplicates submitted/analyzed? YES NO

Were RPDs within criteria? YES NO NA (circle one) All ND

10. ☑ **Laboratory Control Sample Results** (water&soil limits: Base/Neutral 50-140%, Acid 30-140%)
Were all results within limits? YES NO (circle one) See attached - subsets UJ, LCSL, LCSRPD

11. ☑ **Raw Data Review and Calculation Checks**

12. ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? YES NO (circle one)
See attached

13. ☑ **Tables and TIC Review**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

Table 4 (TICs) Did lab report TICs? YES NO (circle one)

GTD 4/28/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

MS-24

Either matrix spike or matrix spike duplicate is outside of control limits, but the other is within limits. Analysis is in control based on laboratory fortified blank recovery.

Analyte & Samples(s) Qualified:

1,2-Dibromo-3-chloropropane (DB
B304257-MSD1

2-Hexanone (MBK)
B304257-MSD1

Acetone
B304257-MSD1

Bromomethane
B304257-MSD1

tert-Butyl Alcohol (TBA)
B304257-MSD1

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

22C1692-06[360175-DW001-1]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

1,4-Dioxane
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1
2-Butanone (MEK)
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1
2-Hexanone (MBK)
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1
Acetone
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1
Acrylonitrile
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1
Naphthalene
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1
tert-Butyl Alcohol (TBA)
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], 22C1692-05[360175-TB32222], 22C1692-06[360175-DW001-1], 22C1692-07[360175-DW002-2], B304257-BLK1, B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Bromomethane
B304257-BS1, B304257-BSD1, B304257-MS1, B304257-MSD1

SW-846 8270E

Qualifications:

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

N-Nitrosodimethylamine
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1

See attached for LCS review

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

L-07A

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:

Benzidine
B304402-BS1

Pyridine
B304402-BS1

See attached for LCS review

MS-09

Matrix spike recovery and/or matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

Benzoic Acid
22C1692-03[360175-DP005011], B304402-MS1, B304402-MSD1

N-Nitrosodimethylamine
22C1692-03[360175-DP005011], B304402-MS1, B304402-MSD1

Phenol
22C1692-03[360175-DP005011], B304402-MS1, B304402-MSD1

Pyridine
22C1692-03[360175-DP005011], B304402-MS1, B304402-MSD1

See attached for MS review

MS-22

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

Benzidine
B304402-MS1

See attached for MS review

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Benzidine
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BSD1

Benzoic Acid
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1

Pyridine
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BSD1

See attached for LCS review

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.

Analyte & Samples(s) Qualified:

Benzidine
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1

UJ, ICVRSD

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

Aniline
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1

UJ, CCV%D

Benzidine
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1

UJ, CCV%D

Hexachlorocyclopentadiene
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1

UJ, CCV%D

Pentachlorophenol
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1

UJ, CCV%D

GTD 4/28/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

3,3-Dichlorobenzidine

22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1 UJ, ICV%D

4-Chloroaniline

22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1 UJ, ICV%D

V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Benzidine

22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D], B304402-BLK1, B304402-BS1, B304402-BSD1, B304402-MS1, B304402-MSD1 High bias, samples ND - no quals

GTD 4/28/2022

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B304402 - SW-846 3510C												
Blank (B304402-BLK1)					Prepared: 03/29/22 Analyzed: 03/31/22							
Isophorone	ND	10	0.55	µg/L								
1-Methylnaphthalene	ND	5.0	0.60	µg/L								
2-Methylnaphthalene	ND	5.0	0.69	µg/L								
2-Methylphenol	ND	10	0.47	µg/L								
3/4-Methylphenol	ND	10	0.46	µg/L								
Naphthalene	ND	5.0	0.61	µg/L								
2-Nitroaniline	ND	10	0.69	µg/L								
3-Nitroaniline	ND	10	0.59	µg/L								
4-Nitroaniline	ND	10	0.60	µg/L								
Nitrobenzene	ND	10	0.63	µg/L								
2-Nitrophenol	ND	10	0.51	µg/L								
4-Nitrophenol	ND	10	2.1	µg/L								
N-Nitrosodimethylamine	ND	10	0.78	µg/L								L-04
N-Nitrosodiphenylamine/Diphenylamine	ND	10	0.38	µg/L								
N-Nitrosodi-n-propylamine	ND	10	0.61	µg/L								
Pentachloronitrobenzene	ND	10	0.62	µg/L								
Pentachlorophenol	ND	10	3.5	µg/L								V-05
Phenanthrene	ND	5.0	0.48	µg/L								
Phenol	ND	10	0.23	µg/L								
Pyrene	ND	5.0	0.61	µg/L								
Pyridine	ND	5.0	2.5	µg/L								R-05
1,2,4,5-Tetrachlorobenzene	ND	10	0.65	µg/L								
1,2,4-Trichlorobenzene	ND	5.0	0.67	µg/L								
2,4,5-Trichlorophenol	ND	10	0.51	µg/L								
2,4,6-Trichlorophenol	ND	10	0.45	µg/L								
Surrogate: 2-Fluorophenol	*88.0*			µg/L	200		44.0		15-110			
Surrogate: Phenol-d6	*58.1*			µg/L	200		29.1		15-110			
Surrogate: Nitrobenzene-d5	*67.0*			µg/L	100		67.0		30-130			
Surrogate: 2-Fluorobiphenyl	*75.4*			µg/L	100		75.4		30-130			
Surrogate: 2,4,6-Tribromophenol	*176*			µg/L	200		88.2		15-110			
Surrogate: p-Terphenyl-d14	*85.0*			µg/L	100		85.0		30-130			
LCS (B304402-BS1) B/N: 50-140 A: 30-140					Prepared: 03/29/22 Analyzed: 03/31/22							
Acenaphthene	34.0	5.0	0.52	µg/L	50.0		68.0		40-140			
Acenaphthylene	37.5	5.0	0.48	µg/L	50.0		75.0		40-140			
Acetophenone	32.0	10	0.53	µg/L	50.0		64.1		40-140			
Aniline	27.1	5.0	0.70	µg/L	50.0		54.1		40-140			V-05
Anthracene	37.6	5.0	0.46	µg/L	50.0		75.2		40-140			
Benzidine UJ, LCSL	12.0	20	10	µg/L	50.0		**24.1**	*	40-140			L-07A, V-04, V-05, V-35, J
Benzo(a)anthracene	38.0	5.0	0.41	µg/L	50.0		75.9		40-140			
Benzo(a)pyrene	40.8	5.0	0.57	µg/L	50.0		81.6		40-140			
Benzo(b)fluoranthene	37.2	5.0	0.47	µg/L	50.0		74.5		40-140			
Benzo(g,h,i)perylene	38.7	5.0	0.61	µg/L	50.0		77.4		40-140			
Benzo(k)fluoranthene	39.8	5.0	0.49	µg/L	50.0		79.7		40-140			
Benzoic Acid UJ, LCSL	10.6	10	8.4	µg/L	50.0		21.2		10-130			R-05 †
Bis(2-chloroethoxy)methane	34.4	10	0.46	µg/L	50.0		68.8		40-140			
Bis(2-chloroethyl)ether	30.0	10	0.57	µg/L	50.0		60.0		40-140			
Bis(2-chloroisopropyl)ether	33.2	10	0.69	µg/L	50.0		66.5		40-140			
Bis(2-Ethylhexyl)phthalate	35.5	10	0.84	µg/L	50.0		71.0		40-140			
4-Bromophenylphenylether	37.6	10	0.47	µg/L	50.0		75.1		40-140			

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B304402 - SW-846 3510C												
LCS (B304402-BS1)					Prepared: 03/29/22 Analyzed: 03/31/22							
Butylbenzylphthalate	34.2	10	0.67	µg/L	50.0		68.5	40-140				
Carbazole	36.2	10	0.43	µg/L	50.0		72.4	40-140				
4-Chloroaniline	40.5	10	0.58	µg/L	50.0		81.0	40-140			V-34	
4-Chloro-3-methylphenol	32.9	10	0.56	µg/L	50.0		65.8	30-130				
2-Chloronaphthalene	32.6	10	0.49	µg/L	50.0		65.3	40-140				
2-Chlorophenol	30.2	10	0.47	µg/L	50.0		60.5	30-130				
4-Chlorophenylphenylether	36.7	10	0.48	µg/L	50.0		73.4	40-140				
Chrysene	36.0	5.0	0.40	µg/L	50.0		72.0	40-140				
Dibenz(a,h)anthracene	39.2	5.0	0.69	µg/L	50.0		78.4	40-140				
Dibenzofuran	40.1	5.0	0.49	µg/L	50.0		80.2	40-140				
Di-n-butylphthalate	33.8	10	0.46	µg/L	50.0		67.6	40-140				
1,2-Dichlorobenzene	29.0	5.0	0.67	µg/L	50.0		58.0	40-140				
1,3-Dichlorobenzene	28.1	5.0	0.67	µg/L	50.0		56.2	40-140				
1,4-Dichlorobenzene	28.2	5.0	0.67	µg/L	50.0		56.5	40-140				
3,3-Dichlorobenzidine	42.5	10	0.71	µg/L	50.0		85.0	40-140			V-34	
2,4-Dichlorophenol	34.3	10	0.48	µg/L	50.0		68.5	30-130				
Diethylphthalate	34.7	10	0.42	µg/L	50.0		69.5	40-140				
2,4-Dimethylphenol	35.0	10	0.70	µg/L	50.0		69.9	30-130				
Dimethylphthalate	35.6	10	0.38	µg/L	50.0		71.2	40-140				
4,6-Dinitro-2-methylphenol	32.2	10	7.0	µg/L	50.0		64.4	30-130				
2,4-Dinitrophenol	26.7	10	8.1	µg/L	50.0		53.4	30-130				
2,4-Dinitrotoluene	36.8	10	0.61	µg/L	50.0		73.6	40-140				
2,6-Dinitrotoluene	38.8	10	0.52	µg/L	50.0		77.6	40-140				
Di-n-octylphthalate	33.6	10	3.9	µg/L	50.0		67.1	40-140				
1,2-Diphenylhydrazine/Azobenzene	35.8	10	0.57	µg/L	50.0		71.5	40-140				
Fluoranthene	36.6	5.0	0.43	µg/L	50.0		73.1	40-140				
Fluorene	36.8	5.0	0.52	µg/L	50.0		73.7	40-140				
Hexachlorobenzene	40.6	10	0.51	µg/L	50.0		81.2	40-140				
Hexachlorobutadiene	31.7	10	0.77	µg/L	50.0		63.5	40-140				
Hexachlorocyclopentadiene B/N - UJ, LCSL	22.5	10	3.7	µg/L	50.0		44.9	30-140			V-05	†
Hexachloroethane	27.0	10	0.74	µg/L	50.0		53.9	40-140				
Indeno(1,2,3-cd)pyrene	39.0	5.0	0.74	µg/L	50.0		78.1	40-140				
Isophorone	38.1	10	0.55	µg/L	50.0		76.1	40-140				
1-Methylnaphthalene	33.6	5.0	0.60	µg/L	50.0		67.2	40-140				
2-Methylnaphthalene	38.3	5.0	0.69	µg/L	50.0		76.6	40-140				
2-Methylphenol	30.6	10	0.47	µg/L	50.0		61.1	30-130				
3/4-Methylphenol	27.8	10	0.46	µg/L	50.0		55.7	30-130				
Naphthalene	33.7	5.0	0.61	µg/L	50.0		67.4	40-140				
2-Nitroaniline	34.2	10	0.69	µg/L	50.0		68.3	40-140				
3-Nitroaniline	37.1	10	0.59	µg/L	50.0		74.2	40-140				
4-Nitroaniline	35.3	10	0.60	µg/L	50.0		70.5	40-140				
Nitrobenzene	32.6	10	0.63	µg/L	50.0		65.1	40-140				
2-Nitrophenol	34.0	10	0.51	µg/L	50.0		68.0	30-130				
4-Nitrophenol A - within limits - no quals	18.6	10	2.1	µg/L	50.0		37.2	10-130				†
N-Nitrosodimethylamine B/N - UJ, LCSL	18.3	10	0.78	µg/L	50.0		**36.7**	* 40-140			L-04	
N-Nitrosodiphenylamine/Diphenylamine	38.4	10	0.38	µg/L	50.0		76.7	40-140				
N-Nitrosodi-n-propylamine	30.7	10	0.61	µg/L	50.0		61.4	40-140				
Pentachloronitrobenzene	38.1	10	0.62	µg/L	50.0		76.3	40-140				
Pentachlorophenol	26.5	10	3.5	µg/L	50.0		53.1	30-130			V-05	
Phenanthrene	38.2	5.0	0.48	µg/L	50.0		76.4	40-140				

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B304402 - SW-846 3510C													
LCS (B304402-BS1)					Prepared: 03/29/22 Analyzed: 03/31/22								
Phenol UJ, LCSL	13.9	10	0.23	µg/L	50.0		27.8		20-130				†
Pyrene	38.9	5.0	0.61	µg/L	50.0		77.9		40-140				
Pyridine %R essentially 10 - UJ, LCSL	4.97	5.0	2.5	µg/L	50.0		**9.94**	*	10-140			L-07A, J	†
1,2,4,5-Tetrachlorobenzene	35.6	10	0.65	µg/L	50.0		71.3		40-140				
1,2,4-Trichlorobenzene	33.5	5.0	0.67	µg/L	50.0		67.1		40-140				
2,4,5-Trichlorophenol	38.6	10	0.51	µg/L	50.0		77.1		30-130				
2,4,6-Trichlorophenol	35.5	10	0.45	µg/L	50.0		70.9		30-130				
Surrogate: 2-Fluorophenol	*93.6*			µg/L	200		46.8		15-110				
Surrogate: Phenol-d6	*64.7*			µg/L	200		32.4		15-110				
Surrogate: Nitrobenzene-d5	*71.3*			µg/L	100		71.3		30-130				
Surrogate: 2-Fluorobiphenyl	*81.0*			µg/L	100		81.0		30-130				
Surrogate: 2,4,6-Tribromophenol	*176*			µg/L	200		88.1		15-110				
Surrogate: p-Terphenyl-d14	*80.0*			µg/L	100		80.0		30-130				
LCS Dup (B304402-BSD1)					Prepared: 03/29/22 Analyzed: 03/31/22								
Acenaphthene	33.3	5.0	0.52	µg/L	50.0		66.6		40-140	1.99	20		
Acenaphthylene	36.8	5.0	0.48	µg/L	50.0		73.5		40-140	1.97	20		
Acetophenone	30.7	10	0.53	µg/L	50.0		61.5		40-140	4.11	20		
Aniline	34.4	5.0	0.70	µg/L	50.0		68.8		40-140	23.9	50	V-05	‡
Anthracene	36.3	5.0	0.46	µg/L	50.0		72.5		40-140	3.66	20		
Benzidine Already qual'd UJ, add LCSRPD	59.0	20	10	µg/L	50.0		118		40-140	**132**	* 20	R-05, V-04, V-05, V-35	
Benzo(a)anthracene	37.5	5.0	0.41	µg/L	50.0		75.0		40-140	1.19	20		
Benzo(a)pyrene	38.8	5.0	0.57	µg/L	50.0		77.7		40-140	4.95	20		
Benzo(b)fluoranthene	36.6	5.0	0.47	µg/L	50.0		73.1		40-140	1.79	20		
Benzo(g,h,i)perylene	35.6	5.0	0.61	µg/L	50.0		71.2		40-140	8.37	20		
Benzo(k)fluoranthene	39.2	5.0	0.49	µg/L	50.0		78.3		40-140	1.72	20		
Benzoic Acid Already qual'd - see above	5.37	10		µg/L	50.0		10.7		10-130	**65.6**	* 50	R-05, J	† ‡
Bis(2-chloroethoxy)methane	32.1	10	0.46	µg/L	50.0		64.3		40-140	6.73	20		
Bis(2-chloroethyl)ether	28.2	10	0.57	µg/L	50.0		56.5		40-140	5.94	20		
Bis(2-chloroisopropyl)ether	31.3	10	0.69	µg/L	50.0		62.6		40-140	6.11	20		
Bis(2-Ethylhexyl)phthalate	34.6	10	0.84	µg/L	50.0		69.2		40-140	2.45	20		
4-Bromophenylphenylether	35.9	10	0.47	µg/L	50.0		71.7		40-140	4.60	20		
Butylbenzylphthalate	34.1	10	0.67	µg/L	50.0		68.2		40-140	0.410	20		
Carbazole	35.1	10	0.43	µg/L	50.0		70.1		40-140	3.12	20		
4-Chloroaniline	40.6	10	0.58	µg/L	50.0		81.3		40-140	0.419	20	V-34	
4-Chloro-3-methylphenol	31.3	10	0.56	µg/L	50.0		62.6		30-130	5.02	20		
2-Chloronaphthalene	31.2	10	0.49	µg/L	50.0		62.4		40-140	4.51	20		
2-Chlorophenol	28.9	10	0.47	µg/L	50.0		57.7		30-130	4.64	20		
4-Chlorophenylphenylether	35.6	10	0.48	µg/L	50.0		71.3		40-140	2.88	20		
Chrysene	35.1	5.0	0.40	µg/L	50.0		70.2		40-140	2.50	20		
Dibenz(a,h)anthracene	37.0	5.0	0.69	µg/L	50.0		74.1		40-140	5.69	20		
Dibenzofuran	39.3	5.0	0.49	µg/L	50.0		78.6		40-140	2.04	20		
Di-n-butylphthalate	33.4	10	0.46	µg/L	50.0		66.8		40-140	1.13	20		
1,2-Dichlorobenzene	27.2	5.0	0.67	µg/L	50.0		54.4		40-140	6.37	20		
1,3-Dichlorobenzene	25.7	5.0	0.67	µg/L	50.0		51.3		40-140	9.11	20		
1,4-Dichlorobenzene	26.4	5.0	0.67	µg/L	50.0		52.7		40-140	6.85	20		
3,3-Dichlorobenzidine	43.2	10	0.71	µg/L	50.0		86.4		40-140	1.61	20	V-34	
2,4-Dichlorophenol	32.7	10	0.48	µg/L	50.0		65.4		30-130	4.66	20		
Diethylphthalate	35.6	10	0.42	µg/L	50.0		71.2		40-140	2.45	20		
2,4-Dimethylphenol	33.1	10	0.70	µg/L	50.0		66.1		30-130	5.58	20		

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B304402 - SW-846 3510C													
LCS Dup (B304402-BSD1)					Prepared: 03/29/22 Analyzed: 03/31/22								
Dimethylphthalate	35.2	10	0.38	µg/L	50.0		70.4		40-140	1.16	50		‡
4,6-Dinitro-2-methylphenol	32.2	10	7.0	µg/L	50.0		64.3		30-130	0.155	50		‡
2,4-Dinitrophenol	29.2	10	8.1	µg/L	50.0		58.4		30-130	8.84	50		‡
2,4-Dinitrotoluene	38.0	10	0.61	µg/L	50.0		76.0		40-140	3.21	20		
2,6-Dinitrotoluene	39.1	10	0.52	µg/L	50.0		78.2		40-140	0.770	20		
Di-n-octylphthalate	32.7	10	3.9	µg/L	50.0		65.4		40-140	2.63	20		
1,2-Diphenylhydrazine/Azobenzene	34.0	10	0.57	µg/L	50.0		68.1		40-140	4.96	20		
Fluoranthene	36.2	5.0	0.43	µg/L	50.0		72.4		40-140	1.04	20		
Fluorene	36.7	5.0	0.52	µg/L	50.0		73.4		40-140	0.435	20		
Hexachlorobenzene	39.3	10	0.51	µg/L	50.0		78.5		40-140	3.33	20		
Hexachlorobutadiene	29.2	10	0.77	µg/L	50.0		58.3		40-140	8.48	20		
Hexachlorocyclopentadiene	20.6	10	3.7	µg/L	50.0		41.3		30-140	8.54	50	V-05	† ‡
Hexachloroethane	24.3	10	0.74	µg/L	50.0		48.6		40-140	10.5	50		‡
Indeno(1,2,3-cd)pyrene	36.6	5.0	0.74	µg/L	50.0		73.1		40-140	6.56	50		‡
Isophorone	36.1	10	0.55	µg/L	50.0		72.2		40-140	5.23	20		
1-Methylnaphthalene	31.3	5.0	0.60	µg/L	50.0		62.6		40-140	7.09	20		
2-Methylnaphthalene	36.4	5.0	0.69	µg/L	50.0		72.8		40-140	5.11	20		
2-Methylphenol	29.7	10	0.47	µg/L	50.0		59.5		30-130	2.72	20		
3/4-Methylphenol	26.0	10	0.46	µg/L	50.0		52.1		30-130	6.68	20		
Naphthalene	31.9	5.0	0.61	µg/L	50.0		63.8		40-140	5.55	20		
2-Nitroaniline	34.4	10	0.69	µg/L	50.0		68.9		40-140	0.816	20		
3-Nitroaniline	39.5	10	0.59	µg/L	50.0		78.9		40-140	6.11	20		
4-Nitroaniline	38.1	10	0.60	µg/L	50.0		76.2		40-140	7.71	20		
Nitrobenzene	30.9	10	0.63	µg/L	50.0		61.8		40-140	5.26	20		
2-Nitrophenol	30.6	10	0.51	µg/L	50.0		61.1		30-130	10.6	20		
4-Nitrophenol	17.4	10	2.1	µg/L	50.0		34.9		10-130	6.49	50		† ‡
N-Nitrosodimethylamine	17.1	10	0.78	µg/L	50.0		**34.1**	*	40-140	7.17	20	L-04	
N-Nitrosodiphenylamine/Diphenylamine	36.4	10	0.38	µg/L	50.0		72.8		40-140	5.19	20		
N-Nitrosodi-n-propylamine	29.7	10	0.61	µg/L	50.0		59.4		40-140	3.38	20		
Pentachloronitrobenzene	39.4	10	0.62	µg/L	50.0		78.8		40-140	3.22	20		
Pentachlorophenol	24.4	10	3.5	µg/L	50.0		48.9		30-130	8.20	50	V-05	‡
Phenanthrene	36.9	5.0	0.48	µg/L	50.0		73.9		40-140	3.38	20		
Phenol	13.2	10	0.23	µg/L	50.0		26.4		20-130	5.02	20		†
Pyrene	38.8	5.0	0.61	µg/L	50.0		77.6		40-140	0.309	20		
Pyridine	11.4	5.0	2.5	µg/L	50.0		22.8		10-140	**78.4**	* 50	R-05	† ‡
1,2,4,5-Tetrachlorobenzene	33.5	10	0.65	µg/L	50.0		67.0		40-140	6.10	20		
1,2,4-Trichlorobenzene	30.5	5.0	0.67	µg/L	50.0		61.0		40-140	9.46	20		
2,4,5-Trichlorophenol	37.8	10	0.51	µg/L	50.0		75.6		30-130	1.99	20		
2,4,6-Trichlorophenol	35.3	10	0.45	µg/L	50.0		70.6		30-130	0.481	50		‡
Surrogate: 2-Fluorophenol	*87.4*			µg/L	200		43.7		15-110				
Surrogate: Phenol-d6	*60.3*			µg/L	200		30.1		15-110				
Surrogate: Nitrobenzene-d5	*65.8*			µg/L	100		65.8		30-130				
Surrogate: 2-Fluorobiphenyl	*76.9*			µg/L	100		76.9		30-130				
Surrogate: 2,4,6-Tribromophenol	*180*			µg/L	200		89.9		15-110				
Surrogate: p-Terphenyl-d14	*78.7*			µg/L	100		78.7		30-130				

Already qual'd - see above

B/N - UJ, LCSL

A - within limits - no quals

Already qual'd - see above

A - within limits - no quals

Already UJ, LCSL

Already qual'd UJ, add LCSRPD

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B304402 - SW-846 3510C												
Qual'd sample and FD												
Matrix Spike (B304402-MS1)	**Source: 22C1692-03**				Prepared: 03/29/22 Analyzed: 04/06/22							
Acenaphthene	33.8	4.8	0.50	µg/L	48.1	ND	70.3		40-140			
Acenaphthylene	37.1	4.8	0.47	µg/L	48.1	ND	77.2		40-140			
Acetophenone	30.9	9.6	0.51	µg/L	48.1	ND	64.2		40-140			
Aniline	30.7	4.8	0.67	µg/L	48.1	ND	63.8		40-140			V-05
Anthracene	36.4	4.8	0.44	µg/L	48.1	ND	75.6		40-140			
Benzidine High bias, sample ND - no quals	68.1	19	10	µg/L	48.1	ND	**142**	*	40-140			MS-22, V-04, V-05, V-35
Benzo(a)anthracene	36.6	4.8	0.39	µg/L	48.1	ND	76.2		40-140			
Benzo(a)pyrene	38.9	4.8	0.55	µg/L	48.1	ND	81.0		40-140			
Benzo(b)fluoranthene	36.3	4.8	0.45	µg/L	48.1	ND	75.5		40-140			
Benzo(g,h,i)perylene	37.0	4.8	0.59	µg/L	48.1	ND	77.0		40-140			
Benzo(k)fluoranthene	38.0	4.8	0.47	µg/L	48.1	ND	79.1		40-140			
Benzoic Acid R, MSL	3.71	9.6	0.0	µg/L	48.1	ND	**7.72**	*	40-140			MS-09, J
Bis(2-chloroethoxy)methane	32.2	9.6	0.44	µg/L	48.1	ND	66.9		40-140			
Bis(2-chloroethyl)ether	28.8	9.6	0.55	µg/L	48.1	ND	59.8		40-140			
Bis(2-chloroisopropyl)ether	32.4	9.6	0.66	µg/L	48.1	ND	67.5		40-140			
Bis(2-Ethylhexyl)phthalate	36.0	9.6	0.81	µg/L	48.1	ND	74.8		40-140			
4-Bromophenylphenylether	33.9	9.6	0.45	µg/L	48.1	ND	70.6		40-140			
Butylbenzylphthalate	33.3	9.6	0.65	µg/L	48.1	ND	69.2		40-140			
Carbazole	34.8	9.6	0.41	µg/L	48.1	ND	72.5		40-140			
4-Chloroaniline	36.7	9.6	0.55	µg/L	48.1	ND	76.2		40-140			V-34
4-Chloro-3-methylphenol	31.4	9.6	0.54	µg/L	48.1	ND	65.3		30-130			
2-Chloronaphthalene	32.2	9.6	0.47	µg/L	48.1	ND	67.0		40-140			
2-Chlorophenol	29.6	9.6	0.46	µg/L	48.1	ND	61.6		30-130			
4-Chlorophenylphenylether	35.2	9.6	0.46	µg/L	48.1	ND	73.2		40-140			
Chrysene	35.1	4.8	0.38	µg/L	48.1	ND	73.0		40-140			
Dibenz(a,h)anthracene	37.8	4.8	0.66	µg/L	48.1	ND	78.7		40-140			
Dibenzofuran	38.9	4.8	0.47	µg/L	48.1	ND	81.0		40-140			
Di-n-butylphthalate	32.4	9.6	0.44	µg/L	48.1	ND	67.3		40-140			
1,2-Dichlorobenzene	30.2	4.8	0.64	µg/L	48.1	ND	62.9		40-140			
1,3-Dichlorobenzene	29.7	4.8	0.65	µg/L	48.1	ND	61.7		40-140			
1,4-Dichlorobenzene	29.6	4.8	0.64	µg/L	48.1	ND	61.5		40-140			
3,3-Dichlorobenzidine	41.4	9.6	0.68	µg/L	48.1	ND	86.1		40-140			V-34
2,4-Dichlorophenol	32.8	9.6	0.46	µg/L	48.1	ND	68.1		30-130			
Diethylphthalate	33.8	9.6	0.40	µg/L	48.1	ND	70.3		40-140			
2,4-Dimethylphenol	32.1	9.6	0.67	µg/L	48.1	ND	66.8		30-130			
Dimethylphthalate	33.8	9.6	0.36	µg/L	48.1	ND	70.3		40-140			
4,6-Dinitro-2-methylphenol	31.7	9.6	6.8	µg/L	48.1	ND	65.8		30-130			
2,4-Dinitrophenol	27.8	9.6	7.8	µg/L	48.1	ND	57.8		30-130			
2,4-Dinitrotoluene	37.0	9.6	0.59	µg/L	48.1	ND	76.9		40-140			
2,6-Dinitrotoluene	38.8	9.6	0.50	µg/L	48.1	ND	80.7		40-140			
Di-n-octylphthalate	34.8	9.6	3.8	µg/L	48.1	ND	72.3		40-140			
1,2-Diphenylhydrazine/Azobenzene	33.6	9.6	0.55	µg/L	48.1	ND	70.0		40-140			
Fluoranthene	35.4	4.8	0.41	µg/L	48.1	ND	73.6		40-140			
Fluorene	36.3	4.8	0.50	µg/L	48.1	ND	75.5		40-140			
Hexachlorobenzene	37.2	9.6	0.49	µg/L	48.1	ND	77.4		40-140			
Hexachlorobutadiene	32.4	9.6	0.74	µg/L	48.1	ND	67.5		40-140			
Hexachlorocyclopentadiene	24.6	9.6	3.5	µg/L	48.1	ND	51.2		30-130			V-05
Hexachloroethane	28.4	9.6	0.71	µg/L	48.1	ND	59.1		40-140			
Indeno(1,2,3-cd)pyrene	35.8	4.8	0.71	µg/L	48.1	ND	74.5		40-140			

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B304402 - SW-846 3510C												
Matrix Spike (B304402-MS1)	**Source: 22C1692-03**				Prepared: 03/29/22 Analyzed: 04/06/22							
Isophorone	36.0	9.6	0.53	µg/L	48.1	ND	74.9		40-140			
1-Methylnaphthalene	32.0	4.8	0.58	µg/L	48.1	ND	66.5		40-140			
2-Methylnaphthalene	37.7	4.8	0.66	µg/L	48.1	ND	78.5		40-140			
2-Methylphenol	28.7	9.6	0.46	µg/L	48.1	ND	59.6		30-130			
3/4-Methylphenol	25.3	9.6	0.44	µg/L	48.1	ND	52.7		30-130			
Naphthalene	33.5	4.8	0.59	µg/L	48.1	ND	69.7		40-140			
2-Nitroaniline	34.0	9.6	0.67	µg/L	48.1	ND	70.7		40-140			
3-Nitroaniline	37.9	9.6	0.56	µg/L	48.1	ND	78.8		40-140			
4-Nitroaniline	37.8	9.6	0.58	µg/L	48.1	ND	78.6		40-140			
Nitrobenzene	32.2	9.6	0.60	µg/L	48.1	ND	67.1		40-140			
2-Nitrophenol	32.3	9.6	0.49	µg/L	48.1	ND	67.1		30-130			
4-Nitrophenol	18.4	9.6	2.0	µg/L	48.1	ND	38.3		30-130			
N-Nitrosodimethylamine B/N - UJ, MSL	18.6	9.6	0.75	µg/L	48.1	ND	**38.8**	*	40-140			MS-09
N-Nitrosodiphenylamine/Diphenylamine	35.7	9.6	0.37	µg/L	48.1	ND	74.3		40-140			
N-Nitrosodi-n-propylamine	29.6	9.6	0.59	µg/L	48.1	ND	61.6		40-140			
Pentachloronitrobenzene	36.4	9.6	0.60	µg/L	48.1	ND	75.7		40-140			
Pentachlorophenol A - within limits - no quals	22.8	9.6	3.4	µg/L	48.1	ND	47.4		30-130			V-05
Phenanthrene	35.9	4.8	0.46	µg/L	48.1	ND	74.7		40-140			
Phenol UJ, MSL	12.8	9.6	0.22	µg/L	48.1	ND	**26.6**	*	30-130			MS-09
Pyrene	36.3	4.8	0.59	µg/L	48.1	ND	75.5		40-140			
Pyridine UJ, MSL	13.6	4.8	2.4	µg/L	48.1	ND	**28.3**	*	40-140			MS-09
1,2,4,5-Tetrachlorobenzene	35.1	9.6	0.63	µg/L	48.1	ND	73.1		40-140			
1,2,4-Trichlorobenzene	32.7	4.8	0.64	µg/L	48.1	ND	68.1		40-140			
2,4,5-Trichlorophenol	36.8	9.6	0.49	µg/L	48.1	ND	76.6		30-130			
2,4,6-Trichlorophenol	34.0	9.6	0.43	µg/L	48.1	ND	70.7		30-130			
Surrogate: 2-Fluorophenol	*85.9*			µg/L	192		44.6		15-110			
Surrogate: Phenol-d6	*56.5*			µg/L	192		29.4		15-110			
Surrogate: Nitrobenzene-d5	*70.0*			µg/L	96.2		72.8		30-130			
Surrogate: 2-Fluorobiphenyl	*79.3*			µg/L	96.2		82.4		30-130			
Surrogate: 2,4,6-Tribromophenol	*166*			µg/L	192		86.4		15-110			
Surrogate: p-Terphenyl-d14	*73.5*			µg/L	96.2		76.5		30-130			
Matrix Spike Dup (B304402-MSD1)	**Source: 22C1692-03**				Prepared: 03/29/22 Analyzed: 04/06/22							
Acenaphthene	32.9	4.8	0.50	µg/L	48.1	ND	68.5		40-140	2.59	30	
Acenaphthylene	36.6	4.8	0.47	µg/L	48.1	ND	76.1		40-140	1.44	30	
Acetophenone	31.0	9.6	0.51	µg/L	48.1	ND	64.4		40-140	0.404	30	
Aniline	29.1	4.8	0.67	µg/L	48.1	ND	60.6		40-140	5.17	30	V-05
Anthracene	35.7	4.8	0.44	µg/L	48.1	ND	74.3		40-140	1.84	30	
Benzidine	55.3	19	10	µg/L	48.1	ND	115		40-140	20.8	30	V-04, V-05, V-35
Benzo(a)anthracene	35.9	4.8	0.39	µg/L	48.1	ND	74.8		40-140	1.91	30	
Benzo(a)pyrene	38.5	4.8	0.55	µg/L	48.1	ND	80.1		40-140	1.14	30	
Benzo(b)fluoranthene	35.7	4.8	0.45	µg/L	48.1	ND	74.2		40-140	1.71	30	
Benzo(g,h,i)perylene	36.1	4.8	0.59	µg/L	48.1	ND	75.1		40-140	2.58	30	
Benzo(k)fluoranthene	37.7	4.8	0.47	µg/L	48.1	ND	78.3		40-140	0.966	30	
Benzoic Acid Already R, MSL, add MSRPD	7.40	9.6	0.0	µg/L	48.1	ND	**15.4**	*	40-140		30	MS-09, J
Bis(2-chloroethoxy)methane	31.7	9.6	0.44	µg/L	48.1	ND	66.0		40-140	1.38	30	
Bis(2-chloroethyl)ether	28.9	9.6	0.55	µg/L	48.1	ND	60.1		40-140	0.467	30	
Bis(2-chloroisopropyl)ether	32.8	9.6	0.66	µg/L	48.1	ND	68.2		40-140	1.06	30	
Bis(2-Ethylhexyl)phthalate	34.0	9.6	0.81	µg/L	48.1	ND	70.8		40-140	5.52	30	
4-Bromophenylphenylether	34.0	9.6	0.45	µg/L	48.1	ND	70.7		40-140	0.255	30	

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B304402 - SW-846 3510C												
Matrix Spike Dup (B304402-MSD1)	**Source: 22C1692-03**				Prepared: 03/29/22 Analyzed: 04/06/22							
Butylbenzylphthalate	32.7	9.6	0.65	µg/L	48.1	ND	68.0		40-140	1.81	30	
Carbazole	34.7	9.6	0.41	µg/L	48.1	ND	72.1		40-140	0.498	30	
4-Chloroaniline	34.8	9.6	0.55	µg/L	48.1	ND	72.3		40-140	5.33	30	V-34
4-Chloro-3-methylphenol	31.0	9.6	0.54	µg/L	48.1	ND	64.5		30-130	1.23	30	
2-Chloronaphthalene	32.1	9.6	0.47	µg/L	48.1	ND	66.8		40-140	0.269	30	
2-Chlorophenol	29.8	9.6	0.46	µg/L	48.1	ND	62.0		30-130	0.615	30	
4-Chlorophenylphenylether	34.7	9.6	0.46	µg/L	48.1	ND	72.2		40-140	1.38	30	
Chrysene	34.1	4.8	0.38	µg/L	48.1	ND	70.9		40-140	2.83	30	
Dibenz(a,h)anthracene	36.6	4.8	0.66	µg/L	48.1	ND	76.2		40-140	3.25	30	
Dibenzofuran	38.7	4.8	0.47	µg/L	48.1	ND	80.5		40-140	0.570	30	
Di-n-butylphthalate	31.7	9.6	0.44	µg/L	48.1	ND	66.0		40-140	2.04	30	
1,2-Dichlorobenzene	30.5	4.8	0.64	µg/L	48.1	ND	63.5		40-140	1.08	30	
1,3-Dichlorobenzene	30.1	4.8	0.65	µg/L	48.1	ND	62.6		40-140	1.48	30	
1,4-Dichlorobenzene	30.3	4.8	0.64	µg/L	48.1	ND	63.1		40-140	2.57	30	
3,3-Dichlorobenzidine	39.5	9.6	0.68	µg/L	48.1	ND	82.3		40-140	4.61	30	V-34
2,4-Dichlorophenol	32.5	9.6	0.46	µg/L	48.1	ND	67.5		30-130	0.884	30	
Diethylphthalate	33.2	9.6	0.40	µg/L	48.1	ND	69.1		40-140	1.84	30	
2,4-Dimethylphenol	31.8	9.6	0.67	µg/L	48.1	ND	66.1		30-130	1.02	30	
Dimethylphthalate	33.5	9.6	0.36	µg/L	48.1	ND	69.7		40-140	0.743	30	
4,6-Dinitro-2-methylphenol	31.6	9.6	6.8	µg/L	48.1	ND	65.7		30-130	0.274	30	
2,4-Dinitrophenol	27.4	9.6	7.8	µg/L	48.1	ND	57.0		30-130	1.39	30	
2,4-Dinitrotoluene	36.0	9.6	0.59	µg/L	48.1	ND	75.0		40-140	2.53	30	
2,6-Dinitrotoluene	37.8	9.6	0.50	µg/L	48.1	ND	78.5		40-140	2.71	30	
Di-n-octylphthalate	33.2	9.6	3.8	µg/L	48.1	ND	69.1		40-140	4.52	30	
1,2-Diphenylhydrazine/Azobenzene	33.8	9.6	0.55	µg/L	48.1	ND	70.4		40-140	0.599	30	
Fluoranthene	34.4	4.8	0.41	µg/L	48.1	ND	71.6		40-140	2.70	30	
Fluorene	36.4	4.8	0.50	µg/L	48.1	ND	75.8		40-140	0.317	30	
Hexachlorobenzene	36.6	9.6	0.49	µg/L	48.1	ND	76.0		40-140	1.75	30	
Hexachlorobutadiene	33.6	9.6	0.74	µg/L	48.1	ND	69.8		40-140	3.38	30	
Hexachlorocyclopentadiene	25.1	9.6	3.5	µg/L	48.1	ND	52.2		30-130	1.97	30	V-05
Hexachloroethane	29.1	9.6	0.71	µg/L	48.1	ND	60.6		40-140	2.41	30	
Indeno(1,2,3-cd)pyrene	35.1	4.8	0.71	µg/L	48.1	ND	73.0		40-140	2.04	30	
Isophorone	36.2	9.6	0.53	µg/L	48.1	ND	75.3		40-140	0.453	30	
1-Methylnaphthalene	32.1	4.8	0.58	µg/L	48.1	ND	66.8		40-140	0.510	30	
2-Methylnaphthalene	37.5	4.8	0.66	µg/L	48.1	ND	78.0		40-140	0.562	30	
2-Methylphenol	28.5	9.6	0.46	µg/L	48.1	ND	59.3		30-130	0.504	30	
3/4-Methylphenol	25.1	9.6	0.44	µg/L	48.1	ND	52.3		30-130	0.800	30	
Naphthalene	33.7	4.8	0.59	µg/L	48.1	ND	70.1		40-140	0.515	30	
2-Nitroaniline	34.6	9.6	0.67	µg/L	48.1	ND	72.0		40-140	1.85	30	
3-Nitroaniline	36.6	9.6	0.56	µg/L	48.1	ND	76.1		40-140	3.46	30	
4-Nitroaniline	36.7	9.6	0.58	µg/L	48.1	ND	76.3		40-140	2.89	30	
Nitrobenzene	31.4	9.6	0.60	µg/L	48.1	ND	65.4		40-140	2.51	30	
2-Nitrophenol	32.9	9.6	0.49	µg/L	48.1	ND	68.4		30-130	1.86	30	
4-Nitrophenol	17.0	9.6	2.0	µg/L	48.1	ND	35.3		30-130	8.10	30	
N-Nitrosodimethylamine	18.7	9.6	0.75	µg/L	48.1	ND	**38.8**	*	40-140	0.155	30	MS-09
N-Nitrosodiphenylamine/Diphenylamine	35.4	9.6	0.37	µg/L	48.1	ND	73.6		40-140	0.920	30	
N-Nitrosodi-n-propylamine	29.5	9.6	0.59	µg/L	48.1	ND	61.5		40-140	0.292	30	
Pentachloronitrobenzene	35.7	9.6	0.60	µg/L	48.1	ND	74.2		40-140	2.05	30	
Pentachlorophenol	22.5	9.6	3.4	µg/L	48.1	ND	46.8		30-130	1.44	30	V-05
Phenanthrene	36.0	4.8	0.46	µg/L	48.1	ND	74.9		40-140	0.241	30	

A - within limits - no quals

Already qual'd - see above

Already qual'd - see above

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B304402 - SW-846 3510C												
Matrix Spike Dup (B304402-MSD1)		**Source: 22C1692-03**			Prepared: 03/29/22 Analyzed: 04/06/22							
Phenol Already qual'd - see above	12.5	9.6	0.22	µg/L	48.1	ND	**26.0**	*	30-130	1.98	30	MS-09
Pyrene	36.0	4.8	0.59	µg/L	48.1	ND	74.9		40-140	0.904	30	
Pyridine Already qual'd - see above	13.5	4.8	2.4	µg/L	48.1	ND	**28.1**	*	40-140	0.850	30	MS-09
1,2,4,5-Tetrachlorobenzene	34.7	9.6	0.63	µg/L	48.1	ND	72.1		40-140	1.35	30	
1,2,4-Trichlorobenzene	33.8	4.8	0.64	µg/L	48.1	ND	70.3		40-140	3.18	30	
2,4,5-Trichlorophenol	36.5	9.6	0.49	µg/L	48.1	ND	76.0		30-130	0.734	30	
2,4,6-Trichlorophenol	34.7	9.6	0.43	µg/L	48.1	ND	72.1		30-130	1.90	30	
Surrogate: 2-Fluorophenol	*85.4*			µg/L	192		44.4		15-110			
Surrogate: Phenol-d6	*56.5*			µg/L	192		29.4		15-110			
Surrogate: Nitrobenzene-d5	*69.5*			µg/L	96.2		72.2		30-130			
Surrogate: 2-Fluorobiphenyl	*77.1*			µg/L	96.2		80.2		30-130			
Surrogate: 2,4,6-Tribromophenol	*167*			µg/L	192		86.8		15-110			
Surrogate: p-Terphenyl-d14	*73.3*			µg/L	96.2		76.2		30-130			

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Irvington, NY | Sample Description: | Work Order: 22C1692

Date Received: 3/25/2022

Field Sample #: 360175-DP003011 | Sampled: 3/22/2022 15:25

Sample ID: 22C1692-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	DF	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Fluorene	ND	4.8	0.50	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Hexachlorobenzene	ND	9.6	0.49	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Hexachlorobutadiene	ND	9.6	0.74	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Hexachlorocyclopentadiene	ND	9.6	3.5	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Hexachloroethane	ND	9.6	0.71	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Indeno(1,2,3-cd)pyrene	ND	4.8	0.71	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Isophorone	ND	9.6	0.53	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
1-Methylnaphthalene	ND	4.8	0.58	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
2-Methylnaphthalene	ND	4.8	0.66	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
2-Methylphenol	ND	9.6	0.46	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
3/4-Methylphenol	ND	9.6	0.44	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Naphthalene	ND	4.8	0.59	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
2-Nitroaniline	ND	9.6	0.67	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
3-Nitroaniline	ND	9.6	0.56	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
4-Nitroaniline	ND	9.6	0.58	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Nitrobenzene	ND	9.6	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
2-Nitrophenol	ND	9.6	0.49	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
4-Nitrophenol	ND	9.6	2.0	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
N-Nitrosodimethylamine	ND	9.6	0.75	µg/L	1	L-04	SW-846 8270E	3/29/22	4/6/22 18:04	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	9.6	0.37	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
N-Nitrosodi-n-propylamine	ND	9.6	0.59	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Pentachloronitrobenzene	ND	9.6	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Pentachlorophenol	ND	9.6	3.4	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Phenanthrene	ND	4.8	0.46	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Phenol	ND	9.6	0.22	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Pyrene	ND	4.8	0.59	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
Pyridine	ND	4.8	2.4	µg/L	1	R-05	SW-846 8270E	3/29/22	4/6/22 18:04	BGL
1,2,4,5-Tetrachlorobenzene	ND	9.6	0.63	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
1,2,4-Trichlorobenzene	ND	4.8	0.64	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
2,4,5-Trichlorophenol	ND	9.6	0.49	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL
2,4,6-Trichlorophenol	ND	9.6	0.43	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:04	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	41.6	15-110		4/6/22 18:04
Phenol-d6	27.5	15-110		4/6/22 18:04
Nitrobenzene-d5	66.1	30-130		4/6/22 18:04
2-Fluorobiphenyl	74.1	30-130		4/6/22 18:04
2,4,6-Tribromophenol	81.6	15-110		4/6/22 18:04
p-Terphenyl-d14	75.6	30-130		4/6/22 18:04

Only 1 A surrogate out - no quals

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Irvington, NY | Sample Description: | Work Order: 22C1692

Date Received: 3/25/2022

Field Sample #: 360175-DP004011 | Sampled: 3/22/2022 13:55

Sample ID: 22C1692-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	DF	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Fluorene	0.87	4.8	0.50	µg/L	1	J	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Hexachlorobenzene	ND	9.6	0.49	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Hexachlorobutadiene	ND	9.6	0.74	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Hexachlorocyclopentadiene	ND	9.6	3.5	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Hexachloroethane	ND	9.6	0.71	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Indeno(1,2,3-cd)pyrene	ND	4.8	0.71	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Isophorone	ND	9.6	0.53	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
1-Methylnaphthalene	3.9	4.8	0.58	µg/L	1	J	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
2-Methylnaphthalene	1.4	4.8	0.66	µg/L	1	J	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
2-Methylphenol	ND	9.6	0.46	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
3/4-Methylphenol	ND	9.6	0.44	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Naphthalene	0.62	4.8	0.59	µg/L	1	J	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
2-Nitroaniline	ND	9.6	0.67	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
3-Nitroaniline	ND	9.6	0.56	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
4-Nitroaniline	ND	9.6	0.58	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Nitrobenzene	ND	9.6	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
2-Nitrophenol	ND	9.6	0.49	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
4-Nitrophenol	ND	9.6	2.0	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
N-Nitrosodimethylamine	ND	9.6	0.75	µg/L	1	L-04	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	9.6	0.37	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
N-Nitrosodi-n-propylamine	ND	9.6	0.59	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Pentachloronitrobenzene	ND	9.6	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Pentachlorophenol	ND	9.6	3.4	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Phenanthrene	1.1	4.8	0.46	µg/L	1	J	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Phenol	ND	9.6	0.22	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Pyrene	ND	4.8	0.59	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
Pyridine	ND	4.8	2.4	µg/L	1	R-05	SW-846 8270E	3/29/22	4/6/22 18:31	BGL
1,2,4,5-Tetrachlorobenzene	ND	9.6	0.63	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
1,2,4-Trichlorobenzene	ND	4.8	0.64	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
2,4,5-Trichlorophenol	ND	9.6	0.49	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL
2,4,6-Trichlorophenol	ND	9.6	0.43	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:31	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	43.1	15-110		4/6/22 18:31
Phenol-d6	27.4	15-110		4/6/22 18:31
Nitrobenzene-d5	69.7	30-130	Only 1 A surrogate out - no quals	4/6/22 18:31
2-Fluorobiphenyl	76.6	30-130		4/6/22 18:31
2,4,6-Tribromophenol	82.1	15-110		4/6/22 18:31
p-Terphenyl-d14	70.4	30-130		4/6/22 18:31

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Irvington, NY | Sample Description: | Work Order: 22C1692

Date Received: 3/25/2022

Field Sample #: 360175-DP005011 | Sampled: 3/22/2022 09:50

Sample ID: 22C1692-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	DF	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Fluorene	ND	4.9	0.50	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Hexachlorobenzene	ND	9.7	0.49	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Hexachlorobutadiene	ND	9.7	0.75	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Hexachlorocyclopentadiene	ND	9.7	3.6	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Hexachloroethane	ND	9.7	0.72	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Indeno(1,2,3-cd)pyrene	ND	4.9	0.72	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Isophorone	ND	9.7	0.54	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
1-Methylnaphthalene	ND	4.9	0.58	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
2-Methylnaphthalene	ND	4.9	0.67	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
2-Methylphenol	ND	9.7	0.46	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
3/4-Methylphenol	ND	9.7	0.44	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Naphthalene	ND	4.9	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
2-Nitroaniline	ND	9.7	0.67	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
3-Nitroaniline	ND	9.7	0.57	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
4-Nitroaniline	ND	9.7	0.58	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Nitrobenzene	ND	9.7	0.61	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
2-Nitrophenol	ND	9.7	0.50	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
4-Nitrophenol	ND	9.7	2.0	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
N-Nitrosodimethylamine	ND	9.7	0.76	µg/L	1	L-04, MS-09	SW-846 8270E	3/29/22	4/6/22 18:58	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	9.7	0.37	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
N-Nitrosodi-n-propylamine	ND	9.7	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Pentachloronitrobenzene	ND	9.7	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Pentachlorophenol	ND	9.7	3.4	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Phenanthrene	ND	4.9	0.46	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Phenol	ND	9.7	0.22	µg/L	1	MS-09	SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Pyrene	ND	4.9	0.59	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
Pyridine	ND	4.9	2.4	µg/L	1	MS-09, R-05	SW-846 8270E	3/29/22	4/6/22 18:58	BGL
1,2,4,5-Tetrachlorobenzene	ND	9.7	0.63	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
1,2,4-Trichlorobenzene	ND	4.9	0.65	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
2,4,5-Trichlorophenol	ND	9.7	0.50	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL
2,4,6-Trichlorophenol	ND	9.7	0.44	µg/L	1		SW-846 8270E	3/29/22	4/6/22 18:58	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	43.3	15-110		4/6/22 18:58
Phenol-d6	27.6	15-110	Only 1 A surrogate out - no quals	4/6/22 18:58
Nitrobenzene-d5	70.8	30-130		4/6/22 18:58
2-Fluorobiphenyl	77.1	30-130		4/6/22 18:58
2,4,6-Tribromophenol	84.2	15-110		4/6/22 18:58
p-Terphenyl-d14	73.8	30-130		4/6/22 18:58

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Irvington, NY | Sample Description: | Work Order: 22C1692

Date Received: 3/25/2022

Field Sample #: 360175-DP005011D | Sampled: 3/22/2022 09:50

Sample ID: 22C1692-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	DF	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Fluorene	ND	5.0	0.51	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Hexachlorobenzene	ND	9.9	0.50	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Hexachlorobutadiene	ND	9.9	0.77	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Hexachlorocyclopentadiene	ND	9.9	3.6	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Hexachloroethane	ND	9.9	0.73	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Indeno(1,2,3-cd)pyrene	ND	5.0	0.73	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Isophorone	ND	9.9	0.55	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
1-Methylnaphthalene	ND	5.0	0.60	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
2-Methylnaphthalene	ND	5.0	0.68	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
2-Methylphenol	ND	9.9	0.47	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
3/4-Methylphenol	ND	9.9	0.45	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Naphthalene	ND	5.0	0.61	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
2-Nitroaniline	ND	9.9	0.69	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
3-Nitroaniline	ND	9.9	0.58	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
4-Nitroaniline	ND	9.9	0.59	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Nitrobenzene	ND	9.9	0.62	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
2-Nitrophenol	ND	9.9	0.51	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
4-Nitrophenol	ND	9.9	2.1	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
N-Nitrosodimethylamine	ND	9.9	0.78	µg/L	1	L-04	SW-846 8270E	3/29/22	4/6/22 19:25	BGL
N-Nitrosodiphenylamine/Diphenylamine	ND	9.9	0.38	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
N-Nitrosodi-n-propylamine	ND	9.9	0.61	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Pentachloronitrobenzene	ND	9.9	0.62	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Pentachlorophenol	ND	9.9	3.5	µg/L	1	V-05	SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Phenanthrene	ND	5.0	0.47	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Phenol	ND	9.9	0.23	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Pyrene	ND	5.0	0.61	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
Pyridine	ND	5.0	2.4	µg/L	1	R-05	SW-846 8270E	3/29/22	4/6/22 19:25	BGL
1,2,4,5-Tetrachlorobenzene	ND	9.9	0.65	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
1,2,4-Trichlorobenzene	ND	5.0	0.66	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
2,4,5-Trichlorophenol	ND	9.9	0.51	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL
2,4,6-Trichlorophenol	ND	9.9	0.45	µg/L	1		SW-846 8270E	3/29/22	4/6/22 19:25	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	41.5	15-110		4/6/22 19:25
Phenol-d6	26.9	15-110		4/6/22 19:25
Nitrobenzene-d5	63.2	30-130		4/6/22 19:25
2-Fluorobiphenyl	69.7	30-130		4/6/22 19:25
2,4,6-Tribromophenol	77.8	15-110		4/6/22 19:25
p-Terphenyl-d14	72.6	30-130		4/6/22 19:25

Only 1 A surrogate out - no quals

GTD 4/28/2022

6 - FORM VI
INITIAL CALIBRATION DATA SHEET

SW-846 8270E

Client: NYDEC Wood - Portland, ME SDG: 22C1692

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 2200130 Instrument: GCMSSV3

Calibration Date: 2/23/2022 6:57:32AM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Acenaphthene	5	1.184065	10	1.399713	20	1.346074	50	1.341448	80	1.356096	100	1.437324
Acenaphthylene	5	1.850366	10	2.074117	20	2.048663	50	2.001931	80	2.01381	100	2.092592
Acetophenone	5	2.078052	10	2.417873	20	2.345057	50	2.147136	80	2.072892	100	2.177372
Aniline	5	0.595466	10	0.6855373	20	0.6393816	50	0.5400291	80	0.4780118	100	0.5348932
Anthracene	5	1.106531	10	1.298484	20	1.259158	50	1.214755	80	1.239211	100	1.260708
Benzidine	5	0.2636751	10	0.361212	20	0.2178175	50	0.1195017	80	8.876353E-02		
Benzo(a)anthracene	5	1.290346	10	1.505159	20	1.442826	50	1.419248	80	1.406376	100	1.473945
Benzo(a)pyrene	5	1.094545	10	1.28263	20	1.264287	50	1.275341	80	1.297714	100	1.375063
Benzo(b)fluoranthene	5	1.278397	10	1.467834	20	1.459067	50	1.483857	80	1.526707	100	1.620165
Benzo(g,h,i)perylene	5	1.029671	10	1.209389	20	1.197613	50	1.195414	80	1.144289	100	1.057838
Benzo(k)fluoranthene	5	1.130862	10	1.315693	20	1.306101	50	1.303777	80	1.337952	100	1.379969
Benzoic Acid			10	0.1817256	20	0.2013811	50	0.2277603	80	0.2352348	100	0.2574964
Bis(2-chloroethoxy)methane	5	0.4005435	10	0.4533893	20	0.4608434	50	0.4358153	80	0.4401966	100	0.4581939
Bis(2-chloroethyl)ether	5	0.921462	10	1.049313	20	1.009236	50	1.007204	80	0.9873892	100	0.9619105
Bis(2-chloroisopropyl)ether	5	1.409015	10	1.604453	20	1.514591	50	1.394916	80	1.330892	100	1.37103
Bis(2-Ethylhexyl)phthalate	5	0.8133949	10	0.9508946	20	0.9289468	50	0.9221016	80	0.9333509	100	0.9678805
4-Bromophenylphenylether	5	0.2065402	10	0.2397199	20	0.2443914	50	0.2348222	80	0.2423849	100	0.2526445
Butylbenzylphthalate	5	0.5838583	10	0.7052072	20	0.6789397	50	0.6663878	80	0.6807736	100	0.6923676
Carbazole	5	1.024612	10	1.188519	20	1.133639	50	1.136686	80	1.160225	100	1.202371
4-Chloroaniline	5	0.379796	10	0.44483	20	0.4221148	50	0.3936819	80	0.3523382	100	0.3867788
4-Chloro-3-methylphenol	5	0.3054557	10	0.3607559	20	0.3538258	50	0.3536019	80	0.3550675	100	0.3780949
2-Chloronaphthalene	5	1.34909	10	1.550398	20	1.43681	50	1.479312	80	1.447029	100	1.614205
2-Chlorophenol	5	1.536856	10	1.800969	20	1.741048	50	1.665512	80	1.627757	100	1.694974
4-Chlorophenylphenylether	5	0.6653936	10	0.7637897	20	0.7626639	50	0.7647324	80	0.7695275	100	0.8158337
Chrysene	5	1.267557	10	1.444088	20	1.360848	50	1.354376	80	1.350539	100	1.386921
Dibenz(a,h)anthracene	5	0.9333214	10	1.102979	20	1.097864	50	1.182887	80	1.205078	100	1.196278
Dibenzofuran	5	1.613845	10	1.794365	20	1.750149	50	1.712906	80	1.721651	100	1.80394
Di-n-butylphthalate	5	1.193461	10	1.435714	20	1.423245	50	1.396206	80	1.396834	100	1.456258
1,2-Dichlorobenzene	5	1.504395	10	1.751963	20	1.68901	50	1.598656	80	1.578631	100	1.64333
1,3-Dichlorobenzene	5	1.556534	10	1.787169	20	1.679807	50	1.647212	80	1.678227	100	1.730407
1,4-Dichlorobenzene	5	1.576462	10	1.835316	20	1.745265	50	1.720745	80	1.701063	100	1.775121

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8270E

Client: NYDEC_Wood - Portland, ME SDG: 22C1692

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 2200130 Instrument: GCMSSV3

Calibration Date: 2/23/2022 6:57:32AM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Acenaphthene	120	1.512147	2	1.235154								
Acenaphthylene	120	2.207035	2	1.873102								
Acetophenone	120	2.304695										
Aniline	120	0.547166										
Anthracene	120	1.319501	2	1.166521								
Benzidine			2	0.2864639								
Benzo(a)anthracene	120	1.569387	2	1.399451								
Benzo(a)pyrene	120	1.438999	2	1.152746								
Benzo(b)fluoranthene	120	1.701777	2	1.302799								
Benzo(g,h,i)perylene	120	1.052745	2	1.046929								
Benzo(k)fluoranthene	120	1.482046	2	1.186648								
Benzoic Acid	120	0.2700966										
Bis(2-chloroethoxy)methane	120	0.4865982										
Bis(2-chloroethyl)ether	120	1.042876										
Bis(2-chloroisopropyl)ether	120	1.501762										
Bis(2-Ethylhexyl)phthalate	120	1.017092	2	0.849588								
4-Bromophenylphenylether	120	0.2675229										
Butylbenzylphthalate	120	0.7529338										
Carbazole	120	1.252782										
4-Chloroaniline	120	0.3789389										
4-Chloro-3-methylphenol	120	0.3917801										
2-Chloronaphthalene	120	1.636767										
2-Chlorophenol	120	1.858333										
4-Chlorophenylphenylether	120	0.8627534										
Chrysene	120	1.486198	2	1.3047								
Dibenz(a,h)anthracene	120	1.20997	2	0.9665538								
Dibenzofuran	120	1.869949	2	1.657282								
Di-n-butylphthalate	120	1.511917										
1,2-Dichlorobenzene	120	1.744091										
1,3-Dichlorobenzene	120	1.818492										
1,4-Dichlorobenzene	120	1.856503										

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8270E

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22C1692
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Calibration:	2200130	Instrument:	GCMSSV3
		Calibration Date:	2/23/2022 6:57:32AM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
Acenaphthene	1.351503	7.8			20	
Acenaphthylene	2.020202	5.8			20	
Acetophenone	2.22044	6.1			20	
Aniline	0.574355	12.3			20	
Anthracene	1.233109	5.7			20	
Benzidine	0.2229056	46.4			20	*
Benzo(a)anthracene	1.438342	5.7			20	
Benzo(a)pyrene	1.272666	8.7			20	
Benzo(b)fluoranthene	1.480075	9.7			20	
Benzo(g,h,i)perylene	1.116736	6.9			20	
Benzo(k)fluoranthene	1.305381	8.3			20	
Benzoic Acid	0.2289491	14.5			20	
Bis(2-chloroethoxy)methane	0.44794	5.9			20	
Bis(2-chloroethyl)ether	0.9970558	4.5			20	
Bis(2-chloroisopropyl)ether	1.446666	6.7			20	
Bis(2-Ethylhexyl)phthalate	0.9229062	7.0			20	
4-Bromophenylphenylether	0.2411466	7.7			20	
Butylbenzylphthalate	0.6800669	7.5			20	
Carbazole	1.156976	6.2			20	
4-Chloroaniline	0.3940684	7.7			20	
4-Chloro-3-methylphenol	0.3569403	7.5			20	
2-Chloronaphthalene	1.501944	6.9			20	
2-Chlorophenol	1.703636	6.3			20	
4-Chlorophenylphenylether	0.7720992	7.8			20	
Chrysene	1.369403	5.1			20	
Dibenz(a,h)anthracene	1.111866	9.8			20	
Dibenzofuran	1.740511	4.8			20	
Di-n-butylphthalate	1.401948	7.1			20	
1,2-Dichlorobenzene	1.644297	5.5			20	
1,3-Dichlorobenzene	1.699693	5.2			20	
1,4-Dichlorobenzene	1.744354	5.4			20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\C022322\
Data File : C2205406.D
Acq On : 23 Feb 2022 9:10 am
Operator : BGL
Sample : 8270std 20ppm 2111135 Inst : GCMSSV3
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 23 15:03:57 2022
Quant Method : C:\msdchem\1\methods\BNC02232.M
Quant Title : SVMS3 (C)- PAHs 2ppm
QLast Update : Wed Feb 23 14:57:58 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-D4	3.315	152	59764	40.00	ug/ml	0.00
19) NAPHTHALENE-d8	4.044	136	255883	40.00	ug/ml	0.00
35) ACENAPHTHENE-D10	5.112	164	150546	40.00	ug/ml	0.00
58) PHENANTHRENE-D10	6.034	188	271769	40.00	ug/ml	0.00
71) CHRYSENE-D12	8.498	240	247969	40.00	ug/ml	0.00
80) PERYLENE-D12	11.026	264	229777	40.00	ug/ml	0.00
System Monitoring Compounds						
2) 2-Fluorophenol	2.643	112	63999	41.47	ug/ml	0.00
Spiked Amount 200.000	Range 30 - 130		Recovery = 20.73%#			
3) Phenol-d6	3.093	99	111752	43.09	ug/ml	0.00
Spiked Amount 200.000	Range 30 - 130		Recovery = 21.55%#			
20) Nitrobenzene-d5	3.619	82	48807	21.13	ug/ml	0.00
Spiked Amount 100.000	Range 30 - 130		Recovery = 21.13%#			
36) 2-Fluorobiphenyl	4.687	172	104149	20.71	ug/ml	0.00
Spiked Amount 100.000	Range 30 - 130		Recovery = 20.71%#			
37) 2,4,6-Tribromophenol	5.599	330	24322	37.76	ug/ml	0.00
Spiked Amount 200.000	Range 30 - 130		Recovery = 18.88%#			
72) Terphenyl-d14	7.226	244	139703	20.54	ug/ml	0.00
Spiked Amount 100.000	Range 30 - 130		Recovery = 20.54%#			
Target Compounds						Qvalue
4) N-Nitrosodimethylamine	2.017	42	17013	19.60	ug/ml#	81
5) Pyridine	2.046	79	39324	19.32	ug/ml	92
6) Aniline	3.132	66	19106	22.26	ug/ml	94
7) Phenol	3.101	94	63967	20.68	ug/ml	89
8) Bis(2-chloroethyl)ether	3.153	63	30158	20.24	ug/ml	100
9) 2-Chlorophenol	3.202	128	52026	20.44	ug/ml	98
10) 1,3-Dichlorobenzene	3.287	146	50196	19.77	ug/ml	99
11) 1,4-Dichlorobenzene	3.325	146	52152	20.01	ug/ml	99
12) 1,2-Dichlorobenzene	3.410	146	50471	20.54	ug/ml	97
13) 2- METHYLPHENOL	3.431	108	45693	21.12	ug/ml	91
14) Bis(2-Chloroisopropyl)...	3.446	45	45259	20.94	ug/ml	85
15) Acetophenone	3.529	105	70075	21.12	ug/ml	94
16) 3/4- METHYLPHENOL	3.513	107	108414	41.82	ug/ml	97
17) N-Nitroso-Di-N-Propyla...	3.521	70	36472	21.11	ug/ml	98
18) Hexachloroethane	3.601	117	19523	20.74	ug/ml	93
21) NITROBENZENE	3.632	77	49958	19.94	ug/ml	96
22) Isophorone	3.763	82	88916	20.33	ug/ml	99
23) 2-Nitrophenol	3.814	139	29181	19.45	ug/ml	87
24) 2,4-Dimethylphenol	3.822	122	49172	19.84	ug/ml	98
25) Bis(2-Chloroethoxy)met...	3.876	93	58961	20.58	ug/ml	98
26) Benzoic Acid	3.861	122	25765	17.59	ug/ml	88
27) 2,4-Dichlorophenol	3.953	162	45848	19.82	ug/ml	98
28) 1,2,4-Trichlorobenzene	4.005	180	44738	19.51	ug/ml	96
29) Naphthalene	4.056	128	150523	20.14	ug/ml	99
30) 4-Chloroaniline	4.077	127	54006	21.42	ug/ml	96
31) Hexachlorobutadiene	4.121	225	24589	19.96	ug/ml	99
32) 4-Chloro-3-Methylphenol	4.360	107	45269	19.83	ug/ml	96
33) 2-MethylNaphthalene	4.471	142	93487	20.23	ug/ml	94
34) 1-Methylnaphthalene	4.533	142	103502	19.99	ug/ml	96
38) Hexachlorocyclopentadiene	4.564	237	15378	17.54	ug/ml	97
39) 1,2,4,5-Tetrachloroben...	4.571	216	48025	19.88	ug/ml	99
40) 2,4,6-Trichlorophenol	4.638	196	32079	19.46	ug/ml	98
41) 2,4,5-Trichlorophenol	4.664	196	31102	19.32	ug/ml	95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\C022322\
Data File : C2205406.D
Acq On : 23 Feb 2022 9:10 am
Operator : BGL
Sample : 8270std 20ppm 2111135 Inst : GCMSSV3
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 23 15:03:57 2022
Quant Method : C:\msdchem\1\methods\BNC02232.M
Quant Title : SVMS3 (C)- PAHs 2ppm
QLast Update : Wed Feb 23 14:57:58 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
42) 2-ChloroNaphthalene	4.770	162	108153	21.30	ug/ml	99
43) 2-Nitroaniline	4.824	65	24502	19.64	ug/ml	90
44) 1,1-Biphenyl	4.752	154	120276	19.59	ug/ml	98
45) DIMETHYL PHTHALATE	4.927	163	114262	20.09	ug/ml	99
46) 2,6-DinitroToluene	4.968	165	24421	19.68	ug/ml	90
47) Acenaphthylene	5.027	152	154209	20.28	ug/ml	99
48) 3-Nitroaniline	5.076	138	27205	21.05	ug/ml	93
49) Acenaphthene	5.133	154	101323	19.92	ug/ml	98
50) 2,4-Dinitrophenol	5.143	184	11601	16.02	ug/ml	93
51) 4-Nitrophenol	5.171	109	13248	19.61	ug/ml#	64
52) Dibenzofuran	5.238	168	131739	20.11	ug/ml	93
53) 2,4-Dinitrotoluene	5.220	165	33388	19.86	ug/ml	94
54) DIETHYL PHTHALATE	5.359	149	107554	19.85	ug/ml	97
55) 4-Chlorophenyl phenyl ...	5.439	204	57408	19.76	ug/ml	98
56) Flourene	5.449	166	114610	20.11	ug/ml	98
57) 4-Nitroaniline	5.452	138	27247	19.21	ug/ml#	83
59) 4,6-Dinitro-2-Methylph...	5.475	198	17812	17.76	ug/ml	95
60) N-Nitrosodiphenylamine	5.511	169	83099	17.37	ug/ml	98
61) 1,2-Diphenylhydrazine	5.539	77	100565	20.76	ug/ml	95
62) 4-Bromophenyl phenyl e...	5.743	248	33209	20.27	ug/ml	98
63) Hexachlorobenzene	5.792	284	30311	19.81	ug/ml	99
64) Pentachlorophenol	5.910	266	18873	18.53	ug/ml	100
65) Pentachloronitrobenzene	5.918	295	5428	19.73	ug/ml#	90
66) Phenanthrene	6.047	178	165156	20.24	ug/ml	98
67) Anthracene	6.080	178	171100	20.42	ug/ml	99
68) Carbazole	6.175	167	154044	19.60	ug/ml	98
69) Di-N-Butyl Phthalate	6.384	149	193397	20.30	ug/ml	99
70) Flouranthene	6.899	202	182474	20.13	ug/ml	97
73) Benzidine	6.994	184	27006	19.54	ug/ml	97
74) Pyrene	7.100	202	191466	20.43	ug/ml	99
75) Butylbenzyl phthalate	7.738	149	84178	19.97	ug/ml	98
76) 3,3'-Dichlorobenzidine	8.441	252	57431	20.79	ug/ml	99
77) Benzo(a)anthracene	8.482	228	178888	20.06	ug/ml	99
78) Chrysene	8.534	228	168724	19.88	ug/ml	100
79) Bis(2-ethylhexyl)phtha...	8.529	149	115175	20.13	ug/ml	98
81) Di-n-octylphthalate	9.657	149	187389	19.65	ug/ml	97
82) Benzo(b)fluoranthene	10.290	252	167630	19.72	ug/ml	97
83) Benzo(k)fluoranthene	10.344	252	150056	20.01	ug/ml	95
84) Benzo(a)pyrene	10.916	252	145252	19.87	ug/ml	96
85) Indeno(1,2,3-cd)pyrene	12.957	276	126425	20.50	ug/ml	92
86) Dibenz(a,h)anthracene	12.996	278	126132	20.29	ug/ml	93
87) Benzo(g,h,i)perylene	13.349	276	137592	21.45	ug/ml	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

328

Data Path : C:\msdchem\1\data\C040622\
Data File : C2209610.D
Acq On : 6 Apr 2022 6:31 pm
Operator : BGL
Sample : 22C1692-02 Inst : GCMSSV3
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 06 18:45:21 2022
Quant Method : C:\MSDCHEM\1\METHODS\BNC02232.M
Quant Title : SVMS3 (C)- PAHs 2ppm
QLast Update : Tue Mar 22 12:32:10 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-D4	3.273	152	47147	40.00	ug/ml	#-0.01
19) NAPHTHALENE-d8	4.001	136	181250	40.00	ug/ml	0.00
35) ACENAPHTHENE-D10	5.067	164	103333	40.00	ug/ml	-0.01
58) PHENANTHRENE-D10	5.989	188	194118	40.00	ug/ml	-0.02
71) CHRYSENE-D12	8.427	240	184220	40.00	ug/ml	-0.03
80) PERYLENE-D12	10.953	264	182834	40.00	ug/ml	-0.03
System Monitoring Compounds						
2) 2-Fluorophenol	2.613	112	104832	86.12	ug/ml	0.00
Spiked Amount 200.000	Range 30 - 130		Recovery = 43.06%			
3) Phenol-d6	3.069	99	112060	54.77	ug/ml	0.00
Spiked Amount 200.000	Range 30 - 130		Recovery = 27.39%#			
20) Nitrobenzene-d5	3.579	82	113973	69.65	ug/ml	-0.01
Spiked Amount 100.000	Range 30 - 130		Recovery = 69.65%			
36) 2-Fluorobiphenyl	4.642	172	264379	76.59	ug/ml	-0.01
Spiked Amount 100.000	Range 30 - 130		Recovery = 76.59%			
37) 2,4,6-Tribromophenol	5.556	330	72564	164.11	ug/ml	-0.02
Spiked Amount 200.000	Range 30 - 130		Recovery = 82.06%			
72) Terphenyl-d14	7.166	244	355836	70.42	ug/ml	-0.02
Spiked Amount 100.000	Range 30 - 130		Recovery = 70.42%			
Target Compounds						Qvalue
29) Naphthalene	4.014	128	3468	0.65	ug/ml#	52
33) 2-MethylNaphthalene	4.426	142	4879	1.49	ug/ml	98
34) 1-Methylnaphthalene	4.488	142	15011m	4.09	ug/ml	
44) 1,1-Biphenyl	4.707	154	4346	1.03	ug/ml	98
49) Acenaphthene	5.088	154	1535	0.44	ug/ml#	54
52) Dibenzofuran	5.193	168	2968	0.66	ug/ml	90
56) Flourene	5.407	166	3537	0.90	ug/ml	91
66) Phenanthrene	6.004	178	6790	1.16	ug/ml	94
68) Carbazole	6.136	167	1163	0.21	ug/ml	91
79) Bis(2-ethylhexyl)phtha...	8.440	149	2233	0.53	ug/ml#	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

1 - FORM I
ANALYSIS DATA SHEET

360175-DP004011

Laboratory:	Con-Test, a Pace Analytical Labora			Work Order:	22C1692
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Ground Water	Laboratory ID:	22C1692-02	File ID:	C2209610.D
Sampled:	03/22/22 13:55	Prepared:	03/29/22 11:51	Analyzed:	04/06/22 18:31
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1040 mL / 1 mL				
Batch:	B304402	Sequence:	S070076	Calibration:	2200130	Instrument:	GCMSSV3

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
83-32-9	Acenaphthene		0.50	4.8	
208-96-8	Acenaphthylene		0.47	4.8	
98-86-2	Acetophenone		0.51	9.6	
62-53-3	Aniline		0.67	4.8	V-05
120-12-7	Anthracene		0.44	4.8	
92-87-5	Benzidine		10	19	)5, V-04, V-05, V
56-55-3	Benzo(a)anthracene		0.39	4.8	
50-32-8	Benzo(a)pyrene		0.55	4.8	
205-99-2	Benzo(b)fluoranthene		0.45	4.8	
191-24-2	Benzo(g,h,i)perylene		0.59	4.8	
207-08-9	Benzo(k)fluoranthene		0.47	4.8	
65-85-0	Benzoic Acid		8.1	9.6	R-05
111-91-1	Bis(2-chloroethoxy)methane		0.44	9.6	
111-44-4	Bis(2-chloroethyl)ether		0.55	9.6	
108-60-1	Bis(2-chloroisopropyl)ether		0.66	9.6	
117-81-7	Bis(2-Ethylhexyl)phthalate		0.81	9.6	
101-55-3	4-Bromophenylphenylether		0.45	9.6	
85-68-7	Butylbenzylphthalate		0.65	9.6	
86-74-8	Carbazole		0.41	9.6	
106-47-8	4-Chloroaniline		0.55	9.6	V-34
59-50-7	4-Chloro-3-methylphenol		0.54	9.6	
91-58-7	2-Chloronaphthalene		0.47	9.6	
95-57-8	2-Chlorophenol		0.46	9.6	
7005-72-3	4-Chlorophenylphenylether		0.46	9.6	
218-01-9	Chrysene		0.38	4.8	
53-70-3	Dibenz(a,h)anthracene		0.66	4.8	
132-64-9	Dibenzofuran	0.63 ✓	0.47	4.8	J
84-74-2	Di-n-butylphthalate		0.44	9.6	
95-50-1	1,2-Dichlorobenzene		0.64	4.8	
541-73-1	1,3-Dichlorobenzene		0.65	4.8	

DUSR Calculations Sheet

Sample ID: 360175-DP004011
TC: Dibenzofuran
ICAL Level:
Val File Result for TC: 0.63 ug/L

Ical Calc

Area TC	131739
Area IS	150546
Conc TC	20
Conc IS	40
RRF =	1.7501495

1	1.613845
2	1.794365
3	1.750149
4	1.712906
5	1.721651
6	1.80394
7	1.869949
8	1.657282
9	
10	
Avg RRF =	1.740511
Std Dev =	0.082687
%RSD =	4.750716

Sample Calc

Area TC	2968
Area IS	103333
Conc IS	40
Avg RRF	1.7405109
Conc TC =	0.6600975 ug/mL

DF	1
Initial Vol	1040
Final Vol	1
Conc TC (w prep	0.000635 ug/mL
Conv to ug/L	0.634709 ug/L

Notes:
Green = matched reported value
Red = did not match reported value

PESTICIDES

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners March 2022
Method: 8081B
Laboratory: Con-test **SDG(s):** 22C1692
Date: 4/28/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? Yes, see attached
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
2. ☑ **Holding time (HT) and Sample Collection** Sample 22C1692-01 shouls be 360175-DP002011

   Soil: 14 days from collection to extraction; 40 days from extraction to analysis
   Water: 7 days from collection to extraction; 40 days from extraction to analysis
   Hold time met for all samples? YES NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)
   Are Rinse blanks free of contamination? YES NO NA (circle one)

4. ☑ **Second Column Confirmation – Data Package Narrative Review**
   Did the laboratory narrative identify sample results for which the percent difference between columns was ≥ 25 (Region II criteria) for PCBs? YES NO NA (circle one)

   Did the laboratory qualify results based on the percent difference between columns? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one) Not associated with samples

   Initial Calibration criteria %RSD=20 (alpha-BHC, delta-BHC = 25, Toxaphene = 30)
   Continuing Calibration criteria %D=20

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Surrogate Recovery** (soil and water limits: 30-150%)

   Were all results within limits? YES NO (circle one)

7. ☑ **Matrix Spike** (Use lab limits; refer to limits listed in SOP HW-44 Oct 2006 if no lab limits are listed)

   Were MS/MSDs submitted/analyzed? YES NO

   Were all results within laboratory limits? YES NO NA (circle one)

8. ☑ **Field Duplicates** (RPD limits for soil=100, water = 50)

   Were Field Duplicates submitted/analyzed? YES NO

   Were RPDs within the limits? YES NO NA (circle one) All ND

GTD 4/28/2022

9. ☑ **Laboratory Control Samples** (Use lab limits; refer to limits in SOP HW-44 Oct 2006 if no lab limits)

Were all results within laboratory limits? YES NO (circle one)
Limits used were: Lab Limits Region II SOP HW-44 Oct 2006 (circle one)

10. ☑ **Raw Data Review and Calculation Checks**
See attached

11. ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? YES NO (circle one)

12. ☑ **Tables Review**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

GTD 4/28/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SW-846 6010D

Qualifications:

MS-19

Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.

Analyte & Samples(s) Qualified:

Calcium
22C1692-03[360175-DP005011], B305111-MSD1

Magnesium
22C1692-03[360175-DP005011], B305111-MSD1

Sodium
22C1692-03[360175-DP005011], B305111-MSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Beryllium
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D]

Thallium
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D]

SW-846 7470A

Qualifications:

B

Analyte is found in the associated laboratory blank as well as in the sample.

Analyte & Samples(s) Qualified:

Mercury
22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-04[360175-DP005011D], B305219-BLK1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Mercury
B305408-BSD1

SW-846 8081B

Qualifications:

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

Hexachlorobenzene
B304396-BS1, B304396-BSD1, B304396-MS1, B304396-MSD1 Not associated with samples - no quals

SW-846 8260D

Qualifications:

MS-07A

Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Naphthalene
22C1692-03[360175-DP005011], B304257-MS1, B304257-MSD1

GTD 4/28/2022

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8081B

Client: NYDEC_Wood - Portland, ME SDG: 22C1692

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 2200152 Instrument: ECD2

Calibration Date: 3/28/2022 12:00:57AM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Endrin [2C]			0.1	0	1	0	5	1.460301E+07	10	1.421E+07	20	1.537E+07
Endrin Aldehyde			0.1	0	1	0	5	7724151	10	7113591	20	7295000
Endrin Aldehyde [2C]			0.1	0	1	0	5	1.149717E+07	10	1.09E+07	20	1.1275E+07
Endrin Ketone			0.1	0	1	0	5	9747360	10	9098677	20	9405000
Endrin Ketone [2C]			0.1	0	1	0	5	1.580253E+07	10	1.499E+07	20	1.5655E+07
Heptachlor			0.1	0	1	1.026751E+07	5	1.065285E+07	10	1.052E+07	20	1.071E+07
Heptachlor [2C]			0.1	0	1	1.567141E+07	5	1.658962E+07	10	1.664E+07	20	1.7725E+07
Heptachlor Epoxide			0.1	0	1	9506230	5	9898672	10	9581988	20	9905000
Heptachlor Epoxide [2C]			0.1	0	1	1.446707E+07	5	1.50937E+07	10	1.467E+07	20	1.569E+07
Hexachlorobenzene			0.1	0	1	1.112032E+07	5	1.120887E+07	10	1.088E+07	20	1.098E+07
Hexachlorobenzene [2C]			0.1	0	1	1.413315E+07	5	1.388842E+07	10	1.331E+07	20	1.384E+07
Methoxychlor			0.1	0	1	0	5	4672884	10	4196836	20	4214067
Methoxychlor [2C]			0.1	0	1	0	5	7743796	10	7025985	20	7100000
Toxaphene												
Toxaphene [2C]												
Chlordane (1)	500	366400										
Chlordane (1) [2C]	500	502800										
Chlordane (2)	500	638200										
Chlordane (2) [2C]	500	990800										
Chlordane (3)	500	390400										
Chlordane (3) [2C]	500	519600										
Chlordane (4)	500	1416400										
Chlordane (4) [2C]	500	1820000										
Chlordane (5)	500	365800										
Chlordane (5) [2C]	500	1623800										
Decachlorobiphenyl			0.1	0	1	0	5	9608736	10	8721587	20	9210000
Decachlorobiphenyl [2C]			0.1	0	1	0	5	1.46052E+07	10	1.346E+07	20	1.432E+07
Tetrachloro-m-xylene			0.1	0	1	0	5	1.158797E+07	10	1.131E+07	20	1.1525E+07
Tetrachloro-m-xylene [2C]			0.1	0	1	0	5	1.433764E+07	10	1.392E+07	20	1.4635E+07

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8081B

Client: NYDEC Wood - Portland, ME SDG: 22C1692

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 2200152 Instrument: ECD2

Calibration Date: 3/28/2022 12:00:57AM

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF
Endrin [2C]	50	1.5436E+07	100	1.6321E+07	200	1.5921E+07						
Endrin Aldehyde	50	7296000	100	7658000	200	7381500						
Endrin Aldehyde [2C]	50	1.1584E+07	100	1.2414E+07	200	1.21515E+07						
Endrin Ketone	50	9222000	100	9585000	200	9056500						
Endrin Ketone [2C]	50	1.5702E+07	100	1.6751E+07	200	1.62095E+07						
Heptachlor	50	1.0754E+07	100	1.0859E+07	200	1.052E+07						
Heptachlor [2C]	50	1.7936E+07	100	1.841E+07	200	1.82905E+07						
Heptachlor Epoxide	50	9926000	100	1.0148E+07	200	9798000						
Heptachlor Epoxide [2C]	50	1.5744E+07	100	1.6348E+07	200	1.60965E+07						
Hexachlorobenzene	50	1.087E+07	100	1.1139E+07	200	1.0922E+07						
Hexachlorobenzene [2C]	50	1.3886E+07	100	1.4323E+07	200	1.43405E+07						
Methoxychlor	50	3974000	100	4084000	200	3777500						
Methoxychlor [2C]	50	6876000	100	7240000	200	6889000						
Toxaphene							50	7440000	100	7618000	200	7806500
Toxaphene [2C]							50	1.1496E+07	100	1.1568E+07	200	1.19955E+07
Chlordane (1)												
Chlordane (1) [2C]												
Chlordane (2)												
Chlordane (2) [2C]												
Chlordane (3)												
Chlordane (3) [2C]												
Chlordane (4)												
Chlordane (4) [2C]												
Chlordane (5)												
Chlordane (5) [2C]												
Decachlorobiphenyl	50	8442000	100	8931000	200	8498000						
Decachlorobiphenyl [2C]	50	1.32E+07	100	1.4285E+07	200	1.37965E+07						
Tetrachloro-m-xylene	50	1.1524E+07	100	1.1932E+07	200	1.15985E+07						
Tetrachloro-m-xylene [2C]	50	1.475E+07	100	1.5472E+07	200	1.5308E+07						

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8081B

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22C1692
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Calibration:	2200152	Instrument:	ECD2
		Calibration Date:	3/28/2022 12:00:57AM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
Endrin [2C]	1.531017E+07	5.2			20	
Endrin Aldehyde	7411373 ✓	3.2 ✓			20	
Endrin Aldehyde [2C]	1.163694E+07	4.8			20	
Endrin Ketone	9352423	3.0			20	
Endrin Ketone [2C]	1.585167E+07	3.7			20	
Heptachlor	1.061191E+07	1.8			20	
Heptachlor [2C]	1.732322E+07	6.0			20	
Heptachlor Epoxide	9823413	2.2			20	
Heptachlor Epoxide [2C]	1.544418E+07	4.6			20	
Hexachlorobenzene	1.101717E+07	1.2			20	
Hexachlorobenzene [2C]	1.396015E+07	2.5			20	
Methoxychlor	4153214	7.3			20	
Methoxychlor [2C]	7145797	4.5			20	
Toxaphene	7773717	3.1			20	
Toxaphene [2C]	1.187534E+07	2.9			20	
Chlordane (1)	337372.2	7.6			20	
Chlordane (1) [2C]	470583.3	4.8			20	
Chlordane (2)	621303.8	5.7			20	
Chlordane (2) [2C]	953238	6.3			20	
Chlordane (3)	389628.5	7.2			20	
Chlordane (3) [2C]	539459.9	6.8			20	
Chlordane (4)	1325080	6.9			20	
Chlordane (4) [2C]	1632290	9.2			20	
Chlordane (5)	333739.6	8.0			20	
Chlordane (5) [2C]	1476631	7.7			20	
Decachlorobiphenyl	8901887	5.0			20	
Decachlorobiphenyl [2C]	1.394445E+07	3.9			20	
Tetrachloro-m-xylene	1.157958E+07	1.7			20	
Tetrachloro-m-xylene [2C]	1.473711E+07	4.0			20	

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\040622\
Data File : B22E096031.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Apr 2022 1:30 pm
Operator : JMB
Sample : B304396-BS1@COP Inst : ECD 2A
Misc : mix[s,t]
ALS Vial : 31 Sample Multiplier: 1

Integration File signal 1: F-PEST.E
Integration File signal 2: B-PEST.E
Quant Time: Apr 08 05:07:25 2022
Quant Method : C:\msdchem\1\methods\Pest Methods\2PEST032822C.M
Quant Title : PEST 03/28/22 CHLOR 01/31/22 TOX 12/27/21 2200152
QLast Update : Mon Mar 28 19:15:56 2022
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

		Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L	
		System Monitoring Compounds							
1)	S	Tetrachlo...	4.853	4.781	1532.3E6	1940.1E6	132.327	131.641	
24)	S	Decachlor...	8.502	8.602	1277.8E6	1969.5E6	143.537	141.239	
		Target Compounds							
2)	T	Hexachlor...	5.064	5.023	1036.4E6	1109.1E6	94.064	79.447	
3)	T	alpha-BHC	5.160	5.101	1105.6E6	1511.6E6	83.876	75.998	
4)	T	gamma-BHC	5.339	5.293	1019.8E6	1433.8E6	86.308	80.533	
5)	T	Beta-BHC	5.392	5.345	461.1E6	645.5E6	92.689	86.633	
6)	T	Delta-BHC	5.495	5.511	1115.2E6	1547.3E6	92.126	85.098	
7)	T	Heptachlor	5.619	5.539	854.2E6	1369.1E6	80.489	79.032	
8)	T	Aldrin	5.803	5.728	930.9E6	1351.3E6	85.902	81.430	
9)	T	Alachlor	5.904	5.686	106.2E6	160.4E6	90.208	83.758	
10)	T	Heptachlo...	6.195	6.090	883.8E6	1313.8E6	89.967	85.067	
11)	T	Y-Chlordane	6.279	6.215	933.2E6	1438.2E6	95.115	91.648	
12)	T	A-Chlordane	6.369	6.313	923.8E6	1376.9E6	92.903	89.464	
13)	T	4,4-DDE	6.433	6.444	1063.7E6	1471.3E6	100.648	95.760	
14)	T	Endo-I	6.457	6.345	864.3E6	1283.6E6	91.852	87.604	
15)	T	Dieldrin	6.625	6.534	965.1E6	1457.4E6	91.807	92.294	
16)	T	Endrin	6.786	6.744	880.2E6	1378.8E6	91.850	90.057	
17)	T	4,4-DDD	6.853	6.855	795.3E6	1268.7E6	101.942	98.800	
18)	T	Endo-II	6.948	6.901	798.2E6	1218.3E6	91.938	87.438	
19)	T	4,4-DDT	7.057	7.083	773.1E6	1288.0E6	94.965	94.071	634.5E6 / 7411373 = 85.6
20)	T	Endrin Al...	7.258	7.153	634.5E6	955.7E6	85.616 ✓	82.133	
21)	T	Methoxychlor	7.440	7.629	383.0E6	639.7E6	92.216	89.526	
22)	T	End Sulf	7.587	7.363	769.7E6	1191.6E6	94.182	88.677	
23)	T	Endrin Ke...	7.797	7.761	905.8E6	1450.4E6	96.855	91.492	
25)	L8	Chlordane{1}	0.000	0.000	0	0	N.D.	N.D. d	
26)	L8	Chlordane{2}	0.000	0.000	0	0	N.D. d	N.D. d	
27)	L8	Chlordane{3}	0.000	0.000	0	0	N.D. d	N.D. d	
28)	L8	Chlordane{4}	0.000	0.000	0	0	N.D. d	N.D. d	
29)	L8	Chlordane{5}	0.000	0.000	0	0	N.D.	N.D. d	
		Sum Chlordane			0	0	N.D.	N.D.	
Average		Chlordane					0.000	0.000	
30)	H	Toxaphene	0.000	0.000	0	0	N.D. d	N.D. d	

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int

CHECKED BY: APR 08 2022 Todd Glenfriddo

Checked by: John Benne APR 08 2022

PCBs

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners March 2022
Method: 8082A
Laboratory: Con-test **SDG(s):** 22C1692
Date: 4/28/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? No problems noted
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)

2. ☑ **Holding time and Sample Collection** Sample 22C1692-01 should be 360175-DP002011

   Soil: 14 days from collection to extraction; 40 days from extraction to analysis
   Water: 7 days from collection to extraction; 40 days from extraction to analysis
   Hold time met for all samples? YES NO (circle one)

3. ☑ **QC Blanks**

   Are method blanks free of contamination? YES NO (circle one)

   Are Rinse blanks free of contamination? YES NO NA (circle one)

4. ☑ **Second Column Confirmation – Data Package Narrative Review**
   Did the laboratory narrative identify sample results for which the percent difference between columns was ≥ 25 (Region II criteria) for PCBs? YES NO NA (circle one)

   Did the laboratory qualify results based on the percent difference between columns? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Aroclors ICAL %RSD criteria = 20
   Aroclors Continuing Calibration %D criteria = 15

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Surrogate Recovery**

   Were all percent recoveries within limits? (30-150 project limits) YES NO (circle one)

7. ☑ **Matrix Spike**

   Were MS/MSDs submitted/analyzed? YES NO

   Were all percent recoveries and RPDs within limits? (soil and water project limit 29-135, RPD<20) YES NO NA (circle one)

GTD 4/28/2022

8. ☑ **Duplicates**

Were Field Duplicates submitted/analyzed? YES NO

Were all results within Region II limits? (soil RPD<100, water RPD<50) NA - all ND

9. ☑ **Laboratory Control Sample Results**

Were all results within limits? (50-150 project limits) YES NO (circle one)

10. ☑ **Raw Data Review and Calculation Checks**

See attached

11. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? YES NO (circle one)

12. ☑ **Tables Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

GTD 4/28/2022

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8082A

Client: NYDEC_Wood - Portland, ME SDG: 22C1692

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 2200121 Instrument: ECD10

Calibration Date: 3/17/2022 3:20:04PM

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
		RF		RF		RF		RF		RF		RF
Aroclor-1260 (2) [2C]			10	1170725	20	1119107	50	990881.6	100	955933.3	200	936500
Aroclor-1260 (3) [2C]			10	883853.9	20	827065	50	736326.8	100	701542.8	200	689000
Aroclor-1260 (4) [2C]			10	1029180	20	945747	50	860501.2	100	820646.3	200	804000
Aroclor-1260 (5) [2C]			10	1869582	20	1862513	50	1732839	100	1673000	200	1693000
Aroclor-1262 (1)												
Aroclor-1262 (2)												
Aroclor-1262 (3)												
Aroclor-1262 (4)												
Aroclor-1262 (5)												
Aroclor-1262 (1) [2C]												
Aroclor-1262 (2) [2C]												
Aroclor-1262 (3) [2C]												
Aroclor-1262 (4) [2C]												
Aroclor-1262 (5) [2C]												
Aroclor-1268 (1)												
Aroclor-1268 (2)												
Aroclor-1268 (3)												
Aroclor-1268 (4)												
Aroclor-1268 (5)												
Aroclor-1268 (1) [2C]												
Aroclor-1268 (2) [2C]												
Aroclor-1268 (3) [2C]												
Aroclor-1268 (4) [2C]												
Aroclor-1268 (5) [2C]												
Decachlorobiphenyl	5	1.282118E+07	10	1.268E+07	20	1.293E+07	50	1.2446E+07	100	1.2491E+07	200	1.30895E+07
Decachlorobiphenyl [2C]	5	1.28405E+07	10	1.257E+07	20	1.2705E+07	50	1.2162E+07	100	1.2148E+07	200	1.271E+07
Tetrachloro-m-xylene	5	1.480954E+07	10	1.518E+07	20	1.5955E+07	50	1.495E+07	100	1.5283E+07	200	1.6076E+07
Tetrachloro-m-xylene [2C]	5	1.681364E+07	10	1.743E+07	20	1.822E+07	50	1.7604E+07	100	1.7437E+07	200	1.78325E+07

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8082A

Client: NYDEC_Wood - Portland, ME SDG: 22C1692

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 2200121 Instrument: ECD10

Calibration Date: 3/17/2022 3:20:04PM

Compound	Level 37		Level 38		Level 39		Level 40		Level 41		Level 42	
		RF		RF		RF		RF		RF		RF
Aroclor-1260 (2) [2C]	500	903000										
Aroclor-1260 (3) [2C]	500	664800										
Aroclor-1260 (4) [2C]	500	782800										
Aroclor-1260 (5) [2C]	500	1702000										
Aroclor-1262 (1)												
Aroclor-1262 (2)												
Aroclor-1262 (3)												
Aroclor-1262 (4)												
Aroclor-1262 (5)												
Aroclor-1262 (1) [2C]												
Aroclor-1262 (2) [2C]												
Aroclor-1262 (3) [2C]												
Aroclor-1262 (4) [2C]												
Aroclor-1262 (5) [2C]												
Aroclor-1268 (1)												
Aroclor-1268 (2)												
Aroclor-1268 (3)												
Aroclor-1268 (4)												
Aroclor-1268 (5)												
Aroclor-1268 (1) [2C]												
Aroclor-1268 (2) [2C]												
Aroclor-1268 (3) [2C]												
Aroclor-1268 (4) [2C]												
Aroclor-1268 (5) [2C]												
Decachlorobiphenyl	500	1.37128E+07										
Decachlorobiphenyl [2C]	500	1.31162E+07										
Tetrachloro-m-xylene	500	1.64958E+07										
Tetrachloro-m-xylene [2C]	500	1.79872E+07										

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8082A

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22C1692
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Calibration:	2200121	Instrument:	ECD10
		Calibration Date:	3/17/2022 3:20:04PM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
Aroclor-1260 (2) [2C]	1012691	10.6			20	
Aroclor-1260 (3) [2C]	750431.4	11.5			20	
Aroclor-1260 (4) [2C]	873812.4	10.9			20	
Aroclor-1260 (5) [2C]	1755489	5.0			20	
Aroclor-1262 (1)	643621.8	10.0			20	
Aroclor-1262 (2)	877222.2	8.9			20	
Aroclor-1262 (3)	1056592	6.7			20	
Aroclor-1262 (4)	955834.9	6.0			20	
Aroclor-1262 (5)	1910830	2.4			20	
Aroclor-1262 (1) [2C]	726263.9	10.6			20	
Aroclor-1262 (2) [2C]	822244.6	11.6			20	
Aroclor-1262 (3) [2C]	1091432	10.7			20	
Aroclor-1262 (4) [2C]	1071046	12.2			20	
Aroclor-1262 (5) [2C]	2014408	7.0			20	
Aroclor-1268 (1)	2123036	3.9			20	
Aroclor-1268 (2)	1993068	3.2			20	
Aroclor-1268 (3)	1678318	4.9			20	
Aroclor-1268 (4)	719312.6	5.2			20	
Aroclor-1268 (5)	5284064	1.6			20	
Aroclor-1268 (1) [2C]	2212031	7.1			20	
Aroclor-1268 (2) [2C]	2092194	6.7			20	
Aroclor-1268 (3) [2C]	1739898	9.1			20	
Aroclor-1268 (4) [2C]	856150.4	16.9			20	
Aroclor-1268 (5) [2C]	5378130	2.4			20	
Decachlorobiphenyl	1.28815E+07	3.4			20	
Decachlorobiphenyl [2C]	1.260739E+07	2.8			20	
Tetrachloro-m-xylene	1.553562E+07 ✓	4.1 ✓			20	
Tetrachloro-m-xylene [2C]	1.761776E+07	2.6			20	

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\040722\
Data File : J22E097012.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 7 Apr 2022 10:54 am
Operator : JMB
Sample : B304395-BS1@TBA Inst : ECD10
Misc : mix[s,l1,l7]
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: PCB-F.E
Integration File signal 2: PCB-B.E
Quant Time: Apr 07 16:06:20 2022
Quant Method : C:\msdchem\1\methods\PCB Methods\10-PCB-040622.M
Quant Title : 60/16-031422, 54-031422, 48-031422, 42-031422, 32/68-031422, 21/62-0314221 220012
1
QLast Update : Thu Mar 17 16:57:04 2022
Response via : Initial Calibration
Integrator: ChemStation

CHECKED BY:

APR 08 2022

Todd Glenfriedo

Volume Inj. :
Signal #1 Phase :
Signal #1 Info :
Signal #2 Phase:
Signal #2 Info :

Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L
System Monitoring Compounds						
1) S Tetrachlo...	3.127	3.071	2297.9E6	2669.5E6	147.912	151.532
2) S Decachlor...	7.226	7.390	2172.8E6	2275.5E6	168.673	180.491
Target Compounds						
3) L1 1016{1}	3.885	3.977	9216749	11600887	42.027	44.861
4) L1 1016{2}	4.096	4.251	27125870	24376420	39.199	45.256
5) L1 1016{3}	4.203	4.333	21263799	14579980	43.754	44.511
6) L1 1016{4}	4.255	4.407	12321388	13586474	41.257	45.364
7) L1 1016{5}	4.533	4.625	16165522	19047238	41.399	43.321
Sum 1016			86093328	83190998	207.637	223.314
Average 1016					41.527	44.663
8) L7 1260{1}	5.527	5.655	31868313	37340597	40.476	42.702
9) L7 1260{2}	5.857	5.823	19652396	43888992	40.655	43.340
10) L7 1260{3}	6.060	6.165	29897971	32532067	41.378	43.350
11) L7 1260{4}	6.236	6.370	30145063	37484074	39.952	42.896
12) L7 1260{5}	6.439	6.528	62850747	73024896	38.547	41.598
Sum 1260			174.4E6	224.3E6	201.007	213.886
Average 1260					40.201	42.777
13) L6 1254{1}	0.000	0.000	0	0	N.D. d	N.D. d
14) L6 1254{2}	0.000	0.000	0	0	N.D. d	N.D. d
15) L6 1254{3}	0.000	0.000	0	0	N.D. d	N.D. d
16) L6 1254{4}	0.000	0.000	0	0	N.D. d	N.D. d
17) L6 1254{5}	0.000	0.000	0	0	N.D. d	N.D. d
Sum 1254			0	0	N.D.	N.D.
Average 1254					0.000	0.000
18) L5 1248{1}	0.000	0.000	0	0	N.D. d	N.D. d
19) L5 1248{2}	0.000	0.000	0	0	N.D. d	N.D. d
20) L5 1248{3}	0.000	0.000	0	0	N.D. d	N.D. d
21) L5 1248{4}	0.000	0.000	0	0	N.D. d	N.D. d
22) L5 1248{5}	0.000	0.000	0	0	N.D. d	N.D. d
Sum 1248			0	0	N.D.	N.D.
Average 1248					0.000	0.000
23) L4 1242{1}	0.000	0.000	0	0	N.D. d	N.D. d
24) L4 1242{2}	0.000	0.000	0	0	N.D. d	N.D. d
25) L4 1242{3}	0.000	0.000	0	0	N.D. d	N.D. d
26) L4 1242{4}	0.000	0.000	0	0	N.D. d	N.D. d
27) L4 1242{5}	0.000	0.000	0	0	N.D. d	N.D. d
Sum 1242			0	0	N.D.	N.D.
Average 1242					0.000	0.000
28) L3 1232{1}	0.000	0.000	0	0	N.D. d	N.D. d

2297.9E6 / 1.55E7 = 147.912 ✓

METALS

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners March 2022
Method(s): 6010D
Laboratory: Con-test **SDG(s):** 22C1692
Date: 4/28/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? Yes, see attached
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)

   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
2. ☑ **Holding time and Sample Collection** Sample 22C1692-01 should be 360175-DP002011
   Were all samples were all prepped and analyzed with the holding time (6 month). YES NO
3. ☑ **QC Blanks**
   Are method blanks clean? YES NO (circle one)

   Are Initial and continuing calibration blanks clean? YES NO (circle one)
4. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)
   See attached for CCV review

   Initial calibration criteria based on method guidance and continuing calibration standards recovery 90-110% (80-120% Hg)

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed
5. ☑ **Laboratory Control Sample Results**
   Were all results were within 80-120% limits? YES NO (circle one)
6. ☑ **Matrix Spike**
   Were MS/MSDs submitted/analyzed? YES NO

   Were all results were within 75-125% limits? YES NO NA (circle one) See attached - no quals
7. ☑ **Duplicates**
   Were Field Duplicates submitted/analyzed? YES NO

   Aqueous RPD within limit? (20%) YES NO NA (circle one)
   Soil RPD within limit? (35%) YES NO NA (circle one)
   Lab Dup RPD <20% for water, 35% for soil values > 5X the CRQL (or ± CRQL) YES NO NA
8. ☑ Were both **Total and Dissolved** metals reported? YES NO NA (circle one)
   If the dissolved concentration is > 20% of the total concentration then estimate (J) both results using professional judgment
9. ☑ **Percent solids** < 50% for any soil/sediment sample? YES NO NA (circle one)
   If yes, estimate all results using professional judgment

GTD 4/28/2022

10. ☑ **Raw Data Review and Calculation Checks**
    See attached

11. ☑ **Electronic Data Review and Edits**
    Does the EDD match the Form Is? YES NO (circle one)

12. ☑ **DUSR Tables Review**
    Table 1 (Samples and Analytical Methods)
    Table 2 (Analytical Results)
    Table 3 (Qualification Actions)
    Were all tables produced and reviewed? YES NO (circle one)

GTD 4/28/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SW-846 6010D

Qualifications:

MS-19

Sample to spike ratio is greater than or equal to 4:1. Spiked amount is not representative of the native amount in the sample. Appropriate or meaningful recoveries cannot be calculated.

Analyte & Samples(s) Qualified:

Calcium

22C1692-03[360175-DP005011], B305111-MSD1

Magnesium

22C1692-03[360175-DP005011], B305111-MSD1

See attached for MS review

Sodium

22C1692-03[360175-DP005011], B305111-MSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Beryllium

22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D]

High bias, samples ND - no quals

Thallium

22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-03[360175-DP005011], 22C1692-04[360175-DP005011D]

SW-846 7470A

Qualifications:

B

Analyte is found in the associated laboratory blank as well as in the sample.

Analyte & Samples(s) Qualified:

See attached for MB review

Mercury

22C1692-01[360175-DP003011], 22C1692-02[360175-DP004011], 22C1692-04[360175-DP005011D], B305219-BLK1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Mercury

B305408-BSD1

SW-846 8081B

Qualifications:

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:

Hexachlorobenzene

B304396-BS1, B304396-BSD1, B304396-MS1, B304396-MSD1

SW-846 8260D

Qualifications:

MS-07A

Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Naphthalene

22C1692-03[360175-DP005011], B304257-MS1, B304257-MSD1

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B305111 - SW-846 3005A												
Matrix Spike Dup (B305111-MSD1)		**Source: 22C1692-03**			Prepared: 04/06/22 Analyzed: 04/08/22							
Aluminum	0.450	0.050	0.015	mg/L	0.500	0.0154	87.0		75-125	9.22	20	
Antimony	0.459	0.050	0.0089	mg/L	0.500	ND	91.9		75-125	8.19	20	
Arsenic	0.440	0.010	0.0047	mg/L	0.500	ND	87.9		75-125	7.74	20	
Barium	0.518	0.050	0.0056	mg/L	0.500	0.0413	95.4		75-125	6.71	20	
Beryllium	0.556	0.0040	0.0010	mg/L	0.500	ND	111		75-125	5.15	20	
Cadmium	0.484	0.0040	0.0008(	mg/L	0.500	ND	96.8		75-125	7.92	20	
Calcium Sample result >4x spike - no quals	75.0	0.50	0.11	mg/L	4.00	73.9	**27.1**	*	75-125	4.22	20	MS-19
Chromium	0.485	0.010	0.0025	mg/L	0.500	ND	97.0		75-125	6.96	20	
Cobalt	0.467	0.010	0.0014	mg/L	0.500	ND	93.4		75-125	7.71	20	
Copper	0.895	0.010	0.0036	mg/L	1.00	ND	89.5		75-125	6.85	20	
Iron	3.58	0.050	0.019	mg/L	4.00	0.0450	88.4		75-125	8.26	20	
Lead	0.480	0.010	0.0030	mg/L	0.500	ND	96.0		75-125	7.24	20	
Magnesium Sample result >4x spike - no quals	28.7	0.050	0.0095	mg/L	4.00	26.0	**68.5**	*	75-125	4.19	20	MS-19
Manganese	0.464	0.010	0.0017	mg/L	0.500	0.0190	89.0		75-125	8.47	20	
Nickel	0.470	0.010	0.0088	mg/L	0.500	ND	94.1		75-125	7.79	20	
Potassium	8.29	2.0	0.30	mg/L	4.00	4.73	88.9		75-125	5.59	20	
Selenium	0.503	0.050	0.011	mg/L	0.500	ND	101		75-125	9.25	20	
Silver	0.499	0.010	0.0032	mg/L	0.500	ND	99.8		75-125	2.60	20	
Sodium Sample result >4x spike - no quals	28.8	2.0	0.53	mg/L	4.00	26.1	**67.2**	*	75-125	4.24	20	MS-19
Thallium	0.528	0.050	0.019	mg/L	0.500	ND	106		75-125	7.51	20	
Vanadium	0.502	0.010	0.0031	mg/L	0.500	0.00673	99.1		75-125	7.10	20	
Zinc	0.933	0.010	0.0042	mg/L	1.00	0.00541	92.8		75-125	7.42	20	
Batch B305219 - SW-846 7470A/7471A												
Blank (B305219-BLK1) Associated with samples 1, 2, 4					Prepared: 04/07/22 Analyzed: 04/08/22							
Mercury All qual'd U @ RL, BL1	0.000093	0.00010	0.0000-	mg/L								B, J
LCS (B305219-BS1)					Prepared: 04/07/22 Analyzed: 04/08/22							
Mercury	0.00451	0.00010	0.0000-	mg/L	0.00402		112		80-120			
LCS Dup (B305219-BSD1)					Prepared: 04/07/22 Analyzed: 04/08/22							
Mercury	0.00447	0.00010	0.0000-	mg/L	0.00402		111		80-120	0.810	20	
Batch B305408 - SW-846 7470A Prep												
Blank (B305408-BLK1)					Prepared & Analyzed: 04/10/22							
Mercury	ND	0.00010	0.0000-	mg/L								
LCS (B305408-BS1)					Prepared & Analyzed: 04/10/22							
Mercury	0.00326	0.00010	0.0000-	mg/L	0.00402		81.0		80-120			

GTD 4/28/2022

All within limits - no quals

Sample ID: 360175-DP005011 / 360175-DP005011D

Compound	Result	LabQual	DF	Dup	LabQual	DF	RPD
Calcium	74			74			0.0
Magnesium	26			26			0.0
Manganese	0.019			0.019			0.0
Potassium	4.7			4.8			2.1
Sodium	26			26			0.0

GTD 4/28/2022

Batch ID: AVIO 500
Sequence No.: 45 **Autosampler Location: 50**
Sample ID: 22C1692-03 **Date Collected: 4/8/2022 3:51:15 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**
Wash Time (before sample): 100

Mean Data: 22C1692-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y radial	588693.2	95.7	%	0.71	95.7	%	0.71	0.75%
Y axial	2690113.2	92.4	%	0.23	92.4	%	0.23	0.25%
Ag 328.068†	-16.5	0.0011	mg/L	0.00111	0.0011	mg/L	0.00111	96.72%
Al 396.153†	189.9	0.0191	mg/L	0.00164	0.0191	mg/L	0.00164	8.62%
As 188.979†	-3.8	-0.0025	mg/L	0.00320	-0.0025	mg/L	0.00320	127.05%
B 208.889†	187.5	0.0260	mg/L	0.00075	0.0260	mg/L	0.00075	2.88%
Ba 233.527†	3496.5	0.0412	mg/L	0.00028	0.0412	mg/L	0.00028	0.69%
Be 313.107†	-163.4	-0.0003	mg/L	0.00003	-0.0003	mg/L	0.00003	11.44%
Ca 317.933†	2189685.6	74.79	mg/L	0.101	74.79	mg/L	0.101	0.13%
Cd 228.802†	21.0	0.0010	mg/L	0.00036	0.0010	mg/L	0.00036	35.87%
Co 228.616†	8.5	0.0004	mg/L	0.00011	0.0004	mg/L	0.00011	25.47%
Cr 267.716†	112.1	0.0017	mg/L	0.00014	0.0017	mg/L	0.00014	8.39%
Cu 327.393†	-99.7	-0.0002	mg/L	0.00082	-0.0002	mg/L	0.00082	492.22%
Fe 238.204†	407.8	0.0297	mg/L	0.00020	0.0297	mg/L	0.00020	0.66%
K 766.490†	19910.0	4.662	mg/L	0.0197	4.662	mg/L	0.0197	0.42%
Mg 285.213†	966878.1	26.05	mg/L	0.035	26.05	mg/L	0.035	0.14%
Mn 257.610†	1384.8	0.0191	mg/L	0.00026	0.0191	mg/L	0.00026	1.35%
Mo 202.031†	-11.5	-0.0007	mg/L	0.00036	-0.0007	mg/L	0.00036	50.50%
Na 589.592†	349912.4	26.23	mg/L	0.056	26.23	mg/L	0.056	0.21%
Ni 231.604†	-35.5	-0.0011	mg/L	0.00053	-0.0011	mg/L	0.00053	50.04%
Pb 220.353†	-2.9	-0.0005	mg/L	0.00066	-0.0005	mg/L	0.00066	137.43%
Sb 206.836†	-4.0	-0.0015	mg/L	0.00286	-0.0015	mg/L	0.00286	191.29%
Se 196.026†	3.5	0.0017	mg/L	0.00167	0.0017	mg/L	0.00167	96.11%
Sn 189.927†	-52.6	-0.0096	mg/L	0.00134	-0.0096	mg/L	0.00134	14.01%
Ti 337.279†	38.2	0.0004	mg/L	0.00005	0.0004	mg/L	0.00005	10.48%
Tl 351.924†	-22.1	-0.0098	mg/L	0.00289	-0.0098	mg/L	0.00289	29.59%
V 290.880†	1162.7	0.0158	mg/L	0.00066	0.0158	mg/L	0.00066	4.20%

2	4.290	4.290	0.0510	0.2443	0.0511	11:29:09 AM	Yes
Mean:	4.396	4.396	0.0522				
SD:	0.1509	0.1509	0.0018				
%RSD:	3.43%	3.43%	3.42%				

==========

Sequence No.: 17 **Autosampler Location: 56**
Sample ID: B305219-DUP1 **Date Collected: 4/8/2022 11:29:33 AM**
Analyst: MJH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Analyst Dilution Factor: **Sample Prep Vol:**
Wash Time (before sample): 0 **System Dilution Factor: 1**
Instrument: FIMS100

Replicate Data: B305219-DUP1 **Analyte: Hg 253.7**

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.139	0.139	0.0019	0.0102	0.0020	11:30:25 AM	Yes
2	0.099	0.099	0.0014	0.0076	0.0016	11:30:56 AM	Yes
Mean:	0.119	0.119	0.0016				
SD:	0.0284	0.0284	0.0003				
%RSD:	23.85%	23.85%	20.57%				

==========

Sequence No.: 18 **Autosampler Location: 57**
Sample ID: 22C1692-03 **Date Collected: 4/8/2022 11:31:19 AM**
Analyst: MJH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Analyst Dilution Factor: **Sample Prep Vol:**
Wash Time (before sample): 0 **System Dilution Factor: 1**
Instrument: FIMS100

Replicate Data: 22C1692-03 **Analyte: Hg 253.7**

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.083	0.083	0.0012	0.0063	0.0014	11:32:11 AM	Yes
2	0.072	0.072	0.0011	0.0056	0.0013	11:32:42 AM	Yes
Mean:	0.078	0.078	0.0011				
SD:	0.0080	0.0080	0.0001				
%RSD:	10.27%	10.27%	8.25%				

==========

Sequence No.: 19 **Autosampler Location: 58**
Sample ID: 22C1692-01 **Date Collected: 4/8/2022 11:33:06 AM**
Analyst: MJH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Analyst Dilution Factor: **Sample Prep Vol:**
Wash Time (before sample): 0 **System Dilution Factor: 1**
Instrument: FIMS100

Replicate Data: 22C1692-01 **Analyte: Hg 253.7**

Repl #	SampleConc µg/L	StndConc µg/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.078	0.078	0.0011	0.0061	0.0013	11:33:58 AM	Yes
2	0.067	0.067	0.0010	0.0054	0.0012	11:34:29 AM	Yes
Mean:	0.073	0.073	0.0011				
SD:	0.0077	0.0077	0.0001				
%RSD:	10.51%	10.51%	8.34%				

0.000073 mg/L ✓

==========

Sequence No.: 20 **Autosampler Location: 59**
Sample ID: 22C1692-02 **Date Collected: 4/8/2022 11:34:53 AM**
Analyst: MJH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Analyst Dilution Factor: **Sample Prep Vol:**
Wash Time (before sample): 0 **System Dilution Factor: 1**
Instrument: FIMS100

PFAS

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners March 2022
Method: SOP-454 PFAS
Laboratory: Con-test **SDG(s):** 22C1815
Date: 4/28/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? Yes, see attached
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)

2. ☑ **Holding time and Sample Collection** Sample 22C1815-03 should be 360175-DP01009
   Water: 14 days from collection to extraction; 28 days from extraction to analysis
   Hold time met for all samples? YES NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)
   Are rinse blanks free of contamination? YES NO NA (circle one)
   Are field reagent blanks free of contamination? YES NO NA (circle one)

4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)
   Not associated with samples
   Initial Calibration %RSD = 15%, Continuing Calibration %D = 20%

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Surrogate Recovery** (Extracted Isotope Dilution Standards) (50-150)
   Were all results within limits? YES NO (circle one)
   Were any recoveries < 10%? (use professional judgment) Subsets J/UJ, ISL

8. ☑ **Matrix Spike** (70-130)
   Were MS/MSDs submitted/analyzed? YES NO

   Were all results within limits? YES NO NA (circle one)

GTD 4/28/2022

9. ☑ **Duplicates** (RPD limits = water 30)
Were Field Duplicates submitted/analyzed? YES NO

Were RPDs within criteria? YES NO NA (circle one)

10. ☑ **Laboratory Control Sample Results** (70-130)
Were all results within limits? YES NO (circle one)

11. ☑ **Raw Data Review and Calculation Checks**
See attached

12. ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? YES NO (circle one)

13. ☑ **Tables**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS

Qualifications:

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

d3-NMeFOSAA
22C1815-02[360175-DP008011], 22C1815-06[360175-DP01508]

d5-NEtFOSAA
22C1815-02[360175-DP008011], 22C1815-06[360175-DP01508]

M2-4:2FTS
22C1815-02[360175-DP008011], 22C1815-03[DP01009], 22C1815-06[360175-DP01508], S070144-CCV3

See attached for EIS review

M2-6:2FTS
22C1815-02[360175-DP008011], 22C1815-03[DP01009], S070144-CCV3

M2-8:2FTS
22C1815-02[360175-DP008011], 22C1815-03[DP01009], S070144-CCV3

M2PFTA
22C1815-02[360175-DP008011], 22C1815-03[DP01009], 22C1815-05[360175-DP00909], 22C1815-06[360175-DP01508]

M8FOSA
22C1815-05[360175-DP00909], 22C1815-06[360175-DP01508]

MPFBA
22C1815-05[360175-DP00909], 22C1815-06[360175-DP01508]

MPFDoA
22C1815-02[360175-DP008011], 22C1815-06[360175-DP01508]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

9Cl-PF3ONS (F53B Major)
S070144-CCV1

Not associated with samples

N-EtFOSAA
S070144-CCV2

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod Kopyscinski

GTD 4/28/2022

Tod E. Kopyscinski
Laboratory Director

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-DP008011 (22C1815-02)			Lab File ID: 22C1815-02.d			Analyzed: 04/08/22 00:27			
M8FOSA	160938.2	4.00455	301,634.00	4.00455	53	50 - 150	0.0000	+/-0.50	
M2-4:2FTS UJ, ISL	41046.71	2.4886	133,005.00	2.4886	31	50 - 150	0.0000	+/-0.50	*
M2PFTA UJ, ISL	352873.5	4.329683	1,059,876.00	4.329683	33	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS UJ, ISL	56686.02	3.810767	149,824.00	3.810767	38	50 - 150	0.0000	+/-0.50	*
MPFBA	453768.4	1.0834	677,067.00	1.0834	67	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	158825.7	2.831117	193,330.00	2.831117	82	50 - 150	0.0000	+/-0.50	
M6PFDA	393080	3.811283	651,522.00	3.811283	60	50 - 150	0.0000	+/-0.50	
M3PFBS	92354.28	1.894967	142,480.00	1.894967	65	50 - 150	0.0000	+/-0.50	
M7PFUnA	394008.3	3.954033	788,425.00	3.954033	50	50 - 150	0.0000	+/-0.50	
M2-6:2FTS J, ISL	23173.56	3.453267	65,591.00	3.453267	35	50 - 150	0.0000	+/-0.50	*
M5PFPeA	427759.6	1.7231	587,852.00	1.7231	73	50 - 150	0.0000	+/-0.50	
M5PFHxA	520816.8	2.572333	803,824.00	2.572333	65	50 - 150	0.0000	+/-0.50	
M3PFHxS	48475.55	3.218333	92,798.00	3.218333	52	50 - 150	0.0000	+/-0.50	
M4PFHpA	455348.5	3.178867	742,996.00	3.178867	61	50 - 150	0.0000	+/-0.50	
M8PFOA	353556.9	3.461933	679,171.00	3.461933	52	50 - 150	0.0000	+/-0.50	
M8PFOS	63667.21	3.65215	116,549.00	3.65215	55	50 - 150	0.0000	+/-0.50	
M9PFNA	327373.5	3.653183	546,124.00	3.653183	60	50 - 150	0.0000	+/-0.50	
MPFDoA UJ, ISL	276289.9	4.08865	804,522.00	4.08865	34	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA UJ, ISL	82028.58	3.9615	185,914.00	3.9615	44	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA UJ, ISL	112427.4	3.88175	244,864.00	3.88175	46	50 - 150	0.0000	+/-0.50	*

GTD 4/28/2022

con-test® A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
DP01009 (22C1815-03)			Lab File ID: 22C1815-03.d			Analyzed: 04/08/22 00:35			
M8FOSA	170478.2	4.00455	301,634.00	4.00455	57	50 - 150	0.0000	+/-0.50	
M2-4:2FTS UJ, ISL	42512.48	2.4886	133,005.00	2.4886	32	50 - 150	0.0000	+/-0.50	*
M2PFTA UJ, ISL	464392.7	4.329683	1,059,876.00	4.329683	44	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS UJ, ISL	67405.44	3.810767	149,824.00	3.810767	45	50 - 150	0.0000	+/-0.50	*
MPFBA	400704.4	1.0834	677,067.00	1.0834	59	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	178505.5	2.831117	193,330.00	2.831117	92	50 - 150	0.0000	+/-0.50	
M6PFDA	406246.2	3.811283	651,522.00	3.811283	62	50 - 150	0.0000	+/-0.50	
M3PFBS	93323.39	1.894967	142,480.00	1.894967	65	50 - 150	0.0000	+/-0.50	
M7PFUnA	453460.2	3.954033	788,425.00	3.954033	58	50 - 150	0.0000	+/-0.50	
M2-6:2FTS UJ, ISL	23732.84	3.453267	65,591.00	3.453267	36	50 - 150	0.0000	+/-0.50	*
M5PFPeA	436678.6	1.7231	587,852.00	1.7231	74	50 - 150	0.0000	+/-0.50	
M5PFHxA	530161.3	2.572333	803,824.00	2.572333	66	50 - 150	0.0000	+/-0.50	
M3PFHxS	53812.65	3.218333	92,798.00	3.218333	58	50 - 150	0.0000	+/-0.50	
M4PFHpA	462978.6	3.178867	742,996.00	3.178867	62	50 - 150	0.0000	+/-0.50	
M8PFOA	374696.8	3.461933	679,171.00	3.461933	55	50 - 150	0.0000	+/-0.50	
M8PFOS	70525.23	3.65215	116,549.00	3.65215	61	50 - 150	0.0000	+/-0.50	
M9PFNA	343350.5	3.653183	546,124.00	3.653183	63	50 - 150	0.0000	+/-0.50	
MPFDoA	404761.4	4.08865	804,522.00	4.08865	50	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	107181.8	3.9615	185,914.00	3.9615	58	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	135015.7	3.88175	244,864.00	3.88175	55	50 - 150	0.0000	+/-0.50	

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-DP00909 (22C1815-05)			Lab File ID: 22C1815-05.d			Analyzed: 04/08/22 00:42			
M8FOSA UJ, ISL	130178.3	3.996567	301,634.00	4.00455	43	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS	84846.84	2.463967	133,005.00	2.4886	64	50 - 150	-0.0246	+/-0.50	
M2PFTA UJ, ISL	284474.8	4.329683	1,059,876.00	4.329683	27	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	103114.8	3.8028	149,824.00	3.810767	69	50 - 150	-0.0080	+/-0.50	
MPFBA J, ISL	102844.8	1.008617	677,067.00	1.0834	15	50 - 150	-0.0748	+/-0.50	*
M3HFPO-DA	118783.6	2.806567	193,330.00	2.831117	61	50 - 150	-0.0246	+/-0.50	
M6PFDA	377691.2	3.803317	651,522.00	3.811283	58	50 - 150	-0.0080	+/-0.50	
M3PFBS	85225.97	1.878383	142,480.00	1.894967	60	50 - 150	-0.0166	+/-0.50	
M7PFUnA	476147.7	3.954033	788,425.00	3.954033	60	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	45886.53	3.445283	65,591.00	3.453267	70	50 - 150	-0.0080	+/-0.50	
M5PFPeA	367359	1.706567	587,852.00	1.7231	62	50 - 150	-0.0165	+/-0.50	
M5PFHxA	498765.1	2.5477	803,824.00	2.572333	62	50 - 150	-0.0246	+/-0.50	
M3PFHxS	49390.58	3.21025	92,798.00	3.218333	53	50 - 150	-0.0081	+/-0.50	
M4PFHpA	428929.9	3.170783	742,996.00	3.178867	58	50 - 150	-0.0081	+/-0.50	
M8PFOA	339644.7	3.461933	679,171.00	3.461933	50	50 - 150	0.0000	+/-0.50	
M8PFOS	65123.6	3.65215	116,549.00	3.65215	56	50 - 150	0.0000	+/-0.50	
M9PFNA	305083.8	3.6532	546,124.00	3.653183	56	50 - 150	0.0000	+/-0.50	
MPFDoA	450379.2	4.08865	804,522.00	4.08865	56	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	116916.9	3.9535	185,914.00	3.9615	63	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	133829.7	3.88175	244,864.00	3.88175	55	50 - 150	0.0000	+/-0.50	

GTD 4/28/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-DP01508 (22C1815-06)			Lab File ID: 22C1815-06.d			Analyzed: 04/08/22 00:49			
M8FOSA UJ, ISL	104622.3	3.996567	301,634.00	4.00455	35	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS UJ, ISL	61379.07	2.472183	133,005.00	2.4886	46	50 - 150	-0.0164	+/-0.50	*
M2PFTA R, ISL	171222.8	4.329683	1,059,876.00	4.329683	16	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	93593.93	3.8028	149,824.00	3.810767	62	50 - 150	-0.0080	+/-0.50	
MPFBA J, ISL	253952.5	1.058467	677,067.00	1.0834	38	50 - 150	-0.0249	+/-0.50	*
M3HFPO-DA	157911.6	2.81475	193,330.00	2.831117	82	50 - 150	-0.0164	+/-0.50	
M6PFDA	407098.8	3.803317	651,522.00	3.811283	62	50 - 150	-0.0080	+/-0.50	
M3PFBS	89022.23	1.878383	142,480.00	1.894967	62	50 - 150	-0.0166	+/-0.50	
M7PFUnA	442506.7	3.954033	788,425.00	3.954033	56	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	38122.99	3.445283	65,591.00	3.453267	58	50 - 150	-0.0080	+/-0.50	
M5PFPeA	371496.8	1.714833	587,852.00	1.7231	63	50 - 150	-0.0083	+/-0.50	
M5PFHxA	464128.5	2.555917	803,824.00	2.572333	58	50 - 150	-0.0164	+/-0.50	
M3PFHxS	52067.3	3.21025	92,798.00	3.218333	56	50 - 150	-0.0081	+/-0.50	
M4PFHpA	417765.3	3.170783	742,996.00	3.178867	56	50 - 150	-0.0081	+/-0.50	
M8PFOA	346307.8	3.461933	679,171.00	3.461933	51	50 - 150	0.0000	+/-0.50	
M8PFOS	67824.61	3.65215	116,549.00	3.65215	58	50 - 150	0.0000	+/-0.50	
M9PFNA	320775.9	3.6532	546,124.00	3.653183	59	50 - 150	0.0000	+/-0.50	
MPFDoA UJ, ISL	306235.4	4.08865	804,522.00	4.08865	38	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA UJ, ISL	68143.48	3.9535	185,914.00	3.9615	37	50 - 150	-0.0080	+/-0.50	*
d3-NMeFOSAA UJ, ISL	88145.88	3.88175	244,864.00	3.88175	36	50 - 150	0.0000	+/-0.50	*

GTD 4/28/2022

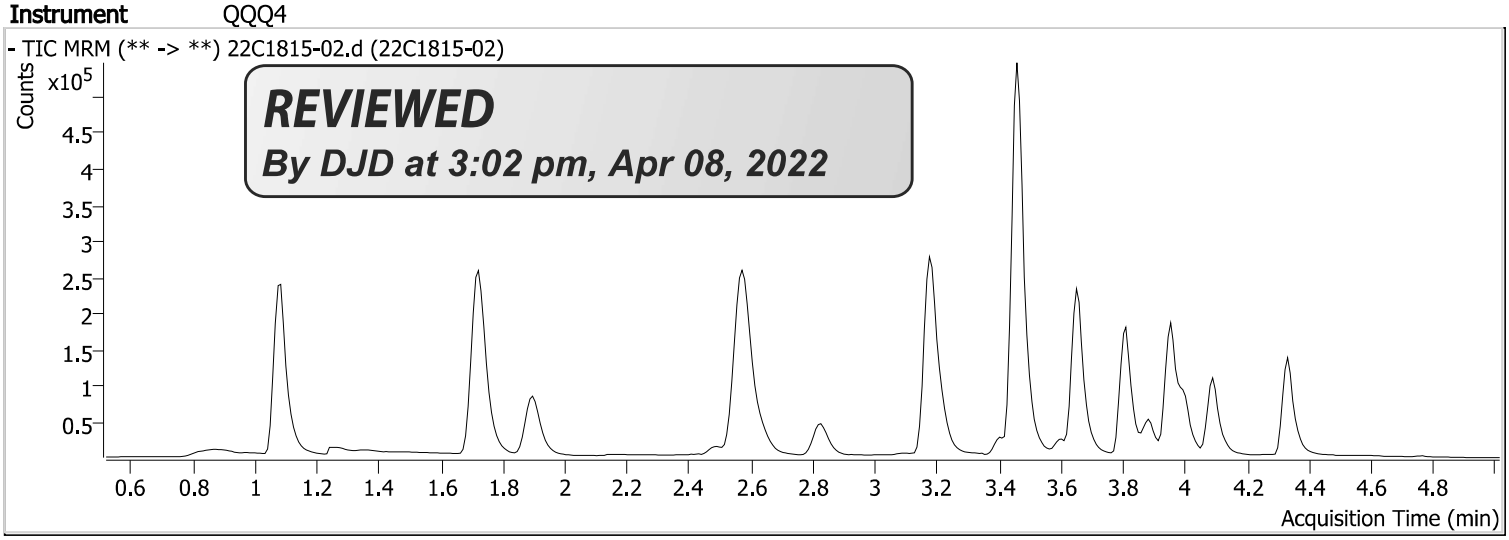
6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SOP-454 PFAS

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22C1815
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington- CO 142890
Calibration:	2200163	Instrument:	QQQ4
		Calibration Date:	4/1/2022 12:00:21AM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
Perfluorobutanoic acid (PFBA)	0.894004	7.1		1.000		
Perfluorobutanesulfonic acid (PFBS)	1.022244	5.3		1.000		
Perfluoropentanoic acid (PFPeA)	0.9886799	6.7		1.000		
Perfluorohexanoic acid (PFHxA)	0.886256	6.7		1.000		
11Cl-PF3OUdS (F53B Minor)	1.373873	11.9		0.998		
9Cl-PF3ONS (F53B Major)	3.951362	14.5	0.995		0.99	
4,8-dioxa-3H-perfluorononanoic acid (ADON/	1.585567	10.3		1.000		
Hexafluoropropylene oxide dimer acid (HFPC	0.1257651	16.4		0.998		
8:2 Fluorotelomersulfonic acid (8:2FTS A)	0.8432716	13.7		0.996		
Perfluorodecanoic acid (PFDA)	0.9251209	10.7		0.999		
Perfluorododecanoic acid (PFDoA)	0.9776517	11.9		1.000		
Perfluoro(2-ethoxyethane)sulfonic acid (PFEI	7.491241	6.4		1.000		
Perfluoroheptanesulfonic acid (PFHpS)	0.6439033	9.3		0.996		
N-EtFOSAA	0.8977993	9.5	0.999		0.99	
N-MeFOSAA	0.9388427	10.4	0.999		0.99	
Perfluorotetradecanoic acid (PFTA)	0.9543091	10.7	0.996		0.99	
Perfluorotridecanoic acid (PFTrDA)	1.053801	9.0		0.999		
4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.246034	8.9		1.000		
Perfluorodecanesulfonic acid (PFDS)	0.561114	5.1	0.998		0.99	
Perfluorooctanesulfonamide (FOSA)	0.956773	8.2		0.999		
Perfluorononanesulfonic acid (PFNS)	0.3182159	11.6		0.997		
Perfluoro-1-hexanesulfonamide (FHxSA)	0.3516814	14.2		0.999		
Perfluoro-1-butanesulfonamide (FBSA)	0.3256066	5.7	0.999		0.99	
Perfluorohexanesulfonic acid (PFHxS)	0.9827122	8.0		1.000		
Perfluoro-4-oxapentanoic acid (PFMPA)	0.5587749	5.3		1.000		
Perfluoro-5-oxahexanoic acid (PFMBA)	0.6607067	5.4		1.000		
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.457755	16.8		0.997		
Perfluoropetanesulfonic acid (PFPeS)	1.036809	7.6		1.000		
Perfluoroundecanoic acid (PFUnA)	0.88456	16.8		1.000		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA	0.4114875	5.3		1.000		
Perfluoroheptanoic acid (PFHpA)	1.080451	10.0		1.000		

Batch Path	D:\MassHunter\Data\APRIL2022\040722\QuantResults\B304952.batch.bin		
Analysis Time	4/8/2022 2:01 PM	**Last Calib Update**	4/4/2022 3:09 PM
Acq. Time	4/8/2022 12:27 AM	**Data File**	22C1815-02.d
Sample Type	Sample	**Sample Name**	22C1815-02
Dilution	1	**Acq. Method**	PFAS ACQUISITION.m
Sample Comment		**Processing method**	ID_040122.m
Instrument	QQQ4		



Compound	RT	Resp.	ISTD	RT	ISTD Resp.	Final Conc	Units	MI	Reason	Analyst & Date
PFBA	1.079	223754	MPFBA - ISTD	1.083	453768	2775.2481	pg/ml			
PFBS	1.897	138857	M3PFBS - ISTD	1.895	92354	6794.7354	pg/ml			
PFPeA	1.724	445068	M5PFPeA - ISTD	1.723	427760	5278.6275	pg/ml			
PFHxA	2.574	475092	M5PFHxA - ISTD	2.572	520817	5177.9748	pg/ml			
11Cl-PF3OUdS	3.808	0	M8PFOS - ISTD	3.652	63667	ND	pg/ml	✔	1	BLH 04/08/22
9Cl-PF3ONS	3.579	0	M8PFOS - ISTD	3.652	63667	ND	pg/ml	✔	1	BLH 04/08/22
ADONA	3.407	0	M4PFHpA - ISTD	3.179	455348	ND	pg/ml	✔	1	BLH 04/08/22
HFPO-DA	2.815	0	M3HFPO-DA - ISTD	2.831	158826	ND	pg/ml	✔	1	BLH 04/08/22
8-2 FTS			M2-8-2-FTS - ISTD	3.811	56686	ND	pg/ml			
PFDA	3.812	4493	M6PFDA - ISTD	3.811	393080	63.5662	pg/ml	✔	3	BLH 04/08/22
PFDoA	4.065	0	MPFDoA - ISTD	4.089	276290	ND	pg/ml	✔	1	BLH 04/08/22
PFEESA			M3PFBS - ISTD	1.895	92354	ND	pg/ml			
PFHpS	3.469	2960	M8PFOS - ISTD	3.652	63667	330.0143	pg/ml			
N-EtFOSAA	3.970	0	d5-N-EtFOSAA - ISTD	3.962	82029	ND	pg/ml	✔	1	BLH 04/08/22
N-MeFOSAA			d3-N-MeFOSAA - ISTD	3.882	112427	ND	pg/ml			
PFTA	4.088	0	M2PFTA - ISTD	4.330	352874	ND	pg/ml	✔	1	BLH 04/08/22
PFTrDA	4.510	0	M2PFTA - ISTD	4.330	352874	ND	pg/ml	✔	1	BLH 04/08/22
4-2 FTS			M2-4-2-FTS - ISTD	2.489	41047	ND	pg/ml			
PFDS			M3PFBS - ISTD	1.895	92354	ND	pg/ml			
FOSA	4.005	0	M8FOSA - ISTD	4.005	160938	ND	pg/ml	✔	1	BLH 04/08/22
PFNS	3.691	0	M8PFOS - ISTD	3.652	63667	ND	pg/ml	✔	1	BLH 04/08/22
FHxSA	3.616	169	M8PFOA - ISTD	3.462	353557	6.9151	pg/ml			
FBSA	2.641	84764	M5PFHxA - ISTD	2.572	520817	2353.4909	pg/ml			

1 - FORM I
ANALYSIS DATA SHEET

360175-DP008011

Laboratory:	Con-Test, a Pace Analytical Labora			Work Order:	22C1815
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington- CO 142890
Matrix:	Ground Water	Laboratory ID:	22C1815-02	File ID:	22C1815-02.d
Sampled:	03/23/22 10:45	Prepared:	04/05/22 09:10	Analyzed:	04/08/22 00:27
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	282.76 mL / 1 mL				
Batch:	B304952	Sequence:	S070144	Calibration:	2200163	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	9.8 ✓	0.66	1.8	
375-73-5	Perfluorobutanesulfonic acid (PFBS)	24	0.25	1.8	
2706-90-3	Perfluoropentanoic acid (PFPeA)	19	0.35	1.8	
307-24-4	Perfluorohexanoic acid (PFHxA)	18	0.34	1.8	
763051-92-9	11Cl-PF3OUdS (F53B Minor)		0.57	1.8	
756426-58-1	9Cl-PF3ONS (F53B Major)		0.34	1.8	
919005-14-4	4,8-dioxa-3H-perfluorononanoic acid (ADON/		0.31	1.8	
13252-13-6	Hexafluoropropylene oxide dimer acid (HFPC		0.21	1.8	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.54	1.8	
335-76-2	Perfluorodecanoic acid (PFDA)		0.43	1.8	
307-55-1	Perfluorododecanoic acid (PFDoA)		0.39	1.8	
113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid (PFEI		0.21	1.8	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.83	1.8	
2991-50-6	N-EtFOSAA		0.56	1.8	
2355-31-9	N-MeFOSAA		0.67	1.8	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.32	1.8	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.24	1.8	
757124-72-4	4:2 Fluorotelomersulfonic acid (4:2FTS A)		0.25	1.8	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.29	1.8	
754-91-6	Perfluorooctanesulfonamide (FOSA)		0.37	1.8	
68259-12-1	Perfluorononanesulfonic acid (PFNS)		0.15	1.8	
41997-13-1	Perfluoro-1-hexanesulfonamide (FHxSA)		0.27	1.8	
30334-69-1	Perfluoro-1-butanesulfonamide (FBSA)	8.3	0.17	1.8	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	10	0.30	1.8	
377-73-1	Perfluoro-4-oxapentanoic acid (PFMPA)		0.37	1.8	
863090-89-5	Perfluoro-5-oxahexanoic acid (PFMBA)		0.30	1.8	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.32	1.8	
2706-91-4	Perfluoropetanesulfonic acid (PFPeS)		0.23	1.8	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		0.33	1.8	
151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA		0.24	1.8	

DUSR Calculations Sheet
PFAS

Sample ID: 360175-DP008011
TC: PFBA
Val File Result for TC: 9.8 ng/L

Sample Calc

Area TC	223754		
Area IS	453768	**DF**	1
		Sample Volume	282.76
Conc IS	5000	**final vol**	1
Avg RRF	0.894004		
Conc (ng/mL) TC =	2757.83	**Conc (ng/L)**	9.75325348
		Final Conc (ng/L)	9.75325348

Notes:
Green = matched reported value
Red = did not match reported value

VOCs in Air

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners March 2022
Method : TO-15
Laboratory and SDG(s): **SDG#** 22C1819
Date: 4/28/2022
Reviewer: Gabrielle Davis
Review Level [X] NYSDEC DUSR ☐ USEPA Region II Guideline

Control limits are from EPA Region 2 - SOP# HW-31, October 2006.

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? Yes, see attached
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
2. ☑ **Holding time and Sample Collection**
   Were samples analyzed within the 30 day holding time? YES NO (circle one)
3. ☑ **QC Blanks** ~~(use 5x rule for calculating action levels)~~ Normal Blank Rules
   Are method blanks free of contamination? YES NO (circle one)
4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed
5. ☑ **Instrument Calibration - Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within method criteria (%RSD ≤30; %D ≤30) in the initial calibration and/or continuing calibration standards? YES NO

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO NA
   If yes to above, use professional judgment to evaluate data and qualify results if needed
6. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = +40% to -40%, RTs within 20 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO NA
   If yes to above, use professional judgment to evaluate data and qualify results if needed
7. ☑ **Surrogate Recovery**

   Were all results within laboratory limits? YES NO (circle one)
8. ☑ **Field Duplicates**
   Were Field Duplicates submitted/analyzed? YES NO

   Were all results were within criteria (Field Dup RPD goal = 50). YES NO NA (circle one)
9. ☑ **Laboratory Control Sample Results** (limits 70-130%)

   Were all results within limits? YES NO (circle one) See attached - subset UJ, LCSL
10. ☑ **Reporting Limits:** Were samples analyzed at a dilution? YES NO (circle one)
    All samples analyzed at 4x dilutions

GTD 4/28/2022

11. ☑ **Raw Data Review and Calculation Checks**

See attached for calculations

12. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? YES NO (circle one)

13. ☑ **Tables Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

Table 4 (TICs) Did lab report TICs? YES NO (circle one)

GTD 4/28/2022

Pace Analytical®

22L819

Phone: 413-525-2332
Fax: 413-525-6405
www.pacelabs.com

http://www.pacelabs.com

DOC #378 REV3_11232021

CHAIN OF CUSTODY RECORD (AIR)

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 2

ANALYSIS REQUESTED

Company Name: Wood E+IS
Address: 511 Congress St, Suite 200, Portland, ME
Phone: 1-207-450 9772
Project Name: NYSDEC - Irvington Ring
Project Location: Irvington, NY
Project Number: 3616216144
Project Manager: Chuck Stapler
Pace Quote Name/Number: NYSDEC
Invoice Recipient: Wood E+IS
Sampled By: M. Ludwig

Standard Turnaround Time
7-Day ☐ 10-Day ☑
Due Date:

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Package
Format: PDF ☑ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: Charles.Stapler@woodplc.com
Fax To #:

TO15 - low level

" Hg

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume					Initial Pressure	Final Pressure	Lab Receipt Pressure	Summa Can ID	Flow Controller ID
Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	m³/min L/min	Code	Liters m³									
01 ✓	360175-GV008005	3/23/22	13:38	60		SG		X				-30	-9	8.4	1931	4248
02 ✓	360175-GV009005D	3/23/22	13:38	60		SG		X				-28	-3	1.2	2042	4413
03 ✓	360175-GV004005	3/23/22	12:40	60		SG		X				-28	-3	1.2	1734	4413
04 ✓	360175-GV016005	3/23/22	16:28	60		SG		X				-30	-27	24*	1853	4252
05 ✓	360175-GV017005	3/24/22	9:40	60		SG		X				-26	-5	3.8	1146	4139
06 ✓	360175-GV010005	3/24/22	11:35	60		SG		X				-29	-3	1.8	2195	4353
07 ✓	360175-GV015005	3/24/22	12:55	60		SG		X				-30*	-3	2	1452	4354
08 ✓	360175-GV012005	3/24/22	14:33	60		SG		X				-27	-9	2	1924	4329
09 ✓	360175-GV011005	3/24/22	16:00	60		SG		X				-29	-8	2.2	1176	4121

Please fill out completely, sign, date and retain the yellow copy for your records

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Comments:
* 360175-GV016005 * gauge would go passed -27 after an hour.

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Matrix Codes:
SG = SOIL GAS
IA = INDOOR AIR
AMB = AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = Other_____

	Date/Time:
Relinquished by: (signature)	3/28/22 1400
Received by: (signature)	3/29/22 1400
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time: 3/28/22 1518
Relinquished by: (signature)	Date/Time:
Received by: (signature) GTD 4/28/2022	Date/Time:

Data Deliverable Requirements
NY ☐
☐
☐
☐
☐
NYS

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

Pace Analytical®
NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Pace Analytical®

22C1819

Phone: 413-525-2332
Fax: 413-525-6405
www.pacelabs.com

http://www.pacelabs.com

DOC #378 REV3_11232021

CHAIN OF CUSTODY RECORD (AIR)

39 Spruce Street
East Longmeadow, MA 01028

Page 2 of 2

Company Name: Wood E+IS
Address: 511 Congress St Suite 200 Portland ME
Phone: 1-207-450-9772
Project Name: NYSDEC - Irvington Rug
Project Location: Irvington, NY
Project Number: 36160216144.
Project Manager: Chuck Staples
Pace Quote Name/Number: NYSDEC
Invoice Recipient: Wood E+IS
Sampled By: M-Lindsay

Requested Turnaround Time
7-Day ☐ 10-Day ☑
Due Date:

Rush Analysis Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☐ EXCEL ☑
Other:
CLP Like Data Pkg Required: ☐
Email To: charles.staples@woodplc.com
Fax To #:

ANALYSIS REQUESTED

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	TO15 low level				" Hg			Please fill out completely, sign, date and retain the yellow copy for your records	
Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	☐ m³/min ☑ L/min	Code	☑ Liters ☐ m³					Initial Pressure	Final Pressure	Lab Receipt Pressure	Summa Can ID	Flow Controller ID
10 ✓	360175-GW014005	3/25/22	7:40 / 8:40	60		SG		X				-29	-9	-5	1139	4335

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Comments:

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Matrix Codes:
SG = SOIL GAS
IA = INDOOR AIR
AMB = AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = Other_____

	Date/Time:
Relinquished by: (signature)	3/25/22 1400
Received by: (signature)	3/28/22 1400
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time: 3/28/22 1518
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

GTD 4/28/2022

Deliverables / Report Requirements
FAX
Other

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

Pace Analytical®
NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

50

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA TO-15

Qualifications:

L-03 Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

See attached for LCS review

1,2,4-Trichlorobenzene

22C1819-01[360175-GV008005], 22C1819-02[360175-GV009005D], 22C1819-03[360175-GV009005], 22C1819-04[360175-GV016005], B305329-BLK1, B305329-BS1, B305329-DUP1, B305469-BLK1, B305469-BS1

GTD 4/28/2022

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B305329 - TO-15 Prep												
LCS (B305329-BS1) Associated with samples 1-4					Prepared & Analyzed: 04/07/22							
cis-1,3-Dichloropropene	3.73				5.00		74.7		70-130			
trans-1,3-Dichloropropene	3.91				5.00		78.2		70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.89				5.00		97.8		70-130			
1,4-Dioxane	4.24				5.00		84.8		70-130			
Ethanol	4.14				5.00		82.7		70-130			
Ethyl Acetate	4.88				5.00		97.5		70-130			
Ethylbenzene	4.48				5.00		89.5		70-130			
4-Ethyltoluene	4.67				5.00		93.5		70-130			
Heptane	4.02				5.00		80.3		70-130			
Hexachlorobutadiene	3.69				5.00		73.7		70-130			
Hexane	4.48				5.00		89.6		70-130			
2-Hexanone (MBK)	4.07				5.00		81.4		70-130			
Isopropanol	4.00				5.00		80.0		70-130			
Methyl tert-Butyl Ether (MTBE)	4.37				5.00		87.4		70-130			
Methylene Chloride	4.81				5.00		96.2		70-130			
4-Methyl-2-pentanone (MIBK)	3.97				5.00		79.4		70-130			
Naphthalene	3.53				5.00		70.6		70-130			
Propene	4.72				5.00		94.3		70-130			
Styrene	4.57				5.00		91.5		70-130			
1,1,2,2-Tetrachloroethane	4.34				5.00		86.7		70-130			
Tetrachloroethylene	4.27				5.00		85.4		70-130			
Tetrahydrofuran	4.45				5.00		88.9		70-130			
Toluene	4.46				5.00		89.3		70-130			
1,2,4-Trichlorobenzene UJ, LCSL	3.32				5.00		**66.4**	*	70-130			L-03
1,1,1-Trichloroethane	4.20				5.00		84.1		70-130			
1,1,2-Trichloroethane	4.58				5.00		91.6		70-130			
Trichloroethylene	4.32				5.00		86.3		70-130			
Trichlorofluoromethane (Freon 11)	5.45				5.00		109		70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.23				5.00		105		70-130			
1,2,4-Trimethylbenzene	4.49				5.00		89.9		70-130			
1,3,5-Trimethylbenzene	4.73				5.00		94.7		70-130			
Vinyl Acetate	3.72				5.00		74.3		70-130			
Vinyl Chloride	4.65				5.00		92.9		70-130			
m&p-Xylene	9.49				10.0		94.9		70-130			
o-Xylene	4.64				5.00		92.8		70-130			
Surrogate: 4-Bromofluorobenzene (1)	*7.67*				*8.00*		*95.9*		*70-130*			

GTD 4/28/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv Results	ppbv RL	ug/m3 Results	ug/m3 RL	Spike Level ppbv	Source Result	%REC		%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B305469 - TO-15 Prep												
LCS (B305469-BS1) Associated with sample 4RE - ethanol only					Prepared & Analyzed: 04/08/22							
1,1,2,2-Tetrachloroethane	4.25				5.00		84.9		70-130			
Tetrachloroethylene	4.22				5.00		84.3		70-130			
Tetrahydrofuran	4.43				5.00		88.6		70-130			
Toluene	4.36				5.00		87.1		70-130			
1,2,4-Trichlorobenzene Not associated -no quals	3.40				5.00		**68.1**	*	70-130			L-03
1,1,1-Trichloroethane	4.16				5.00		83.1		70-130			
1,1,2-Trichloroethane	4.50				5.00		90.0		70-130			
Trichloroethylene	4.23				5.00		84.6		70-130			
Trichlorofluoromethane (Freon 11)	5.43				5.00		109		70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.24				5.00		105		70-130			
1,2,4-Trimethylbenzene	4.42				5.00		88.4		70-130			
1,3,5-Trimethylbenzene	4.64				5.00		92.7		70-130			
Vinyl Acetate	3.57				5.00		71.4		70-130			
Vinyl Chloride	4.62				5.00		92.4		70-130			
m&p-Xylene	9.43				10.0		94.3		70-130			
o-Xylene	4.60				5.00		92.0		70-130			
Surrogate: 4-Bromofluorobenzene (1)	*7.64*				*8.00*		*95.4*		*70-130*			

GTD 4/28/2022

All within limits - no quals

Sample ID: 360175-GV009005 / 360175-GV009005D

Compound	Result	LabQual	DF	Dup	LabQual	DF	RPD
acetone	14			13			7.4
1,3-dichlorobenzene	0.3			0.38			23.5
dichlorodifluoromethane	0.47			0.43			8.9
ethanol	54			55			1.8
tetrachloroethylene	0.68			0.74			8.5
toluene	0.49			0.5			2.0

GTD 4/28/2022

Response Factor Report SYSG

Method Path : C:\msdchem\1\methods\
Method File : G031122.m
Title : New Column Method G021015
Last Update : Sun Mar 13 11:52:17 2022
Response Via : Initial Calibration

Calibration Files
0.02=G22A070003.D 0.05=G22A070004.D 0.10=G22A070005.D 0.20=G22A070006.D 0.50=G22A070007.D 1.0 =G22A070009.D
2.0 =G22A070010.D 5.0 =G22A070011.D 10 =G22A070012.D 20 =G22A070013.D 50 =G22A070014.D

		Compound	0.02	0.05	0.10	0.20	0.50	1.0	2.0	5.0	10	20	50	Avg	%RSD
1)	I	BROMOCHLOROMETHANE...	----------ISTD----------												
2)		PROPENE					0.569	0.692	0.583	0.545	0.530	0.523	0.519	0.566	10.68
3)		DICHLORODIFLUO...		1.978	1.815	1.723	1.626	2.142	1.899	1.770	1.714	1.551	1.208	1.743	14.61
4)		CHLOROMETHANE		0.780	0.701	0.692	0.658	0.843	0.729	0.680	0.659	0.646	0.632	0.702	9.40
5)		FREON 114		2.246	2.003	1.917	1.878	2.310	2.044	1.895	1.812	1.732	1.504	1.934	12.20
6)		VINYL CHLORIDE	1.135	0.869	0.808	0.762	0.726	0.937	0.806	0.752	0.736	0.721	0.716	0.815	15.50
7)		1,3-BUTADIENE		0.604	0.611	0.541	0.525	0.680	0.594	0.558	0.545	0.542	0.532	0.573	8.47
8)		BROMOMETHANE		0.750	0.731	0.681	0.655	0.829	0.727	0.673	0.645	0.623	0.575	0.689	10.52
9)		CHLOROETHANE		0.471	0.408	0.379	0.360	0.448	0.383	0.357	0.348	0.338	0.329	0.382	12.34
10)		ACROLEIN		0.392	0.287	0.284	0.263	0.327	0.292	0.292	0.281	0.281	0.283	0.298	12.26
11)		ACETONE					1.167	1.260	1.161	1.106	1.071	1.049	1.028	1.120 ✓	7.26 ✓
12)		TRICHLOROFLUOR...		1.933	1.787	1.652	1.625	2.111	1.817	1.692	1.595	1.537	1.397	1.715	11.98
13)		ETHANOL					0.264	0.279	0.254	0.244	0.248	0.239	0.228	0.251	6.71
14)		1,1-DICHLOROET...	1.476	1.289	1.115	1.068	1.025	1.382	1.194	1.123	1.112	1.113	1.120	1.183	11.86
15)		METHYLENE CHLO...		1.058	0.895	0.844	0.803	1.031	0.886	0.819	0.800	0.796	0.800	0.873	11.16
16)		FREON 113		1.490	1.440	1.320	1.313	1.726	1.484	1.387	1.368	1.393	1.393	1.431	8.35
17)		CARBON DISULFIDE		2.050	1.902	1.800	1.749	2.352	2.024	1.889	1.861	1.870	1.879	1.938	8.84
18)		TRANS-1,2-DICH...	1.230	1.019	0.923	0.839	0.854	1.135	0.989	0.936	0.935	0.960	0.988	0.983	11.67
19)		1,1-DICHLOROET...	1.685	1.434	1.326	1.222	1.197	1.518	1.327	1.243	1.214	1.216	1.224	1.328	11.84
20)		MTBE		1.774	1.725	1.578	1.567	1.844	1.754	1.745	1.775	1.815	1.868	1.745	5.78
21)		IPA		1.689	1.487	1.326	1.321	1.513	1.382	1.373	1.352	1.332	1.264	1.404	8.94
22)		2-BUTANONE(MEK)		1.644	1.397	1.263	1.259	1.482	1.385	1.376	1.399	1.411	1.433	1.405	7.74
23)		CIS-1,2-DICHLO...	1.196	0.978	0.864	0.843	0.809	1.074	0.937	0.901	0.901	0.926	0.951	0.944	11.63
24)		VINYL ACETATE		2.262	1.982	1.793	1.811	2.168	1.942	1.860	1.837	1.909	1.962	1.952	7.88
25)		HEXANE		1.037	0.869	0.802	0.740	0.984	0.860	0.828	0.822	0.840	0.852	0.863	10.02
26)		ETHYL ACETATE		0.249	0.202	0.211	0.185	0.221	0.211	0.214	0.218	0.224	0.233	0.217	7.93
27)		CHLOROFORM	1.889	1.640	1.512	1.433	1.409	1.822	1.590	1.493	1.464	1.479	1.479	1.565	10.14
28)		TETRAHYDROFURAN		0.304	0.259	0.253	0.251	0.300	0.283	0.289	0.300	0.307	0.317	0.286	8.36
29)		1,2-DICHLOROET...	1.298	1.034	0.941	0.875	0.841	1.107	0.972	0.924	0.910	0.921	0.944	0.979	13.13
30)	I	1,4-DIFLUOROBENZEN...	----------ISTD----------												
31)		1,1,1-TRICHLOR...	0.680	0.605	0.555	0.523	0.499	0.664	0.576	0.541	0.540	0.545	0.564	0.572	9.91
32)		BENZENE		0.859	0.800	0.760	0.738	0.966	0.857	0.815	0.809	0.822	0.814	0.824	7.56
33)		CARBON TETRACH...	0.674	0.542	0.505	0.497	0.482	0.637	0.561	0.532	0.523	0.535	0.545	0.548	10.62
34)		CYCLOHEXANE		0.400	0.485	0.372	0.312	0.392	0.342	0.330	0.330	0.337	0.344	0.365	13.93
35)		1,2-DICHLOROPR...	0.453	0.337	0.318	0.283	0.289	0.363	0.326	0.311	0.307	0.314	0.320	0.329	14.05
36)		BROMODICHLOROM...	0.781	0.685	0.625	0.593	0.568	0.734	0.649	0.624	0.619	0.630	0.645	0.650	9.48
37)		TRICHLOROETHENE	0.453	0.402	0.348	0.326	0.312	0.416	0.372	0.363	0.366	0.379	0.382	0.374	10.65
38)		1,4-DIOXANE		0.187	0.160	0.162	0.145	0.176	0.169	0.175	0.181	0.183	0.173	0.171	7.36
39)		METHYLMETHACRY...		0.284	0.254	0.240	0.239	0.298	0.290	0.296	0.304	0.312	0.330	0.285	10.78
40)		HEPTANE		0.257	0.224	0.211	0.208	0.283	0.257	0.256	0.258	0.263	0.276	0.249	10.43
41)		MIBK		0.617	0.590	0.547	0.562	0.687	0.667	0.684	0.698	0.715	0.734	0.650	10.17
42)		CIS-1,3-DICHLO...	0.565	0.465	0.429	0.402	0.394	0.520	0.476	0.478	0.487	0.505	0.522	0.476	11.01

305

GTD 4/28/2022

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\data\G031122\G22A070009.D Vial: 3
Acq On : 11 Mar 2022 7:55 pm Operator: BRF
Sample : 1.0PPBV STD Inst : SYSG
Misc : CTWS-3854-1300 Multiplr: 1.00
Quant Time: Mar 13 11:43:31 2022

Quant Method : C:\msdchem\1\methods\G120821.m
Quant Title : New Column Method G021015
QLast Update : Thu Dec 09 07:09:08 2021
Response via : Initial Calibration
DataAcq Meth:GRUN042419.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE (1)	8.497	49	1354564	8.000	PPBV	# 0.00
30) 1,4-DIFLUOROBENZENE (1)	10.265	114	3438564	8.000	PPBV	-0.01
44) CHLOROBENZENE-D5 (1)	14.636	117	3167402	8.000	PPBV	0.00
System Monitoring Compounds						
58) 4-BROMOFLUOROBENZENE (1)	16.386	174	1881280	9.015	PPBV	0.00
Spiked Amount 8.000	Range 70 - 130		Recovery = 112.75%			
Target Compounds						Qvalue
2) PROPENE	4.284	41	117104	1.087	PPBV	96
3) DICHLORODIFLUOROMETHANE	4.357	85	362690	1.408	PPBV	95
4) CHLOROMETHANE	4.516	50	142800	1.381	PPBV	95
5) FREON 114	4.613	85	391074	1.457	PPBV	84
6) VINYL CHLORIDE	4.729	62	158608	1.339	PPBV	94
7) 1,3-BUTADIENE	4.857	54	115128	1.366	PPBV	90
8) BROMOMETHANE	5.113	94	140326	1.415	PPBV	99
9) CHLOROETHANE	5.266	64	75772	1.387	PPBV	96
10) ACROLEIN	5.699	56	55294	1.692	PPBV	97
11) ACETONE	5.827	43	213356	1.339	PPBV	93
12) TRICHLOROFLUOROMETHANE	5.955	101	357493	1.554	PPBV	94
13) ETHANOL	5.388	45	47193	1.885	PPBV	93
14) 1,1-DICHLOROETHENE	6.509	61	233984	1.217	PPBV	97
15) METHYLENE CHLORIDE	6.607	49	174635	1.160	PPBV	89
16) FREON 113	6.851	101	292275	1.230	PPBV	92
17) CARBON DISULFIDE	6.887	76	398280	1.045	PPBV	93
18) TRANS-1,2-DICHLOROETHENE	7.430	61	192174	1.063	PPBV	96
19) 1,1-DICHLOROETHANE	7.613	63	256964	1.074	PPBV	99
20) MTBE	7.704	73	312298	0.949	PPBV	94
21) IPA	6.040	45	256194	1.404	PPBV	75
22) 2-BUTANONE(MEK)	7.991	43	250957	0.981	PPBV	91
23) CIS-1,2-DICHLOROETHENE	8.350	61	181867	1.068	PPBV	99
24) VINYL ACETATE	7.741	43	367109m	1.778	PPBV	
25) HEXANE	8.552	41	166601	1.244	PPBV	92
26) ETHYL ACETATE	8.564	61	37430	0.646	PPBV	92
27) CHLOROFORM	8.607	83	308474	1.171	PPBV	98
28) TETRAHYDROFURAN	9.021	71	50778	0.883	PPBV	98
29) 1,2-DICHLOROETHANE	9.289	62	187456	1.204	PPBV	95
31) 1,1,1-TRICHLOROETHANE	9.533	97	285582	1.265	PPBV	95
32) BENZENE	9.954	78	415302	1.034	PPBV	98
33) CARBON TETRACHLORIDE	10.100	117	273894	1.403	PPBV	99
34) CYCLOHEXANE	10.222	84	168521	0.988	PPBV #	9
35) 1,2-DICHLOROPROPANE	10.722	63	156168	0.971	PPBV	92
36) BROMODICHLOROMETHANE	10.893	83	315286	1.157	PPBV	96
37) TRICHLOROETHENE	10.941	95	178932	1.060	PPBV	92
38) 1,4-DIOXANE	10.972	88	75847	0.904	PPBV #	79
39) METHYLMETHACRYLATE	11.124	69	128194	0.926	PPBV #	83
40) HEPTANE	11.234	57	121773	0.953	PPBV	92
41) MIBK	11.832	43	295127	0.981	PPBV	91
42) CIS-1,3-DICHLOROPROPENE	11.771	75	223435	1.044	PPBV	95
43) TRANS-1,3-DICHLOROPROPENE	12.283	75	197278	1.083	PPBV	97
45) 1,1,2-TRICHLOROETHANE	12.466	97	167663	1.105	PPBV	96
46) TOLUENE	12.770	91	458268	1.061	PPBV	95
47) 2-HEXANONE(MBK)	13.045	43	270257	1.039	PPBV	96
48) DIBROMOCHLOROMETHANE	13.191	129	278749	1.323	PPBV	92
49) 1,2-DIBROMOETHANE	13.453	107	257848	1.158	PPBV	97
50) TETRACHLOROETHENE	13.953	166	206871	1.232	PPBV	94
51) CHLOROBENZENE	14.685	112	372731	1.124	PPBV	89
52) ETHYLBENZENE	15.105	91	569021	1.053	PPBV	100
53) M/P-XYLENE	15.313	91	900925	2.214	PPBV	99

GTD 4/28/2022

Quantitation Report (QT Reviewed)

Data File : C:\msdchem\1\data\G040722\G22A097009.D Vial: 3
Acq On : 7 Apr 2022 2:28 pm Operator: BRF
Sample : 22C1819-01 4X Inst : SYSG
Misc : 1.5,1,400,150,4X Multiplr: 1.00
Quant Time: Apr 08 10:50:33 2022

Quant Method : C:\msdchem\1\methods\G031122.m
Quant Title : New Column Method G021015
QLast Update : Sun Mar 13 11:52:17 2022
Response via : Initial Calibration
DataAcq Meth:GRUN042419.M

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE (1)	8.485	49	1204099	8.000	PPBV		-0.01
30) 1,4-DIFLUOROBENZENE (1)	10.259	114	3241350	8.000	PPBV		-0.01
44) CHLOROBENZENE-D5 (1)	14.630	117	3074020	8.000	PPBV		0.00
System Monitoring Compounds							
58) 4-BROMOFLUOROBENZENE (1)	16.379	174	1690025	7.538	PPBV		0.00
Spiked Amount 8.000	Range 70 - 130		Recovery = 94.25%				
Target Compounds							Qvalue
3) DICHLORODIFLUOROMETHANE	4.345	85	24944	0.095	PPBV		98
6) VINYL CHLORIDE	4.717	62	10228	0.083	PPBV		90
10) ACROLEIN	5.680	56	9871	0.220	PPBV		99
11) ACETONE	5.802	43	1015485	6.023	PPBV	✓	95
12) TRICHLOROFLUOROMETHANE	5.936	101	15461	0.060	PPBV		90
13) ETHANOL	5.369	45	489506	12.970	PPBV		92
14) 1,1-DICHLOROETHENE	6.491	61	5397m	0.030	PPBV		
15) METHYLENE CHLORIDE	6.595	49	3942	0.030	PPBV	#	60
16) FREON 113	6.833	101	3869	0.018	PPBV		87
17) CARBON DISULFIDE	6.875	76	10752	0.037	PPBV		95
18) TRANS-1,2-DICHLOROETHENE	7.418	61	80726	0.546	PPBV		92
21) IPA	6.028	45	115505	0.547	PPBV		94
22) 2-BUTANONE(MEK)	7.973	43	49412	0.234	PPBV		91
23) CIS-1,2-DICHLOROETHENE	8.338	61	771887	5.435	PPBV		91
25) HEXANE	8.533	41	14656	0.110	PPBV		92
26) ETHYL ACETATE	8.546	61	6691	0.205	PPBV		87
27) CHLOROFORM	8.594	83	29438	0.125	PPBV		97
29) 1,2-DICHLOROETHANE	9.283	62	2135	0.014	PPBV		96
32) BENZENE	9.942	78	10329	0.031	PPBV		90
37) TRICHLOROETHENE	10.935	95	795726	5.245	PPBV		93
40) HEPTANE	11.228	57	9614	0.095	PPBV		87
46) TOLUENE	12.758	91	117113	0.299	PPBV		93
50) TETRACHLOROETHENE	13.947	166	7027448	38.845	PPBV		94
52) ETHYLBENZENE	15.099	91	18060	0.037	PPBV		100
53) M/P-XYLENE	15.294	91	43311	0.115	PPBV		99
56) O-XYLENE	15.837	91	18124	0.046	PPBV		96
62) 1,3-DICHLOROBENZENE	18.251	146	35495	0.126	PPBV		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

GTD 4/28/2022

1 - FORM I
ANALYSIS DATA SHEET

360175-GV008005

Laboratory:	Con-Test, a Pace Analytical Labora			Work Order:	22C1819
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington AIR- CO 142890
Matrix:	Soil Gas	Laboratory ID:	22C1819-01	File ID:	G22A097009.D
Sampled:	03/23/22 13:38	Prepared:	04/07/22 09:19	Analyzed:	04/07/22 14:28
Solids:		Preparation:	TO-15 Prep	Dilution:	4
Initial/Final:	400 mL / 400 mL				
Batch:	B305329	Sequence:	S070128	Calibration:	2200100
				Instrument:	SYSG

CAS NO.	COMPOUND	CONC. (ppbv)	MDL	RL	Q
67-64-1	Acetone	24 ✓	4.8	8.0	
71-43-2	Benzene		0.15	0.20	
100-44-7	Benzyl chloride		0.18	0.20	
75-27-4	Bromodichloromethane		0.14	0.20	
75-25-2	Bromoform		0.14	0.20	
74-83-9	Bromomethane		0.16	0.20	
106-99-0	1,3-Butadiene		0.17	0.20	
78-93-3	2-Butanone (MEK)		2.1	8.0	
75-15-0	Carbon Disulfide		0.18	2.0	
56-23-5	Carbon Tetrachloride		0.16	0.20	
108-90-7	Chlorobenzene		0.13	0.20	
75-00-3	Chloroethane		0.15	0.20	
67-66-3	Chloroform	0.50	0.19	0.20	
74-87-3	Chloromethane		0.16	0.40	
110-82-7	Cyclohexane		0.13	0.20	
124-48-1	Dibromochloromethane		0.13	0.20	
106-93-4	1,2-Dibromoethane (EDB)		0.12	0.20	
95-50-1	1,2-Dichlorobenzene		0.11	0.20	
541-73-1	1,3-Dichlorobenzene	0.50	0.11	0.20	
106-46-7	1,4-Dichlorobenzene		0.13	0.20	
75-71-8	Dichlorodifluoromethane (Freon 12)	0.38	0.20	0.20	
75-34-3	1,1-Dichloroethane		0.17	0.20	
107-06-2	1,2-Dichloroethane		0.18	0.20	
75-35-4	1,1-Dichloroethylene		0.15	0.20	
156-59-2	cis-1,2-Dichloroethylene	22	0.15	0.20	
156-60-5	trans-1,2-Dichloroethylene	2.2	0.16	0.20	
78-87-5	1,2-Dichloropropane		0.11	0.20	
10061-01-5	cis-1,3-Dichloropropene		0.10	0.20	
10061-02-6	trans-1,3-Dichloropropene	GTD 4/28/2022	0.10	0.20	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon		0.20	0.20	

DUSR Calculations Sheet

Sample ID: 360175-GV008005
TC: Acetone
ICAL Level: 2
Val File Result for TC: 57 ug/m3

Ical Calc

Area TC	213356	**1**	1.167
Area IS	1354564	**2**	1.26
		3	1.161
Conc TC	1	**4**	1.106
Conc IS	8	**5**	1.071
		6	1.049
RRF =	1.260072	**7**	1.028
		8	
		9	
		10	
		Avg RRF =	1.120286
		Std Dev =	0.081232
		%RSD =	7.250971

Sample Calc

Area TC	1015485	**Pi**	
Area IS	1204099	**Pf**	
		Canister DF	4
Conc IS	8		
Avg RRF	1.120286		
Conc TC (ug/L) =	6.02244	**Conc (ug/L) =**	24.08976
		Conc (ug/m3) =	57.1775

Notes:
Green = matched reported value
Red = did not match reported value

GTD 4/28/2022

VOCs

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs and Cleaners May 2022
Method: 8260D
Laboratory: Con-test **SDG(s):** 22E1903
Date: 7/13/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? Yes, see attached
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
2. ☑ **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. YES NO (circle one)
3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)

   Are Trip blanks free of contamination? YES NO (circle one)

   Are Rinse blanks free of contamination? YES NO NA (circle one)
4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed
5. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Initial Calibration %RSD = 20% **(30% for 1,1-DCE, chloroform, 1,2-DCP, toluene, ethylbenzene, VC)**
   Initial Avg RRF and Continuing RRF should be ≥ 0.05 and 0.10 for Chloromethane, 1,1-Dichloroethane, Bromoform and 0.30 for Chlorobenzene and 1,1,2,2-Tetrachloroethane

   Continuing Calibration %D = 20% See attached subsets J-/UJ, CCV%D

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed
6. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL)
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed
7. ☑ **Surrogate Recovery** - Region II limits (water 80-120%, soil 70-130%)

   Were all results within Region II limits? YES NO (circle one)
8. ☑ **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)

   Were MS/MSDs submitted/analyzed? YES NO

   Were all results within the Region II limits? YES NO NA (circle one)

GTD 7/13/2022

9. ☑ **Duplicates** - Region II Limits (water RPD 50, soil RPD 100)

Were Field Duplicates submitted/analyzed? YES NO

Were all results within Region II limits? (soil RPD<100, water RPD<50) YES NO NA

10. ☑ **Laboratory Control Sample Results** - Region II (Water and soil 70-130%)

See attached - subset UJ, LCSL

Were all results were within Region II control limits? YES NO (circle one)

11. ☑ **Reporting Limits:** Were samples analyzed at a dilution? YES NO (circle one)

12. ☑ **Raw Data Review and Calculation Checks**

See attached for calculations

13. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? YES NO (circle one)

14. ☑ **Tables and TIC Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

Table 4 (TICs) Did lab report TICs? YES NO (circle one)

GTD 7/13/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

NYDEC_Wood - Portland, ME
511 Congress Street, Suite 200
Portland, ME 04101
ATTN: Chuck R. Staples

REPORT DATE: 6/7/2022

PURCHASE ORDER NUMBER: 142890

PROJECT NUMBER: 3616216144.02

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22E1903

The results of analyses performed on the following samples submitted to Con-Test, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Irvington, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
360175-DP08011 ✓	22E1903-01	Ground Water		SW-846 8260D	
360175-DP01009 ✓	22E1903-02	Ground Water		SW-846 8260D	
360175-DP015010 ✓	22E1903-03	Ground Water		SW-846 8260D	
360175-DP016012 ✓	22E1903-04	Ground Water		SW-846 8260D	
360175-DP017012 ✓	22E1903-05	Ground Water		SW-846 8260D	
360175-DP01108 ✓	22E1903-06	Ground Water		SW-846 8260D	
360175-DP01206 ✓	22E1903-07	Ground Water		SW-846 8260D	
360175-TB522 ✓	22E1903-08	Ground Water		SW-846 8260D	

GTD 7/13/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8260D

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Chloroethane See attached for LCS review

B309448-BS1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)

22E1903-01[360175-DP08011], 22E1903-02[360175-DP01009], 22E1903-03[360175-DP015010], 22E1903-04[360175-DP016012], 22E1903-05[360175-DP017012], 22E1903-06[360175-DP01108], 22E1903-07[360175-DP01206], 22E1903-08[360175-TB522], B309448-BLK1, B309448-BS1, B309448-BSD1, S072140-CCV1

2-Hexanone (MBK) J-/UJ, CCV%D

22E1903-01[360175-DP08011], 22E1903-02[360175-DP01009], 22E1903-03[360175-DP015010], 22E1903-04[360175-DP016012], 22E1903-05[360175-DP017012], 22E1903-06[360175-DP01108], 22E1903-07[360175-DP01206], 22E1903-08[360175-TB522], B309448-BLK1, B309448-BS1, B309448-BSD1, S072140-CCV1

Methylene Chloride

22E1903-01[360175-DP08011], 22E1903-02[360175-DP01009], 22E1903-03[360175-DP015010], 22E1903-04[360175-DP016012], 22E1903-05[360175-DP017012], 22E1903-06[360175-DP01108], 22E1903-07[360175-DP01206], 22E1903-08[360175-TB522], B309448-BLK1, B309448-BS1, B309448-BSD1, S072140-CCV1

tert-Butyl Alcohol (TBA)

22E1903-01[360175-DP08011], 22E1903-02[360175-DP01009], 22E1903-03[360175-DP015010], 22E1903-04[360175-DP016012], 22E1903-05[360175-DP017012], 22E1903-06[360175-DP01108], 22E1903-07[360175-DP01206], 22E1903-08[360175-TB522], B309448-BLK1, B309448-BS1, B309448-BSD1, S072140-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Chloroethane

B309448-BS1, B309448-BSD1, S072140-CCV1

Lab QC - no quals

Chloromethane

B309448-BS1, B309448-BSD1, S072140-CCV1

GTD 7/13/2022

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod E. Kopyscinski
Laboratory Director

con-test® A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
									70-130				
Batch B309448 - SW-846 5030B													
LCS (B309448-BS1)					Prepared & Analyzed: 05/27/22								
Carbon Tetrachloride	10.9	5.0	0.16	µg/L	10.0		109		70-130				
Chlorobenzene	10.9	1.0	0.11	µg/L	10.0		109		70-130				
Chlorodibromomethane	10.9	0.50	0.22	µg/L	10.0		109		70-130				
Chloroethane High bias, samples ND - no quals	13.4	2.0	0.32	µg/L	10.0		134	*	70-130			V-20, L-07	
Chloroform	10.6	2.0	0.17	µg/L	10.0		106		70-130				
Chloromethane High bias, samples ND - no quals	14.9	2.0	0.52	µg/L	10.0		149		40-160			V-20	†
2-Chlorotoluene	10.5	1.0	0.11	µg/L	10.0		105		70-130				
4-Chlorotoluene	10.4	1.0	0.12	µg/L	10.0		104		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	8.77	5.0	0.80	µg/L	10.0		87.7		70-130				
1,2-Dibromoethane (EDB)	10.5	0.50	0.17	µg/L	10.0		105		70-130				
Dibromomethane	10.6	1.0	0.35	µg/L	10.0		106		70-130				
1,2-Dichlorobenzene	10.8	1.0	0.12	µg/L	10.0		108		70-130				
1,3-Dichlorobenzene	10.6	1.0	0.12	µg/L	10.0		106		70-130				
1,4-Dichlorobenzene	10.5	1.0	0.13	µg/L	10.0		105		70-130				
trans-1,4-Dichloro-2-butene	8.72	2.0	1.6	µg/L	10.0		87.2		70-130				
Dichlorodifluoromethane (Freon 12)	9.41	2.0	0.19	µg/L	10.0		94.1		40-160				†
1,1-Dichloroethane	10.2	1.0	0.14	µg/L	10.0		102		70-130				
1,2-Dichloroethane	11.1	1.0	0.31	µg/L	10.0		111		70-130				
1,1-Dichloroethylene	11.6	1.0	0.14	µg/L	10.0		116		70-130				
cis-1,2-Dichloroethylene	10.2	1.0	0.15	µg/L	10.0		102		70-130				
trans-1,2-Dichloroethylene	10.2	1.0	0.17	µg/L	10.0		102		70-130				
1,2-Dichloropropane	10.4	1.0	0.18	µg/L	10.0		104		70-130				
1,3-Dichloropropane	10.4	0.50	0.13	µg/L	10.0		104		70-130				
2,2-Dichloropropane	9.16	1.0	0.33	µg/L	10.0		91.6		40-130				†
1,1-Dichloropropene	10.4	2.0	0.15	µg/L	10.0		104		70-130				
cis-1,3-Dichloropropene	10.1	0.50	0.16	µg/L	10.0		101		70-130				
trans-1,3-Dichloropropene	9.83	0.50	0.17	µg/L	10.0		98.3		70-130				
Diethyl Ether	10.6	2.0	0.18	µg/L	10.0		106		70-130				
Diisopropyl Ether (DIPE)	9.57	0.50	0.13	µg/L	10.0		95.7		70-130				
1,4-Dioxane	81.3	50	21	µg/L	100		81.3		40-130				†
Ethylbenzene	10.6	1.0	0.21	µg/L	10.0		106		70-130				
Hexachlorobutadiene	10.4	0.60	0.46	µg/L	10.0		104		70-130				
2-Hexanone (MBK)	77.5	10	1.1	µg/L	100		77.5		70-160			V-05	†
Isopropylbenzene (Cumene)	11.0	1.0	0.11	µg/L	10.0		110		70-130				
p-Isopropyltoluene (p-Cymene)	9.92	1.0	0.097	µg/L	10.0		99.2		70-130				
Methyl Acetate	11.2	1.0	0.45	µg/L	10.0		112		70-130				
Methyl tert-Butyl Ether (MTBE)	10.7	1.0	0.17	µg/L	10.0		107		70-130				
Methyl Cyclohexane	10.3	1.0	0.24	µg/L	10.0		103		70-130				
Methylene Chloride	10.7	5.0	0.23	µg/L	10.0		107		70-130			V-05	
4-Methyl-2-pentanone (MIBK)	84.3	10	1.3	µg/L	100		84.3		70-160				†
Naphthalene UJ, LCSL	6.92	2.0	0.24	µg/L	10.0		69.2		40-130				†
n-Propylbenzene	10.5	1.0	0.086	µg/L	10.0		105		70-130				
Styrene	10.9	1.0	0.11	µg/L	10.0		109		70-130				
1,1,1,2-Tetrachloroethane	11.2	1.0	0.18	µg/L	10.0		112		70-130				
1,1,2,2-Tetrachloroethane	10.2	0.50	0.13	µg/L	10.0		102		70-130				
Tetrachloroethylene	11.9	1.0	0.19	µg/L	10.0		119		70-130				
Tetrahydrofuran	8.30	10	0.49	µg/L	10.0		83.0		70-130			J	
Toluene	11.6	1.0	0.22	µg/L	10.0		116		70-130				
1,2,3-Trichlorobenzene	8.55	5.0	0.30	µg/L	10.0		85.5		70-130				
1,2,4-Trichlorobenzene	8.61	1.0	0.25	µg/L	10.0		86.1		70-130				

GTD 7/13/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B309448 - SW-846 5030B												
LCS (B309448-BS1)					Prepared & Analyzed: 05/27/22							
1,3,5-Trichlorobenzene	9.64	1.0	0.21	µg/L	10.0		96.4	70-130				
1,1,1-Trichloroethane	11.1	1.0	0.17	µg/L	10.0		111	70-130				
1,1,2-Trichloroethane	10.9	1.0	0.18	µg/L	10.0		109	70-130				
Trichloroethylene	11.4	1.0	0.19	µg/L	10.0		114	70-130				
Trichlorofluoromethane (Freon 11)	11.3	2.0	0.18	µg/L	10.0		113	70-130				
1,2,3-Trichloropropane	9.32	2.0	0.28	µg/L	10.0		93.2	70-130				
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	12.0	1.0	0.23	µg/L	10.0		120	70-130				
1,2,4-Trimethylbenzene	9.79	1.0	0.20	µg/L	10.0		97.9	70-130				
1,3,5-Trimethylbenzene	10.5	1.0	0.11	µg/L	10.0		105	70-130				
Vinyl Chloride	10.4	2.0	0.21	µg/L	10.0		104	40-160				†
m+p Xylene	21.8	2.0	0.46	µg/L	20.0		109	70-130				
o-Xylene	11.0	1.0	0.23	µg/L	10.0		110	70-130				
Surrogate: 1,2-Dichloroethane-d4	*24.2*			µg/L	25.0		96.9	70-130				
Surrogate: Toluene-d8	*25.3*			µg/L	25.0		101	70-130				
Surrogate: 4-Bromofluorobenzene	*24.3*			µg/L	25.0		97.3	70-130				
LCS Dup (B309448-BSD1)					Prepared & Analyzed: 05/27/22			70-130				
Acetone	86.8	50	2.0	µg/L	100		86.8	70-160	2.27	25		†
Acrylonitrile	8.77	5.0	0.55	µg/L	10.0		87.7	70-130	6.35	25		
tert-Amyl Methyl Ether (TAME)	9.96	0.50	0.14	µg/L	10.0		99.6	70-130	4.52	25		
Benzene	10.4	1.0	0.20	µg/L	10.0		104	70-130	3.34	25		
Bromobenzene	10.3	1.0	0.15	µg/L	10.0		103	70-130	2.46	25		
Bromochloromethane	10.6	1.0	0.31	µg/L	10.0		106	70-130	1.33	25		
Bromodichloromethane	11.1	0.50	0.18	µg/L	10.0		111	70-130	0.0902	25		
Bromoform	10.4	1.0	0.38	µg/L	10.0		104	70-130	4.31	25		
Bromomethane	11.4	2.0	1.5	µg/L	10.0		114	40-160	0.437	25		†
2-Butanone (MEK)	77.4	20	1.6	µg/L	100		77.4	40-160	4.88	25	V-05	†
tert-Butyl Alcohol (TBA)	86.7	20	4.7	µg/L	100		86.7	40-160	6.53	25	V-05	†
n-Butylbenzene	9.25	1.0	0.15	µg/L	10.0		92.5	70-130	1.09	25		
sec-Butylbenzene	10.2	1.0	0.11	µg/L	10.0		102	70-130	0.0976	25		
tert-Butylbenzene	10.7	1.0	0.13	µg/L	10.0		107	70-130	0.656	25		
tert-Butyl Ethyl Ether (TBEE)	9.76	0.50	0.15	µg/L	10.0		97.6	70-130	1.76	25		
Carbon Disulfide	112	5.0	1.4	µg/L	100		112	70-130	1.06	25		
Carbon Tetrachloride	11.0	5.0	0.16	µg/L	10.0		110	70-130	0.366	25		
Chlorobenzene	11.1	1.0	0.11	µg/L	10.0		111	70-130	1.27	25		
Chlorodibromomethane	11.1	0.50	0.22	µg/L	10.0		111	70-130	1.55	25		
Chloroethane	12.9	2.0	0.32	µg/L	10.0		129	70-130	3.51	25	V-20	
Chloroform	10.7	2.0	0.17	µg/L	10.0		107	70-130	1.03	25		
Chloromethane High bias, samples ND - no quals	14.7	2.0	0.52	µg/L	10.0		147	40-160	0.811	25	V-20	†
2-Chlorotoluene	10.5	1.0	0.11	µg/L	10.0		105	70-130	0.0954	25		
4-Chlorotoluene	10.9	1.0	0.12	µg/L	10.0		109	70-130	4.80	25		
1,2-Dibromo-3-chloropropane (DBCP)	9.07	5.0	0.80	µg/L	10.0		90.7	70-130	3.36	25		
1,2-Dibromoethane (EDB)	10.8	0.50	0.17	µg/L	10.0		108	70-130	3.01	25		
Dibromomethane	10.9	1.0	0.35	µg/L	10.0		109	70-130	2.60	25		
1,2-Dichlorobenzene	10.9	1.0	0.12	µg/L	10.0		109	70-130	1.02	25		
1,3-Dichlorobenzene	10.9	1.0	0.12	µg/L	10.0		109	70-130	2.51	25		
1,4-Dichlorobenzene	10.3	1.0	0.13	µg/L	10.0		103	70-130	1.35	25		
trans-1,4-Dichloro-2-butene	7.55	2.0	1.6	µg/L	10.0		75.5	70-130	14.4	25		
Dichlorodifluoromethane (Freon 12)	9.61	2.0	0.19	µg/L	10.0		96.1	40-160	2.10	25		†

GTD 7/13/2022

6 - FORM VI
INITIAL CALIBRATION DATA SHEET

SW-846 8260D

Client: NYDEC Wood - Portland, ME SDG: 22E1903

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 1900192 Instrument: GCMSVOA3

Calibration Date: 5/16/2019 9:46:05AM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
1,3-Dichlorobenzene	0.4	1.095641	0.5	1.210676	1	1.209648	2	1.184127	5	1.150063	10	1.15524
1,4-Dichlorobenzene	0.4	1.312528	0.5	1.265305	1	1.269293	2	1.295737	5	1.237276	10	1.17488
trans-1,4-Dichloro-2-butene			0.5	0.1838875	1	0.2229195	2	0.1983061	5	0.2157493	10	0.2080091
Dichlorodifluoromethane (Freon	0.4	0.4865607	0.5	0.5506666	1	0.5581535	2	0.5360508	5	0.5017599	10	0.447308
1,1-Dichloroethane	0.4	0.8717747	0.5	0.8422404	1	0.8061384	2	0.8299679	5	0.780426	10	0.7771888
1,2-Dichloroethane	0.4	0.400164	0.5	0.4258389	1	0.4095024	2	0.428944	5	0.4048162	10	0.3833373
1,1-Dichloroethylene	0.4	0.5960729	0.5	0.6050534	1	0.6017943	2	0.6310017	5	0.5943076	10	0.5418049
cis-1,2-Dichloroethylene	0.4	0.6777268	0.5	0.7040073	1	0.7278471	2	0.7411197	5	0.6903263	10	0.6698028
trans-1,2-Dichloroethylene	0.4	0.6868528	0.5	0.635646	1	0.6004832	2	0.6214887	5	0.5685126	10	0.5681676
Dichlorofluoromethane (Freon 2	0.4	0.8275855	0.5	0.8611247	1	0.8430365	2	0.8321218	5	0.7658844	10	0.7355818
1,2-Dichloropropane	0.4	0.2926337	0.5	0.328011	1	0.3241163	2	0.3173614	5	0.3144341	10	0.3120607
1,3-Dichloropropane	0.4	0.4600782	0.5	0.5351759	1	0.5054207	2	0.5049797	5	0.5133373	10	0.4885369
2,2-Dichloropropane	0.4	0.6854118	0.5	0.6771915	1	0.6332607	2	0.6169117	5	0.5642378	10	0.5429915
1,1-Dichloropropene	0.4	0.5538051	0.5	0.5967443	1	0.5626487	2	0.5605514	5	0.5640916	10	0.518418
cis-1,3-Dichloropropene	0.4	0.4610242	0.5	0.4513592	1	0.4546404	2	0.4948575	5	0.4847918	10	0.4669137
trans-1,3-Dichloropropene	0.4	0.3657921	0.5	0.4100764	1	0.4359583	2	0.4363273	5	0.4230034	10	0.4162324
Diethyl Ether	0.4	0.4519779	0.5	0.3924161	1	0.3684188	2	0.3728932	5	0.3619701	10	0.3490138
Difluorochloromethane (Freon 2	0.4	0.6224903	0.5	0.6118518	1	0.6250195	2	0.615745	5	0.5901424	10	0.5398149
Diisopropyl Ether (DIPE)	0.4	1.803109	0.5	1.732825	1	1.897535	2	1.760271	5	1.669476	10	1.663608
1,4-Dioxane									50	3.743436E-03	100	4.111881E-03
Ethanol							20	1.208874E-02	50	1.012435E-02	100	1.012883E-02
Ethyl Acetate			0.5	0.9072025	1	0.6349464	2	0.6591819	5	0.6711445	10	0.6097199
Ethylbenzene	0.4	2.65737	0.5	2.587347	1	2.531944	2	2.624897	5	2.458215	10	2.418872
Hexachlorobutadiene	0.4	0.2472115	0.5	0.2356838	1	0.2948255	2	0.3274643	5	0.2960404	10	0.2861251
2-Hexanone (MBK)	4	0.3178292	5	0.333015	10	0.3396638	20	0.3138663	50	0.3177247	100	0.3087019
Iodomethane	4	0.4074046	5	0.3608793	10	0.4438257	20	0.438596	50	0.4517629	100	0.4730665
Isopropylbenzene (Cumene)	0.4	2.401147	0.5	2.355251	1	2.371533	2	2.338783	5	2.199191	10	2.190236
p-Isopropyltoluene (p-Cymene)	0.4	2.025156	0.5	2.013978	1	1.946319	2	1.942685	5	1.923026	10	1.857638
Methyl Acetate			0.5	0.6465989	1	0.7686785	2	0.5464613	5	0.5308797	10	0.5410928
Methyl tert-Butyl Ether (MTBE)	0.4	1.306461	0.5	1.441629	1	1.374968	2	1.374904	5	1.256464	10	1.233224
Methyl Cyclohexane	0.4	0.3623234	0.5	0.4123281	1	0.3748966	2	0.3795237	5	0.3493151	10	0.3219938

GTD

7/13/202

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8260D

Client: NYDEC Wood - Portland, ME SDG: 22E1903

Project: Irvington Rugs and Cleaners - CO 142890

Calibration: 1900192 Instrument: GCMSVOA3

Calibration Date: 5/16/2019 9:46:05AM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
1,3-Dichlorobenzene	20	1.22026	50	1.261229	100	1.147698	200	1.216093				
1,4-Dichlorobenzene	20	1.267958	50	1.298011	100	1.182542	200	1.260015				
trans-1,4-Dichloro-2-butene	20	0.2297755	50	0.2395583	100	0.2310871	200	0.2668073				
Dichlorodifluoromethane (Freon	20	0.4751828	50	0.4698337	100	0.4324328	200	0.4325715				
1,1-Dichloroethane	20	0.797232	50	0.8061549	100	0.7473728	200	0.7920684				
1,2-Dichloroethane	20	0.4096842	50	0.4193351	100	0.3841411	200	0.4200285				
1,1-Dichloroethylene	20	0.567796	50	0.5829587	100	0.5346802	200	0.5507606				
cis-1,2-Dichloroethylene	20	0.700361	50	0.7149265	100	0.6647751	200	0.7127344				
trans-1,2-Dichloroethylene	20	0.5897868	50	0.6000535	100	0.5529189	200	0.5890457				
Dichlorofluoromethane (Freon 2	20	0.7727157	50	0.7842405	100	0.715346	200	0.7468919				
1,2-Dichloropropane	20	0.3065822	50	0.3316003	100	0.3036002	200	0.3320039				
1,3-Dichloropropane	20	0.5213865	50	0.5314715	100	0.4862869	200	0.5409326				
2,2-Dichloropropane	20	0.5461334	50	0.6058969	100	0.5585877	200	0.6001095				
1,1-Dichloropropene	20	0.5475739	50	0.5560321	100	0.5165807	200	0.5513152				
cis-1,3-Dichloropropene	20	0.4822948	50	0.5140672	100	0.4807701	200	0.5323406				
trans-1,3-Dichloropropene	20	0.4462905	50	0.4796145	100	0.4448148	200	0.5018782				
Diethyl Ether	20	0.3589924	50	0.3615247	100	0.333427	200	0.3516705				
Difluorochloromethane (Freon 2	20	0.590653	50	0.578874	100	0.5302223	200	0.5411129				
Diisopropyl Ether (DIPE)	20	1.727485	50	1.761408	100	1.637946	200	1.75854				
1,4-Dioxane	200	5.179833E-03	500	4.944318E-03	1000	4.650206E-03	2000	5.181314E-03				
Ethanol	200	1.035083E-02	500	9.606578E-03	1000	9.977734E-03	2000	9.295583E-03				
Ethyl Acetate	20	0.6899218	50	0.658084	100	0.6236325	200	0.6893449				
Ethylbenzene	20	2.567705	50	2.635251	100	2.391798	200	2.585488				
Hexachlorobutadiene	20	0.3113776	50	0.3229757	100	0.2976984	200	0.3087296				
2-Hexanone (MBK)	200	0.3590803	500	0.3453809	1000	0.3343056	2000	0.3745308				
Iodomethane	200	0.5205412	500	0.5514077	1000	0.526562	2000	0.5775008				
Isopropylbenzene (Cumene)	20	2.303206	50	2.40029	100	2.168419	200	2.331284				
p-Isopropyltoluene (p-Cymene)	20	2.009798	50	2.103029	100	1.877725	200	1.971134				
Methyl Acetate	20	0.5792473	50	0.5543198	100	0.5195348	200	0.5584516				
Methyl tert-Butyl Ether (MTBE)	20	1.294862	50	1.305762	100	1.203826	200	1.313095				
Methyl Cyclohexane	20	0.3402204	50	0.3692778	100	0.3413521	200	0.360888				

GTD
7/13/2022

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8260D

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22E1903
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Calibration:	1900192	Instrument:	GCMSVOA3
		Calibration Date:	5/16/2019 9:46:05AM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
1,3-Dichlorobenzene	1.185068	4.1			20	
1,4-Dichlorobenzene	1.256354	3.7			20	
trans-1,4-Dichloro-2-butene	0.2217889	10.9			20	
Dichlorodifluoromethane (Freon 12)	0.489052	9.6			20	
1,1-Dichloroethane	0.8050564	4.4			20	
1,2-Dichloroethane	0.4085792	3.9			20	
1,1-Dichloroethylene	0.580623	5.4			20	
cis-1,2-Dichloroethylene	0.7003627 ✓	3.6 ✓			20	
trans-1,2-Dichloroethylene	0.6012956	6.5			20	
Dichlorofluoromethane (Freon 21)	0.7884529	6.3			20	
1,2-Dichloropropane	0.3162404	4.1			20	
1,3-Dichloropropane	0.5087606	5.0			20	
2,2-Dichloropropane	0.6030733	8.5			20	
1,1-Dichloropropene	0.5527761	4.2			20	
cis-1,3-Dichloropropene	0.4823059	5.4			20	
trans-1,3-Dichloropropene	0.4359988	8.6		GTD	20	
Diethyl Ether	0.3702305	8.8		7/13/2022	20	
Difluorochloromethane (Freon 22)	0.5845926	6.2			20	
Diisopropyl Ether (DIPE)	1.74122	4.3			20	
1,4-Dioxane	4.635165E-03	12.8			20	
Ethanol	1.022466E-02	8.8			20	
Ethyl Acetate	0.6825754	13.0			20	
Ethylbenzene	2.545889	3.7			20	
Hexachlorobutadiene	0.2928132	10.3			20	
2-Hexanone (MBK)	0.3344099	6.3			20	
Iodomethane	0.4751547	14.3			20	
Isopropylbenzene (Cumene)	2.305934	3.8			20	
p-Isopropyltoluene (p-Cymene)	1.967049	3.7			20	
Methyl Acetate	0.5828072	13.5			20	
Methyl tert-Butyl Ether (MTBE)	1.31052	5.5			20	
Methyl Cyclohexane	0.3612119	7.0			20	

Data Path : C:\msdchem\1\data\C051619\
Data File : C1913612.D
Acq On : 16 May 2019 11:58 am
Operator :
Sample : 8260STD 5.0PPB 1905273 Inst : GCMSVOA3
Misc :
ALS Vial : 12 Sample Multiplier: 1

183

Quant Time: May 16 14:42:02 2019
Quant Method : C:\msdchem\1\methods\C053018.M
Quant Title : 8260 WATER 5MLS VOAMS 5973 #3
QLast Update : Wed Mar 13 07:34:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE - ISTD	4.196	168	164218	30.00	UG/L		0.00
48) 1,4-DIFLUOROBENZENE - ...	4.919	114	249076	30.00	UG/L		0.00
70) CHLOROBENZENE-D5 ISTD	7.755	82	125618	30.00	UG/L		0.00
89) 1,4-DICHLOROBENZENE-D4...	10.050	152	118950	30.00	UG/L	#	0.00
System Monitoring Compounds							
2) 1,2-DICHLOROETHANE-D4 SS	4.470	65	79096	18.78	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 75.12%				
49) TOLUENE SS	6.355	98	246832	23.87	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 95.48%				
71) 4-BROMOFLUOROBENZENE SS	8.912	95	91353	23.24	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 92.96%				
Target Compounds							Qvalue
3) DICHLORODIFLUOROMETHANE	1.087	85	13733	4.10	UG/L		99
4) DIFLUOROCHLOROMETHANE	1.093	51	16152	3.98	UG/L	#	100
5) CHLOROMETHANE	1.196	50	18156	4.64	UG/L	#	21
6) VINYL CHLORIDE	1.260	62	14175	4.44	UG/L		97
7) BROMOMETHANE	1.452	94	8776	5.73	UG/L		86
8) CHLOROETHANE	1.516	64	8177	4.14	UG/L		100
9) FLUORODICHLOROMETHANE	1.639	67	20962	4.33	UG/L		99
10) TRICHLOROFLUOROMETHANE	1.675	101	15723	3.79	UG/L		99
11) ETHANOL	1.801	45	2771	28.55	UG/L	#	83
12) DI ETHYL ETHER	1.868	59	9907	4.04	UG/L		94
13) ACROLEIN	1.957	56	33059	48.83	UG/L		97
14) ACETONE	2.071	43	48525	38.15	UG/L		97
15) 1,1-DICHLOROETHENE	2.027	61	16266	3.98	UG/L		98
16) 1,1,2-TRICL-1,2,2-TRIF...	2.024	101	8909	4.59	UG/L		81
17) IODOMETHANE	2.141	142	123646	47.12	UG/L		100
20) METHYL ACETATE	2.320	43	14530	2.18	UG/L		99
21) T-BUTYL ALCOHOL	2.515	59	18333	38.65	UG/L	#	97
22) ACRYLONITRILE	2.621	53	6148	4.04	UG/L		99
23) METHYLENE CHLORIDE	2.398	49	16630	3.74	UG/L		98
24) CARBON DISULFIDE	2.191	76	307845	49.33	UG/L		99
25) METHYL TERT-BUTYL ETHE...	2.646	73	34389	4.23	UG/L		99
26) TRANS 1,2-DICHLOROETHENE	2.635	61	15560	3.98	UG/L		95
27) 1,1-DICHLOROETHANE	3.047	63	21360	4.24	UG/L		96
28) VINYL ACETATE	3.114	43	422460	53.79	UG/L		99
29) DI ISOPROYL ETHER	3.131	45	45693	4.30	UG/L		99
31) 2-BUTANONE	3.680	43	90245	43.58	UG/L		100
32) T-BUTYL ETHYL ETHER	3.507	59	38227	3.88	UG/L		97
33) CIS-1,2-DICHLOROETHENE	3.647	61	18894	3.85	UG/L		93
34) 2,2-DICHLOROPROPANE	3.641	77	15443	4.39	UG/L		92
35) ETHYL ACETATE	3.750	43	18369	8.74	UG/L	#	92
38) BROMOCHLOROMETHANE	3.884	49	11586	4.58	UG/L		93
39) TETRAHYDROFURAN	3.945	42	5556	4.69	UG/L		100
40) CHLOROFORM	3.976	83	20387	4.31	UG/L		96
41) 1,1,1-TRICHLOROETHANE	4.143	97	16165	3.93	UG/L		95
42) CYCLOHEXANE	4.193	56	22290	4.11	UG/L		94
43) CARBON TETRACHLORIDE	4.313	117	13583	3.89	UG/L		99
44) 1,1-DICHLOROPROPENE	4.313	75	15439	4.38	UG/L		94
45) BENZENE	4.523	78	45771	4.48	UG/L		98
47) T-AMYLMETHYL ETHER	4.651	73	34053	4.47	UG/L		97
50) 1,2-DICHLOROETHANE	4.550	62	16805	3.48	UG/L	#	84
51) TRICHLOROETHENE	5.167	95	11248	4.60	UG/L		91
52) METHYLCYCLOHEXANE	5.340	83	14501	4.70	UG/L		97
53) 1,2-DICHLOROPROPANE	5.384	63	13053	4.82	UG/L	#	97

GTD 7/13/2022

Quantitation Report (QT Reviewed)

39

Data Path : C:\msdchem\1\data\C052722\
Data File : C22V14757.D
Acq On : 28 May 2022 5:15 am
Operator :
Sample : 22E1903-01 Inst : GCMSVOA3
Misc :
ALS Vial : 57 Sample Multiplier: 1

Quant Time: May 31 09:37:42 2022
Quant Method : C:\msdchem\1\methods\C051619.M
Quant Title : 8260 WATER 5MLS VOAMS 5973 #3
QLast Update : Fri May 06 09:16:20 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE - ISTD	4.193	168	128727	30.00	UG/L		0.00
48) 1,4-DIFLUOROBENZENE - ...	4.916	114	189496	30.00	UG/L		0.00
70) CHLOROBENZENE-D5 ISTD	7.752	82	94232	30.00	UG/L		0.00
89) 1,4-DICHLOROBENZENE-D4...	10.047	152	87053	30.00	UG/L	#	0.00
System Monitoring Compounds							
2) 1,2-DICHLOROETHANE-D4 SS	4.467	65	59950	24.76	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 99.04%				
49) TOLUENE SS	6.352	98	188629	24.96	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 99.84%				
71) 4-BROMOFLUOROBENZENE SS	8.909	95	65937	23.59	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 94.36%				
Target Compounds							Qvalue
14) ACETONE	2.069	43	2541	3.15	UG/L	#	47
26) TRANS 1,2-DICHLOROETHENE	2.635	61	1807	0.70	UG/L		90
33) CIS-1,2-DICHLOROETHENE	3.647	61	21450	7.14	UG/L	✓	98
51) TRICHLOROETHENE	5.164	95	10315	6.19	UG/L		95
66) TETRACHLOROETHENE	6.943	166	12677	7.48	UG/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

GTD 7/13/2022

7/7/1/13/

DUSR Calculations Sheet

Sample ID: 360175-DP08011
TC: cis-1,2-dichloroethene
ICAL Level:
Val File Result for TC: 7.1 ug/L

Ical Calc

Area TC	18894
Area IS	164218
Conc TC	5
Conc IS	30
RRF =	0.690326

1	0.677727
2	0.704007
3	0.727847
4	0.741120
5	0.690326
6	0.669803
7	0.700361
8	0.714927
9	0.664775
10	0.712734
Avg RRF =	0.700363
Std Dev =	0.024963
%RSD =	3.56433

Sample Calc

Area TC	21450	**DF**	1
Area IS	128727		
Conc IS	30		
Avg RRF	0.700363		
Conc TC =	7.137661 µg/L	Conc TC =	7.137661

Notes:
Green = matched reported value
Red = did not match reported value

GTD 7/13/2022

VOCs

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs June 2022
Method: 8260D
Laboratory: Con-test **SDG(s):** 22F1625
Date: 8/19/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? Yes
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)

2. ☑ **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. YES NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)

   Are Trip blanks free of contamination? YES NO (circle one) See attached - subset U @ RL, BL2

   Are Rinse blanks free of contamination? YES NO NA (circle one)

4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Initial Calibration %RSD = 20% **(30% for 1,1-DCE, chloroform, 1,2-DCP, toluene, ethylbenzene, VC)**
   Initial Avg RRF and Continuing RRF should be ≥ 0.05 and 0.10 for Chloromethane, 1,1-Dichloroethane, Bromoform and 0.30 for Chlorobenzene and 1,1,2,2-Tetrachloroethane

   Continuing Calibration %D = 20% See attached - subset UJ, CCV%D

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL)
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Surrogate Recovery** - Region II limits (water 80-120%, soil 70-130%)

   Were all results within Region II limits? YES NO (circle one)

8. ☑ **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)

   Were MS/MSDs submitted/analyzed? YES NO

   Were all results within the Region II limits? YES NO NA (circle one) GTD 8/19/2022

9. ☑ **Duplicates** - Region II Limits (water RPD 50, soil RPD 100)

Were Field Duplicates submitted/analyzed? YES NO All ND or J - no evaluation

Were all results within Region II limits? (soil RPD<100, water RPD<50) YES NO NA

10. ☑ **Laboratory Control Sample Results** - Region II (Water and soil 70-130%)

Were all results were within Region II control limits? YES NO (circle one) See attached - subset UJ, LCSL

11. ☑ **Reporting Limits:** Were samples analyzed at a dilution? YES NO (circle one)

12. ☑ **Raw Data Review and Calculation Checks**

See attached for calculation check

13. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form Is? YES NO (circle one)

14. ☑ **Tables and TIC Review**

Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

Table 4 (TICs) Did lab report TICs? YES NO (circle one)

GTD 8/19/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

NYDEC_Wood - Portland, ME
511 Congress Street, Suite 200
Portland, ME 04101
ATTN: Chuck R. Staples

REPORT DATE: 7/11/2022

PURCHASE ORDER NUMBER: 142890

PROJECT NUMBER: 3616216144.02

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22F1625

The results of analyses performed on the following samples submitted to Con-Test, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Irvington, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
360175-MW0030020 ✓	22F1625-01	Ground Water		SW-846 8260D	
360175-MW0030020 Dup ✓	22F1625-02	Ground Water		SW-846 8260D	
360175-TB624 ✓	22F1625-03	Ground Water		SW-846 8260D	

GTD 8/19/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8260D

Qualifications:

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

1,4-Dioxane
22F1625-01[360175-MW0030020], 22F1625-02[360175-MW0030020 Dup], 22F1625-03[360175-TB624], B311672-BLK1, B311672-BS1, B311672-BSD1, S073330-CCV1

2-Butanone (MEK)
22F1625-01[360175-MW0030020], 22F1625-02[360175-MW0030020 Dup], 22F1625-03[360175-TB624], B311672-BLK1, B311672-BS1, B311672-BSD1, S073330-CCV1

2-Hexanone (MBK)
22F1625-01[360175-MW0030020], 22F1625-02[360175-MW0030020 Dup], 22F1625-03[360175-TB624], B311672-BLK1, B311672-BS1, B311672-BSD1, S073330-CCV1

Acetone UJ, CCV%D
22F1625-01[360175-MW0030020], 22F1625-02[360175-MW0030020 Dup], 22F1625-03[360175-TB624], B311672-BLK1, B311672-BS1, B311672-BSD1, S073330-CCV1

Acrylonitrile
22F1625-01[360175-MW0030020], 22F1625-02[360175-MW0030020 Dup], 22F1625-03[360175-TB624], B311672-BLK1, B311672-BS1, B311672-BSD1, S073330-CCV1

Naphthalene
22F1625-01[360175-MW0030020], 22F1625-02[360175-MW0030020 Dup], 22F1625-03[360175-TB624], B311672-BLK1, B311672-BS1, B311672-BSD1, S073330-CCV1

tert-Butyl Alcohol (TBA)
22F1625-01[360175-MW0030020], 22F1625-02[360175-MW0030020 Dup], 22F1625-03[360175-TB624], B311672-BLK1, B311672-BS1, B311672-BSD1, S073330-CCV1

GTD 8/19/2022

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

1 - FORM I
ANALYSIS DATA SHEET

360175-TB624

Laboratory:	Con-Test, a Pace Analytical Labora			Work Order:	22F1625
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Ground Water	Laboratory ID:	22F1625-03	File ID:	C22V17816.D
Sampled:	06/24/22 09:00	Prepared:	06/27/22 09:14	Analyzed:	06/27/22 12:52
Solids:		Preparation:	SW-846 5030B	Dilution:	1
Initial/Final:	5 mL / 5 mL				
Batch:	B311672	Sequence:	S073330	Calibration:	1900192	Instrument:	GCMSVOA3

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
110-57-6	trans-1,4-Dichloro-2-butene		1.6	2.0	
75-71-8	Dichlorodifluoromethane (Freon 12)		0.19	2.0	
75-34-3	1,1-Dichloroethane		0.14	1.0	
107-06-2	1,2-Dichloroethane		0.31	1.0	
75-35-4	1,1-Dichloroethylene		0.14	1.0	
156-59-2	cis-1,2-Dichloroethylene		0.15	1.0	
156-60-5	trans-1,2-Dichloroethylene		0.17	1.0	
78-87-5	1,2-Dichloropropane		0.18	1.0	
142-28-9	1,3-Dichloropropane		0.13	0.50	
594-20-7	2,2-Dichloropropane		0.33	1.0	
563-58-6	1,1-Dichloropropene		0.15	2.0	
10061-01-5	cis-1,3-Dichloropropene		0.16	0.50	
10061-02-6	trans-1,3-Dichloropropene		0.17	0.50	
60-29-7	Diethyl Ether		0.18	2.0	
108-20-3	Diisopropyl Ether (DIPE)		0.13	0.50	
123-91-1	1,4-Dioxane		21	50	V-05
100-41-4	Ethylbenzene		0.21	1.0	
87-68-3	Hexachlorobutadiene		0.46	0.60	
591-78-6	2-Hexanone (MBK)		1.1	10	V-05
98-82-8	Isopropylbenzene (Cumene)		0.11	1.0	
99-87-6	p-Isopropyltoluene (p-Cymene)		0.097	1.0	
79-20-9	Methyl Acetate		0.45	1.0	
1634-04-4	Methyl tert-Butyl Ether (MTBE)		0.17	1.0	
108-87-2	Methyl Cyclohexane		0.24	1.0	
75-09-2	Methylene Chloride Samples 1 and 2 U @ RL, BL2	0.29	0.23	5.0	J
108-10-1	4-Methyl-2-pentanone (MIBK)		1.3	10	
91-20-3	Naphthalene		0.24	2.0	V-05
103-65-1	n-Propylbenzene GTD 8/19/2022		0.086	1.0	
100-42-5	Styrene		0.11	1.0	
630-20-6	1,1,1,2-Tetrachloroethane		0.18	1.0	

3 - FORM III

LCS / LCS DUPLICATE RECOVERY

SW-846 8260D

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22F1625
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Water	Preparation:	SW-846 5030B
Batch:	B311672	Laboratory ID:	B311672-BS1
Column:		Initial/Final:	5 mL / 5 mL

70-130

ANALYTE	SPIKE ADDED (µg/L)	LCS CONCENTRATION (µg/L)	LCS % REC.	QC LIMITS REC.
Acetone	100	75.6	75.6	70 - 160
Acrylonitrile	10.0	8.14	81.4	70 - 130
tert-Amyl Methyl Ether (TAME)	10.0	8.64	86.4	70 - 130
Benzene	10.0	9.22	92.2	70 - 130
Bromobenzene	10.0	9.32	93.2	70 - 130
Bromochloromethane	10.0	10.3	103	70 - 130
Bromodichloromethane	10.0	10.2	102	70 - 130
Bromoform	10.0	9.84	98.4	70 - 130
Bromomethane	10.0	10.7	107	40 - 160
2-Butanone (MEK)	100	75.5	75.5	40 - 160
tert-Butyl Alcohol (TBA) UJ, LCSL	100	60.9	60.9	40 - 160
n-Butylbenzene	10.0	8.30	83.0	70 - 130
sec-Butylbenzene	10.0	9.35	93.5	70 - 130
tert-Butylbenzene	10.0	9.85	98.5	70 - 130
tert-Butyl Ethyl Ether (TBEE)	10.0	8.80	88.0	70 - 130
Carbon Disulfide	100	92.0	92.0	70 - 130
Carbon Tetrachloride	10.0	10.3	103	70 - 130
Chlorobenzene	10.0	10.2	102	70 - 130
Chlorodibromomethane	10.0	10.0	100	70 - 130
Chloroethane	10.0	10.5	105	70 - 130
Chloroform	10.0	9.67	96.7	70 - 130
Chloromethane	10.0	11.3	113	40 - 160
2-Chlorotoluene	10.0	9.79	97.9	70 - 130
4-Chlorotoluene	10.0	9.72	97.2	70 - 130
Cyclohexane	10.0	9.71	97.1	70 - 130
1,2-Dibromo-3-chloropropane (DBCP)	10.0	8.01	80.1	70 - 130
1,2-Dibromoethane (EDB)	10.0	9.50	95.0	70 - 130
Dibromomethane	10.0	9.44	94.4	70 - 130
1,2-Dichlorobenzene	10.0	9.76	97.6	70 - 130
1,3-Dichlorobenzene	10.0	9.88	98.8	70 - 130
1,4-Dichlorobenzene	10.0	9.81	98.1	70 - 130
trans-1,4-Dichloro-2-butene	10.0	7.70	77.0	70 - 130
Dichlorodifluoromethane (Freon 12)	10.0	9.65	96.5	40 - 160
1,1-Dichloroethane	10.0	9.39	93.9	70 - 130
1,2-Dichloroethane	10.0	10.2	102	70 - 130
1,1-Dichloroethylene	10.0	9.86	98.6	70 - 130
cis-1,2-Dichloroethylene	10.0	9.54	95.4	70 - 130

GTD 8/19/2022

3 - FORM III

LCS / LCS DUPLICATE RECOVERY

SW-846 8260D

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22F1625
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Water	Preparation:	SW-846 5030B
Batch:	B311672	Laboratory ID:	B311672-BS1
Column:		Initial/Final:	5 mL / 5 mL

70-130

ANALYTE	SPIKE ADDED (µg/L)	LCS CONCENTRATION (µg/L)	LCS % REC.	QC LIMITS REC.
trans-1,2-Dichloroethylene	10.0	9.71	97.1	70 - 130
1,2-Dichloropropane	10.0	10.2	102	70 - 130
1,3-Dichloropropane	10.0	9.68	96.8	70 - 130
2,2-Dichloropropane	10.0	9.28	92.8	40 - 130
1,1-Dichloropropene	10.0	9.80	98.0	70 - 130
cis-1,3-Dichloropropene	10.0	9.64	96.4	70 - 130
trans-1,3-Dichloropropene	10.0	9.01	90.1	70 - 130
Diethyl Ether	10.0	9.08	90.8	70 - 130
Diisopropyl Ether (DIPE)	10.0	9.63	96.3	70 - 130
1,4-Dioxane	100	80.1	80.1	40 - 130
Ethylbenzene	10.0	9.79	97.9	70 - 130
Hexachlorobutadiene	10.0	10.7	107	70 - 130
2-Hexanone (MBK)	100	79.2	79.2	70 - 160
Isopropylbenzene (Cumene)	10.0	10.3	103	70 - 130
p-Isopropyltoluene (p-Cymene)	10.0	8.96	89.6	70 - 130
Methyl Acetate	10.0	10.3	103	70 - 130
Methyl tert-Butyl Ether (MTBE)	10.0	9.84	98.4	70 - 130
Methyl Cyclohexane	10.0	9.44	94.4	70 - 130
Methylene Chloride	10.0	9.20	92.0	70 - 130
4-Methyl-2-pentanone (MIBK)	100	86.6	86.6	70 - 160
Naphthalene UJ, LCSL	10.0	5.66	56.6	40 - 130
n-Propylbenzene	10.0	9.64	96.4	70 - 130
Styrene	10.0	9.89	98.9	70 - 130
1,1,1,2-Tetrachloroethane	10.0	10.4	104	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.55	95.5	70 - 130
Tetrachloroethylene	10.0	10.8	108	70 - 130
Tetrahydrofuran	10.0	8.86	88.6	70 - 130
Toluene	10.0	10.2	102	70 - 130
1,2,3-Trichlorobenzene	10.0	7.44	74.4	70 - 130
1,2,4-Trichlorobenzene	10.0	7.72	77.2	70 - 130
1,3,5-Trichlorobenzene	10.0	9.14	91.4	70 - 130
1,1,1-Trichloroethane	10.0	10.0	100	70 - 130
1,1,2-Trichloroethane GTD 8/19/2022	10.0	10.1	101	70 - 130
Trichloroethylene	10.0	10.5	105	70 - 130
Trichlorofluoromethane (Freon 11)	10.0	9.83	98.3	70 - 130
1,2,3-Trichloropropane	10.0	8.30	83.0	70 - 130

3 - FORM III

LCS / LCS DUPLICATE RECOVERY

SW-846 8260D

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22F1625
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Water	Preparation:	SW-846 5030B
Batch:	B311672	Laboratory ID:	B311672-BS1
Column:		Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (µg/L)	LCS CONCENTRATION (µg/L)	LCS % REC.	QC LIMITS REC.
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.0	10.6	106	70 - 130
1,2,4-Trimethylbenzene	10.0	8.56	85.6	70 - 130
1,3,5-Trimethylbenzene	10.0	9.37	93.7	70 - 130
Vinyl Chloride	10.0	10.0	100	40 - 160
m+p Xylene	20.0	19.6	97.8	70 - 130
o-Xylene	10.0	10.1	101	70 - 130
Xylenes (total)	30.0	29.6	98.7	0 - 200

ANALYTE	SPIKE ADDED (µg/L)	LCSD CONCENTRATION (µg/L)	70-130	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetone	100	75.9		75.9	0.436	25	70 - 160
Acrylonitrile	10.0	7.66		76.6	6.08	25	70 - 130
tert-Amyl Methyl Ether (TAME)	10.0	8.55		85.5	1.05	25	70 - 130
Benzene	10.0	9.40		94.0	1.93	25	70 - 130
Bromobenzene	10.0	9.63		96.3	3.27	25	70 - 130
Bromochloromethane	10.0	10.7		107	4.19	25	70 - 130
Bromodichloromethane	10.0	10.6		106	3.64	25	70 - 130
Bromoform	10.0	9.77		97.7	0.714	25	70 - 130
Bromomethane	10.0	10.1		101	5.20	25	40 - 160
2-Butanone (MEK)	100	75.2		75.2	0.372	25	40 - 160
tert-Butyl Alcohol (TBA) UJ, LCSL	100	60.9		60.9	0.0164	25	40 - 160
n-Butylbenzene	10.0	8.61		86.1	3.67	25	70 - 130
sec-Butylbenzene	10.0	9.72		97.2	3.88	25	70 - 130
tert-Butylbenzene	10.0	10.2		102	3.00	25	70 - 130
tert-Butyl Ethyl Ether (TBEE)	10.0	8.79		87.9	0.114	25	70 - 130
Carbon Disulfide	100	95.4		95.4	3.67	25	70 - 130
Carbon Tetrachloride	10.0	10.4		104	0.193	25	70 - 130
Chlorobenzene	10.0	10.5		105	2.99	25	70 - 130
Chlorodibromomethane	10.0	10.3		103	2.95	25	70 - 130
Chloroethane	10.0	11.1		111	5.83	25	70 - 130
Chloroform	10.0	10.1		101	4.15	25	70 - 130
Chloromethane	10.0	11.2		112	1.24	25	40 - 160
2-Chlorotoluene	10.0	10.0		100	2.12	25	70 - 130
4-Chlorotoluene GTD 8/19/2022	10.0	9.91		99.1	1.94	25	70 - 130
Cyclohexane	10.0	9.90		99.0	1.94	25	70 - 130

3 - FORM III

LCS / LCS DUPLICATE RECOVERY

SW-846 8260D

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22F1625
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Water	Preparation:	SW-846 5030B
Batch:	B311672	Laboratory ID:	B311672-BSD1
Column:		Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (µg/L)	LCSD CONCENTRATION (µg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
		70-130				
1,2-Dibromo-3-chloropropane (DBCP)	10.0	8.05	80.5	0.498	25	70 - 130
1,2-Dibromoethane (EDB)	10.0	9.73	97.3	2.39	25	70 - 130
Dibromomethane	10.0	9.86	98.6	4.35	25	70 - 130
1,2-Dichlorobenzene	10.0	10.3	103	5.58	25	70 - 130
1,3-Dichlorobenzene	10.0	10.3	103	3.87	25	70 - 130
1,4-Dichlorobenzene	10.0	9.83	98.3	0.204	25	70 - 130
trans-1,4-Dichloro-2-butene	10.0	7.55	75.5	1.97	25	70 - 130
Dichlorodifluoromethane (Freon 12)	10.0	9.23	92.3	4.45	25	40 - 160
1,1-Dichloroethane	10.0	9.81	98.1	4.38	25	70 - 130
1,2-Dichloroethane	10.0	10.5	105	2.60	25	70 - 130
1,1-Dichloroethylene	10.0	10.1	101	2.31	25	70 - 130
cis-1,2-Dichloroethylene	10.0	9.94	99.4	4.11	25	70 - 130
trans-1,2-Dichloroethylene	10.0	9.39	93.9	3.35	25	70 - 130
1,2-Dichloropropane	10.0	10.3	103	1.37	25	70 - 130
1,3-Dichloropropane	10.0	10.0	100	3.35	25	70 - 130
2,2-Dichloropropane	10.0	9.47	94.7	2.03	25	40 - 130
1,1-Dichloropropene	10.0	9.61	96.1	1.96	25	70 - 130
cis-1,3-Dichloropropene	10.0	10.1	101	4.36	25	70 - 130
trans-1,3-Dichloropropene	10.0	9.27	92.7	2.84	25	70 - 130
Diethyl Ether	10.0	9.10	91.0	0.220	25	70 - 130
Diisopropyl Ether (DIPE)	10.0	10.0	100	4.07	25	70 - 130
1,4-Dioxane	100	74.5	74.5	7.31	50	40 - 130
Ethylbenzene	10.0	9.97	99.7	1.82	25	70 - 130
Hexachlorobutadiene	10.0	11.0	110	2.77	25	70 - 130
2-Hexanone (MBK)	100	79.2	79.2	0.0253	25	70 - 160
Isopropylbenzene (Cumene)	10.0	10.5	105	2.03	25	70 - 130
p-Isopropyltoluene (p-Cymene)	10.0	9.16	91.6	2.21	25	70 - 130
Methyl Acetate	10.0	10.9	109	5.49	25	70 - 130
Methyl tert-Butyl Ether (MTBE)	10.0	9.63	96.3	2.16	25	70 - 130
Methyl Cyclohexane	10.0	9.70	97.0	2.72	25	70 - 130
Methylene Chloride	10.0	9.70	97.0	5.29	25	70 - 130
4-Methyl-2-pentanone (MIBK)	100	86.5	86.5	0.0693	25	70 - 160
Naphthalene UJ, LCSL	10.0	5.62	56.2	0.709	25	40 - 130
n-Propylbenzene	10.0	9.94	99.4	3.06	25	70 - 130
Styrene GTD 8/19/2022	10.0	10.4	104	4.93	25	70 - 130

Response Factor Report GCMSVOA3

Method Path : C:\msdchem\1\methods\
Method File : C051619.M
Title : 8260 WATER 5MLS VOAMS 5973 #3
Last Update : Fri May 17 05:29:37 2019
Response Via : Initial Calibration

Calibration Files
0.4 =C1913608.D 0.5 =C1913609.D 1.0 =C1913610.D 2.0 =C1913611.D 5.0 =C1913612.D 10 =C1913613.D 20 =C1914614.D
50 =C1913615.D 100 =C1913616.D 200 =C1913617.D

		Compound	0.4	0.5	1.0	2.0	5.0	10	20	50	100	200	Avg	%RSD
1)		PENTAFLUOROBENZENE...	----------ISTD----------											
2)	S	1,2-DICHLOROET...	0.570	0.573	0.559	0.566	0.578	0.571	0.565	0.552	0.559	0.550	0.564	1.65
3)		DICHLORODIFLUO...	0.487	0.551	0.558	0.536	0.502	0.447	0.475	0.470	0.432	0.433	0.489	9.55
4)		DIFLUOROCHLORO...	0.622	0.612	0.625	0.616	0.590	0.540	0.591	0.579	0.530	0.541	0.585	6.18
5)	P	CHLOROMETHANE			0.793	0.789	0.663	0.615	0.627	0.571	0.566	0.596	0.653	13.95
6)	C	VINYL CHLORIDE	0.566	0.556	0.545	0.547	0.518	0.484	0.513	0.522	0.472	0.492	0.522	6.12#
7)		BROMOMETHANE				0.337	0.321	0.248	0.233	0.288	0.266	0.301	0.285	13.40
8)		CHLOROETHANE		0.313	0.334	0.366	0.299	0.256	0.263	0.272	0.248	0.243	0.288	14.77
9)		FLUORODICHLORO...	0.828	0.861	0.843	0.832	0.766	0.736	0.773	0.784	0.715	0.747	0.788	6.32
10)		TRICHLOROFLUOR...	0.661	0.636	0.598	0.625	0.574	0.522	0.561	0.567	0.521	0.540	0.580	8.30
11)		ETHANOL				0.012	0.010	0.010	0.010	0.010	0.010	0.009	0.010	8.76
12)		DI ETHYL ETHER	0.452	0.392	0.368	0.373	0.362	0.349	0.359	0.362	0.333	0.352	0.370	8.82
13)		ACROLEIN	0.119	0.122	0.137	0.112	0.121	0.116	0.132	0.128	0.121	0.128	0.123	6.19
14)		ACETONE		0.234	0.211	0.188	0.177	0.170	0.192	0.176	0.168	0.177	0.188	11.56
15)	C	1,1-DICHLOROET...	0.596	0.605	0.602	0.631	0.594	0.542	0.568	0.583	0.535	0.551	0.581	5.35#
16)		1,1,2-TRICL-1,...	0.360	0.333	0.340	0.340	0.326	0.289	0.306	0.310	0.285	0.290	0.318	8.09
17)		IODOMETHANE	0.407	0.361	0.444	0.439	0.452	0.473	0.521	0.551	0.527	0.578	0.475	14.29
18)		ACETONITRILE											0.000	-1.00
19)		ALLYL CHLORIDE											0.000	-1.00
20)		METHYL ACETATE		0.647	0.769	0.546	0.531	0.541	0.579	0.554	0.520	0.558	0.583	13.54
21)		T-BUTYL ALCOHOL	0.079	0.082	0.078	0.068	0.067	0.065	0.073	0.068	0.068	0.077	0.072	8.39
22)		ACRYLONITRILE	0.336	0.262	0.238	0.233	0.225	0.230	0.250	0.237	0.226	0.248	0.248	13.28
23)		METHYLENE CHLO...	0.639	0.690	0.649	0.631	0.608	0.581	0.597	0.595	0.553	0.622	0.616	6.26
24)		CARBON DISULFIDE	1.219	1.196	1.135	1.157	1.125	1.069	1.136	1.107	1.020	1.035	1.120	5.76
25)		METHYL TERT-BU...	1.306	1.442	1.375	1.375	1.256	1.233	1.295	1.306	1.204	1.313	1.311	5.46
26)		TRANS 1,2-DICH...	0.687	0.636	0.600	0.621	0.569	0.568	0.590	0.600	0.553	0.589	0.601	6.49
27)	P	1,1-DICHLOROET...	0.872	0.842	0.806	0.830	0.780	0.777	0.797	0.806	0.747	0.792	0.805	4.42
28)		VINYL ACETATE	1.590	1.544	1.601	1.554	1.544	1.508	1.605	1.580	1.464	1.472	1.546	3.30
29)		DI ISOPROYL ETHER	1.803	1.733	1.898	1.760	1.669	1.664	1.727	1.761	1.638	1.759	1.741	4.34
30)		CHLOROPRENE											0.000	-1.00
31)		2-BUTANONE	0.348	0.349	0.346	0.327	0.330	0.318	0.360	0.333	0.319	0.348	0.338	4.18
32)		T-BUTYL ETHYL ...	1.473	1.564	1.518	1.474	1.397	1.364	1.432	1.455	1.366	1.470	1.451	4.42
33)		CIS-1,2-DICHLO...	0.678	0.704	0.728	0.741	0.690	0.670	0.700	0.715	0.665	0.713	0.700	3.56
34)		2,2-DICHLOROPR...	0.685	0.677	0.633	0.617	0.564	0.543	0.546	0.606	0.559	0.600	0.603	8.51
35)		ETHYL ACETATE		0.907	0.635	0.659	0.671	0.610	0.690	0.658	0.624	0.689	0.683	12.99
36)		PROPIONITRILE											0.000	-1.00
37)		METHACRYLONITRILE											0.000	-1.00
38)		BROMOCHLOROMET...	0.402	0.421	0.438	0.445	0.423	0.424	0.427	0.428	0.369	0.354	0.413	7.19
39)		TETRAHYDROFURAN	0.122	0.229	0.218	0.208	0.203	0.195	0.218	0.207	0.200	0.216	0.202	14.76
40)	C	CHLOROFORM	0.696	0.772	0.799	0.783	0.745	0.720	0.742	0.754	0.699	0.751	0.746	4.54#
41)		1,1,1-TRICHLOR...	0.580	0.642	0.592	0.621	0.591	0.571	0.594	0.610	0.564	0.599	0.596	3.93
42)		CYCLOHEXANE					0.814	0.689	0.700	0.709	0.650	0.673	0.706	8.09
43)		CARBON TETRACH...	0.468	0.488	0.535	0.525	0.496	0.477	0.493	0.519	0.480	0.515	0.500	4.55

GTD 8/19/2022

Data Path : C:\msdchem\1\data\C051619\
Data File : C1913611.D
Acq On : 16 May 2019 11:31 am
Operator :
Sample : 8260STD 2.0PPB 1905273 Inst : GCMSVOA3
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 16 14:41:20 2019
Quant Method : C:\msdchem\1\methods\C053018.M
Quant Title : 8260 WATER 5MLS VOAMS 5973 #3
QLast Update : Wed Mar 13 07:34:04 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE - ISTD	4.199	168	167139	30.00	UG/L		0.00
48) 1,4-DIFLUOROBENZENE - ...	4.919	114	251921	30.00	UG/L		0.00
70) CHLOROBENZENE-D5 ISTD	7.755	82	126925	30.00	UG/L		0.00
89) 1,4-DICHLOROBENZENE-D4...	10.050	152	122166	30.00	UG/L	#	0.00
System Monitoring Compounds							
2) 1,2-DICHLOROETHANE-D4 SS	4.470	65	78891	18.40	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 73.60%				
49) TOLUENE SS	6.355	98	255886	24.47	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 97.88%				
71) 4-BROMOFLUOROBENZENE SS	8.912	95	95865	24.14	UG/L		0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 96.56%				
Target Compounds							Qvalue
3) DICHLORODIFLUOROMETHANE	1.087	85	5973	1.75	UG/L		100
4) DIFLUOROCHLOROMETHANE	1.095	51	6861	1.66	UG/L	#	100
5) CHLOROMETHANE	1.196	50	8793	2.21	UG/L	#	30
6) VINYL CHLORIDE	1.260	62	6092	1.88	UG/L	#	85
7) BROMOMETHANE	1.450	94	3753	1.90	UG/L		95
8) CHLOROETHANE	1.517	64	4074	2.03	UG/L		100
9) FLUORODICHLOROMETHANE	1.639	67	9272	1.88	UG/L		99
10) TRICHLOROFLUOROMETHANE	1.678	101	6961	1.65	UG/L		96
11) ETHANOL	1.798	45	1347m	0.48	UG/L		
12) DI ETHYL ETHER	1.865	59	4155	1.66	UG/L	#	87
13) ACROLEIN	1.957	56	12439	18.05	UG/L		93
14) ACETONE	2.071	43	20903	16.15	UG/L		96
15) 1,1-DICHLOROETHENE	2.027	61	7031	1.69	UG/L		94
16) 1,1,2-TRICL-1,2,2-TRIF...	2.024	101	3790	1.92	UG/L		82
17) IODOMETHANE	2.141	142	48871	20.62	UG/L		99
20) METHYL ACETATE	2.322	43	6089	0.90	UG/L	#	93
21) T-BUTYL ALCOHOL	2.520	59	7606	15.76	UG/L	#	84
22) ACRYLONITRILE	2.626	53	2599	1.68	UG/L		96
23) METHYLENE CHLORIDE	2.403	49	7026	1.55	UG/L		99
24) CARBON DISULFIDE	2.191	76	128945	20.30	UG/L		100
25) METHYL TERT-BUTYL ETHE...	2.643	73	15320	1.85	UG/L		96
26) TRANS 1,2-DICHLOROETHENE	2.632	61	6925	1.74	UG/L		91
27) 1,1-DICHLOROETHANE	3.047	63	9248	1.80	UG/L		98
28) VINYL ACETATE	3.114	43	173108	21.66	UG/L	#	89
29) DI ISOPROYL ETHER	3.137	45	19614	1.81	UG/L		97
31) 2-BUTANONE	3.683	43	36492	17.31	UG/L		99
32) T-BUTYL ETHYL ETHER	3.510	59	16428	1.64	UG/L		99
33) CIS-1,2-DICHLOROETHENE	3.647	61	8258	1.66	UG/L		90
34) 2,2-DICHLOROPROPANE	3.644	77	6874	1.92	UG/L		93
35) ETHYL ACETATE	3.753	43	7345	3.43	UG/L		96
38) BROMOCHLOROMETHANE	3.884	49	4957	1.92	UG/L		93
39) TETRAHYDROFURAN	3.948	42	2317	1.92	UG/L	#	69
40) CHLOROFORM	3.976	83	8728	1.81	UG/L		97
41) 1,1,1-TRICHLOROETHANE	4.146	97	6919	1.65	UG/L		93
42) CYCLOHEXANE	4.199	56	11500	1.58	UG/L	#	82
43) CARBON TETRACHLORIDE	4.308	117	5855	1.65	UG/L		99
44) 1,1-DICHLOROPROPENE	4.316	75	6246	1.74	UG/L		94
45) BENZENE	4.520	78	19650	1.89	UG/L	#	90
47) T-AMYLMETHYL ETHER	4.654	73	15083	1.94	UG/L		95
50) 1,2-DICHLOROETHANE	4.548	62	7204	1.47	UG/L		97
51) TRICHLOROETHENE	5.170	95	4589	1.86	UG/L		98
52) METHYLCYCLOHEXANE	5.340	83	6374	2.04	UG/L		93
53) 1,2-DICHLOROPROPANE	5.387	63	5330	1.94	UG/L	#	97

GTD 8/19/2022

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\C062722\
Data File : C22V17824.D
Acq On : 27 Jun 2022 4:04 pm
Operator :
Sample : 22F1625-02 Inst : GCMSVOA3
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 30 06:28:16 2022
Quant Method : C:\msdchem\1\methods\C051619.M
Quant Title : 8260 WATER 5MLS VOAMS 5973 #3
QLast Update : Fri May 06 09:16:20 2022
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE - ISTD	4.196	168	136665	30.00	UG/L	0.00
48) 1,4-DIFLUOROBENZENE - ...	4.918	114	195622	30.00	UG/L	0.00
70) CHLOROBENZENE-D5 ISTD	7.752	82	97507	30.00	UG/L	0.00
89) 1,4-DICHLOROBENZENE-D4...	10.047	152	89094	30.00	UG/L	# 0.00
System Monitoring Compounds						
2) 1,2-DICHLOROETHANE-D4 SS	4.469	65	62903	24.47	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 97.88%			
49) TOLUENE SS	6.355	98	194855	24.98	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 99.92%			
71) 4-BROMOFLUOROBENZENE SS	8.909	95	71021	24.55	UG/L	0.00
Spiked Amount 25.000	Range 70 - 130		Recovery = 98.20%			
Target Compounds						Qvalue
23) METHYLENE CHLORIDE	2.400	49	706	0.25	UG/L	# 21
40) CHLOROFORM	3.979	83	735	0.22	UG/L	# ✓ 16

(#) = qualifier out of range (m) = manual integration (+) = signals summed

GTD 8/19/2022

DUSR Calculations Sheet

Sample ID: 360175-MW0030020 Dup
TC: Chloroform
ICAL Level:
Val File Result for TC: 0.22 J ug/L

Ical Calc

Area TC	8728	**1**	0.696
Area IS	167139	**2**	0.772
		3	0.799
Conc TC	2	**4**	0.783
Conc IS	30	**5**	0.745
		6	0.72
RRF =	0.7833	**7**	0.742
		8	0.754
		9	0.699
		10	0.751
		Avg RRF =	0.7461
		Std Dev =	0.033903
		%RSD =	4.544068

Sample Calc

Area TC	735	**DF**	1
Area IS	136665		
Conc IS	30		
Avg RRF	0.7461		
Conc TC =	0.216249 µg/L	Conc TC =	0.216249

Notes:
Green = matched reported value
Red = did not match reported value

GTD 8/19/2022

PFAS

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs June 2022
Method: 537
Laboratory: Con-Test **SDG(s):** 22F0915
Date: 8/19/2022
Reviewer: Gabrielle Davis

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? Yes - see attached
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)

2. ☑ **Holding time and Sample Collection**
   Water: 14 days from collection to extraction; 28 days from extraction to analysis
   Hold time met for all samples? YES NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)
   Are rinse blanks free of contamination? YES NO NA (circle one)
   Are field reagent blanks free of contamination? YES NO NA (circle one)

4. ☑ **Instrument Tuning – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Internal Standards – Data Package Narrative Review**
   (Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
   Did the laboratory narrative identify any sample internal standards that were not within criteria? YES NO (circle one)

   Did the laboratory qualify results based on internal standard exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Instrument Calibration – Data Package Narrative Review**
   Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

   Initial Calibration %RSD = 15%, Continuing Calibration %D = 20%

   Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
   If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Surrogate Recovery** (Extracted Isotope Dilution Standards) (50-150)
   Were all results within limits? YES NO (circle one)
   Were any recoveries < 10%? (use professional judgment) See attached - subsets UJ/J and R, ISL R < 20%

8. ☑ **Matrix Spike** (70-130)
   Were MS/MSDs submitted/analyzed? YES NO

   Were all results within limits? YES NO NA (circle one) See attached - subset J+, MSH

GTD 8/19/2022

9. ☑ ☐ **Duplicates** (RPD limits = water 30)
Were Field Duplicates submitted/analyzed? YES NO

Were RPDs within criteria? YES NO NA (circle one)

10. ☐ ☑ **Laboratory Control Sample Results** (70-130)
Were all results within limits? YES NO (circle one) See attached - subset J+, LCSH

11. ☐ ☑ **Raw Data Review and Calculation Checks**

See attached for calulcation checks

12. ☐ ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? YES NO (circle one)

13. ☑ ☐ **Tables**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

GTD 8/19/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

NYDEC_Wood - Portland, ME
511 Congress Street, Suite 200
Portland, ME 04101
ATTN: Chuck R. Staples

REPORT DATE: 7/25/2022

PURCHASE ORDER NUMBER: 142890

PROJECT NUMBER: 360175

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 22F0915

The results of analyses performed on the following samples submitted to Con-Test, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Irvington, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
360175-MW003D020 ✓	22F0915-01	Ground Water		SOP-454 PFAS	
360175-DP002011 ✓	22F0915-02	Ground Water		SOP-454 PFAS	
360175-DP004011 ✓	22F0915-03	Ground Water		SOP-454 PFAS	
360175-DP005011-~~MS/MSD~~ ✓	22F0915-04	Ground Water		SOP-454 PFAS	
360175-DP005011-DUP ✓	22F0915-05	Ground Water		SOP-454 PFAS	
360175-WC ✓	22F0915-06	Soil		SM 2540G	
				SOP-466 PFAS	

GTD 8/19/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SM 2540G

Qualifications:

H-06

Sample was extracted past the recommended holding time.

Analyte & Samples(s) Qualified:

% Solids
22F0915-06[360175-WC] Ok - no impact on data

SOP-454 PFAS

Qualifications:

L-01

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

N-EtFOSAA See attached for LCS review
B311892-BS1

PF-18

Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects.

Analyte & Samples(s) Qualified:

M2PFTA
22F0915-04[360175-DP005011-MS/MSD], B311892-MSD1

See attached for EIS review

MPFDoA
22F0915-04[360175-DP005011-MS/MSD], B311892-MSD1

PF-20

Sample extracted at a dilution. Elevated reporting limits due to adjusted sample volume during preparation.

Analyte & Samples(s) Qualified:

okay
22F0915-03RE1[360175-DP004011]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

d3-NMeFOSAA
22F0915-03[360175-DP004011], 22F0915-04[360175-DP005011-MS/MSD]

d5-NEtFOSAA
22F0915-03[360175-DP004011], 22F0915-04[360175-DP005011-MS/MSD]

M2-4:2FTS
22F0915-01[360175-MW003D020], 22F0915-02[360175-DP002011], 22F0915-04[360175-DP005011-MS/MSD]

M2-6:2FTS
22F0915-01[360175-MW003D020], 22F0915-02[360175-DP002011]

M2-8:2FTS
22F0915-04[360175-DP005011-MS/MSD]

See attached for EIS review

M2PFTA
22F0915-03[360175-DP004011], 22F0915-05[360175-DP005011-DUP]

M7PFUnA
22F0915-03[360175-DP004011], 22F0915-04[360175-DP005011-MS/MSD]

M8FOSA
22F0915-03[360175-DP004011], 22F0915-04[360175-DP005011-MS/MSD], 22F0915-05[360175-DP005011-DUP]

MPFBA
22F0915-03[360175-DP004011]

MPFDoA
22F0915-03[360175-DP004011], 22F0915-05[360175-DP005011-DUP]

GTD 8/19/2022

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-MW003D020 (22F0915-01)			Lab File ID: 22F0915-01.d			Analyzed: 07/20/22 19:19			
M8FOSA	213115.8	4.01255	359,141.00	4.01255	59	50 - 150	0.0000	+/-0.50	
M2-4:2FTS UJ, ISL	119794.5	2.5461	263,838.00	2.537883	45	50 - 150	0.0082	+/-0.50	*
M2PFTA	986865.6	4.354033	1,580,120.00	4.35405	62	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	91882.59	3.82705	155,600.00	3.82705	59	50 - 150	0.0000	+/-0.50	
MPFBA	392173.3	1.075083	662,980.00	1.0834	59	50 - 150	-0.0083	+/-0.50	
M3HFPO-DA	182529.6	2.872033	198,404.00	2.872033	92	50 - 150	0.0000	+/-0.50	
M6PFDA	587500.2	3.82755	737,070.00	3.82755	80	50 - 150	0.0000	+/-0.50	
M3PFBS	147820.5	1.928117	175,865.00	1.928117	84	50 - 150	0.0000	+/-0.50	
M7PFUnA	864031.6	3.970017	1,157,712.00	3.978	75	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS UJ, ISL	65788.28	3.469383	137,118.00	3.469383	48	50 - 150	0.0000	+/-0.50	*
M5PFPeA	496094.9	1.749417	640,533.00	1.749417	77	50 - 150	0.0000	+/-0.50	
M5PFHxA	973137.3	2.629817	1,180,952.00	2.621617	82	50 - 150	0.0082	+/-0.50	
M3PFHxS	121638.3	3.242583	162,362.00	3.2345	75	50 - 150	0.0081	+/-0.50	
M4PFHpA	1151973	3.21145	1,353,857.00	3.203083	85	50 - 150	0.0084	+/-0.50	
M8PFOA	863982.3	3.4779	1,058,083.00	3.4779	82	50 - 150	0.0000	+/-0.50	
M8PFOS	94531.5	3.668117	127,023.00	3.668117	74	50 - 150	0.0000	+/-0.50	
M9PFNA	590545.9	3.66915	758,890.00	3.66915	78	50 - 150	0.0000	+/-0.50	
MPFDoA	913609.4	4.112617	1,322,468.00	4.112617	69	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	214361.3	3.977483	298,352.00	3.977483	72	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	249143.2	3.897717	362,956.00	3.9059	69	50 - 150	-0.0082	+/-0.50	

GTD 8/19/2022

con-test®
A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-DP002011 (22F0915-02)			Lab File ID: 22F0915-02.d			Analyzed: 07/20/22 19:26			
M8FOSA	253203.4	4.01255	359,141.00	4.01255	71	50 - 150	0.0000	+/-0.50	
M2-4:2FTS UJ, ISL	119428.7	2.537883	263,838.00	2.537883	45	50 - 150	0.0000	+/-0.50	*
M2PFTA	959252.7	4.354033	1,580,120.00	4.35405	61	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	91028.08	3.82705	155,600.00	3.82705	59	50 - 150	0.0000	+/-0.50	
MPFBA	429832.8	1.0834	662,980.00	1.0834	65	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	159864	2.872033	198,404.00	2.872033	81	50 - 150	0.0000	+/-0.50	
M6PFDA	551737.4	3.82755	737,070.00	3.82755	75	50 - 150	0.0000	+/-0.50	
M3PFBS	142145.9	1.9281	175,865.00	1.928117	81	50 - 150	0.0000	+/-0.50	
M7PFUnA	890639.5	3.970017	1,157,712.00	3.978	77	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS UJ, ISL	65023.34	3.469383	137,118.00	3.469383	47	50 - 150	0.0000	+/-0.50	*
M5PFPeA	484207.2	1.749417	640,533.00	1.749417	76	50 - 150	0.0000	+/-0.50	
M5PFHxA	949538.6	2.629817	1,180,952.00	2.621617	80	50 - 150	0.0082	+/-0.50	
M3PFHxS	128146.6	3.242583	162,362.00	3.2345	79	50 - 150	0.0081	+/-0.50	
M4PFHpA	1114128	3.203083	1,353,857.00	3.203083	82	50 - 150	0.0000	+/-0.50	
M8PFOA	854106.2	3.4779	1,058,083.00	3.4779	81	50 - 150	0.0000	+/-0.50	
M8PFOS	100234.6	3.668117	127,023.00	3.668117	79	50 - 150	0.0000	+/-0.50	
M9PFNA	519730.2	3.66915	758,890.00	3.66915	68	50 - 150	0.0000	+/-0.50	
MPFDoA	971631.3	4.112617	1,322,468.00	4.112617	73	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	204389.2	3.977483	298,352.00	3.977483	69	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	259506.3	3.897717	362,956.00	3.9059	71	50 - 150	-0.0082	+/-0.50	

GTD 8/19/2022

con-test® A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-DP004011 (22F0915-03)			Lab File ID: 22F0915-03.d			Analyzed: 07/20/22 19:33			
M8FOSA J, ISL	134679.7	4.01255	359,141.00	4.01255	38	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	199643.4	2.529667	263,838.00	2.537883	76	50 - 150	-0.0082	+/-0.50	
M2PFTA R, ISL	2312.987	4.35405	1,580,120.00	4.35405	00	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	99905.3	3.818733	155,600.00	3.82705	64	50 - 150	-0.0083	+/-0.50	
MPFBA J, ISL	325042.7	1.075083	662,980.00	1.0834	49	50 - 150	-0.0083	+/-0.50	*
M3HFPO-DA	140128.3	2.86385	198,404.00	2.872033	71	50 - 150	-0.0082	+/-0.50	
M6PFDA	435154.3	3.81925	737,070.00	3.82755	59	50 - 150	-0.0083	+/-0.50	
M3PFBS	133757.9	1.919817	175,865.00	1.928117	76	50 - 150	-0.0083	+/-0.50	
M7PFUnA UJ, ISL	370674.4	3.970017	1,157,712.00	3.978	32	50 - 150	-0.0080	+/-0.50	*
M2-6:2FTS	117581.7	3.4614	137,118.00	3.469383	86	50 - 150	-0.0080	+/-0.50	
M5PFPeA	447609.8	1.741117	640,533.00	1.749417	70	50 - 150	-0.0083	+/-0.50	
M5PFHxA	896161.9	2.6134	1,180,952.00	2.621617	76	50 - 150	-0.0082	+/-0.50	
M3PFHxS	118179.4	3.2345	162,362.00	3.2345	73	50 - 150	0.0000	+/-0.50	
M4PFHpA	1054201	3.203083	1,353,857.00	3.203083	78	50 - 150	0.0000	+/-0.50	
M8PFOA	795782.6	3.4779	1,058,083.00	3.4779	75	50 - 150	0.0000	+/-0.50	
M8PFOS	78727.73	3.660133	127,023.00	3.668117	62	50 - 150	-0.0080	+/-0.50	
M9PFNA	527432.8	3.669167	758,890.00	3.66915	70	50 - 150	0.0000	+/-0.50	
MPFDoA R, ISL	85166.2	4.104633	1,322,468.00	4.112617	06	50 - 150	-0.0080	+/-0.50	*
d5-NEtFOSAA J, ISL	105920	3.977483	298,352.00	3.977483	36	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA UJ, ISL	146351	3.897717	362,956.00	3.9059	40	50 - 150	-0.0082	+/-0.50	*
360175-DP004011 (22F0915-03RE1)			Lab File ID: 22F0915-03RE1.d			Analyzed: 07/22/22 02:36			
M8PFOS	85701.5	3.668117	125,774.00	3.668117	68	50 - 150	0.0000	+/-0.50	

GTD 8/19/2022

con-test® A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-DP005011-MS/MSD (22F0915-04)			Lab File ID: 22F0915-04.d			Analyzed: 07/20/22 19:40			
M8FOSA R, ISL	68865.27	4.01255	359,141.00	4.01255	19	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS UJ, ISL	111616.5	2.529667	263,838.00	2.537883	42	50 - 150	-0.0082	+/-0.50	*
M2PFTA R, ISL	49304.37	4.354033	1,580,120.00	4.35405	03	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS UJ, ISL	71026.13	3.818733	155,600.00	3.82705	46	50 - 150	-0.0083	+/-0.50	*
MPFBA	409798.8	1.0834	662,980.00	1.0834	62	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	151265.8	2.872033	198,404.00	2.872033	76	50 - 150	0.0000	+/-0.50	
M6PFDA	432694.1	3.82755	737,070.00	3.82755	59	50 - 150	0.0000	+/-0.50	
M3PFBS	137391.5	1.928117	175,865.00	1.928117	78	50 - 150	0.0000	+/-0.50	
M7PFUnA UJ, ISL	413041.9	3.970017	1,157,712.00	3.978	36	50 - 150	-0.0080	+/-0.50	*
M2-6:2FTS	75599.23	3.4614	137,118.00	3.469383	55	50 - 150	-0.0080	+/-0.50	
M5PFPeA	461513.1	1.741117	640,533.00	1.749417	72	50 - 150	-0.0083	+/-0.50	
M5PFHxA	915960.7	2.621617	1,180,952.00	2.621617	78	50 - 150	0.0000	+/-0.50	
M3PFHxS	114629.4	3.2345	162,362.00	3.2345	71	50 - 150	0.0000	+/-0.50	
M4PFHpA	1040686	3.203083	1,353,857.00	3.203083	77	50 - 150	0.0000	+/-0.50	
M8PFOA	825057.8	3.4779	1,058,083.00	3.4779	78	50 - 150	0.0000	+/-0.50	
M8PFOS	79846.14	3.668117	127,023.00	3.668117	63	50 - 150	0.0000	+/-0.50	
M9PFNA	490712.4	3.66915	758,890.00	3.66915	65	50 - 150	0.0000	+/-0.50	
MPFDoA R, ISL	255259.3	4.112617	1,322,468.00	4.112617	19	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA UJ, ISL	109023.1	3.977483	298,352.00	3.977483	37	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA UJ, ISL	171573.1	3.897717	362,956.00	3.9059	47	50 - 150	-0.0082	+/-0.50	*

GTD 8/19/2022

con-test® A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-DP005011-DUP (22F0915-05)			Lab File ID: 22F0915-05.d			Analyzed: 07/20/22 19:48			
M8FOSA UJ, ISL	74837.83	4.01255	359,141.00	4.01255	21	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	140654.1	2.537883	263,838.00	2.537883	53	50 - 150	0.0000	+/-0.50	
M2PFTA R, ISL	173346.8	4.35405	1,580,120.00	4.35405	11	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	98794.45	3.818733	155,600.00	3.82705	63	50 - 150	-0.0083	+/-0.50	
MPFBA	435384.4	1.0834	662,980.00	1.0834	66	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	149646.8	2.872033	198,404.00	2.872033	75	50 - 150	0.0000	+/-0.50	
M6PFDA	565098.1	3.81925	737,070.00	3.82755	77	50 - 150	-0.0083	+/-0.50	
M3PFBS	146119	1.928117	175,865.00	1.928117	83	50 - 150	0.0000	+/-0.50	
M7PFUnA	676216.4	3.970017	1,157,712.00	3.978	58	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	85570.2	3.4614	137,118.00	3.469383	62	50 - 150	-0.0080	+/-0.50	
M5PFPeA	495237	1.749417	640,533.00	1.749417	77	50 - 150	0.0000	+/-0.50	
M5PFHxA	968317.5	2.621617	1,180,952.00	2.621617	82	50 - 150	0.0000	+/-0.50	
M3PFHxS	126840	3.2345	162,362.00	3.2345	78	50 - 150	0.0000	+/-0.50	
M4PFHpA	1155396	3.203083	1,353,857.00	3.203083	85	50 - 150	0.0000	+/-0.50	
M8PFOA	863717.5	3.4779	1,058,083.00	3.4779	82	50 - 150	0.0000	+/-0.50	
M8PFOS	94737.46	3.668117	127,023.00	3.668117	75	50 - 150	0.0000	+/-0.50	
M9PFNA	570610.7	3.66915	758,890.00	3.66915	75	50 - 150	0.0000	+/-0.50	
MPFDoA UJ, ISL	551036	4.112617	1,322,468.00	4.112617	42	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	178407.3	3.977483	298,352.00	3.977483	60	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	215558	3.897717	362,956.00	3.9059	59	50 - 150	-0.0082	+/-0.50	

GTD 8/19/2022

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B311892 - SOP 454-PFAAS												
Blank (B311892-BLK1)					Prepared: 07/12/22 Analyzed: 07/20/22							
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L								
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L								
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L								
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L								
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	0.32	ng/L								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L								
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L								
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L								
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L								
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L								
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L								
Perfluoroheptanoic acid (PFHpA)	ND	1.9	0.32	ng/L								
Perfluorooctanoic acid (PFOA)	ND	1.9	0.64	ng/L								
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	0.56	ng/L								
Perfluorononanoic acid (PFNA)	ND	1.9	0.32	ng/L					70-130			
LCS (B311892-BS1)					Prepared: 07/12/22 Analyzed: 07/20/22							
Perfluorobutanoic acid (PFBA)	10.6	1.9	0.70	ng/L	9.36		113		73-129			
Perfluorobutanesulfonic acid (PFBS)	9.09	1.9	0.26	ng/L	8.28		110		72-130			
Perfluoropentanoic acid (PFPeA)	10.2	1.9	0.37	ng/L	9.36		109		72-129			
Perfluorohexanoic acid (PFHxA)	9.89	1.9	0.36	ng/L	9.36		106		72-129			
11Cl-PF3OUdS (F53B Major)	9.64	1.9	0.60	ng/L	8.81		109		50-150			
9Cl-PF3ONS (F53B Minor)	10.4	1.9	0.36	ng/L	8.72		119		50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.04	1.9	0.33	ng/L	8.81		103		50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	10.9	1.9	0.22	ng/L	9.36		117		50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	10.3	1.9	0.57	ng/L	8.98		114		67-138			
Perfluorodecanoic acid (PFDA)	9.52	1.9	0.46	ng/L	9.36		102		71-129			
Perfluorododecanoic acid (PFDoA)	10.9	1.9	0.41	ng/L	9.36		116		72-134			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	8.91	1.9	0.22	ng/L	8.33		107		50-150			
Perfluoroheptanesulfonic acid (PFHpS)	9.48	1.9	0.88	ng/L	8.94		106		69-134			
N-EtFOSAA Sample 3 J+, LCSH	13.7	1.9	0.59	ng/L	9.36		**147**	*	61-135			L-01
N-MeFOSAA	12.0	1.9	0.71	ng/L	9.36		129		65-136			
Perfluorotetradecanoic acid (PFTA)	10.6	1.9	0.34	ng/L	9.36		113		71-132			
Perfluorotridecanoic acid (PFTrDA)	11.7	1.9	0.26	ng/L	9.36		125		65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	9.54	1.9	0.26	ng/L	8.75		109		63-143			
Perfluorodecanesulfonic acid (PFDS)	9.66	1.9	0.31	ng/L	9.03		107		53-142			
Perfluorooctanesulfonamide (FOSA)	11.0	1.9	0.39	ng/L	9.36		118		67-137			
Perfluorononanesulfonic acid (PFNS)	10.6	1.9	0.16	ng/L	8.98		117		69-127			
Perfluoro-1-hexanesulfonamide (FHxSA) High bias, samples ND - no quals	12.9	1.9	0.29	ng/L	9.36		137		50-150			
Perfluoro-1-butanesulfonamide (FBSA)	10.6	1.9	0.18	ng/L	9.36		114		50-150			
Perfluorohexanesulfonic acid (PFHxS)	9.49	1.9	0.32	ng/L	8.56		111		68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	9.90	1.9	0.39	ng/L	9.36		106		50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	10.8	1.9	0.32	ng/L	9.36		116		50-150		GTD 8/19/2022	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.47	1.9	0.34	ng/L	8.89		107		64-140			
Perfluoropetanesulfonic acid (PFPeS)	10.3	1.9	0.24	ng/L	8.80		117		71-127			
Perfluoroundecanoic acid (PFUnA)	10.9	1.9	0.35	ng/L	9.36		117		69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.71	1.9	0.26	ng/L	9.36		93.1		50-150			

con-test® A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
							70-130					
Batch B311892 - SOP 454-PFAAS												
LCS (B311892-BS1)					Prepared: 07/12/22 Analyzed: 07/20/22							
Perfluoroheptanoic acid (PFHpA)	9.96	1.9	0.32	ng/L	9.36		106		72-130			
Perfluorooctanoic acid (PFOA)	11.0	1.9	0.64	ng/L	9.36		118		71-133			
Perfluorooctanesulfonic acid (PFOS)	9.23	1.9	0.56	ng/L	8.66		107		65-140			
Perfluorononanoic acid (PFNA)	11.1	1.9	0.32	ng/L	9.36		118		69-130			
Matrix Spike (B311892-MS1)					**Source: 22F0915-04** Prepared: 07/12/22 Analyzed: 07/20/22							
Perfluorobutanoic acid (PFBA)	20.0	1.8	0.68	ng/L	9.15	9.11	119		73-129			
Perfluorobutanesulfonic acid (PFBS)	17.2	1.8	0.26	ng/L	8.10	8.45	109		72-130			
Perfluoropentanoic acid (PFPeA)	18.8	1.8	0.36	ng/L	9.15	7.70	121		72-129			
Perfluorohexanoic acid (PFHxA)	17.4	1.8	0.35	ng/L	9.15	6.89	115		72-129			
11Cl-PF3OUdS (F53B Major)	7.89	1.8	0.59	ng/L	8.62	ND	91.5		50-150			
9Cl-PF3ONS (F53B Minor)	9.54	1.8	0.36	ng/L	8.53	ND	112		50-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	9.11	1.8	0.32	ng/L	8.62	ND	106		50-150			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	10.4	1.8	0.22	ng/L	9.15	ND	113		50-150			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	9.76	1.8	0.56	ng/L	8.78	ND	111		67-138			
Perfluorodecanoic acid (PFDA)	10.6	1.8	0.45	ng/L	9.15	ND	116		71-129			
Perfluorododecanoic acid (PFDoA) High bias, sample ND - no quals	12.4	1.8	0.40	ng/L	9.15	ND	**136**	*	72-134			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	9.06	1.8	0.21	ng/L	8.14	ND	111		50-150			
Perfluoroheptanesulfonic acid (PFHpS)	9.11	1.8	0.86	ng/L	8.74	ND	104		69-134			
N-EtFOSAA High bias, sample ND - no quals	11.9	1.8	0.58	ng/L	9.15	ND	131		61-135			
N-MeFOSAA	11.6	1.8	0.70	ng/L	9.15	ND	126		65-136			
Perfluorotetradecanoic acid (PFTA) High bias, sample ND - no quals	13.0	1.8	0.34	ng/L	9.15	ND	**142**	*	71-132			
Perfluorotridecanoic acid (PFTrDA)	13.0	1.8	0.25	ng/L	9.15	ND	142		65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	9.49	1.8	0.26	ng/L	8.56	ND	111		63-143			
Perfluorodecanesulfonic acid (PFDS)	7.61	1.8	0.30	ng/L	8.83	ND	86.1		53-142			
Perfluorooctanesulfonamide (FOSA)	11.8	1.8	0.39	ng/L	9.15	ND	129		67-137			
Perfluorononanesulfonic acid (PFNS)	9.50	1.8	0.15	ng/L	8.78	ND	108		69-127			
Perfluoro-1-hexanesulfonamide (FHxSA) High bias, sample ND - no quals	12.7	1.8	0.28	ng/L	9.15	ND	139		50-150			
Perfluoro-1-butanesulfonamide (FBSA)	11.2	1.8	0.17	ng/L	9.15	0.278	120		50-150			
Perfluorohexanesulfonic acid (PFHxS)	12.6	1.8	0.31	ng/L	8.37	2.60	119		68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	11.7	1.8	0.38	ng/L	9.15	ND	128		50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	11.3	1.8	0.31	ng/L	9.15	ND	123		50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.91	1.8	0.33	ng/L	8.69	ND	114		64-140			
Perfluoropetanesulfonic acid (PFPeS)	10.6	1.8	0.24	ng/L	8.60	0.367	118		71-127			
Perfluoroundecanoic acid (PFUnA)	11.1	1.8	0.34	ng/L	9.15	ND	121		69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.93	1.8	0.25	ng/L	9.15	ND	97.6		50-150			
Perfluoroheptanoic acid (PFHpA)	14.6	1.8	0.32	ng/L	9.15	4.57	110		72-130			GTD 8/19/2022
Perfluorooctanoic acid (PFOA)	26.5	1.8	0.62	ng/L	9.15	16.0	114		71-133			
Perfluorooctanesulfonic acid (PFOS)	38.3	1.8	0.55	ng/L	8.46	29.2	108		65-140			
Perfluorononanoic acid (PFNA)	13.8	1.8	0.32	ng/L	9.15	3.63	111		69-130			
Matrix Spike Dup (B311892-MSD1) Sample and FD qual'd					**Source: 22F0915-04** Prepared: 07/12/22 Analyzed: 07/20/22							
Perfluorobutanoic acid (PFBA) J+, MSH	21.8	1.9	0.71	ng/L	9.49	9.11	**133**	*	73-129	8.44	30	
Perfluorobutanesulfonic acid (PFBS)	18.8	1.9	0.27	ng/L	8.40	8.45	124		72-130	8.75	30	
Perfluoropentanoic acid (PFPeA) J+, MSH	20.5	1.9	0.37	ng/L	9.49	7.70	**135**	*	72-129	8.64	30	
Perfluorohexanoic acid (PFHxA)	18.7	1.9	0.37	ng/L	9.49	6.89	124		72-129	7.07	30	
11Cl-PF3OUdS (F53B Major)	8.74	1.9	0.61	ng/L	8.94	ND	97.8		50-150	10.3	30	
9Cl-PF3ONS (F53B Minor)	10.0	1.9	0.37	ng/L	8.84	ND	113		50-150	4.87	30	

con-test® A Pace Analytical® Laboratory
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
									70-130			
Batch B311892 - SOP 454-PFAAS												
Matrix Spike Dup (B311892-MSD1) Sample and FD qual'd	**Source: 22F0915-04**				Prepared: 07/12/22 Analyzed: 07/20/22							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	10.8	1.9	0.33	ng/L	8.94	ND	120		50-150	16.7	30	
Hexafluoropropylene oxide dimer acid (HFPO-DA) High bias, sample ND - no quals	12.5	1.9	0.23	ng/L	9.49	ND	132		50-150	18.6	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	12.0	1.9	0.58	ng/L	9.11	ND	131		67-138	20.1	30	
Perfluorodecanoic acid (PFDA) High bias, sample ND - no quals	10.3	1.9	0.47	ng/L	9.49	ND	108		71-129	3.14	30	
Perfluorododecanoic acid (PFDoA)	13.2	1.9	0.42	ng/L	9.49	ND	**139**	*	72-134	5.65	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	10.3	1.9	0.22	ng/L	8.44	ND	122		50-150	12.7	30	
Perfluoroheptanesulfonic acid (PFHpS)	9.73	1.9	0.89	ng/L	9.06	ND	107		69-134	6.54	30	
N-EtFOSAA	14.6	1.9	0.60	ng/L	9.49	ND	**154**	*	61-135	20.0	30	
N-MeFOSAA High bias, sample ND - no quals	13.8	1.9	0.72	ng/L	9.49	ND	**145**	*	65-136	17.2	30	
Perfluorotetradecanoic acid (PFTA)	14.1	1.9	0.35	ng/L	9.49	ND	**149**	*	71-132	7.92	30	
Perfluorotridecanoic acid (PFTrDA)	14.4	1.9	0.26	ng/L	9.49	ND	**152**	*	65-144	10.2	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	10.5	1.9	0.27	ng/L	8.87	ND	118		63-143	9.78	30	
Perfluorodecanesulfonic acid (PFDS)	7.41	1.9	0.31	ng/L	9.15	ND	80.9		53-142	2.68	30	
Perfluorooctanesulfonamide (FOSA)	12.2	1.9	0.40	ng/L	9.49	ND	129		67-137	3.74	30	
Perfluorononanesulfonic acid (PFNS)	9.92	1.9	0.16	ng/L	9.11	ND	109		69-127	4.31	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	13.7	1.9	0.30	ng/L	9.49	ND	145		50-150	7.65	30	
Perfluoro-1-butanesulfonamide (FBSA)	12.6	1.9	0.18	ng/L	9.49	0.278	130		50-150	11.8	30	
Perfluorohexanesulfonic acid (PFHxS)	13.3	1.9	0.32	ng/L	8.68	2.60	123		68-131	5.36	30	
Perfluoro-4-oxapentanoic acid (PFMPA) High bias, sample ND - no quals	12.7	1.9	0.39	ng/L	9.49	ND	134		50-150	7.89	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	12.4	1.9	0.32	ng/L	9.49	ND	131		50-150	9.86	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	9.92	1.9	0.35	ng/L	9.01	ND	110		64-140	0.0633	30	
Perfluoropetanesulfonic acid (PFPeS)	11.2	1.9	0.24	ng/L	8.92	0.367	122		71-127	6.26	30	
Perfluoroundecanoic acid (PFUnA)	11.4	1.9	0.35	ng/L	9.49	ND	120		69-133	2.84	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	9.96	1.9	0.26	ng/L	9.49	ND	105		50-150	11.0	30	
Perfluoroheptanoic acid (PFHpA)	16.3	1.9	0.33	ng/L	9.49	4.57	124		72-130	11.1	30	
Perfluorooctanoic acid (PFOA) J+, MSH	30.6	1.9	0.65	ng/L	9.49	16.0	**154**	*	71-133	14.5	30	
Perfluorooctanesulfonic acid (PFOS)	42.2	1.9	0.57	ng/L	8.78	29.2	**149**	*	65-140	9.61	30	
Perfluorononanoic acid (PFNA)	15.3	1.9	0.33	ng/L	9.49	3.63	123		69-130	10.2	30	

GTD 8/19/2022

All within limits - no quals

Sample ID: 360175-DP005011 / 360175-DP005011-DUP

Compound	Result	LabQual	DF	Dup	LabQual	DF	RPD
PFBA	9.1			8			12.9
PFBS	8.4			7.9			6.1
PFPeA	7.7			8.3			7.5
PFHxA	6.9			7.4			7.0
PFHxS	2.6			2.6			0.0
PFHpA	4.6			4.7			2.2
PFOA	16			17			6.1
PFOS	29			34			15.9
PFNA	3.6			3.8			5.4

GTD 8/19/2022

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

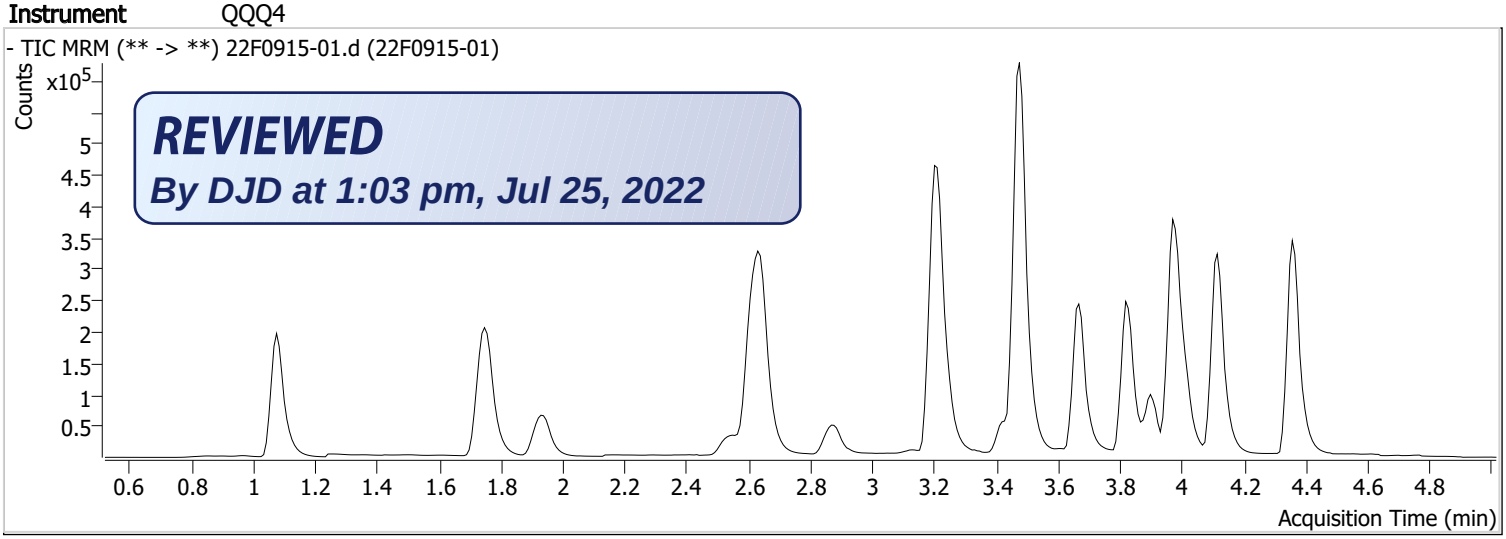
SOP-454 PFAS

Laboratory:	Con-Test, a Pace Analytical Laboratory	Work Order:	22F0915
Client:	NYDEC_Wood - Portland, ME	Project:	Irvington Rugs and Cleaners - CO 142890
Calibration:	2200417	Instrument:	QQQ4
		Calibration Date:	7/19/2022 12:00:38AM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
Perfluorobutanoic acid (PFBA)	0.8912438	7.6		1.000		
Perfluorobutanesulfonic acid (PFBS)	1.075961	6.3		1.000		
Perfluoropentanoic acid (PFPeA)	0.930796	6.7		1.000		
Perfluorohexanoic acid (PFHxA)	0.838055	7.4		1.000		
11Cl-PF3OUdS (F53B Major)	2.331324	9.1		0.998		
9Cl-PF3ONS (F53B Minor)	5.503696	15.5		1.000		
4,8-dioxa-3H-perfluorononanoic acid (ADON/	1.677363	12.0		0.999		
Hexafluoropropylene oxide dimer acid (HFPC	0.1394841	12.9		0.996		
8:2 Fluorotelomersulfonic acid (8:2FTS A)	0.8852401	9.5		1.000		
Perfluorodecanoic acid (PFDA)	1.055091	7.9		0.999		
Perfluorododecanoic acid (PFDoA)	0.9435844	14.0		1.000		
Perfluoro(2-ethoxyethane)sulfonic acid (PFEI	5.564404	8.4		1.000		
Perfluoroheptanesulfonic acid (PFHpS)	0.3115438	12.1		0.995		
N-EtFOSAA	0.8876816	9.8		0.999		
N-MeFOSAA	0.8346591	10.5	0.993		0.99	
Perfluorotetradecanoic acid (PFTA)	0.9763037	10.0		1.000		
Perfluorotridecanoic acid (PFTrDA)	1.130409	11.6		1.000		
4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.088742	9.2		1.000		
Perfluorodecanesulfonic acid (PFDS)	0.6951758	5.6	0.999		0.99	
Perfluorooctanesulfonamide (FOSA)	0.81553	10.1		1.000		
Perfluorononanesulfonic acid (PFNS)	0.3647482	10.3	1.000		0.99	
Perfluoro-1-hexanesulfonamide (FHxSA)	0.42523	9.2		1.000		
Perfluoro-1-butanesulfonamide (FBSA)	0.3158963	6.4	0.999		0.99	
Perfluorohexanesulfonic acid (PFHxS)	1.039414	7.3		1.000		
Perfluoro-4-oxapentanoic acid (PFMPA)	0.5952104	8.0		1.000		
Perfluoro-5-oxahexanoic acid (PFMBA)	0.6973306	8.2		1.000		
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.111771	10.2		1.000		
Perfluoropetanesulfonic acid (PFPeS)	0.9926215	9.7		1.000		
Perfluoroundecanoic acid (PFUnA)	0.9167372	14.3		1.000		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA	0.4069599	7.5		1.000		
Perfluoroheptanoic acid (PFHpA)	0.9451036	11.1		1.000		

GTD 8/19/2022

Batch Path	D:\MassHunter\Data\JULY2022\072022\QuantResults\B311892.batch.bin		
Analysis Time	7/25/2022 10:48 AM	**Last Calib Update**	7/21/2022 11:51 AM
Acq. Time	7/20/2022 7:19 PM	**Data File**	22F0915-01.d
Sample Type	Sample	**Sample Name**	22F0915-01
Dilution	1	**Acq. Method**	PFAS ACQUISITION.m
Sample Comment		**Processing method**	ID_071922.m
Instrument	QQQ4		



Compound	RT	Resp.	ISTD	RT	ISTD Resp.	Final Conc	Units	MI	Reason	Analyst & Date
PFBA	1.079	199188	MPFBA - ISTD	1.075	392173	2864.7992	pg/ml			
PFBS	1.930	76333	M3PFBS - ISTD	1.928	147820	2216.2634	pg/ml			
PFPeA	1.751	298151	M5PFPeA - ISTD	1.749	496095	3223.1932	pg/ml			
PFHxA	2.631	462184	M5PFHxA - ISTD	2.630	973137	2855.8366	pg/ml			
11Cl-PF3OUdS	4.001	0	M8PFOS - ISTD	3.668	94532	ND	pg/ml	✔	1	BLH 07/22/22
9Cl-PF3ONS	4.205	0	M8PFOS - ISTD	3.668	94532	ND	pg/ml	✔	1	BLH 07/22/22
ADONA	3.463	0	M4PFHpA - ISTD	3.211	1151973	ND	pg/ml	✔	1	BLH 07/22/22
HFPO-DA	2.889	0	M3HFPO-DA - ISTD	2.872	182530	ND	pg/ml	✔	1	BLH 07/22/22
8-2 FTS	4.003	0	M2-8-2-FTS - ISTD	3.827	91883	ND	pg/ml	✔	1	BLH 07/22/22
PFDA	3.828	0	M6PFDA - ISTD	3.828	587500	ND	pg/ml	✔	1	BLH 07/22/22
PFDoA	4.121	0	MPFDoA - ISTD	4.113	913609	ND	pg/ml	✔	1	BLH 07/22/22
PFEESA	1.836	0	M3PFBS - ISTD	1.928	147820	ND	pg/ml	✔	1	BLH 07/22/22
PFHpS	3.501	762	M8PFOS - ISTD	3.668	94532	122.7263	pg/ml			
N-EtFOSAA	4.082	0	d5-N-EtFOSAA - ISTD	3.977	214361	ND	pg/ml	✔	1	BLH 07/22/22
N-MeFOSAA	4.114	0	d3-N-MeFOSAA - ISTD	3.898	249143	ND	pg/ml	✔	1	BLH 07/22/22
PFTA	4.362	0	M2PFTA - ISTD	4.354	986866	ND	pg/ml	✔	1	BLH 07/22/22
PFTrDA	4.559	0	M2PFTA - ISTD	4.354	986866	ND	pg/ml	✔	1	BLH 07/22/22
4-2 FTS	2.662	0	M2-4-2-FTS - ISTD	2.546	119794	ND	pg/ml	✔	1	BLH 07/22/22
PFDS	4.113	0	M3PFBS - ISTD	1.928	147820	ND	pg/ml	✔	1	BLH 07/22/22
FOSA	4.013	0	M8FOSA - ISTD	4.013	213116	ND	pg/ml	✔	1	BLH 07/22/22

GTD 8/19/2022

1 - FORM I
ANALYSIS DATA SHEET

360175-MW003D020

Laboratory:	Con-Test, a Pace Analytical Labora			Work Order:	22F0915
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Ground Water	Laboratory ID:	22F0915-01	File ID:	22F0915-01.d
Sampled:	06/14/22 11:30	Prepared:	07/12/22 10:32	Analyzed:	07/20/22 19:19
Solids:		Preparation:	SOP 454-PFAAS	Dilution:	1
Initial/Final:	289.02 mL / 1 mL				
Batch:	B311892	Sequence:	S074351	Calibration:	2200417	Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (ng/L)		MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	9.9	✓	0.64	1.7	
375-73-5	Perfluorobutanesulfonic acid (PFBS)	7.7		0.24	1.7	
2706-90-3	Perfluoropentanoic acid (PFPeA)	11		0.34	1.7	
307-24-4	Perfluorohexanoic acid (PFHxA)	9.9		0.33	1.7	
763051-92-9	11Cl-PF3OUdS (F53B Major)			0.56	1.7	
756426-58-1	9Cl-PF3ONS (F53B Minor)			0.34	1.7	
919005-14-4	4,8-dioxa-3H-perfluorononanoic acid (ADON/			0.30	1.7	
13252-13-6	Hexafluoropropylene oxide dimer acid (HFPC			0.21	1.7	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)			0.53	1.7	
335-76-2	Perfluorodecanoic acid (PFDA)			0.42	1.7	
307-55-1	Perfluorododecanoic acid (PFDoA)			0.38	1.7	
113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid (PFEI			0.20	1.7	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)			0.81	1.7	
2991-50-6	N-EtFOSAA			0.55	1.7	
2355-31-9	N-MeFOSAA			0.66	1.7	
376-06-7	Perfluorotetradecanoic acid (PFTA)			0.32	1.7	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)			0.24	1.7	
757124-72-4	4:2 Fluorotelomersulfonic acid (4:2FTS A)			0.24	1.7	
335-77-3	Perfluorodecanesulfonic acid (PFDS)			0.28	1.7	
754-91-6	Perfluorooctanesulfonamide (FOSA)			0.36	1.7	
68259-12-1	Perfluorononanesulfonic acid (PFNS)			0.15	1.7	
41997-13-1	Perfluoro-1-hexanesulfonamide (FHxSA)			0.27	1.7	
30334-69-1	Perfluoro-1-butanesulfonamide (FBSA)			0.17	1.7	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.5		0.29	1.7	GTD 8/19/2022
377-73-1	Perfluoro-4-oxapentanoic acid (PFMPA)			0.36	1.7	
863090-89-5	Perfluoro-5-oxahexanoic acid (PFMBA)			0.30	1.7	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)			0.32	1.7	
2706-91-4	Perfluoropetanesulfonic acid (PFPeS)	0.34		0.22	1.7	J
2058-94-8	Perfluoroundecanoic acid (PFUnA)			0.32	1.7	
151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA			0.24	1.7	

DUSR Calculations Sheet
PFAS

Sample ID: 360175-MW003D020
TC: PFBA
Val File Result for TC: 9.9 ng/L

Sample Calc

Area TC	199188		
Area IS	392173	**DF**	1
		Sample Volume	289.02
Conc IS	5000	**final vol**	1
Avg RRF	0.891244		
Conc (ng/mL) TC =	2849.436	**Conc (ng/L)**	9.85895914
		Final Conc (ng/L)	9.85895914

Notes:
Green = matched reported value
Red = did not match reported value

GTD 8/19/2022

DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

1.0 INTRODUCTION

Soil samples were collected in September 2022 at the Irvington Rugs and Cleaners Site in Irvington, New York, and shipped to Con-test Laboratory located in East Longmeadow, MA, for analysis. Samples were analyzed by the following methods:

- Per- and Polyfluorinated Alkyl Substances (PFAS) by Method E537(M)
- Total Solids by Method SM2540G

Results were reported in the following sample delivery groups (SDGs):

- 22J0310

A Data Usability Summary Report (DUSR) review was completed based on the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance (NYSDEC, 2010). Sample event information included in this DUSR is presented in the following tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Qualification Action Summary

A summary of table notes applicable to Tables 1, 2, and 3 is presented just before Table 1.

Laboratory deliverables included:

- Category B deliverables as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations. A table of the project control limits for PFAS is presented in Attachment A. DUSR review checklists and applicable laboratory QC summary forms are included in Attachment B to document QC outliers associated with qualification actions.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- Instrument Calibration (report narrative/lab-qualifier evaluation)
- QC Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- Surrogate Spikes (if applicable)
- Internal Standards (if applicable)

- Field Duplicates
- Target Analyte Identification and Quantitation
- Raw Data (chromatograms), Calculation Checks and Transcription Verifications
- Reporting Limits
- Electronic Data Qualification and Verification

Data qualification actions were based on general procedures identified in the NYSDEC validation guideline for PFAS (NYSDEC, 2019).The following laboratory or data review qualifiers are used in the final data presentation:

U = target analyte is not detected above the reported detection limit
J = concentration is estimated
UJ = target analyte is not detected, value is estimated
J+ = concentration is estimated and potentially biased high

Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

2.0 EXECUTIVE SUMMARY

Based on the DUSR review the majority of sample results are interpreted to be usable as reported by the laboratory. Results for a subset of samples were qualified due to extracted internal standard recoveries, ion ratios, and MS/MSD recoveries.

3.0 DATA QUALIFICATION ACTIONS AND OBSERVATIONS

PFAS

22J0310

The lab qualified perfluorotridecanoic acid (PFTrDA) in samples 360175-SB004-0.17 and 360175-SB004-D estimated due to the associated qualifier ion ratios greater than 150% of the associated calibration. Based on professional judgement, results for the affected analyte in the associated samples were qualified estimated (J) and are listed in Table 3 with reason code IAG.

Reporting limits for perfluorotetradecanoic acid (PFTA) in samples 360175-SB004-2.0, 360175-SB001-2.0, and 360175-SB003-2.0 were qualified estimated (UJ) based on recovery of the associated extracted internal standard lower than the 50-150 control limits specified by NYSDEC (NYSDEC, 2019). Qualified results are included in Table 3 with reason code EIS.

Results for perfluorooctanesulfonic acid (PFOS) in sample 360175-SB004-1.0 were qualified as estimated with potential high bias (J+) based on percent recoveries in the associated MS/MSD that exceeded the upper control limit. Qualified results are included in Table 3 with reason code MSH.

Reference:

NYSDEC, 2005. "Analytical Services Protocols"; July 2005.

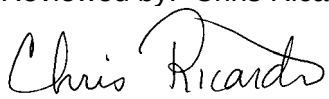
NYSDEC, 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

NYSDEC, 2019. "Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids; October 2019.

Data Validator: Kassidy Patoine

11/20/2022

Reviewed by: Chris Ricardi, NRCC-EAC



11/29/22

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

					Method Class	PFAS	Solids
					Analysis Method	E537(M)	SM2540G
					Fraction	N	N
SDG	**Location**	**Field Sample ID**	**Media**	**Sample Date**	**QC Code**	Parameters	Parameters
22J0310	QC	360175-Blankwater	BW	9/27/2022	FB	34	
22J0310	QC	FRB	BW	9/27/2022	FB	34	
22J0310	SB-01	360175-SB001-0.17	SOIL	9/27/2022	FS	34	1
22J0310	SB-01	360175-SB001-1.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-01	360175-SB001-2.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-02	360175-SB002-0.17	SOIL	9/27/2022	FS	34	1
22J0310	SB-02	360175-SB002-1.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-02	360175-SB002-2.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-03	360175-SB003-0.17	SOIL	9/27/2022	FS	34	1
22J0310	SB-03	360175-SB003-1.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-03	360175-SB003-2.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-04	360175-SB004-0.17	SOIL	9/27/2022	FS	34	1
22J0310	SB-04	360175-SB004-1.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-04	360175-SB004-2.0	SOIL	9/27/2022	FS	34	1
22J0310	SB-04	360175-SB004-D	SOIL	9/27/2022	FD	34	1

Created by: KLD 11/9/22
Checked by: KRP 11/10/22

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22J0310		22J0310		22J0310	
				Location	SB-01		SB-01		SB-01	
				Field Sample Date	9/27/2022		9/27/2022		9/27/2022	
				Field Sample ID	360175-SB001-0.17		360175-SB001-1.0		360175-SB001-2.0	
				Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**		Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier
S	E537(M)	11Cl-PF3OUdS (F53B Minor)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	4:2 Fluorotelomersulfonic acid (4:2FTS A)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	6:2 Fluorotelomersulfonic acid (6:2FTS A)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	8:2 Fluorotelomersulfonic acid (8:2FTS A)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	9Cl-PF3ONS (F53B Major)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Hexafluoropropylene oxide dimer acid (HFPO-DA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	N-EtFOSAA	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	N-MeFOSAA	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluoro-1-butanesulfonamide (FBSA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluoro-1-hexanesulfonamide (FHxSA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluoro-4-oxapentanoic acid (PFMPA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluoro-5-oxahexanoic acid (PFMBA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorobutanesulfonic acid (PFBS)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorobutanoic acid (PFBA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorodecanesulfonic acid (PFDS)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorodecanoic acid (PFDA)	UG/KG		0.07	J	0.61		0.88	
S	E537(M)	Perfluorododecanoic acid (PFDoA)	UG/KG		0.48	U	0.28	J	0.58	U
S	E537(M)	Perfluoroheptanesulfonic acid (PFHpS)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluoroheptanoic acid (PFHpA)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorohexanesulfonic acid (PFHxS)	UG/KG		0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorohexanoic acid (PFHxA)	UG/KG		0.48	U	0.51	U	0.58	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22J0310		22J0310		22J0310	
			Location	SB-01		SB-01		SB-01	
			Field Sample Date	9/27/2022		9/27/2022		9/27/2022	
			Field Sample ID	360175-SB001-0.17		360175-SB001-1.0		360175-SB001-2.0	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier
S	E537(M)	Perfluorononanesulfonic acid (PFNS)	UG/KG	0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorononanoic acid (PFNA)	UG/KG	0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorooctanesulfonamide (FOSA)	UG/KG	0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorooctanesulfonic acid (PFOS)	UG/KG	0.16	J	1.3		2.5	
S	E537(M)	Perfluorooctanoic acid (PFOA)	UG/KG	0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluoropentanoic acid (PFPeA)	UG/KG	0.48	U	0.08	J	0.11	J
S	E537(M)	Perfluoropetanesulfonic acid (PFPeS)	UG/KG	0.48	U	0.51	U	0.58	U
S	E537(M)	Perfluorotetradecanoic acid (PFTA)	UG/KG	0.48	U	0.13	J	0.58	UJ
S	E537(M)	Perfluorotridecanoic acid (PFTrDA)	UG/KG	0.48	U	0.51	U	0.58	UJ
S	E537(M)	Perfluoroundecanoic acid (PFUnA)	UG/KG	0.48	U	0.3	J	0.58	U
S	SM2540G	Percent Solids	% BY WT.	88.4		80.7		72.2	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22J0310		22J0310		22J0310	
				Location	SB-02		SB-02		SB-02	
				Field Sample Date	9/27/2022		9/27/2022		9/27/2022	
				Field Sample ID	360175-SB002-0.17		360175-SB002-1.0		360175-SB002-2.0	
				Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**		Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier
S	E537(M)	11Cl-PF3OUdS (F53B Minor)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	4:2 Fluorotelomersulfonic acid (4:2FTS A)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	6:2 Fluorotelomersulfonic acid (6:2FTS A)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	8:2 Fluorotelomersulfonic acid (8:2FTS A)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	9Cl-PF3ONS (F53B Major)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Hexafluoropropylene oxide dimer acid (HFPO-DA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	N-EtFOSAA	UG/KG		0.5	U	0.14	J	0.51	U
S	E537(M)	N-MeFOSAA	UG/KG		0.11	J	0.096	J	0.51	U
S	E537(M)	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluoro-1-butanesulfonamide (FBSA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluoro-1-hexanesulfonamide (FHxSA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluoro-4-oxapentanoic acid (PFMPA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluoro-5-oxahexanoic acid (PFMBA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluorobutanesulfonic acid (PFBS)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluorobutanoic acid (PFBA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluorodecanesulfonic acid (PFDS)	UG/KG		0.5	U	0.14	J	0.51	U
S	E537(M)	Perfluorodecanoic acid (PFDA)	UG/KG		0.5	U	0.3	J	1.1	
S	E537(M)	Perfluorododecanoic acid (PFDoA)	UG/KG		0.5	U	0.4	J	0.13	J
S	E537(M)	Perfluoroheptanesulfonic acid (PFHpS)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluoroheptanoic acid (PFHpA)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluorohexanesulfonic acid (PFHxS)	UG/KG		0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluorohexanoic acid (PFHxA)	UG/KG		0.5	U	0.48	U	0.51	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22J0310		22J0310		22J0310	
			Location	SB-02		SB-02		SB-02	
			Field Sample Date	9/27/2022		9/27/2022		9/27/2022	
			Field Sample ID	360175-SB002-0.17		360175-SB002-1.0		360175-SB002-2.0	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier
S	E537(M)	Perfluorononanesulfonic acid (PFNS)	UG/KG	0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluorononanoic acid (PFNA)	UG/KG	0.5	U	0.48	U	0.089	J
S	E537(M)	Perfluorooctanesulfonamide (FOSA)	UG/KG	0.5	U	0.45	J	0.51	U
S	E537(M)	Perfluorooctanesulfonic acid (PFOS)	UG/KG	0.11	J	6.6		13	
S	E537(M)	Perfluorooctanoic acid (PFOA)	UG/KG	0.5	U	0.48	U	0.21	J
S	E537(M)	Perfluoropentanoic acid (PFPeA)	UG/KG	0.5	U	0.084	J	0.089	J
S	E537(M)	Perfluoropetanesulfonic acid (PFPeS)	UG/KG	0.5	U	0.48	U	0.51	U
S	E537(M)	Perfluorotetradecanoic acid (PFTA)	UG/KG	0.5	U	0.18	J	0.51	U
S	E537(M)	Perfluorotridecanoic acid (PFTrDA)	UG/KG	0.5	U	0.14	J	0.51	U
S	E537(M)	Perfluoroundecanoic acid (PFUnA)	UG/KG	0.5	U	0.34	J	0.17	J
S	SM2540G	Percent Solids	% BY WT.	89.1		90.1		84.3	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22J0310		22J0310		22J0310	
				Location	SB-03		SB-03	SB-03	SB-03	SB-03
				Field Sample Date	9/27/2022		9/27/2022		9/27/2022	
				Field Sample ID	360175-SB003-0.17		360175-SB003-1.0		360175-SB003-2.0	
				Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**		Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier
S	E537(M)	11Cl-PF3OUdS (F53B Minor)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	4:2 Fluorotelomersulfonic acid (4:2FTS A)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	6:2 Fluorotelomersulfonic acid (6:2FTS A)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	8:2 Fluorotelomersulfonic acid (8:2FTS A)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	9Cl-PF3ONS (F53B Major)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Hexafluoropropylene oxide dimer acid (HFPO-DA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	N-EtFOSAA	UG/KG		0.49	U	0.5	J	0.52	U
S	E537(M)	N-MeFOSAA	UG/KG		0.49	U	0.24	J	0.52	U
S	E537(M)	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluoro-1-butanesulfonamide (FBSA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluoro-1-hexanesulfonamide (FHxSA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluoro-4-oxapentanoic acid (PFMPA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluoro-5-oxahexanoic acid (PFMBA)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluorobutanesulfonic acid (PFBS)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluorobutanoic acid (PFBA)	UG/KG		0.088	J	0.081	J	0.52	U
S	E537(M)	Perfluorodecanesulfonic acid (PFDS)	UG/KG		0.49	U	0.12	J	0.52	U
S	E537(M)	Perfluorodecanoic acid (PFDA)	UG/KG		0.56		0.7		0.87	
S	E537(M)	Perfluorododecanoic acid (PFDoA)	UG/KG		0.7		0.93		0.52	U
S	E537(M)	Perfluoroheptanesulfonic acid (PFHpS)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluoroheptanoic acid (PFHpA)	UG/KG		0.16	J	0.16	J	0.1	J
S	E537(M)	Perfluorohexanesulfonic acid (PFHxS)	UG/KG		0.49	U	0.5	U	0.52	U
S	E537(M)	Perfluorohexanoic acid (PFHxA)	UG/KG		0.23	J	0.15	J	0.11	J

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22J0310		22J0310			22J0310		
			Location	SB-03		SB-03		SB-03	SB-03		
			Field Sample Date	9/27/2022		9/27/2022			9/27/2022		
			Field Sample ID	360175-SB003-0.17		360175-SB003-1.0			360175-SB003-2.0		
			Qc Code	FS		FS			FS		
Matrix	**Method**	**Parameter**	**Units**	Final Result	Final Qualifier	Final Result	Final Qualifier		Final Result	Final Qualifier	
S	E537(M)	Perfluorononanesulfonic acid (PFNS)	UG/KG	0.49	U	0.5	U		0.52	U	
S	E537(M)	Perfluorononanoic acid (PFNA)	UG/KG	0.31	J	0.22	J		0.18	J	
S	E537(M)	Perfluorooctanesulfonamide (FOSA)	UG/KG	0.17	J	2.6			0.89		
S	E537(M)	Perfluorooctanesulfonic acid (PFOS)	UG/KG	1.1		15			22		
S	E537(M)	Perfluorooctanoic acid (PFOA)	UG/KG	0.22	J	0.34	J		0.24	J	
S	E537(M)	Perfluoropentanoic acid (PFPeA)	UG/KG	0.38	J	0.31	J		0.17	J	
S	E537(M)	Perfluoropetanesulfonic acid (PFPeS)	UG/KG	0.49	U	0.5	U		0.52	U	
S	E537(M)	Perfluorotetradecanoic acid (PFTA)	UG/KG	0.31	J	0.32	J		0.52	UJ	
S	E537(M)	Perfluorotridecanoic acid (PFTrDA)	UG/KG	0.49	U	0.16	J		0.52	UJ	
S	E537(M)	Perfluoroundecanoic acid (PFUnA)	UG/KG	0.12	J	0.34	J		0.52	U	
S	SM2540G	Percent Solids	% BY WT.	89.7		87.9			85.4		

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22J0310		22J0310		22J0310	
				Location	SB-04		SB-04		SB-04	
				Field Sample Date	9/27/2022		9/27/2022		9/27/2022	
				Field Sample ID	360175-SB004-0.17		360175-SB004-1.0		360175-SB004-2.0	
				Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**		Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier
S	E537(M)	11Cl-PF3OUdS (F53B Minor)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	4:2 Fluorotelomersulfonic acid (4:2FTS A)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	6:2 Fluorotelomersulfonic acid (6:2FTS A)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	8:2 Fluorotelomersulfonic acid (8:2FTS A)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	9Cl-PF3ONS (F53B Major)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Hexafluoropropylene oxide dimer acid (HFPO-DA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	N-EtFOSAA	UG/KG		0.34	J	0.24	J	0.55	U
S	E537(M)	N-MeFOSAA	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluoro-1-butanesulfonamide (FBSA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluoro-1-hexanesulfonamide (FHxSA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluoro-4-oxapentanoic acid (PFMPA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluoro-5-oxahexanoic acid (PFMBA)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluorobutanesulfonic acid (PFBS)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluorobutanoic acid (PFBA)	UG/KG		0.088	J	0.5	U	0.099	J
S	E537(M)	Perfluorodecanesulfonic acid (PFDS)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluorodecanoic acid (PFDA)	UG/KG		0.3	J	0.1	J	0.41	J
S	E537(M)	Perfluorododecanoic acid (PFDoA)	UG/KG		0.37	J	0.21	J	0.55	U
S	E537(M)	Perfluoroheptanesulfonic acid (PFHpS)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluoroheptanoic acid (PFHpA)	UG/KG		0.11	J	0.5	U	0.099	J
S	E537(M)	Perfluorohexanesulfonic acid (PFHxS)	UG/KG		0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluorohexanoic acid (PFHxA)	UG/KG		0.52	U	0.5	U	0.55	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22J0310		22J0310		22J0310	
			Location	SB-04		SB-04		SB-04	
			Field Sample Date	9/27/2022		9/27/2022		9/27/2022	
			Field Sample ID	360175-SB004-0.17		360175-SB004-1.0		360175-SB004-2.0	
			Qc Code	FS		FS		FS	
Matrix	**Method**	**Parameter**	**Units**	Final Result	Final Qualifier	Final Result	Final Qualifier	Final Result	Final Qualifier
S	E537(M)	Perfluorononanesulfonic acid (PFNS)	UG/KG	0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluorononanoic acid (PFNA)	UG/KG	0.11	J	0.5	U	0.14	J
S	E537(M)	Perfluorooctanesulfonamide (FOSA)	UG/KG	0.96		1.3		0.19	J
S	E537(M)	Perfluorooctanesulfonic acid (PFOS)	UG/KG	11		6.8	J+	14	
S	E537(M)	Perfluorooctanoic acid (PFOA)	UG/KG	0.43	J	0.19	J	0.37	J
S	E537(M)	Perfluoropentanoic acid (PFPeA)	UG/KG	0.14	J	0.5	U	0.21	J
S	E537(M)	Perfluoropetanesulfonic acid (PFPeS)	UG/KG	0.52	U	0.5	U	0.55	U
S	E537(M)	Perfluorotetradecanoic acid (PFTA)	UG/KG	0.16	J	0.099	J	0.55	UJ
S	E537(M)	Perfluorotridecanoic acid (PFTrDA)	UG/KG	0.36	J	0.21	J	0.55	UJ
S	E537(M)	Perfluoroundecanoic acid (PFUnA)	UG/KG	0.26	J	0.092	J	0.48	J
S	SM2540G	Percent Solids	% BY WT.	83.2		87.6		82.1	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22J0310	
			Location	SB-04	
			Field Sample Date	9/27/2022	
			Field Sample ID	360175-SB004-D	
			Qc Code	FD	
Matrix	**Method**	**Parameter**	**Units**	Final Result	Final Qualifier
S	E537(M)	11Cl-PF3OUdS (F53B Minor)	UG/KG	0.52	U
S	E537(M)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	UG/KG	0.52	U
S	E537(M)	4:2 Fluorotelomersulfonic acid (4:2FTS A)	UG/KG	0.52	U
S	E537(M)	6:2 Fluorotelomersulfonic acid (6:2FTS A)	UG/KG	0.52	U
S	E537(M)	8:2 Fluorotelomersulfonic acid (8:2FTS A)	UG/KG	0.52	U
S	E537(M)	9Cl-PF3ONS (F53B Major)	UG/KG	0.52	U
S	E537(M)	Hexafluoropropylene oxide dimer acid (HFPO-DA)	UG/KG	0.52	U
S	E537(M)	N-EtFOSAA	UG/KG	0.37	J
S	E537(M)	N-MeFOSAA	UG/KG	0.52	U
S	E537(M)	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	UG/KG	0.52	U
S	E537(M)	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	UG/KG	0.52	U
S	E537(M)	Perfluoro-1-butanesulfonamide (FBSA)	UG/KG	0.52	U
S	E537(M)	Perfluoro-1-hexanesulfonamide (FHxSA)	UG/KG	0.52	U
S	E537(M)	Perfluoro-4-oxapentanoic acid (PFMPA)	UG/KG	0.52	U
S	E537(M)	Perfluoro-5-oxahexanoic acid (PFMBA)	UG/KG	0.52	U
S	E537(M)	Perfluorobutanesulfonic acid (PFBS)	UG/KG	0.52	U
S	E537(M)	Perfluorobutanoic acid (PFBA)	UG/KG	0.083	J
S	E537(M)	Perfluorodecanesulfonic acid (PFDS)	UG/KG	0.52	U
S	E537(M)	Perfluorodecanoic acid (PFDA)	UG/KG	0.3	J
S	E537(M)	Perfluorododecanoic acid (PFDoA)	UG/KG	0.35	J
S	E537(M)	Perfluoroheptanesulfonic acid (PFHpS)	UG/KG	0.52	U
S	E537(M)	Perfluoroheptanoic acid (PFHpA)	UG/KG	0.093	J
S	E537(M)	Perfluorohexanesulfonic acid (PFHxS)	UG/KG	0.52	U
S	E537(M)	Perfluorohexanoic acid (PFHxA)	UG/KG	0.098	J

Created by: KLD 11/11/22
Checked by: KRP 11/11/22

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22J0310	
			Location	SB-04	
			Field Sample Date	9/27/2022	
			Field Sample ID	360175-SB004-D	
			Qc Code	FD	
Matrix	**Method**	**Parameter**	**Units**	Final Result	Final Qualifier
S	E537(M)	Perfluorononanesulfonic acid (PFNS)	UG/KG	0.52	U
S	E537(M)	Perfluorononanoic acid (PFNA)	UG/KG	0.089	J
S	E537(M)	Perfluorooctanesulfonamide (FOSA)	UG/KG	1.2	
S	E537(M)	Perfluorooctanesulfonic acid (PFOS)	UG/KG	13	
S	E537(M)	Perfluorooctanoic acid (PFOA)	UG/KG	0.48	J
S	E537(M)	Perfluoropentanoic acid (PFPeA)	UG/KG	0.15	J
S	E537(M)	Perfluoropetanesulfonic acid (PFPeS)	UG/KG	0.52	U
S	E537(M)	Perfluorotetradecanoic acid (PFTA)	UG/KG	0.16	J
S	E537(M)	Perfluorotridecanoic acid (PFTrDA)	UG/KG	0.36	J
S	E537(M)	Perfluoroundecanoic acid (PFUnA)	UG/KG	0.24	J
S	SM2540G	Percent Solids	% BY WT.	82.8	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

				Lab SDG	22J0310		22J0310	
				Location	QC		QC	
				Field Sample Date	9/27/2022		9/27/2022	
				Field Sample ID	360175-Blankwater		FRB	
				Qc Code	FB		FB	
Matrix	**Method**	**Parameter**	**Units**		Final Result	Final Qualifier	Final Result	Final Qualifier
L	E537(M)	11Cl-PF3OUdS (F53B Minor)	NG/L		2	U	1.9	U
L	E537(M)	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/L		2	U	1.9	U
L	E537(M)	4:2 Fluorotelomersulfonic acid (4:2FTS A)	NG/L		2	U	1.9	U
L	E537(M)	6:2 Fluorotelomersulfonic acid (6:2FTS A)	NG/L		2	U	1.9	U
L	E537(M)	8:2 Fluorotelomersulfonic acid (8:2FTS A)	NG/L		2	U	1.9	U
L	E537(M)	9Cl-PF3ONS (F53B Major)	NG/L		2	U	1.9	U
L	E537(M)	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/L		2	U	1.9	U
L	E537(M)	N-EtFOSAA	NG/L		2	U	1.9	U
L	E537(M)	N-MeFOSAA	NG/L		2	U	1.9	U
L	E537(M)	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluoro-1-butanesulfonamide (FBSA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluoro-1-hexanesulfonamide (FHxSA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluoro-4-oxapentanoic acid (PFMPA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluoro-5-oxahexanoic acid (PFMBA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluorobutanesulfonic acid (PFBS)	NG/L		2	U	1.9	U
L	E537(M)	Perfluorobutanoic acid (PFBA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluorodecanesulfonic acid (PFDS)	NG/L		2	U	1.9	U
L	E537(M)	Perfluorodecanoic acid (PFDA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluorododecanoic acid (PFDoA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluoroheptanesulfonic acid (PFHpS)	NG/L		2	U	1.9	U
L	E537(M)	Perfluoroheptanoic acid (PFHpA)	NG/L		2	U	1.9	U
L	E537(M)	Perfluorohexanesulfonic acid (PFHxS)	NG/L		2	U	1.9	U
L	E537(M)	Perfluorohexanoic acid (PFHxA)	NG/L		2	U	1.9	U

Created by: KLD 11/11/22
Checked by: KRP 11/11/22

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

			Lab SDG	22J0310		22J0310	
			Location	QC		QC	
			Field Sample Date	9/27/2022		9/27/2022	
			Field Sample ID	360175-Blankwater		FRB	
			Qc Code	FB		FB	
Matrix	**Method**	**Parameter**	**Units**	Final Result	Final Qualifier	Final Result	Final Qualifier
L	E537(M)	Perfluorononanesulfonic acid (PFNS)	NG/L	2	U	1.9	U
L	E537(M)	Perfluorononanoic acid (PFNA)	NG/L	2	U	1.9	U
L	E537(M)	Perfluorooctanesulfonamide (FOSA)	NG/L	2	U	1.9	U
L	E537(M)	Perfluorooctanesulfonic acid (PFOS)	NG/L	2	U	1.9	U
L	E537(M)	Perfluorooctanoic acid (PFOA)	NG/L	2	U	1.9	U
L	E537(M)	Perfluoropentanoic acid (PFPeA)	NG/L	2	U	1.9	U
L	E537(M)	Perfluoropetanesulfonic acid (PFPeS)	NG/L	2	U	1.9	U
L	E537(M)	Perfluorotetradecanoic acid (PFTA)	NG/L	2	U	1.9	U
L	E537(M)	Perfluorotridecanoic acid (PFTrDA)	NG/L	2	U	1.9	U
L	E537(M)	Perfluoroundecanoic acid (PFUnA)	NG/L	2	U	1.9	U

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENTS
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Method	Lab Sample ID	Field Sample ID	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
22J0310	E537(M)	22J0310-03	360175-SB001-2.0	N	Perfluorotetradecanoic acid (PFTA)	0.58	U	0.58	UJ	EIS	UG/KG
22J0310	E537(M)	22J0310-03	360175-SB001-2.0	N	Perfluorotridecanoic acid (PFTrDA)	0.58	U	0.58	UJ	EIS	UG/KG
22J0310	E537(M)	22J0310-09	360175-SB003-2.0	N	Perfluorotetradecanoic acid (PFTA)	0.52	U	0.52	UJ	EIS	UG/KG
22J0310	E537(M)	22J0310-09	360175-SB003-2.0	N	Perfluorotridecanoic acid (PFTrDA)	0.52	U	0.52	UJ	EIS	UG/KG
22J0310	E537(M)	22J0310-10	360175-SB004-0.17	N	Perfluorotridecanoic acid (PFTrDA)	0.36	J	0.36	J	IAG	UG/KG
22J0310	E537(M)	22J0310-11	360175-SB004-1.0	N	Perfluorooctanesulfonic acid (PFOS)	6.8		6.8	J+	MSH	UG/KG
22J0310	E537(M)	22J0310-12	360175-SB004-2.0	N	Perfluorotetradecanoic acid (PFTA)	0.55	U	0.55	UJ	EIS	UG/KG
22J0310	E537(M)	22J0310-12	360175-SB004-2.0	N	Perfluorotridecanoic acid (PFTrDA)	0.55	U	0.55	UJ	EIS	UG/KG
22J0310	E537(M)	22J0310-13	360175-SB004-D	N	Perfluorotridecanoic acid (PFTrDA)	0.36	J	0.36	J	IAG	UG/KG

Standard Table Notes:

Sample Type (QC Code)

FS – field sample

FD – field duplicate

TB – trip blank

EB – equipment blank

FB – field blank

Matrix

GW – ground water

BW – blank water

TW – tap water

SV – soil vapor

SED – sediment

SW – surface water

S – soil

L – water

Units

mg/L – milligrams per liter

ng/L – nanograms per liter

µg/L – micrograms per liter

mg/kg – milligrams per kilogram

µg/kg – micrograms per kilogram

µg/m^3 – micrograms per cubic meter

Qualifiers

U – not detected above quantitation limit

J – estimated quantity

J+ - estimated quantity, biased high

J- - estimated quantity, biased low

R – data unusable

Fraction

T – total

D – dissolved

N – normal

Qualification Reason Codes

BL1 – method blank qualifier

BL2 – field or trip blank qualifier

CCV – continuing calibration verification recovery outside limits

CCV%D – continuing calibration verification percent difference exceeds goal

CCVRRF – continuing calibration relative response factor low

CI – chromatographic interference present

DCPD – dual column percent difference exceeds limit

E – result exceeds calibration range

FD – field duplicate precision goal exceeded

FP – false positive interference

HT – holding time for prep or analysis exceeded

HTG – holding time for prep or analysis grossly exceeded

ICV – initial calibration verification recovery outside limit

ICVRRF – initial calibration verification relative response factor low

ICVRSD – initial calibration verification % relative standard deviation exceeds goal

ISH – internal standard response greater than limit

ISL – internal standard response less than limit

LCSH – laboratory control sample recovery high

LCSL – laboratory control sample recovery low

LCSRPD – laboratory control sample/duplicate relative % difference precision goal exceeded

LD – lab duplicate precision goal exceeded

MSH – matrix spike and/or MS duplicate recovery high

MSL – matrix spike and/or MS duplicate recovery low

MSRPD – matrix spike/duplicate relative % difference precision goal exceeded

N – analyte identification is not certain

PEM – performance evaluation mixture exceeds limit

PM – sample percent moisture exceeds EPA guideline

SD – serial dilution result exceeds percent difference limit

SP – sample preservation/collection does not meet method requirement

SSH – surrogate recovery high

SSL – surrogate recovery low

TD – dissolved concentration exceeds total

PAHs – polycyclic aromatic hydrocarbons

ATTACHMENT A
SUMMARY OF VALIDATION QC LIMITS FOR SURROGATES, SPIKES, AND DUPLICATES
BASED ON THE REGION 2 VALIDATION GUIDELINES

PARAMETER	QC TEST	ANALYTE	Soil (%R)	Soil (RPD)	WATER (%R)	Water (RPD)
Volatiles	Surrogate	All Surrogate Compounds	70 - 130		80 - 120	
	LCS	All Target Compounds	70 - 130		70 - 130	
	MS/MSD	All Target Compounds	70 - 130	35	70 - 130	20
	Field Duplicate	All Target Compounds		100		50
Per- and Polyfluorinated Alkyl Substances (PFAS)	Surrogate (1)	All Surrogate Compounds	50 - 150		50 - 150	
	LCS	All Target Compounds	70 - 130		70 - 130	
	MS/MSD	All Target Compounds	70 - 130	30	70 - 130	30
	Field Duplicate	All Target Compounds		30		30
Semivolatiles	Surrogate	All BN Compounds	50 - 140		50 - 140	
		All Acid Compounds	30 - 140		30 - 140	
	LCS	All BN Compounds	50 - 140		50 - 140	
		All Acid Compounds	30 - 140		30 - 140	
	MS/MSD	All BN Compounds	50 - 140	35	50 - 140	20
		All Acid Compounds	30 - 140	35	30 - 140	20
	Field Duplicate	All Target Compounds		100		50
Pesticides	Surrogate	All Surrogate Compounds	30 - 150		30 - 150	
	LCS	All Target Compounds	Lab Limits		Lab Limits	
	MS/MSD	All Target Compounds	Lab Limits	Lab Limits	Lab Limits	Lab Limits
	Field Duplicate	All Target Compounds		100		50
PCBs	Surrogate	All Surrogate Compounds	30 - 150		30 - 150	
	LCS	All Target Analytes	50 - 150		50 - 150	
	MS/MSD[1]	All Target Analytes	29 - 135	20	29 - 135	20
	Field Duplicate	All Target Analytes		100		50
Inorganics-Metals	LCS	All Target Analytes	80 - 120		80 - 120	
	MS/MSD	All Target Analytes	75 -125	35	75 -125	20
	Lab Duplicate[2]	All Target Analytes		35		20
	Field Duplicate[2]	All Target Analytes		35		20

Notes:
(1) For PFAS, surrogate = extracted isotope dilution standard
LCS - Laboratory Control Sample
MS/MSD - Matrix spike/ Matrix Spike Duplicate
RPD = Relative percent difference
%R = percent recovery
QC Limits are based on USEPA Region II Data Validation Guidelines and Project QA/QC Objectives

DATA USABILITY SUMMARY REPORT
SEPTEMBER 2022 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

ATTACHMENT B

PFAS

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs
Method: 537
Laboratory: Con-test Pace **SDG(s):** 22J0310
Date: 11/10/2022
Reviewer: Kassidy Patoine

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
Were problems noted? Yes PFTrDA in samples 22J0310-10 and 22J0310-13, qualifier ion ration was greater than 150% in associated calibration. J, IAG
Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)

2. ☑ **Holding time and Sample Collection**
Water: 14 days from collection to extraction; 28 days from extraction to analysis
Hold time met for all samples? YES NO (circle one)

3. ☑ **QC Blanks**
Are method blanks free of contamination? YES NO (circle one)
Are rinse blanks free of contamination? YES NO NA (circle one)
Are field reagent blanks free of contamination? YES NO NA (circle one)

4. ☑ **Instrument Tuning – Data Package Narrative Review**
Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Internal Standards – Data Package Narrative Review**
(Area Limits = -50% to +100%, RTs within 30 seconds of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
Did the laboratory narrative identify any sample internal standards that were not within criteria?
YES NO (circle one)

Did the laboratory qualify results based on internal standard exceedances? YES NO
If yes to above, use professional judgment to evaluate data and qualify results if needed

6. ☑ **Instrument Calibration – Data Package Narrative Review**
Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

Initial Calibration %RSD = 15%, Continuing Calibration %D = 20%

Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO
If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Surrogate Recovery** (Extracted Isotope Dilution Standards) (50-150)
Were all results within limits? YES NO (circle one)
Were any recoveries < 10%? (use professional judgment)
B319521 - M2-8:2FTS 162% area. Only associated with field blanks - no quals
M2PFTA (PFTA, PFTrDA) in samples 22J0310-03, 22J0310-09, and 22J0310. UJ, EIS

8. ☑ **Matrix Spike** (70-130)
Were MS/MSDs submitted/analyzed? YES NO

Were all results within limits? YES NO NA (circle one)
4,8-dioxa-3H-perfluorononanoic acid (ADONA) in the MS/MSD associated with sample 22J0310-11 had high percent recovery (170%). Sample result ND, no quals
Perfluorooctanesulfonic acid (PFOS) in the MS/MSD associated with sample 22J0310-11 had high percent recovery (158%). J+, MSH

KRP 11/30/22

9. ☑ ☐ **Duplicates** (RPD limits = water 30)
Were Field Duplicates submitted/analyzed? YES NO

Were RPDs within criteria? YES NO NA (circle one)

10. ☐ ☑ **Laboratory Control Sample Results** (70-130)
Were all results within limits? YES NO (circle one)
ADONA in the LCS/LCSD associated with batch B318791. All associated sample results ND, no quals

ADONA in the LCS/LCSD associated with batch B319211.Sample result ND, no quals
11. ☐ ☑ **Raw Data Review and Calculation Checks**

12. ☐ ☑ **Electronic Data Review and Edits**
Does the EDD match the Form Is? YES NO (circle one)

13. ☑ ☐ **Tables**
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)
Were all tables produced and reviewed? YES NO (circle one)

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SOP-454 PFAS

Qualifications:

PF-17

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:

M2-8:2FTS
22J0310-14[360175-Blankwater]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2-8:2FTS
B319521-BS1

M2PFTA
B319521-BLK1

SOP-466 PFAS

Qualifications:

L-01

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

4,8-dioxa-3H-perfluorononanoic ac
B318791-BS1, B319211-BS1

MS-12

Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

4,8-dioxa-3H-perfluorononanoic ac
B318791-MS1, B318791-MSD1

Perfluorooctanesulfonic acid (PFO
22J0310-11[360175-SB004-1.0], B318791-MS1, B318791-MSD1

PF-22

Qualifier ion ratio >150% of associated calibration. Detection is suspect.

Analyte & Samples(s) Qualified: J, IAG

Perfluorotridecanoic acid (PFTrDA
22J0310-10[360175-SB004-0.17], 22J0310-13[360175-SB004-D]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

M2PFTA
22J0310-03[360175-SB001-2.0], 22J0310-09[360175-SB003-2.0], 22J0310-12[360175-SB004-2.0]

M3HFPO-DA
S078173-CCV2

M8PFOS
S078173-CCV5

MPFBA
S078173-CCV4, S078173-CCV5

KRP 11/30/22

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod E. Kopyscinski
Laboratory Director

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B319211 - SOP 465-PFAAS												
LCS (B319211-BS1)					Prepared: 10/17/22 Analyzed: 10/21/22							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	2.72	0.43	0.14	µg/kg wet	2.05		**133**	*	55.2-122	sample result ND, no quals		L-01
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.89	0.43	0.21	µg/kg wet	2.18		86.5		27.6-137			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.86	0.43	0.11	µg/kg wet	2.09		88.7		65-137			
Perfluorodecanoic acid (PFDA)	1.81	0.43	0.056	µg/kg wet	2.18		82.9		69-133			
Perfluorododecanoic acid (PFDoA)	1.75	0.43	0.066	µg/kg wet	2.18		80.1		69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.60	0.43	0.071	µg/kg wet	1.94		82.7		56.7-133			
Perfluoroheptanesulfonic acid (PFHpS)	1.76	0.43	0.13	µg/kg wet	2.08		84.7		70-132			
N-EtFOSAA	2.11	0.43	0.12	µg/kg wet	2.18		96.9		61-139			
N-MeFOSAA	2.20	0.43	0.079	µg/kg wet	2.18		101		63-144			
Perfluorotetradecanoic acid (PFTA)	1.81	0.43	0.082	µg/kg wet	2.18		82.9		69-133			
Perfluorotridecanoic acid (PFTrDA)	1.96	0.43	0.097	µg/kg wet	2.18		89.9		66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.74	0.43	0.080	µg/kg wet	2.04		85.2		62-145			
Perfluorodecanesulfonic acid (PFDS)	1.94	0.43	0.10	µg/kg wet	2.10		92.1		59-134			
Perfluorooctanesulfonamide (FOSA)	1.86	0.43	0.084	µg/kg wet	2.18		85.3		67-137			
Perfluorononanesulfonic acid (PFNS)	1.62	0.43	0.12	µg/kg wet	2.09		77.3		69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	1.98	0.43	0.13	µg/kg wet	2.18		90.8		51.4-142			
Perfluoro-1-butanesulfonamide (FBSA)	1.96	0.43	0.14	µg/kg wet	2.18		90.2		53.5-129			
Perfluorohexanesulfonic acid (PFHxS)	1.64	0.43	0.069	µg/kg wet	2.00		82.3		67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	1.78	0.43	0.082	µg/kg wet	2.18		81.5		57.8-127			
Perfluoro-5-oxahexanoic acid (PFMBA)	1.78	0.43	0.080	µg/kg wet	2.18		81.6		56.5-132			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.00	0.43	0.099	µg/kg wet	2.07		96.5		64-140			
Perfluoropetanesulfonic acid (PFPeS)	1.74	0.43	0.063	µg/kg wet	2.05		85.0		73-123			
Perfluoroundecanoic acid (PFUnA)	1.85	0.43	0.079	µg/kg wet	2.18		85.0		64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	1.68	0.43	0.067	µg/kg wet	2.18		77.3		54.5-128			
Perfluoroheptanoic acid (PFHpA)	1.77	0.43	0.062	µg/kg wet	2.18		81.4		71-131			
Perfluorooctanoic acid (PFOA)	1.83	0.43	0.12	µg/kg wet	2.18		84.0		69-133			
Perfluorooctanesulfonic acid (PFOS)	1.62	0.43	0.058	µg/kg wet	2.01		80.2		68-136			
Perfluorononanoic acid (PFNA)	1.92	0.43	0.071	µg/kg wet	2.18		88.0		72-129			
Batch B319521 - SOP 454-PFAAS												
Blank (B319521-BLK1)					Prepared: 10/18/22 Analyzed: 10/22/22							
Perfluorobutanoic acid (PFBA)	ND	1.8	0.67	ng/L								
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.25	ng/L								
Perfluoropentanoic acid (PFPeA)	ND	1.8	0.36	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	1.8	0.35	ng/L								
11Cl-PF3OUdS (F53B Major)	ND	1.8	0.58	ng/L								
9Cl-PF3ONS (F53B Minor)	ND	1.8	0.35	ng/L								
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.32	ng/L								
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	0.22	ng/L								
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.55	ng/L								
Perfluorodecanoic acid (PFDA)	ND	1.8	0.44	ng/L								
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.40	ng/L								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	0.21	ng/L								
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	0.85	ng/L								
N-EtFOSAA	ND	1.8	0.57	ng/L								

KRP 11/30/22

con-test® A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B318791 - SOP 465-PFAAS												
Matrix Spike Dup (B318791-MSD1)		**Source: 22J0310-11**			Prepared: 10/17/22 Analyzed: 10/18/22							
Perfluorooctanesulfonic acid (PFOS)	10.8	0.51	0.069	µg/kg dry	2.36	6.84	**169**	*	68-136	3.21	30	MS-12
Perfluorononanoic acid (PFNA)	2.73	0.51	0.083	µg/kg dry	2.55	ND	107		72-129	4.16	30	J+, MSH
Batch B319211 - SOP 465-PFAAS												
Blank (B319211-BLK1)					Prepared: 10/17/22 Analyzed: 10/21/22							
Perfluorobutanoic acid (PFBA)	ND	0.41	0.055	µg/kg wet								
Perfluorobutanesulfonic acid (PFBS)	ND	0.41	0.063	µg/kg wet								
Perfluoropentanoic acid (PFPeA)	ND	0.41	0.063	µg/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.41	0.077	µg/kg wet								
11Cl-PF3OUdS (F53B Major)	ND	0.41	0.12	µg/kg wet								
9Cl-PF3ONS (F53B Minor)	ND	0.41	0.10	µg/kg wet								
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.41	0.13	µg/kg wet								
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.41	0.20	µg/kg wet								
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.41	0.11	µg/kg wet								
Perfluorodecanoic acid (PFDA)	ND	0.41	0.053	µg/kg wet								
Perfluorododecanoic acid (PFDoA)	ND	0.41	0.063	µg/kg wet								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.41	0.068	µg/kg wet								
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.41	0.12	µg/kg wet								
N-EtFOSAA	ND	0.41	0.12	µg/kg wet								
N-MeFOSAA	ND	0.41	0.075	µg/kg wet								
Perfluorotetradecanoic acid (PFTA)	ND	0.41	0.079	µg/kg wet								
Perfluorotridecanoic acid (PFTrDA)	ND	0.41	0.093	µg/kg wet								
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.41	0.076	µg/kg wet								
Perfluorodecanesulfonic acid (PFDS)	ND	0.41	0.096	µg/kg wet								
Perfluorooctanesulfonamide (FOSA)	ND	0.41	0.081	µg/kg wet								
Perfluorononanesulfonic acid (PFNS)	ND	0.41	0.11	µg/kg wet								
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.41	0.12	µg/kg wet								
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.41	0.13	µg/kg wet								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.41	0.066	µg/kg wet								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.41	0.078	µg/kg wet								
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.41	0.076	µg/kg wet								
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.41	0.095	µg/kg wet								
Perfluoropetanesulfonic acid (PFPeS)	ND	0.41	0.061	µg/kg wet								
Perfluoroundecanoic acid (PFUnA)	ND	0.41	0.075	µg/kg wet								
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.41	0.064	µg/kg wet								
Perfluoroheptanoic acid (PFHpA)	ND	0.41	0.060	µg/kg wet								
Perfluorooctanoic acid (PFOA)	ND	0.41	0.12	µg/kg wet								
Perfluorooctanesulfonic acid (PFOS)	ND	0.41	0.056	µg/kg wet								
Perfluorononanoic acid (PFNA)	ND	0.41	0.068	µg/kg wet								
LCS (B319211-BS1)					Prepared: 10/17/22 Analyzed: 10/21/22							
Perfluorobutanoic acid (PFBA)	1.90	0.43	0.058	µg/kg wet	2.18		87.2		71-135			
Perfluorobutanesulfonic acid (PFBS)	1.63	0.43	0.066	µg/kg wet	1.93		84.7		72-128			
Perfluoropentanoic acid (PFPeA)	1.86	0.43	0.066	µg/kg wet	2.18		85.2		69-132			
Perfluorohexanoic acid (PFHxA)	1.90	0.43	0.081	µg/kg wet	2.18		87.1		70-132			
11Cl-PF3OUdS (F53B Major)	1.45	0.43	0.12	µg/kg wet	2.05		70.6		41.8-128			
9Cl-PF3ONS (F53B Minor)	1.44	0.43	0.11	µg/kg wet	2.03		70.8		51.1-141			

KRP 11/30/22

con-test
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B318791 - SOP 465-PFAAS												
Matrix Spike (B318791-MS1)		**Source: 22J0310-11**			Prepared: 10/17/22 Analyzed: 10/18/22							
Perfluoro-1-hexanesulfonamide (FHxSA)	2.71	0.50	0.15	µg/kg dry	2.50	ND	108		18.9-162			
Perfluoro-1-butanesulfonamide (FBSA)	2.65	0.50	0.16	µg/kg dry	2.50	ND	106		49.8-135			
Perfluorohexanesulfonic acid (PFHxS)	2.33	0.50	0.079	µg/kg dry	2.29	ND	102		67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	2.41	0.50	0.094	µg/kg dry	2.50	ND	96.5		62-155			
Perfluoro-5-oxahexanoic acid (PFMBA)	2.25	0.50	0.091	µg/kg dry	2.50	ND	90.1		52.1-148			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.18	0.50	0.11	µg/kg dry	2.38	ND	91.7		64-140			
Perfluoropetanesulfonic acid (PFPeS)	2.46	0.50	0.073	µg/kg dry	2.35	ND	104		73-123			
Perfluoroundecanoic acid (PFUnA)	2.77	0.50	0.090	µg/kg dry	2.50	0.0919	107		64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.89	0.50	0.077	µg/kg dry	2.50	ND	115		54.6-133			
Perfluoroheptanoic acid (PFHpA)	2.89	0.50	0.072	µg/kg dry	2.50	ND	115		71-131			
Perfluorooctanoic acid (PFOA)	2.59	0.50	0.14	µg/kg dry	2.50	0.192	95.9		69-133			
Perfluorooctanesulfonic acid (PFOS)	10.5	0.50	0.067	µg/kg dry	2.31	6.84	**158**	*	68-136	J+, MSH		MS-12
Perfluorononanoic acid (PFNA)	2.62	0.50	0.081	µg/kg dry	2.50	ND	105		72-129			
Matrix Spike Dup (B318791-MSD1)		**Source: 22J0310-11**			Prepared: 10/17/22 Analyzed: 10/18/22							
Perfluorobutanoic acid (PFBA)	2.72	0.51	0.067	µg/kg dry	2.55	ND	106		71-135	2.84	30	
Perfluorobutanesulfonic acid (PFBS)	2.33	0.51	0.078	µg/kg dry	2.26	ND	103		72-128	3.21	30	
Perfluoropentanoic acid (PFPeA)	2.75	0.51	0.078	µg/kg dry	2.55	ND	108		69-132	5.23	30	
Perfluorohexanoic acid (PFHxA)	2.71	0.51	0.094	µg/kg dry	2.55	ND	106		70-132	2.30	30	
11Cl-PF3OUdS (F53B Major)	1.88	0.51	0.14	µg/kg dry	2.41	ND	78.2		4.02-158	3.31	30	
9Cl-PF3ONS (F53B Minor)	2.09	0.51	0.13	µg/kg dry	2.38	ND	87.8		52.5-150	1.45	30	sample result ND, no quals
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	4.25	0.51	0.16	µg/kg dry	2.41	ND	**176**	*	50.7-124	5.97	30	MS-12
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.72	0.51	0.24	µg/kg dry	2.55	ND	107		29.2-146	14.3	30	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.64	0.51	0.13	µg/kg dry	2.45	ND	108		65-137	1.73	30	
Perfluorodecanoic acid (PFDA)	2.77	0.51	0.065	µg/kg dry	2.55	0.104	104		69-133	3.45	30	
Perfluorododecanoic acid (PFDoA)	3.13	0.51	0.078	µg/kg dry	2.55	0.209	114		69-135	8.11	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	2.12	0.51	0.083	µg/kg dry	2.27	ND	93.4		60.7-135	7.39	30	
Perfluoroheptanesulfonic acid (PFHpS)	2.62	0.51	0.15	µg/kg dry	2.44	ND	107		70-132	3.43	30	
N-EtFOSAA	3.04	0.51	0.14	µg/kg dry	2.55	0.244	109		61-139	4.70	30	
N-MeFOSAA	3.09	0.51	0.092	µg/kg dry	2.55	ND	121		63-144	3.15	30	
Perfluorotetradecanoic acid (PFTA)	2.77	0.51	0.097	µg/kg dry	2.55	0.0993	105		69-133	2.82	30	
Perfluorotridecanoic acid (PFTrDA)	2.97	0.51	0.11	µg/kg dry	2.55	0.206	108		66-139	4.13	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.50	0.51	0.093	µg/kg dry	2.39	ND	105		62-145	1.31	30	
Perfluorodecanesulfonic acid (PFDS)	2.29	0.51	0.12	µg/kg dry	2.46	ND	92.9		59-134	3.52	30	
Perfluorooctanesulfonamide (FOSA)	4.14	0.51	0.099	µg/kg dry	2.55	1.32	110		67-137	4.93	30	
Perfluorononanesulfonic acid (PFNS)	2.09	0.51	0.14	µg/kg dry	2.45	ND	85.3		69-125	11.9	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	2.87	0.51	0.15	µg/kg dry	2.55	ND	112		18.9-162	5.81	30	
Perfluoro-1-butanesulfonamide (FBSA)	2.85	0.51	0.16	µg/kg dry	2.55	ND	111		49.8-135	7.02	30	
Perfluorohexanesulfonic acid (PFHxS)	2.37	0.51	0.081	µg/kg dry	2.34	ND	101		67-130	1.53	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	2.51	0.51	0.096	µg/kg dry	2.55	ND	98.1		62-155	3.72	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	2.31	0.51	0.093	µg/kg dry	2.55	ND	90.2		52.1-148	2.26	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.69	0.51	0.12	µg/kg dry	2.43	ND	111		64-140	21.1	30	
Perfluoropetanesulfonic acid (PFPeS)	2.39	0.51	0.074	µg/kg dry	2.40	ND	99.6		73-123	2.71	30	
Perfluoroundecanoic acid (PFUnA)	2.81	0.51	0.092	µg/kg dry	2.55	ND	110		64-136	1.51	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.93	0.51	0.079	µg/kg dry	2.55	ND	115		54.6-133	1.36	30	
Perfluoroheptanoic acid (PFHpA)	2.97	0.51	0.073	µg/kg dry	2.55	ND	116		71-131	2.85	30	
Perfluorooctanoic acid (PFOA)	2.75	0.51	0.14	µg/kg dry	2.55	0.192	100		69-133	6.04	30	

KRP 11/30/22

con-test® A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B318791 - SOP 465-PFAAS												
LCS (B318791-BS1)					Prepared: 10/17/22 Analyzed: 10/18/22							
Perfluorododecanoic acid (PFDoA)	2.00	0.42	0.065	µg/kg wet	2.13		94.0		69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.52	0.42	0.069	µg/kg wet	1.89		80.2		56.7-133			
Perfluoroheptanesulfonic acid (PFHpS)	1.89	0.42	0.13	µg/kg wet	2.03		93.2		70-132			
N-EtFOSAA	2.07	0.42	0.12	µg/kg wet	2.13		97.3		61-139			
N-MeFOSAA	2.20	0.42	0.077	µg/kg wet	2.13		103		63-144			
Perfluorotetradecanoic acid (PFTA)	1.96	0.42	0.080	µg/kg wet	2.13		92.3		69-133			
Perfluorotridecanoic acid (PFTrDA)	2.04	0.42	0.095	µg/kg wet	2.13		96.1		66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	1.87	0.42	0.078	µg/kg wet	1.99		93.7		62-145			
Perfluorodecanesulfonic acid (PFDS)	1.55	0.42	0.098	µg/kg wet	2.05		75.7		59-134			
Perfluorooctanesulfonamide (FOSA)	1.92	0.42	0.082	µg/kg wet	2.13		90.5		67-137			
Perfluorononanesulfonic acid (PFNS)	1.64	0.42	0.11	µg/kg wet	2.04		80.1		69-125			
Perfluoro-1-hexanesulfonamide (FHxSA)	2.08	0.42	0.13	µg/kg wet	2.13		98.0		51.4-142			
Perfluoro-1-butanesulfonamide (FBSA)	1.89	0.42	0.13	µg/kg wet	2.13		88.9		53.5-129			
Perfluorohexanesulfonic acid (PFHxS)	1.65	0.42	0.067	µg/kg wet	1.95		84.9		67-130			
Perfluoro-4-oxapentanoic acid (PFMPA)	1.75	0.42	0.080	µg/kg wet	2.13		82.4		57.8-127			
Perfluoro-5-oxahexanoic acid (PFMBA)	1.61	0.42	0.078	µg/kg wet	2.13		75.9		56.5-132			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.99	0.42	0.096	µg/kg wet	2.02		98.3		64-140			
Perfluoropetanesulfonic acid (PFPeS)	1.71	0.42	0.062	µg/kg wet	2.00		85.6		73-123			
Perfluoroundecanoic acid (PFUnA)	1.83	0.42	0.077	µg/kg wet	2.13		85.9		64-136			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	2.11	0.42	0.065	µg/kg wet	2.13		99.2		54.5-128			
Perfluoroheptanoic acid (PFHpA)	2.02	0.42	0.061	µg/kg wet	2.13		95.2		71-131			
Perfluorooctanoic acid (PFOA)	1.86	0.42	0.12	µg/kg wet	2.13		87.3		69-133			
Perfluorooctanesulfonic acid (PFOS)	1.84	0.42	0.057	µg/kg wet	1.96		93.6		68-136			
Perfluorononanoic acid (PFNA)	1.86	0.42	0.069	µg/kg wet	2.13		87.6		72-129			
Matrix Spike (B318791-MS1)		**Source: 22J0310-11**			Prepared: 10/17/22 Analyzed: 10/18/22							
Perfluorobutanoic acid (PFBA)	2.64	0.50	0.066	µg/kg dry	2.50	ND	106		71-135			
Perfluorobutanesulfonic acid (PFBS)	2.26	0.50	0.076	µg/kg dry	2.21	ND	102		72-128			
Perfluoropentanoic acid (PFPeA)	2.61	0.50	0.076	µg/kg dry	2.50	ND	104		69-132			
Perfluorohexanoic acid (PFHxA)	2.65	0.50	0.093	µg/kg dry	2.50	ND	106		70-132			
11Cl-PF3OUdS (F53B Major)	1.95	0.50	0.14	µg/kg dry	2.36	ND	82.5		4.02-158			
9Cl-PF3ONS (F53B Minor)	2.06	0.50	0.12	µg/kg dry	2.33	ND	88.3		52.5-150			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	4.00	0.50	0.16	µg/kg dry	2.36	ND	**170**	*	50.7-124	sample result ND, no quals		MS-12
Hexafluoropropylene oxide dimer acid (HFPO-DA)	2.36	0.50	0.24	µg/kg dry	2.50	ND	94.3		29.2-146			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.59	0.50	0.13	µg/kg dry	2.40	ND	108		65-137			
Perfluorodecanoic acid (PFDA)	2.67	0.50	0.064	µg/kg dry	2.50	0.104	103		69-133			
Perfluorododecanoic acid (PFDoA)	2.88	0.50	0.076	µg/kg dry	2.50	0.209	107		69-135			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	1.97	0.50	0.081	µg/kg dry	2.23	ND	88.5		60.7-135			
Perfluoroheptanesulfonic acid (PFHpS)	2.53	0.50	0.15	µg/kg dry	2.39	ND	106		70-132			
N-EtFOSAA	2.90	0.50	0.14	µg/kg dry	2.50	0.244	106		61-139			
N-MeFOSAA	3.19	0.50	0.090	µg/kg dry	2.50	ND	127		63-144			
Perfluorotetradecanoic acid (PFTA)	2.69	0.50	0.095	µg/kg dry	2.50	0.0993	104		69-133			
Perfluorotridecanoic acid (PFTrDA)	2.85	0.50	0.11	µg/kg dry	2.50	0.206	106		66-139			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	2.47	0.50	0.091	µg/kg dry	2.34	ND	105		62-145			
Perfluorodecanesulfonic acid (PFDS)	2.21	0.50	0.12	µg/kg dry	2.41	ND	91.5		59-134			
Perfluorooctanesulfonamide (FOSA)	3.94	0.50	0.097	µg/kg dry	2.50	1.32	105		67-137			
Perfluorononanesulfonic acid (PFNS)	2.36	0.50	0.13	µg/kg dry	2.40	ND	98.0		69-125			

KRP 11/30/22

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	DL	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B318791 - SOP 465-PFAAS												
Blank (B318791-BLK1)					Prepared: 10/17/22 Analyzed: 10/18/22							
Perfluorobutanoic acid (PFBA)	ND	0.42	0.057	µg/kg wet								
Perfluorobutanesulfonic acid (PFBS)	ND	0.42	0.065	µg/kg wet								
Perfluoropentanoic acid (PFPeA)	ND	0.42	0.065	µg/kg wet								
Perfluorohexanoic acid (PFHxA)	ND	0.42	0.079	µg/kg wet								
11Cl-PF3OUdS (F53B Major)	ND	0.42	0.12	µg/kg wet								
9Cl-PF3ONS (F53B Minor)	ND	0.42	0.11	µg/kg wet								
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.42	0.14	µg/kg wet								
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.42	0.20	µg/kg wet								
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	0.42	0.11	µg/kg wet								
Perfluorodecanoic acid (PFDA)	ND	0.42	0.055	µg/kg wet								
Perfluorododecanoic acid (PFDoA)	ND	0.42	0.065	µg/kg wet								
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	0.42	0.070	µg/kg wet								
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.42	0.13	µg/kg wet								
N-EtFOSAA	ND	0.42	0.12	µg/kg wet								
N-MeFOSAA	ND	0.42	0.077	µg/kg wet								
Perfluorotetradecanoic acid (PFTA)	ND	0.42	0.081	µg/kg wet								
Perfluorotridecanoic acid (PFTrDA)	ND	0.42	0.095	µg/kg wet								
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	0.42	0.078	µg/kg wet								
Perfluorodecanesulfonic acid (PFDS)	ND	0.42	0.099	µg/kg wet								
Perfluorooctanesulfonamide (FOSA)	ND	0.42	0.083	µg/kg wet								
Perfluorononanesulfonic acid (PFNS)	ND	0.42	0.12	µg/kg wet								
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	0.42	0.13	µg/kg wet								
Perfluoro-1-butanesulfonamide (FBSA)	ND	0.42	0.13	µg/kg wet								
Perfluorohexanesulfonic acid (PFHxS)	ND	0.42	0.068	µg/kg wet								
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	0.42	0.080	µg/kg wet								
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	0.42	0.078	µg/kg wet								
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	0.42	0.097	µg/kg wet								
Perfluoropetanesulfonic acid (PFPeS)	ND	0.42	0.062	µg/kg wet								
Perfluoroundecanoic acid (PFUnA)	ND	0.42	0.077	µg/kg wet								
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	0.42	0.066	µg/kg wet								
Perfluoroheptanoic acid (PFHpA)	ND	0.42	0.061	µg/kg wet								
Perfluorooctanoic acid (PFOA)	ND	0.42	0.12	µg/kg wet								
Perfluorooctanesulfonic acid (PFOS)	ND	0.42	0.058	µg/kg wet								
Perfluorononanoic acid (PFNA)	ND	0.42	0.070	µg/kg wet								
LCS (B318791-BS1)					Prepared: 10/17/22 Analyzed: 10/18/22							
Perfluorobutanoic acid (PFBA)	1.91	0.42	0.056	µg/kg wet	2.13		90.0		71-135			
Perfluorobutanesulfonic acid (PFBS)	1.62	0.42	0.065	µg/kg wet	1.88		86.1		72-128			
Perfluoropentanoic acid (PFPeA)	1.89	0.42	0.065	µg/kg wet	2.13		89.0		69-132			
Perfluorohexanoic acid (PFHxA)	1.93	0.42	0.079	µg/kg wet	2.13		90.7		70-132			
11Cl-PF3OUdS (F53B Major)	1.34	0.42	0.12	µg/kg wet	2.00		66.8		41.8-128			
9Cl-PF3ONS (F53B Minor)	1.44	0.42	0.11	µg/kg wet	1.98		72.8		51.1-141			
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	3.05	0.42	0.13	µg/kg wet	2.00		**152**	*	55.2-122	Sample results ND, no quals		L-01
Hexafluoropropylene oxide dimer acid (HFPO-DA)	1.67	0.42	0.20	µg/kg wet	2.13		78.4		27.6-137			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.89	0.42	0.11	µg/kg wet	2.04		92.6		65-137			
Perfluorodecanoic acid (PFDA)	1.80	0.42	0.054	µg/kg wet	2.13		84.8		69-133			

KRP 11/30/22

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B319521-BS1)			Lab File ID: B319521-BS1.d			Analyzed: 10/22/22 01:08			
M8FOSA	233171.5	3.996567	328,138.00	3.996567	71	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	165570.2	2.4146	189,245.00	2.4064	87	50 - 150	0.0082	+/-0.50	
M2PFTA	791201	4.27305	1,030,059.00	4.281116	77	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	175117	3.76295	107,857.00	3.76295	162	50 - 150	0.0000	+/-0.50	*
MPFBA	477882.2	1.04185	470,407.00	1.04185	102	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	100037.4	2.749283	121,363.00	2.749283	82	50 - 150	0.0000	+/-0.50	
M6PFDA	622654	3.763483	703,999.00	3.763483	88	50 - 150	0.0000	+/-0.50	
M3PFBS	123592	1.83695	128,529.00	1.83695	96	50 - 150	0.0000	+/-0.50	
M7PFUnA	604505.6	3.906067	697,439.00	3.906067	87	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	74403.98	3.41245	79,376.00	3.41245	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	402200.2	1.6652	407,535.00	1.6652	99	50 - 150	0.0000	+/-0.50	
M5PFHxA	751918.8	2.498417	794,423.00	2.490217	95	50 - 150	0.0082	+/-0.50	
M3PFHxS	117658.3	3.177667	129,092.00	3.169583	91	50 - 150	0.0081	+/-0.50	
M4PFHpA	868593.7	3.138483	955,392.00	3.1304	91	50 - 150	0.0081	+/-0.50	
M8PFOA	875265.4	3.421183	963,117.00	3.421183	91	50 - 150	0.0000	+/-0.50	
M8PFOS	105992.8	3.620217	119,440.00	3.620217	89	50 - 150	0.0000	+/-0.50	
M9PFNA	647654.9	3.613267	728,798.00	3.613267	89	50 - 150	0.0000	+/-0.50	
MPFDoA	506555.4	4.040683	640,609.00	4.040683	79	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	166602.9	3.913533	187,724.00	3.913533	89	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	204768.3	3.84175	221,800.00	3.84175	92	50 - 150	0.0000	+/-0.50	

blank results, no quals

KRP 11/30/22

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B319521-BLK1)			Lab File ID: B319521-BLK1.d			Analyzed: 10/22/22 01:22			
M8FOSA	186540.3	3.996567	328,138.00	3.996567	57	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	143104.2	2.4146	189,245.00	2.4064	76	50 - 150	0.0082	+/-0.50	
M2PFTA	335359.6	4.27305	1,030,059.00	4.281116	33	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	109006	3.76295	107,857.00	3.76295	101	50 - 150	0.0000	+/-0.50	
MPFBA	400195.3	1.04185	470,407.00	1.04185	85	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	93230.78	2.749283	121,363.00	2.749283	77	50 - 150	0.0000	+/-0.50	
M6PFDA	540745.9	3.763467	703,999.00	3.763483	77	50 - 150	0.0000	+/-0.50	
M3PFBS	87717.04	1.845233	128,529.00	1.83695	68	50 - 150	0.0083	+/-0.50	
M7PFUnA	482748.6	3.906067	697,439.00	3.906067	69	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	62647.34	3.41245	79,376.00	3.41245	79	50 - 150	0.0000	+/-0.50	
M5PFPeA	337570.9	1.6652	407,535.00	1.6652	83	50 - 150	0.0000	+/-0.50	
M5PFHxA	644070.8	2.498417	794,423.00	2.490217	81	50 - 150	0.0082	+/-0.50	
M3PFHxS	82788.1	3.17765	129,092.00	3.169583	64	50 - 150	0.0081	+/-0.50	
M4PFHpA	728450.1	3.138483	955,392.00	3.1304	76	50 - 150	0.0081	+/-0.50	
M8PFOA	759114.8	3.421167	963,117.00	3.421183	79	50 - 150	0.0000	+/-0.50	
M8PFOS	78802.05	3.620217	119,440.00	3.620217	66	50 - 150	0.0000	+/-0.50	
M9PFNA	553310.6	3.613267	728,798.00	3.613267	76	50 - 150	0.0000	+/-0.50	
MPFDoA	360882.7	4.040683	640,609.00	4.040683	56	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	135660	3.913533	187,724.00	3.913533	72	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	177453.8	3.841733	221,800.00	3.84175	80	50 - 150	0.0000	+/-0.50	

field blank, no quals

KRP 11/30/22

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-Blankwater (22J0310-14)			Lab File ID: 22J0310-14.d			Analyzed: 10/22/22 03:48			
M8FOSA	198569.1	3.996567	328,138.00	3.996567	61	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	149407.6	2.4146	189,245.00	2.4064	79	50 - 150	0.0082	+/-0.50	
M2PFTA	710918.8	4.27305	1,030,059.00	4.27305	69	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	167376.7	3.76295	107,857.00	3.76295	155	50 - 150	0.0000	+/-0.50	*
MPFBA	349162.8	1.050167	470,407.00	1.04185	74	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	101303.2	2.749283	121,363.00	2.749283	83	50 - 150	0.0000	+/-0.50	
M6PFDA	500567.9	3.763467	703,999.00	3.763483	71	50 - 150	0.0000	+/-0.50	
M3PFBS	98640.02	1.83695	128,529.00	1.83695	77	50 - 150	0.0000	+/-0.50	
M7PFUnA	481835.2	3.906067	697,439.00	3.906067	69	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	60991.02	3.41245	79,376.00	3.41245	77	50 - 150	0.0000	+/-0.50	
M5PFPeA	323596.8	1.6652	407,535.00	1.6652	79	50 - 150	0.0000	+/-0.50	
M5PFHxA	637539.9	2.498417	794,423.00	2.490217	80	50 - 150	0.0082	+/-0.50	
M3PFHxS	90364.94	3.17765	129,092.00	3.169583	70	50 - 150	0.0081	+/-0.50	
M4PFHpA	733248.8	3.138483	955,392.00	3.1304	77	50 - 150	0.0081	+/-0.50	
M8PFOA	723316.6	3.421167	963,117.00	3.421183	75	50 - 150	0.0000	+/-0.50	
M8PFOS	79068.41	3.620217	119,440.00	3.620217	66	50 - 150	0.0000	+/-0.50	
M9PFNA	551203.9	3.613267	728,798.00	3.613267	76	50 - 150	0.0000	+/-0.50	
MPFDoA	429900.5	4.040683	640,609.00	4.040683	67	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	135179.9	3.913533	187,724.00	3.913533	72	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	162726.8	3.841733	221,800.00	3.84175	73	50 - 150	0.0000	+/-0.50	

field blank, no quals

KRP 11/30/22

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-SB004-2.0 (22J0310-12)			Lab File ID: 22J0310-12.d			Analyzed: 10/18/22 21:38			
M8FOSA	280777.4	3.996567	243,595.00	3.996567	115	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	125448.8	2.439333	169,206.00	2.431017	74	50 - 150	0.0083	+/-0.50	
M2PFTA PFTA, PFTrDA	517274.1	4.2892	1,065,332.00	4.2892	49	50 - 150	0.0000	+/-0.50	* UJ, ISL
M2-8:2FTS	56423.19	3.770917	59,789.00	3.778883	94	50 - 150	-0.0080	+/-0.50	
MPFBA	383334.6	1.058467	335,941.00	1.050167	114	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	89792.74	2.773833	88,154.00	2.76565	102	50 - 150	0.0082	+/-0.50	
M6PFDA	534895.1	3.779417	540,638.00	3.779417	99	50 - 150	0.0000	+/-0.50	
M3PFBS	112856	1.853533	111,885.00	1.853533	101	50 - 150	0.0000	+/-0.50	
M7PFUnA	532374.5	3.914067	630,046.00	3.914067	84	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	50839.59	3.4205	66,261.00	3.4205	77	50 - 150	0.0000	+/-0.50	
M5PFPeA	342045	1.681733	330,551.00	1.681733	103	50 - 150	0.0000	+/-0.50	
M5PFHxA	687287.2	2.51485	713,594.00	2.51485	96	50 - 150	0.0000	+/-0.50	
M3PFHxS	102742.4	3.185733	102,735.00	3.185733	100	50 - 150	0.0000	+/-0.50	
M4PFHpA	789873.4	3.14655	840,195.00	3.14655	94	50 - 150	0.0000	+/-0.50	
M8PFOA	771843.9	3.437833	737,773.00	3.42985	105	50 - 150	0.0080	+/-0.50	
M8PFOS	88551.22	3.6282	87,500.00	3.6282	101	50 - 150	0.0000	+/-0.50	
M9PFNA	546603.8	3.629233	555,489.00	3.629233	98	50 - 150	0.0000	+/-0.50	
MPFDoA	478714.5	4.048683	653,167.00	4.048683	73	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	112954.6	3.921533	167,187.00	3.921533	68	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	160235.7	3.8497	198,293.00	3.8497	81	50 - 150	0.0000	+/-0.50	

KRP 11/30/22

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
360175-SB003-2.0 (22J0310-09)			Lab File ID: 22J0310-09.d			Analyzed: 10/18/22 21:16			
M8FOSA	288751.5	3.996567	243,595.00	3.996567	119	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	126498.5	2.439333	169,206.00	2.431017	75	50 - 150	0.0083	+/-0.50	
M2PFTA PFTA, PFTrDA	518761.6	4.2892	1,065,332.00	4.2892	49	50 - 150	0.0000	+/-0.50	* UJ, ISL
M2-8:2FTS	60370.73	3.778883	59,789.00	3.778883	101	50 - 150	0.0000	+/-0.50	
MPFBA	393241.9	1.058467	335,941.00	1.050167	117	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	86157.53	2.773833	88,154.00	2.76565	98	50 - 150	0.0082	+/-0.50	
M6PFDA	549064	3.779417	540,638.00	3.779417	102	50 - 150	0.0000	+/-0.50	
M3PFBS	116042.7	1.853533	111,885.00	1.853533	104	50 - 150	0.0000	+/-0.50	
M7PFUnA	538786.3	3.914067	630,046.00	3.914067	86	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	47134.8	3.4205	66,261.00	3.4205	71	50 - 150	0.0000	+/-0.50	
M5PFPeA	349718.3	1.681733	330,551.00	1.681733	106	50 - 150	0.0000	+/-0.50	
M5PFHxA	693877.8	2.523067	713,594.00	2.51485	97	50 - 150	0.0082	+/-0.50	
M3PFHxS	102068	3.185733	102,735.00	3.185733	99	50 - 150	0.0000	+/-0.50	
M4PFHpA	817013.2	3.14655	840,195.00	3.14655	97	50 - 150	0.0000	+/-0.50	
M8PFOA	753773.2	3.437833	737,773.00	3.42985	102	50 - 150	0.0080	+/-0.50	
M8PFOS	93080.74	3.6282	87,500.00	3.6282	106	50 - 150	0.0000	+/-0.50	
M9PFNA	557771.8	3.629233	555,489.00	3.629233	100	50 - 150	0.0000	+/-0.50	
MPFDoA	482167.3	4.048683	653,167.00	4.048683	74	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	116874.3	3.921533	167,187.00	3.921533	70	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	141313.9	3.8497	198,293.00	3.8497	71	50 - 150	0.0000	+/-0.50	

KRP 11/30/22

con-test®
A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-466 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q	
360175-SB001-2.0 (22J0310-03)			Lab File ID: 22J0310-03.d			Analyzed: 10/18/22 20:40				
M8FOSA	281874.7	3.996567	243,595.00	3.996567	116	50 - 150	0.0000	+/-0.50		
M2-4:2FTS	117874.5	2.439333	169,206.00	2.431017	70	50 - 150	0.0083	+/-0.50		
M2PFTA PFTA, PFTrDA	367163.2	4.2892	1,065,332.00	4.2892	34	50 - 150	0.0000	+/-0.50	*	UJ, ISL
M2-8:2FTS	54401.44	3.770917	59,789.00	3.778883	91	50 - 150	-0.0080	+/-0.50		
MPFBA	380354.9	1.058467	335,941.00	1.050167	113	50 - 150	0.0083	+/-0.50		
M3HFPO-DA	87219.47	2.773833	88,154.00	2.76565	99	50 - 150	0.0082	+/-0.50		
M6PFDA	493296.7	3.779417	540,638.00	3.779417	91	50 - 150	0.0000	+/-0.50		
M3PFBS	112384.6	1.853533	111,885.00	1.853533	100	50 - 150	0.0000	+/-0.50		
M7PFUnA	496566.4	3.914067	630,046.00	3.914067	79	50 - 150	0.0000	+/-0.50		
M2-6:2FTS	46642.04	3.4205	66,261.00	3.4205	70	50 - 150	0.0000	+/-0.50		
M5PFPeA	338502.1	1.681733	330,551.00	1.681733	102	50 - 150	0.0000	+/-0.50		
M5PFHxA	671827.7	2.523067	713,594.00	2.51485	94	50 - 150	0.0082	+/-0.50		
M3PFHxS	98335.7	3.185733	102,735.00	3.185733	96	50 - 150	0.0000	+/-0.50		
M4PFHpA	770797.1	3.14655	840,195.00	3.14655	92	50 - 150	0.0000	+/-0.50		
M8PFOA	729983.1	3.437833	737,773.00	3.42985	99	50 - 150	0.0080	+/-0.50		
M8PFOS	86943.94	3.6282	87,500.00	3.6282	99	50 - 150	0.0000	+/-0.50		
M9PFNA	539543	3.629233	555,489.00	3.629233	97	50 - 150	0.0000	+/-0.50		
MPFDoA	442103.5	4.048683	653,167.00	4.048683	68	50 - 150	0.0000	+/-0.50		
d5-NEtFOSAA	99028.58	3.921533	167,187.00	3.921533	59	50 - 150	0.0000	+/-0.50		
d3-NMeFOSAA	135073	3.8497	198,293.00	3.8497	68	50 - 150	0.0000	+/-0.50		

KRP 11/30/22

1 - FORM I
ANALYSIS DATA SHEET

360175-SB004-2.0

Laboratory:	Pace New England			Work Order:	22J0310
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Soil	Laboratory ID:	22J0310-12	File ID:	22J0310-12.d
Sampled:	09/27/22 10:00	Prepared:	10/17/22 00:00	Analyzed:	10/18/22 21:38
Solids:	82.06	Preparation:	SOP 465-PFAAS	Dilution:	1
Initial/Final:	5.5158 g / 5 mL				
Batch:	B318791	Sequence:	S078173	Calibration:	2200772
				Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (µg/kg dry)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	0.099	0.073	0.55	J
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.084	0.55	
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.21	0.084	0.55	J
307-24-4	Perfluorohexanoic acid (PFHxA)		0.10	0.55	
763051-92-9	11Cl-PF3OUdS (F53B Major)		0.15	0.55	
756426-58-1	9Cl-PF3ONS (F53B Minor)		0.14	0.55	
919005-14-4	4,8-dioxa-3H-perfluorononanoic acid (ADON/		0.17	0.55	
13252-13-6	Hexafluoropropylene oxide dimer acid (HFPC		0.26	0.55	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.14	0.55	
335-76-2	Perfluorodecanoic acid (PFDA)	0.41	0.070	0.55	J
307-55-1	Perfluorododecanoic acid (PFDoA)		0.084	0.55	
113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid (PFEI		0.090	0.55	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.16	0.55	
2991-50-6	N-EtFOSAA		0.15	0.55	
2355-31-9	N-MeFOSAA		0.10	0.55	
376-06-7	Perfluorotetradecanoic acid (PFTA)		0.10	0.55	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		0.12	0.55	
757124-72-4	4:2 Fluorotelomersulfonic acid (4:2FTS A)		0.10	0.55	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		0.13	0.55	
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.19	0.11	0.55	J
68259-12-1	Perfluorononanesulfonic acid (PFNS)		0.15	0.55	
41997-13-1	Perfluoro-1-hexanesulfonamide (FHxSA)		0.17	0.55	
30334-69-1	Perfluoro-1-butanesulfonamide (FBSA)		0.17	0.55	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.087	0.55	
377-73-1	Perfluoro-4-oxapentanoic acid (PFMPA)		0.10	0.55	
863090-89-5	Perfluoro-5-oxahexanoic acid (PFMBA)		0.10	0.55	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.13	0.55	
2706-91-4	Perfluoropetanesulfonic acid (PFPeS)		0.080	0.55	
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.48	0.10	0.55	J
151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA		0.085	0.55	

1 - FORM I
ANALYSIS DATA SHEET

360175-SB004-2.0

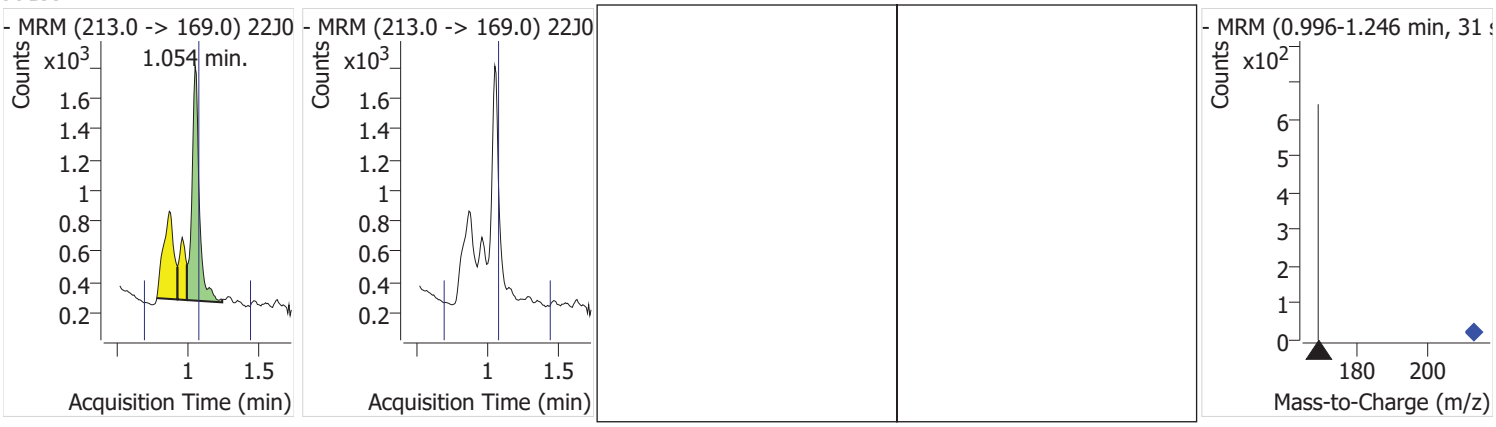
Laboratory:	Pace New England			Work Order:	22J0310
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Soil	Laboratory ID:	22J0310-12	File ID:	22J0310-12.d
Sampled:	09/27/22 10:00	Prepared:	10/17/22 00:00	Analyzed:	10/18/22 21:38
Solids:	82.06	Preparation:	SOP 465-PFAAS	Dilution:	1
Initial/Final:	5.5158 g / 5 mL				
Batch:	B318791	Sequence:	S078173	Calibration:	2200772
				Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (µg/kg dry)	MDL	RL	Q
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.099	0.079	0.55	J
335-67-1	Perfluorooctanoic acid (PFOA)	0.37	0.16	0.55	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	14	0.074	0.55	
375-95-1	Perfluorononanoic acid (PFNA)	0.14	0.090	0.55	J

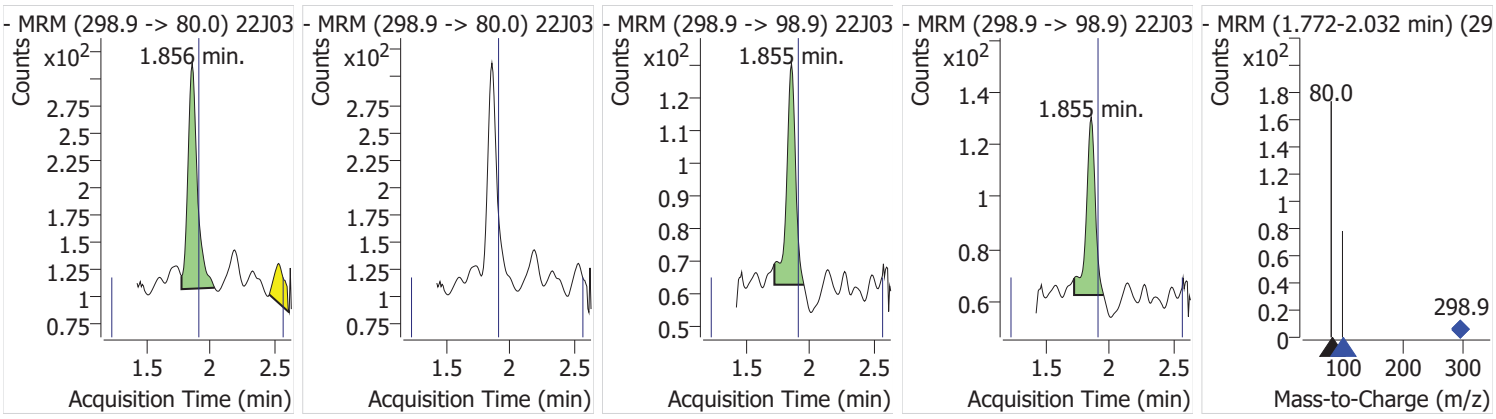
KRP 11/30/22

Compound	RT	Resp.	ISTD	RT	ISTD Resp.	Final Conc	Units	MI	Reason	Analyst & Date
PFMPA			MPFBA - ISTD	1.058	414872	ND	pg/ml			
PFMBA			M5PFPeA - ISTD	1.682	364368	ND	pg/ml			
6-2 FTS	3.421	0	M2-6-2-FTS - ISTD	3.421	53097	ND	pg/ml	✔	1	DRL 10/20/22
PFPeS	3.269	0	M3PFHxS - ISTD	3.186	113663	ND	pg/ml	✔	1	DRL 10/20/22
PFUnA	3.915	33540	M7PFUnA - ISTD	3.914	582186	330.6419	pg/ml			
NFDHA	2.504	0	M5PFHxA - ISTD	2.523	737634	ND	pg/ml	✔	1	DRL 10/20/22
PFHpA	3.147	20936	M4PFHpA - ISTD	3.147	865062	156.1891	pg/ml	✔	3	DRL 10/20/22
PFOA	3.438	53369	M8PFOA - ISTD	3.438	835358	334.6965	pg/ml			
PFOS	3.629	281525	M8PFOS - ISTD	3.628	96441	14355.0478	pg/ml			
PFNA	3.629	25936	M9PFNA - ISTD	3.629	629715	213.6752	pg/ml	✔	3	DRL 10/20/22

PFBA



PFBS



PFPeA

KRP 11/30/22

1 - FORM I
ANALYSIS DATA SHEET

360175-SB003-1.0

Laboratory:	Pace New England			Work Order:	22J0310
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Soil	Laboratory ID:	22J0310-08	File ID:	22J0310-08.d
Sampled:	09/27/22 11:10	Prepared:	10/17/22 00:00	Analyzed:	10/18/22 21:09
Solids:	87.95	Preparation:	SOP 465-PFAAS	Dilution:	1
Initial/Final:	5.573 g / 5 mL				
Batch:	B318791	Sequence:	S078173	Calibration:	2200772
				Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (µg/kg dry)	MDL	RL	Q
375-22-4	Perfluorobutanoic acid (PFBA)	0.081	0.067	0.50	J
375-73-5	Perfluorobutanesulfonic acid (PFBS)		0.077	0.50	
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.31	0.077	0.50	J
307-24-4	Perfluorohexanoic acid (PFHxA)	0.15	0.094	0.50	J
763051-92-9	11Cl-PF3OUdS (F53B Major)		0.14	0.50	
756426-58-1	9Cl-PF3ONS (F53B Minor)		0.13	0.50	
919005-14-4	4,8-dioxa-3H-perfluorononanoic acid (ADON/		0.16	0.50	
13252-13-6	Hexafluoropropylene oxide dimer acid (HFPC		0.24	0.50	
39108-34-4	8:2 Fluorotelomersulfonic acid (8:2FTS A)		0.13	0.50	
335-76-2	Perfluorodecanoic acid (PFDA)	0.70	0.065	0.50	
307-55-1	Perfluorododecanoic acid (PFDoA)	0.93	0.077	0.50	
113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid (PFEI		0.083	0.50	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		0.15	0.50	
2991-50-6	N-EtFOSAA	0.50	0.14	0.50	J
2355-31-9	N-MeFOSAA	0.24	0.092	0.50	J
376-06-7	Perfluorotetradecanoic acid (PFTA)	0.32	0.097	0.50	J
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	0.16	0.11	0.50	J
757124-72-4	4:2 Fluorotelomersulfonic acid (4:2FTS A)		0.093	0.50	
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.12	0.12	0.50	J
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.6	0.099	0.50	
68259-12-1	Perfluorononanesulfonic acid (PFNS)		0.14	0.50	
41997-13-1	Perfluoro-1-hexanesulfonamide (FHxSA)		0.15	0.50	
30334-69-1	Perfluoro-1-butanesulfonamide (FBSA)		0.16	0.50	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		0.081	0.50	
377-73-1	Perfluoro-4-oxapentanoic acid (PFMPA)		0.095	0.50	
863090-89-5	Perfluoro-5-oxahexanoic acid (PFMBA)		0.093	0.50	
27619-97-2	6:2 Fluorotelomersulfonic acid (6:2FTS A)		0.12	0.50	
2706-91-4	Perfluoropetanesulfonic acid (PFPeS)		0.074	0.50	
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.34	0.092	0.50	J
151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA		0.079	0.50	

KRP 11/30/22

1 - FORM I
ANALYSIS DATA SHEET

360175-SB003-1.0

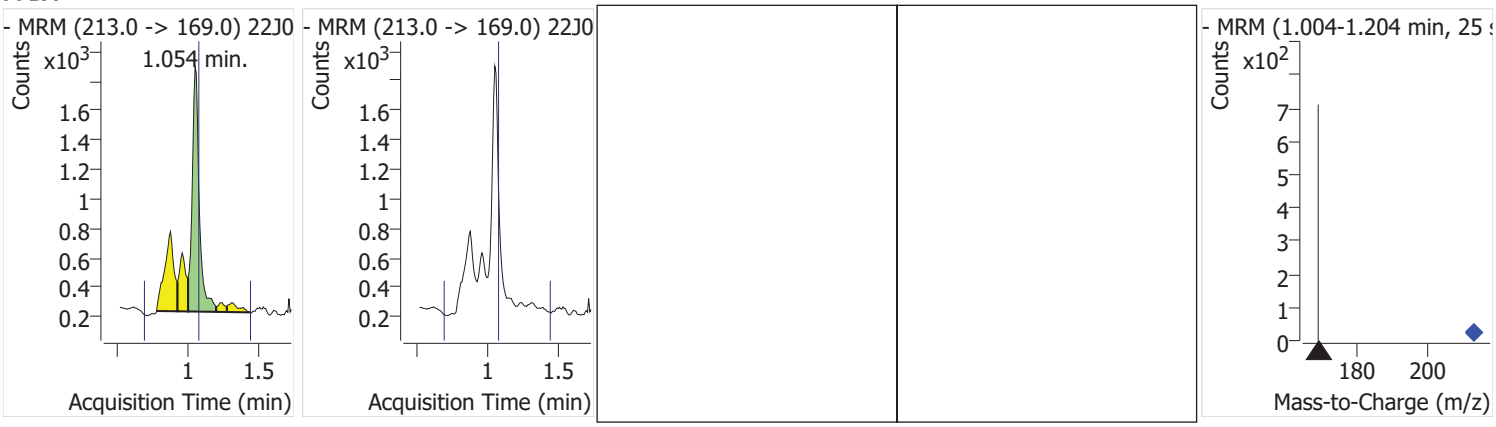
Laboratory:	Pace New England			Work Order:	22J0310
Client:	NYDEC_Wood - Portland, ME			Project:	Irvington Rugs and Cleaners - CO 142890
Matrix:	Soil	Laboratory ID:	22J0310-08	File ID:	22J0310-08.d
Sampled:	09/27/22 11:10	Prepared:	10/17/22 00:00	Analyzed:	10/18/22 21:09
Solids:	87.95	Preparation:	SOP 465-PFAAS	Dilution:	1
Initial/Final:	5.573 g / 5 mL				
Batch:	B318791	Sequence:	S078173	Calibration:	2200772
				Instrument:	QQQ4

CAS NO.	COMPOUND	CONC. (µg/kg dry)	MDL	RL	Q
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.16	0.073	0.50	J
335-67-1	Perfluorooctanoic acid (PFOA)	0.34	0.14	0.50	J
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15	0.068	0.50	
375-95-1	Perfluorononanoic acid (PFNA)	0.22	0.083	0.50	J

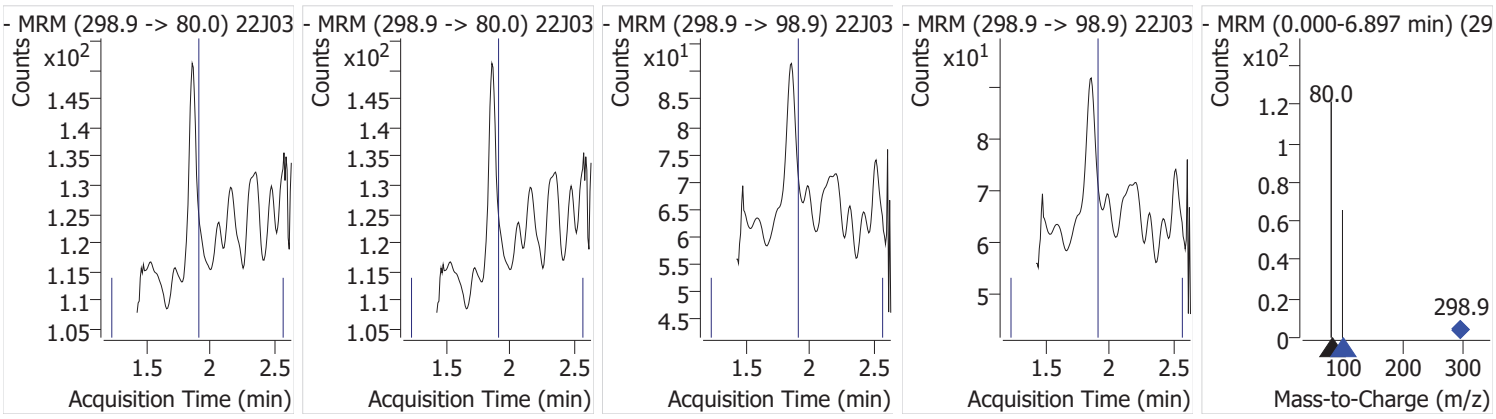
KRP 11/30/22

Compound	RT	Resp.	ISTD	RT	ISTD Resp.	Final Conc	Units	MI	Reason	Analyst & Date
PFMBA			M5PFPeA - ISTD	1.682	342045	ND	pg/ml			
6-2 FTS	3.413	0	M2-6-2-FTS - ISTD	3.421	50840	ND	pg/ml	✔	1	DRL 10/20/22
PFPeS			M3PFHxS - ISTD	3.186	102742	ND	pg/ml			
PFUnA	3.882	40518	M7PFUnA - ISTD	3.914	532375	436.7505	pg/ml			
NFDHA			M5PFHxA - ISTD	2.515	687287	ND	pg/ml			
PFHpA	3.147	11006	M4PFHpA - ISTD	3.147	789873	89.9311	pg/ml			
PFOA	3.438	49902	M8PFOA - ISTD	3.438	771844	338.7073	pg/ml			
PFOS	3.629	233614	M8PFOS - ISTD	3.628	88551	12967.9189	pg/ml			
PFNA	3.629	13693	M9PFNA - ISTD	3.629	546604	129.9831	pg/ml			

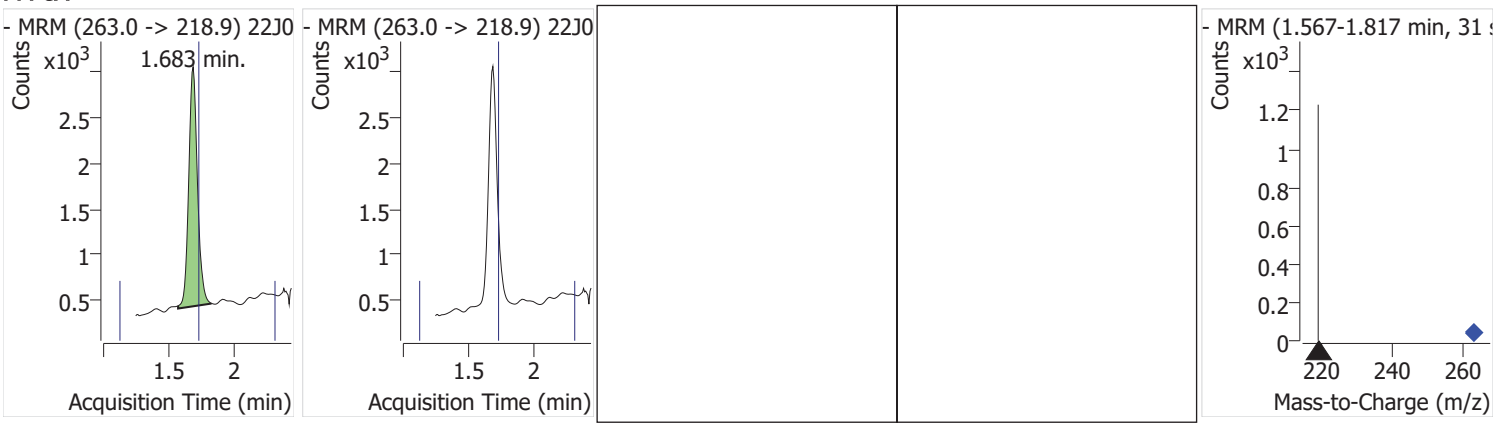
PFBA



PFBS



PFPeA



KRP
11/30/22

Calculation Checks for NYSDEC DUSR
Site:Irvington

SDG = 22J0310

Sample Calculation Check

Field Sample ID = SB-04
Lab Sample ID = 22J0310-12
Date = 10/18/2022
Time = 21:38

Compound Area (PFOS)	Internal Std Conc (ug/L)	Internal Std Area	RF
233614	5	88551	0.958299
		Concentration (ug/L) =	13.76
		Sample Wt (g) =	5.52
		Dilution Factor =	1.00
		Water Extraction (mL) =	5.00
		% Solid =	0.82
		Final Concentration (dry) =	15

Sample Calculation Check

Field Sample ID = SB-03
Lab Sample ID = 22J0310-08
Date = 10/18/2022
Time = 21:09

Compound Area (PFOS)	Internal Std Conc (ug/L)	Internal Std Area	RF
281525	5	96441	0.958299
		Concentration (ug/L) =	15.23
		Sample Wt (g) =	5.57
		Dilution Factor =	1.00
		Water Extraction (mL) =	5.00
		% Solid =	0.88
		Final Concentration (dry) =	16

DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

1.0 INTRODUCTION

Soil samples were collected in October 2023 at the Irvington Rugs and Cleaners Site in Irvington, New York, and shipped to Eurofins New England (ENE) located in North Kingstown, Rhode Island. ENE subcontracted the samples to Eurofins Lancaster (ELLE) located in Lancaster, Pennsylvania, for analysis. Samples were analyzed by the following methods:

- Per- and Polyfluorinated Alkyl Substances (PFAS) by Method 1633
- Total Solids by Method SM2540G

Results were reported in the following sample delivery group (SDG):

- 620-14747-1

A Data Usability Summary Report (DUSR) review was completed based on the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance (NYSDEC, 2010). Sample event information included in this DUSR is presented in the following tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Summary of Qualification Actions

A summary of table notes applicable to Tables 1, 2, and 3 is presented just before Table 1.

Laboratory deliverables included:

- Category B deliverables as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations as applicable. A table of the project control limits is presented in Attachment A. DUSR review checklists and applicable laboratory QC summary forms are included in Attachment B to document QC outliers associated with qualification actions.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- Instrument Calibration (report narrative/lab-qualifier evaluation)
- QC Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD)

- Surrogate Spikes (if applicable)
- Field Duplicates
- Target Analyte Identification and Quantitation
- Compound Identification – ion ratios/Signal to Noise
- Branched Isomers
- Bile Salt Standard
- Raw Data (chromatograms), Calculation Checks and Transcription Verifications
- Reporting Limits
- Electronic Data Qualification and Verification

Data qualification actions were based on general procedures identified in the NYSDEC validation guideline for PFAS (NYSDEC, 2023). The following laboratory or data review qualifiers are used in the final data presentation:

U = target analyte is not detected above the reported detection limit
J = concentration is estimated
UJ = target analyte is not detected, value is estimated
J+ = concentration is estimated and potentially biased high

Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

2.0 POTENTIAL DATA LIMITATIONS

Based on the DUSR review the majority of data meet the data quality objectives; however, the following potential limitations were identified.

Detections for multiple parameters in subsets of samples were qualified as estimated with potential high bias (J+) based on percent recoveries in the associated laboratory control samples that were greater than the upper control limits. Qualified results are included in Table 3 with reason code LCSH.

Results for perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), and perfluorohexanoic acid (PFHxA) in sample 360175-SB-7-0 were qualified as estimated with potential high bias (J+) based on percent recoveries in the associated MS/MSD that were greater than the upper control limit. The MS/MSD relative percent difference (RPD) for PFHxA exceeded control limits. Qualified results are included in Table 3 with reason codes MSH and/or MSRPD.

Results for PFOA, PFNA, perfluoropentanoic acid (PFPeA), and N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA) in sample 360175-SB-5-0 and associated field duplicate 360175-SB-5-0 D were qualified as estimated with potential high bias (J+) based on percent recoveries in the associated MS/MSD that were greater than the upper control limit. Qualified results are included in Table 3 with reason code MSH.

Results for PFOA in sample 360175-SB-3A-0 and associated field duplicate 360175-SB-3A-0 D were qualified as estimated (J) based on a field duplicate RPD that exceeded project limits. Qualified results are included in Table 3 with reason code FD.

The reporting limit for N-ethyl perfluorooctane sulfonamide (NEtFOSA) in sample 360175-SB-1A-5 was qualified estimated (UJ) based on percent recovery of the associated extracted internal standard less than the 50-150 project limits. The qualified result is included in Table 3 with reason code EIS.

Results for several parameters in multiple samples were qualified as estimated (J) due to ion ratios that exceeded control limits. Qualified results are included in Table 3 with reason code IR.

3.0 ADDITIONAL QC EXCEEDANCES AND OBSERVATIONS

There were no additional observations or quality control exceedances not specifically addressed above (Section 2.0) or included in Table 3.

Reference:

NYSDEC, 2005. "Analytical Services Protocols"; July 2005.

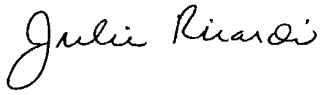
NYSDEC, 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

NYSDEC, 2023. “Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids”; April 2023.

Data Validator: Amber Jones

February 7, 2024

Reviewed by: Julie Ricardi



February 7, 2024

Standard Table Notes:

Sample Type (QC Code)

FS – field sample

FD – field duplicate

TB – trip blank

EB – equipment blank

FB – field blank

Matrix

GW – ground water

BW – blank water

TW – tap water

SV – soil vapor

SED - sediment

Units

mg/L – milligrams per liter

ng/L – nanograms per liter

µg/L – micrograms per liter

mg/kg – milligrams per kilogram

µg/kg – micrograms per kilogram

µg/m^3 – micrograms per cubic meter

Qualifiers

U – not detected above quantitation limit

J – estimated quantity

J+ - estimated quantity, biased high

J- - estimated quantity, biased low

R – data unusable

Fraction

T – total

D – dissolved

N – normal

Qualification Reason Codes

BL1 – method blank qualifier

BL2 – field or trip blank qualifier

CCV – continuing calibration verification recovery outside limits

CCV%D – continuing calibration verification percent difference exceeds goal

CCVRRF – continuing calibration relative response factor low

CI – chromatographic interference present

DCPD – dual column percent difference exceeds limit

E – result exceeds calibration range

FD – field duplicate precision goal exceeded

FP – false positive interference

HT – holding time for prep or analysis exceeded

HTG – holding time for prep or analysis grossly exceeded

ICV – initial calibration verification recovery outside limit

ICVRRF – initial calibration verification relative response factor low

ICVRSD – initial calibration verification % relative standard deviation exceeds goal

ISH – internal standard response greater than limit

ISL – internal standard response less than limit

LCSH – laboratory control sample recovery high

LCSL – laboratory control sample recovery low

LCSRPD – laboratory control sample/duplicate relative % difference precision goal exceeded

LD – lab duplicate precision goal exceeded

MSH – matrix spike and/or MS duplicate recovery high

MSL – matrix spike and/or MS duplicate recovery low

MSRPD – matrix spike/duplicate relative % difference precision goal exceeded

N – analyte identification is not certain

PEM – performance evaluation mixture exceeds limit

PM – sample percent moisture exceeds EPA guideline

SD – serial dilution result exceeds percent difference limit

SP – sample preservation/collection does not meet method requirement

SSH – surrogate recovery high

SSL – surrogate recovery low

TD – dissolved concentration exceeds total

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

						Method Class	PFAS	Moisture
						Analysis Method	E1633	D2216
						Fraction	N	N
Lab SDG	**Media**	**Location**	**Field Sample ID**	**Sample Date**	**Lab Sample ID**	**Qc Code**	Count	Count
620-14747-1	BW	QC	360175-Source Blank	10/18/2023	620-14747-33	FB	40	
620-14747-1	SOIL	SB-10	360175-SB-10-1	10/18/2023	620-14747-32	FS	40	1
620-14747-1	SOIL	SB-1A	360175-SB-1A-0	10/18/2023	620-14747-14	FS	40	1
620-14747-1	SOIL	SB-1A	360175-SB-1A-2	10/18/2023	620-14747-15	FS	40	1
620-14747-1	SOIL	SB-1A	360175-SB-1A-5	10/18/2023	620-14747-16	FS	40	1
620-14747-1	SOIL	SB-2A	360175-SB-2A-0	10/18/2023	620-14747-7	FS	40	1
620-14747-1	SOIL	SB-2A	360175-SB-2A-2	10/18/2023	620-14747-8	FS	40	1
620-14747-1	SOIL	SB-2A	360175-SB-2A-5	10/18/2023	620-14747-9	FS	40	1
620-14747-1	SOIL	SB-3A	360175-SB-3A-0	10/18/2023	620-14747-10	FS	40	1
620-14747-1	SOIL	SB-3A	360175-SB-3A-0 D	10/18/2023	620-14747-11	FD	40	1
620-14747-1	SOIL	SB-3A	360175-SB-3A-2	10/18/2023	620-14747-12	FS	40	1
620-14747-1	SOIL	SB-3A	360175-SB-3A-5	10/18/2023	620-14747-13	FS	40	1
620-14747-1	SOIL	SB-4	360175-SB-4-0	10/18/2023	620-14747-27	FS	40	1
620-14747-1	SOIL	SB-4	360175-SB-4-2	10/18/2023	620-14747-28	FS	40	1
620-14747-1	SOIL	SB-4	360175-SB-4-5	10/18/2023	620-14747-29	FS	40	1
620-14747-1	SOIL	SB-5	360175-SB-5-0	10/18/2023	620-14747-3	FS	40	1
620-14747-1	SOIL	SB-5	360175-SB-5-0 D	10/18/2023	620-14747-4	FD	40	1
620-14747-1	SOIL	SB-5	360175-SB-5-2	10/18/2023	620-14747-5	FS	40	1
620-14747-1	SOIL	SB-5	360175-SB-5-5	10/18/2023	620-14747-6	FS	40	1
620-14747-1	SOIL	SB-6	360175-SB-6-0	10/18/2023	620-14747-22	FS	40	1
620-14747-1	SOIL	SB-6	360175-SB-6-0.2	10/18/2023	620-14747-23	FS	40	1
620-14747-1	SOIL	SB-6	360175-SB-6-1	10/18/2023	620-14747-24	FS	40	1
620-14747-1	SOIL	SB-6	360175-SB-6-2	10/18/2023	620-14747-25	FS	40	1
620-14747-1	SOIL	SB-6	360175-SB-6-5	10/18/2023	620-14747-26	FS	40	1
620-14747-1	SOIL	SB-7	360175-SB-7-0	10/18/2023	620-14747-1	FS	40	1
620-14747-1	SOIL	SB-7	360175-SB-7-1	10/18/2023	620-14747-2	FS	40	1
620-14747-1	SOIL	SB-8	360175-SB-8-0	10/18/2023	620-14747-17	FS	40	1
620-14747-1	SOIL	SB-8	360175-SB-8-0.2	10/18/2023	620-14747-18	FS	40	1
620-14747-1	SOIL	SB-8	360175-SB-8-1	10/18/2023	620-14747-19	FS	40	1
620-14747-1	SOIL	SB-8	360175-SB-8-2	10/18/2023	620-14747-20	FS	40	1
620-14747-1	SOIL	SB-8	360175-SB-8-5	10/18/2023	620-14747-21	FS	40	1
620-14747-1	SOIL	SB-9	360175-SB-9-0	10/18/2023	620-14747-30	FS	40	1
620-14747-1	SOIL	SB-9	360175-SB-9-2	10/18/2023	620-14747-31	FS	40	1

Created by: KLD 12/13/2023
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-10		SB-1A		SB-1A		SB-1A	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-10-1		360175-SB-1A-0		360175-SB-1A-2		360175-SB-1A-5	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chlororeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.791	U	0.788	U	0.791	U	0.794	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	4.94	U	4.92	U	4.95	U	4.96	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	4.94	U	4.92	U	4.95	U	4.96	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	0.988	U	0.984	U	0.989	U	0.992	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.791	U	0.788	U	0.791	U	0.794	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.791	U	0.788	U	0.791	U	0.794	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	0.988	U	0.984	U	0.989	U	0.992	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	0.988	U	0.984	U	0.989	U	0.992	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.791	U	0.788	U	0.791	U	0.794	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.791	U	0.788	U	0.791	U	0.794	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.198	U	0.197	U	0.198	U	0.198	UJ
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	1.98	U	1.97	U	1.98	U	1.98	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	1.98	U	1.97	U	1.98	U	1.98	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.395	U	0.394	U	0.396	U	0.397	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.395	U	0.394	U	0.396	U	0.397	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.395	U	0.394	U	0.396	U	0.397	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.395	U	0.394	U	0.396	U	0.397	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.172	J	0.788	U	0.791	U	0.794	U
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluorodecanoic acid (PFDA)	NG/G	0.422		0.466		0.198	U	0.198	U
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	0.198	U	0.0864	J+	0.198	U	0.198	U
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.183	J+	0.113	J	0.0673	J	0.0507	J
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-10		SB-1A		SB-1A		SB-1A	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-10-1		360175-SB-1A-0		360175-SB-1A-2		360175-SB-1A-5	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.395	J	0.152	J+	0.117	J+	0.198	U
E1633	Perfluorononanesulfonate	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	0.653	J+	0.149	J+	0.514	J+	0.364	J+
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	3.5		3.68		7.19		0.601	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.473	J+	0.195	J+	0.178	J+	0.221	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.34	J+	0.394	U	0.13	J+	0.397	U
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.198	U	0.197	U	0.198	U	0.198	U
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.198	U	0.1	J+	0.198	U	0.198	U
D2216	Percent Moisture	PERCEN	15.9		12		16.6		21.6	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-2A		SB-2A		SB-2A		SB-3A	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-2A-0		360175-SB-2A-2		360175-SB-2A-5		360175-SB-3A-0	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.797	U	0.795	U	0.79	U	0.8	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	4.98	U	4.97	U	4.93	U	5	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	4.98	U	4.97	U	4.93	U	5	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	0.996	U	0.993	U	0.987	U	0.999	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.797	U	0.795	U	0.79	U	0.8	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.797	U	0.795	U	0.79	U	0.8	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	0.996	U	0.993	U	0.987	U	0.999	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	0.996	U	0.993	U	0.987	U	0.999	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.797	U	0.795	U	0.79	U	0.8	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.797	U	0.795	U	0.79	U	0.8	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.199	U	0.199	U	0.197	U	0.2	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	1.99	U	1.99	U	1.97	U	2	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.432	J+	0.199	U	0.197	U	0.2	U
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.199	U	0.199	U	0.197	U	0.2	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	1.99	U	1.99	U	1.97	U	2	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.2	J+	0.199	U	0.197	U	0.111	J+
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.398	U	0.397	U	0.395	U	0.4	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.398	U	0.397	U	0.395	U	0.4	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.398	U	0.397	U	0.395	U	0.4	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.398	U	0.397	U	0.395	U	0.4	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.0517	J+	0.132	J+	0.061	J+	0.2	U
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.797	U	0.795	U	0.79	U	0.8	U
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.199	U	0.199	U	0.197	U	0.2	U
E1633	Perfluorodecanoic acid (PFDA)	NG/G	1.66		0.199	U	0.197	U	0.904	
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.199	U	0.199	U	0.197	U	0.2	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	0.768	J+	0.199	U	0.197	U	2.26	J+
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.199	U	0.223	J+	0.197	U	0.2	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.199	U	0.129	J	0.197	U	0.053	J
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.0563	J	0.128	J	0.197	U	0.2	U

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-2A		SB-2A		SB-2A		SB-3A	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-2A-0		360175-SB-2A-2		360175-SB-2A-5		360175-SB-3A-0	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.199	U	0.117	J+	0.197	U	0.2	U
E1633	Perfluorononanesulfonate	NG/G	0.199	U	0.199	U	0.197	U	0.2	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	0.122	J+	2.85	J+	0.289	J+	0.557	J+
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.593		0.199	U	0.197	U	0.238	
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	4.41		4.08	J	0.279		0.869	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.163	J+	1.18	J+	0.12	J+	0.157	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.199	U	0.199	U	0.197	U	0.2	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.398	U	0.134	J+	0.395	U	0.4	U
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.226		0.199	U	0.197	U	0.665	
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.0978	J	0.199	U	0.197	U	0.238	
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.358	J+	0.199	U	0.197	U	0.837	J+
D2216	Percent Moisture	PERCEN	9.1		18.8		21.8		5.8	

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-3A		SB-3A		SB-3A		SB-4	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-3A-0 D		360175-SB-3A-2		360175-SB-3A-5		360175-SB-4-0	
		Qc Code	FD		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.791	U	0.795	U	0.79	U	0.793	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	4.95	U	4.97	U	4.94	U	4.95	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	4.95	U	4.97	U	4.94	U	4.95	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	0.989	U	0.994	U	0.988	U	0.991	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.791	U	0.795	U	0.79	U	0.793	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.791	U	0.795	U	0.79	U	0.793	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	0.989	U	0.994	U	0.988	U	9.91	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	0.989	U	0.994	U	0.988	U	0.991	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.791	U	0.795	U	0.79	U	0.793	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.791	U	0.795	U	0.79	U	0.793	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.198	U	0.199	U	0.198	U	0.198	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	1.98	U	1.99	U	1.98	U	1.98	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.198	U	0.199	U	0.166	J+	0.11	J
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.198	U	0.199	U	0.0637	J	0.198	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	1.98	U	1.99	U	1.98	U	1.98	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.0899	J+	0.199	U	0.137	J+	0.198	U
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.396	U	0.398	U	0.395	U	0.396	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.396	U	0.398	U	0.395	U	0.396	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.396	U	0.398	U	0.395	U	0.396	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.396	U	0.398	U	0.395	U	0.396	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.198	U	0.199	U	0.198	U	0.121	J+
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.791	U	0.795	U	0.79	U	0.109	J
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.198	U	0.199	U	0.198	U	0.198	U
E1633	Perfluorodecanoic acid (PFDA)	NG/G	0.866		0.667		0.198	U	0.262	
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.198	U	0.199	U	0.198	U	0.198	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	2.08	J+	0.199	U	0.198	U	0.147	J
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.198	U	0.199	U	0.198	U	0.198	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.0658	J	0.226		0.198	U	0.198	U
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.198	U	0.0589	J	0.198	U	0.198	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-3A		SB-3A		SB-3A		SB-4	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-3A-0 D		360175-SB-3A-2		360175-SB-3A-5		360175-SB-4-0	
		Qc Code	FD		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.198	U	0.0843	J+	0.198	U	0.198	U
E1633	Perfluorononanesulfonate	NG/G	0.198	U	0.199	U	0.198	U	0.198	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	0.467	J+	0.108	J+	0.198	U	0.198	U
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.221		0.199	U	0.141	J	0.118	J
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	0.854		0.762		0.451		4.36	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.221	J+	0.558	J+	0.198	U	0.122	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.198	U	0.199	U	0.198	U	0.198	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.396	U	0.171	J+	0.395	U	0.396	U
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.616		0.199	U	0.198	U	0.0674	J
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.194	J	0.199	U	0.198	U	0.198	U
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.794	J+	0.199	U	0.0509	J+	0.102	J
D2216	Percent Moisture	PERCEN	7.4		7.7		21.4		13.4	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-4		SB-4		SB-5		SB-5	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-4-2		360175-SB-4-5		360175-SB-5-0		360175-SB-5-0 D	
		Qc Code	FS		FS		FS		FD	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.793	U	0.795	U	0.79	U	0.898	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	4.96	U	4.97	U	4.94	U	5.61	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	4.96	U	4.97	U	4.94	U	5.61	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	0.991	U	0.994	U	0.987	U	1.12	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.793	U	0.795	U	0.79	U	0.898	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.793	U	0.795	U	0.79	U	0.898	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	0.991	U	0.994	U	0.987	U	1.12	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	0.991	U	0.994	U	0.987	U	1.12	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.793	U	0.795	U	0.79	U	0.898	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.793	U	0.795	U	0.79	U	0.898	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.198	U	0.199	U	0.197	U	0.224	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	1.98	U	1.99	U	1.97	U	2.24	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.141	J	0.199	U	0.197	U	0.224	U
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.198	U	0.199	U	0.197	U	0.224	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	1.98	U	1.99	U	1.97	U	2.24	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.135	J+	0.199	U	0.123	J+	0.139	J+
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.397	U	0.398	U	0.395	U	0.449	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.397	U	0.398	U	0.395	U	0.449	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.397	U	0.398	U	0.395	U	0.449	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.397	U	0.398	U	0.395	U	0.449	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.198	U	0.199	U	0.197	U	0.0755	J
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.793	U	0.795	U	0.79	U	0.898	U
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.198	U	0.199	U	0.197	U	0.224	U
E1633	Perfluorodecanoic acid (PFDA)	NG/G	0.327		0.199	U	1.38		1.66	
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.198	U	0.199	U	0.197	U	0.224	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	0.0865	J	0.199	U	0.577	J+	0.45	
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.198	U	0.199	U	0.197	U	0.224	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.198	U	0.199	U	0.112	J	0.104	J
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.198	U	0.199	U	0.0967	J	0.108	J

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-4		SB-4		SB-5		SB-5	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-4-2		360175-SB-4-5		360175-SB-5-0		360175-SB-5-0 D	
		Qc Code	FS		FS		FS		FD	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.198	U	0.199	U	0.197	U	0.0861	J
E1633	Perfluorononanesulfonate	NG/G	0.198	U	0.199	U	0.197	U	0.224	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	0.11	J+	0.07	J+	0.185	J+	0.187	J+
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.197	J	0.199	U	0.151	J	0.132	J
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	8.67		0.537		12.3		13.4	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.109	J+	0.199	U	0.202	J+	0.243	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.198	U	0.199	U	0.197	U	0.224	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.397	U	0.398	U	0.139	J+	0.144	J+
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.198	U	0.199	U	0.171	J	0.137	J
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.198	U	0.199	U	0.0682	J	0.0687	J
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.0656	J	0.199	U	0.254	J+	0.261	
D2216	Percent Moisture	PERCEN	26.1		17.9		10.7		16.9	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-5		SB-5		SB-6		SB-6	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-5-2		360175-SB-5-5		360175-SB-6-0		360175-SB-6-0.2	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.8	U	0.789	U	0.797	U	0.798	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	5	U	4.93	U	4.98	U	4.99	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	5	U	4.93	U	4.98	U	4.99	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	0.999	U	0.987	U	0.996	U	0.998	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.8	U	0.789	U	0.797	U	0.798	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.8	U	0.789	U	0.797	U	0.798	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	0.999	U	0.987	U	0.996	U	9.98	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	0.999	U	0.987	U	0.996	U	0.998	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.8	U	0.789	U	0.797	U	0.798	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.8	U	0.789	U	0.797	U	0.798	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.2	U	0.197	U	0.199	U	0.2	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	2	U	1.97	U	0.517	J	0.765	J
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.2	U	0.197	U	0.161	J	0.179	J
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.2	U	0.197	U	0.199	U	0.2	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	2	U	1.97	U	1.99	U	2	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.2	U	0.197	U	0.055	J+	0.095	J+
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.4	U	0.395	U	0.398	U	0.399	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.4	U	0.395	U	0.398	U	0.399	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.4	U	0.395	U	0.398	U	0.399	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.4	U	0.395	U	0.398	U	0.399	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.2	U	0.0583	J+	0.112	J+	0.2	U
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.8	U	0.789	U	0.123	J	0.798	U
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.2	U	0.197	U	0.179	J	0.0927	J
E1633	Perfluorodecanoic acid (PFDA)	NG/G	0.2	U	0.197	U	0.623		0.385	
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.2	U	0.197	U	0.199	U	0.2	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	0.2	U	0.197	U	0.89		0.476	
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.0973	J+	0.197	U	0.199	U	0.2	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.0925	J	0.197	U	0.112	J+	0.0718	J+
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.122	J	0.197	U	0.081	J	0.0516	J

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-5		SB-5		SB-6		SB-6	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-5-2		360175-SB-5-5		360175-SB-6-0		360175-SB-6-0.2	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.0697	J+	0.197	U	0.32	J	0.208	
E1633	Perfluorononanesulfonate	NG/G	0.2	U	0.197	U	0.199	U	0.2	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	1.29	J+	0.138	J+	0.209	J+	0.141	J+
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.2	U	0.197	U	0.277		0.336	
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	18.4		1.04		6.06		3.8	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.352	J+	0.106	J+	0.502	J+	0.306	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.2	U	0.197	U	0.199	U	0.2	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.187	J+	0.395	U	0.343	J+	0.23	J+
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.2	U	0.197	U	0.311		0.172	J
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.2	U	0.197	U	0.338		0.148	J
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.2	U	0.197	U	0.865		0.454	
D2216	Percent Moisture	PERCEN	19		19.4		32.5		19	

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-6		SB-6		SB-6		SB-7	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-6-1		360175-SB-6-2		360175-SB-6-5		360175-SB-7-0	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.791	U	0.793	U	0.797	U	0.8	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	4.94	U	4.96	U	4.98	U	5	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	4.94	U	4.96	U	4.98	U	5	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	0.989	U	0.991	U	0.996	U	1	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.791	U	0.793	U	0.797	U	0.8	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.791	U	0.793	U	0.797	U	0.8	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	0.989	U	0.991	U	0.996	U	1	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	0.989	U	0.991	U	0.996	U	1	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.791	U	0.793	U	0.797	U	0.8	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.791	U	0.793	U	0.797	U	0.8	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.198	U	0.198	U	0.199	U	0.2	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	1.98	U	1.98	U	1.99	U	2	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.0704	J	0.198	U	0.199	U	0.0585	J
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.198	U	0.198	U	0.199	U	0.2	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	1.98	U	1.98	U	1.99	U	2	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.0731	J+	0.198	U	0.199	U	0.2	U
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.395	U	0.396	U	0.398	U	0.4	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.395	U	0.396	U	0.398	U	0.4	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.395	U	0.396	U	0.398	U	0.4	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.395	U	0.396	U	0.398	U	0.4	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.198	U	0.198	U	0.199	U	0.0796	J
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.791	U	0.793	U	0.797	U	0.143	J
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.198	U	0.198	U	0.199	U	0.15	J
E1633	Perfluorodecanoic acid (PFDA)	NG/G	0.264		0.233		0.0524	J	0.462	
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.198	U	0.198	U	0.199	U	0.2	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	0.149	J	0.198	U	0.199	U	0.465	
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.198	U	0.198	U	0.199	U	0.2	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.0691	J+	0.0552	J+	0.199	U	0.112	J
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.0597	J	0.198	U	0.199	U	0.2	U

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-6		SB-6		SB-6		SB-7	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-6-1		360175-SB-6-2		360175-SB-6-5		360175-SB-7-0	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.264	J	0.118	J	0.199	U	0.0892	J+
E1633	Perfluorononanesulfonate	NG/G	0.198	U	0.198	U	0.199	U	0.2	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	0.0926	J+	0.0626	J+	0.195	J+	0.191	J+
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.126	J	0.198	U	0.199	U	0.2	U
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	4.71		2.49		0.848		2.24	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.228	J+	0.114	J+	0.0784	J+	0.366	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.198	U	0.198	U	0.199	U	0.2	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.326	J+	0.153	J+	0.398	U	0.166	J
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.0604	J	0.198	U	0.199	U	0.211	
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.198	U	0.198	U	0.199	U	0.211	
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.199		0.0913	J	0.199	U	0.555	
D2216	Percent Moisture	PERCEN	18		30.9		15.6		34.2	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-7		SB-8		SB-8		SB-8	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-7-1		360175-SB-8-0		360175-SB-8-0.2		360175-SB-8-1	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chlororeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.8	U	0.795	U	0.797	U	0.797	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	5	U	4.97	U	4.98	U	4.98	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	5	U	4.97	U	4.98	U	4.98	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	1	U	0.994	U	0.996	U	0.997	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.8	U	0.795	U	0.797	U	0.797	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.8	U	0.795	U	0.797	U	0.797	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	1	U	0.994	U	0.996	U	0.997	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	1	U	0.994	U	0.996	U	0.997	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.8	U	0.795	U	0.797	U	0.797	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.8	U	0.795	U	0.797	U	0.797	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	2	U	1.99	U	1.99	U	1.99	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.2	U	0.223		0.199	U	0.199	U
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	2	U	1.99	U	1.99	U	1.99	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.4	U	0.398	U	0.399	U	0.399	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.4	U	0.398	U	0.399	U	0.399	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.4	U	0.398	U	0.399	U	0.399	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.4	U	0.398	U	0.399	U	0.399	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.8	U	0.795	U	0.797	U	0.797	U
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.2	U	0.0715	J	0.199	U	0.199	U
E1633	Perfluorodecanoic acid (PFDA)	NG/G	0.256		0.092	J	0.185	J	0.199	U
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	0.0904	J	0.374		0.343		0.199	U
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.0801	J	0.199	U	0.199	U	0.199	U
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-7		SB-8		SB-8		SB-8	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-7-1		360175-SB-8-0		360175-SB-8-0.2		360175-SB-8-1	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.221	J	0.199	U	0.199	U	0.199	U
E1633	Perfluorononanesulfonate	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	0.168	J+	0.199	U	0.0902	J+	0.105	J+
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	1.05		0.657		1.64		1.06	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.136	J	0.199	U	0.199	U	0.114	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.2	U	0.199	U	0.199	U	0.199	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.26	J	0.398	U	0.399	U	0.399	U
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.2	U	0.163	J	0.0737	J	0.199	U
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.2	U	0.168	J	0.146	J	0.199	U
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.125	J	0.324		0.123	J	0.199	U
D2216	Percent Moisture	PERCEN	15.3		15.3		16.8		17.4	

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-8		SB-8		SB-9		SB-9	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-8-2		360175-SB-8-5		360175-SB-9-0		360175-SB-9-2	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/G	0.796	U	0.792	U	0.8	U	0.798	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/G	4.97	U	4.95	U	5	U	4.99	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/G	4.97	U	4.95	U	5	U	4.99	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/G	0.995	U	0.99	U	1	U	0.998	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/G	0.796	U	0.792	U	0.8	U	0.798	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/G	0.796	U	0.792	U	8	U	0.798	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/G	0.995	U	0.99	U	10	U	0.998	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/G	0.995	U	0.99	U	10	U	0.998	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/G	0.796	U	0.792	U	0.8	U	0.798	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/G	0.796	U	0.792	U	0.8	U	0.798	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/G	0.199	U	0.198	U	0.2	U	0.2	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/G	1.99	U	1.98	U	2	U	2	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/G	0.199	U	0.198	U	2.17		0.0967	J
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/G	0.199	U	0.198	U	0.2	U	0.2	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/G	1.99	U	1.98	U	2	U	2	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/G	0.199	U	0.198	U	0.126	J+	0.2	U
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/G	0.398	U	0.396	U	0.4	U	0.399	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/G	0.398	U	0.396	U	0.4	U	0.399	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/G	0.398	U	0.396	U	0.4	U	0.399	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/G	0.398	U	0.396	U	0.4	U	0.399	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/G	0.199	U	0.198	U	0.2	U	0.0605	J+
E1633	Perfluorobutanoic acid (PFBA)	NG/G	0.796	U	0.792	U	0.129	J	0.798	U
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/G	0.199	U	0.198	U	1.35		0.285	
E1633	Perfluorodecanoic acid (PFDA)	NG/G	0.199	U	0.198	U	1.84		1.12	
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/G	0.199	U	0.198	U	0.2	U	0.2	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/G	0.199	U	0.198	U	1.58		0.177	J
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/G	0.199	U	0.198	U	0.2	U	0.2	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/G	0.199	U	0.198	U	0.135	J+	0.2	U
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/G	0.199	U	0.198	U	0.2	U	0.2	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	SB-8		SB-8		SB-9		SB-9	
		Lab Sample Delivery Group	620-14747-1		620-14747-1		620-14747-1		620-14747-1	
		Field Sample Date	10/18/2023		10/18/2023		10/18/2023		10/18/2023	
		Field Sample ID	360175-SB-8-2		360175-SB-8-5		360175-SB-9-0		360175-SB-9-2	
		Qc Code	FS		FS		FS		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorohexanoic acid (PFHxA)	NG/G	0.199	U	0.198	U	0.2	U	0.2	U
E1633	Perfluorononanesulfonate	NG/G	0.199	U	0.198	U	0.2	U	0.2	U
E1633	Perfluorononanoic acid (PFNA)	NG/G	0.0819	J+	0.198	U	0.484	J+	0.248	J+
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/G	0.199	U	0.198	U	0.0758	J	0.2	U
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/G	0.955		0.326		3.15		1.31	
E1633	Perfluorooctanoic acid (PFOA)	NG/G	0.118	J+	0.0644	J+	0.489	J+	0.156	J+
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/G	0.199	U	0.198	U	0.2	U	0.2	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/G	0.398	U	0.396	U	0.4	U	0.399	U
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/G	0.199	U	0.198	U	0.644		0.0788	J
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/G	0.199	U	0.198	U	0.625		0.0655	J
E1633	Perfluoroundecanoic acid (PFUnA)	NG/G	0.199	U	0.198	U	1.51		0.251	
D2216	Percent Moisture	PERCEN	15		11.9		22.4		17.3	

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	QC	
		Lab Sample Delivery Group	620-14747-1	
		Field Sample Date	10/18/2023	
		Field Sample ID	360175-Source Blank	
		Qc Code	FB	
Method	Parameter	Units	Result	Qualifier
E1633	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/L	7.6	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/L	47.5	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/L	47.5	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/L	9.5	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/L	7.6	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/L	7.6	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/L	7.6	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/L	7.6	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/L	7.6	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/L	7.6	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/L	1.9	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/L	19	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/L	1.9	U
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/L	1.9	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/L	19	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/L	3.8	U
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/L	3.8	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/L	3.8	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/L	3.8	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/L	3.8	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/L	1.9	U
E1633	Perfluorobutanoic acid (PFBA)	NG/L	7.6	U
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/L	1.9	U
E1633	Perfluorodecanoic acid (PFDA)	NG/L	1.9	U
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/L	1.9	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/L	1.9	U
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/L	1.9	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/L	1.9	U
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/L	1.9	U
E1633	Perfluorohexanoic acid (PFHxA)	NG/L	1.9	U
E1633	Perfluorononanesulfonate	NG/L	1.9	U
E1633	Perfluorononanoic acid (PFNA)	NG/L	1.9	U
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/L	1.9	U
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/L	1.9	U
E1633	Perfluorooctanoic acid (PFOA)	NG/L	1.9	U
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/L	1.9	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/L	3.8	U

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	QC	
		Lab Sample Delivery Group	620-14747-1	
		Field Sample Date	10/18/2023	
		Field Sample ID	360175-Source Blank	
		Qc Code	FB	
Method	**Parameter**	**Units**	Result	Qualifier
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/L	1.9	U
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/L	1.9	U
E1633	Perfluoroundecanoic acid (PFUnA)	NG/L	1.9	U

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Lab Sample ID	Field Sample ID	Method	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
620-14747-1	620-14747-1	360175-SB-7-0	E1633	N	Perfluorononanoic acid (PFNA)	0.191	J	0.191	J+	LCSH, MSH	NG/G
620-14747-1	620-14747-27	360175-SB-4-0	E1633	N	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.11	J I	0.11	J	IR	NG/G
620-14747-1	620-14747-1	360175-SB-7-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.366		0.366	J+	MSH	NG/G
620-14747-1	620-14747-1	360175-SB-7-0	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.0796	J I	0.0796	J	IR	NG/G
620-14747-1	620-14747-10	360175-SB-3A-0	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.111	J	0.111	J+	LCSH	NG/G
620-14747-1	620-14747-27	360175-SB-4-0	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.121	J I	0.121	J+	LCSH, IR	NG/G
620-14747-1	620-14747-10	360175-SB-3A-0	E1633	N	Perfluorododecanoic acid (PFDoA)	2.26		2.26	J+	LCSH	NG/G
620-14747-1	620-14747-10	360175-SB-3A-0	E1633	N	Perfluoroundecanoic acid (PFUnA)	0.837		0.837	J+	LCSH	NG/G
620-14747-1	620-14747-10	360175-SB-3A-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.157	J	0.157	J+	LCSH, FD	NG/G
620-14747-1	620-14747-31	360175-SB-9-2	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.0605	J I	0.0605	J+	LCSH, IR	NG/G
620-14747-1	620-14747-11	360175-SB-3A-0 D	E1633	N	Perfluorododecanoic acid (PFDoA)	2.08		2.08	J+	LCSH	NG/G
620-14747-1	620-14747-11	360175-SB-3A-0 D	E1633	N	Perfluorooctanoic acid (PFOA)	0.221		0.221	J+	LCSH, FD	NG/G
620-14747-1	620-14747-11	360175-SB-3A-0 D	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.0899	J	0.0899	J+	LCSH	NG/G
620-14747-1	620-14747-11	360175-SB-3A-0 D	E1633	N	Perfluoroundecanoic acid (PFUnA)	0.794		0.794	J+	LCSH	NG/G
620-14747-1	620-14747-14	360175-SB-1A-0	E1633	N	Perfluorododecanoic acid (PFDoA)	0.0864	J I	0.0864	J+	LCSH, IR	NG/G
620-14747-1	620-14747-12	360175-SB-3A-2	E1633	N	Perfluoropentanoic acid (PFPeA)	0.171	J I	0.171	J+	LCSH	NG/G
620-14747-1	620-14747-11	360175-SB-3A-0 D	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.0658	J I	0.0658	J	IR	NG/G
620-14747-1	620-14747-12	360175-SB-3A-2	E1633	N	Perfluorononanoic acid (PFNA)	0.108	J *+	0.108	J+	LCSH	NG/G
620-14747-1	620-14747-12	360175-SB-3A-2	E1633	N	Perfluorooctanoic acid (PFOA)	0.558		0.558	J+	LCSH	NG/G
620-14747-1	620-14747-13	360175-SB-3A-5	E1633	N	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.166	J	0.166	J+	LCSH	NG/G
620-14747-1	620-14747-13	360175-SB-3A-5	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.137	J	0.137	J+	LCSH	NG/G
620-14747-1	620-14747-13	360175-SB-3A-5	E1633	N	Perfluoroundecanoic acid (PFUnA)	0.0509	J	0.0509	J+	LCSH	NG/G
620-14747-1	620-14747-14	360175-SB-1A-0	E1633	N	Perfluoroundecanoic acid (PFUnA)	0.1	J	0.1	J+	LCSH	NG/G
620-14747-1	620-14747-14	360175-SB-1A-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.195	J	0.195	J+	LCSH	NG/G
620-14747-1	620-14747-14	360175-SB-1A-0	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.113	J I	0.113	J	IR	NG/G
620-14747-1	620-14747-14	360175-SB-1A-0	E1633	N	Perfluorohexanoic acid (PFHxA)	0.152	J	0.152	J+	LCSH	NG/G
620-14747-1	620-14747-16	360175-SB-1A-5	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.0507	J I	0.0507	J	IR	NG/G
620-14747-1	620-14747-25	360175-SB-6-2	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.0552	J I	0.0552	J+	LCSH, IR	NG/G
620-14747-1	620-14747-15	360175-SB-1A-2	E1633	N	Perfluorohexanoic acid (PFHxA)	0.117	J	0.117	J+	LCSH	NG/G
620-14747-1	620-14747-15	360175-SB-1A-2	E1633	N	Perfluoropentanoic acid (PFPeA)	0.13	J I	0.13	J+	LCSH	NG/G
620-14747-1	620-14747-30	360175-SB-9-0	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.135	J I	0.135	J+	LCSH, IR	NG/G
620-14747-1	620-14747-1	360175-SB-7-0	E1633	N	Perfluorohexanoic acid (PFHxA)	0.0892	J F2 I	0.0892	J+	MSH, MSRPD, IR	NG/G
620-14747-1	620-14747-16	360175-SB-1A-5	E1633	N	Perfluorooctanoic acid (PFOA)	0.221		0.221	J+	LCSH	NG/G
620-14747-1	620-14747-16	360175-SB-1A-5	E1633	N	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	0.198	U	0.198	UJ	EIS	NG/G
620-14747-1	620-14747-12	360175-SB-3A-2	E1633	N	Perfluorohexanoic acid (PFHxA)	0.0843	J I	0.0843	J+	LCSH, IR	NG/G
620-14747-1	620-14747-16	360175-SB-1A-5	E1633	N	Perfluorononanoic acid (PFNA)	0.364	*+	0.364	J+	LCSH	NG/G
620-14747-1	620-14747-18	360175-SB-8-0.2	E1633	N	Perfluorononanoic acid (PFNA)	0.0902	J *+	0.0902	J+	LCSH	NG/G
620-14747-1	620-14747-19	360175-SB-8-1	E1633	N	Perfluorononanoic acid (PFNA)	0.105	J *+	0.105	J+	LCSH	NG/G
620-14747-1	620-14747-19	360175-SB-8-1	E1633	N	Perfluorooctanoic acid (PFOA)	0.114	J	0.114	J+	LCSH	NG/G

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Lab Sample ID	Field Sample ID	Method	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
620-14747-1	620-14747-2	360175-SB-7-1	E1633	N	Perfluorohexanoic acid (PFHxA)	0.221	I	0.221	J	IR	NG/G
620-14747-1	620-14747-2	360175-SB-7-1	E1633	N	Perfluorononanoic acid (PFNA)	0.168	J	0.168	J+	LCSH	NG/G
620-14747-1	620-14747-22	360175-SB-6-0	E1633	N	Perfluorohexanoic acid (PFHxA)	0.32	I	0.32	J	IR	NG/G
620-14747-1	620-14747-20	360175-SB-8-2	E1633	N	Perfluorooctanoic acid (PFOA)	0.118	J	0.118	J+	LCSH	NG/G
620-14747-1	620-14747-21	360175-SB-8-5	E1633	N	Perfluorooctanoic acid (PFOA)	0.0644	J	0.0644	J+	LCSH	NG/G
620-14747-1	620-14747-22	360175-SB-6-0	E1633	N	Perfluoropentanoic acid (PFPeA)	0.343	J	0.343	J+	LCSH	NG/G
620-14747-1	620-14747-22	360175-SB-6-0	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.055	J	0.055	J+	LCSH	NG/G
620-14747-1	620-14747-22	360175-SB-6-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.502		0.502	J+	LCSH	NG/G
620-14747-1	620-14747-22	360175-SB-6-0	E1633	N	Perfluorononanoic acid (PFNA)	0.209	*+	0.209	J+	LCSH	NG/G
620-14747-1	620-14747-22	360175-SB-6-0	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.112	J	0.112	J+	LCSH	NG/G
620-14747-1	620-14747-24	360175-SB-6-1	E1633	N	Perfluorohexanoic acid (PFHxA)	0.264	I	0.264	J	IR	NG/G
620-14747-1	620-14747-22	360175-SB-6-0	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.112	J	0.112	J+	LCSH	NG/G
620-14747-1	620-14747-23	360175-SB-6-0.2	E1633	N	Perfluoropentanoic acid (PFPeA)	0.23	J	0.23	J+	LCSH	NG/G
620-14747-1	620-14747-23	360175-SB-6-0.2	E1633	N	Perfluorooctanoic acid (PFOA)	0.306		0.306	J+	LCSH	NG/G
620-14747-1	620-14747-23	360175-SB-6-0.2	E1633	N	Perfluorononanoic acid (PFNA)	0.141	J *+	0.141	J+	LCSH	NG/G
620-14747-1	620-14747-23	360175-SB-6-0.2	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.095	J	0.095	J+	LCSH	NG/G
620-14747-1	620-14747-23	360175-SB-6-0.2	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.0718	J	0.0718	J+	LCSH	NG/G
620-14747-1	620-14747-32	360175-SB-10-1	E1633	N	Perfluorohexanoic acid (PFHxA)	0.395	I	0.395	J	IR	NG/G
620-14747-1	620-14747-24	360175-SB-6-1	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.0691	J	0.0691	J+	LCSH	NG/G
620-14747-1	620-14747-24	360175-SB-6-1	E1633	N	Perfluorooctanoic acid (PFOA)	0.228		0.228	J+	LCSH	NG/G
620-14747-1	620-14747-24	360175-SB-6-1	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.0731	J	0.0731	J+	LCSH	NG/G
620-14747-1	620-14747-24	360175-SB-6-1	E1633	N	Perfluorononanoic acid (PFNA)	0.0926	J *+	0.0926	J+	LCSH	NG/G
620-14747-1	620-14747-24	360175-SB-6-1	E1633	N	Perfluoropentanoic acid (PFPeA)	0.326	J I	0.326	J+	LCSH	NG/G
620-14747-1	620-14747-10	360175-SB-3A-0	E1633	N	Perfluorononanoic acid (PFNA)	0.557	I *+	0.557	J+	LCSH, IR	NG/G
620-14747-1	620-14747-25	360175-SB-6-2	E1633	N	Perfluorononanoic acid (PFNA)	0.0626	J *+	0.0626	J+	LCSH	NG/G
620-14747-1	620-14747-25	360175-SB-6-2	E1633	N	Perfluoropentanoic acid (PFPeA)	0.153	J	0.153	J+	LCSH	NG/G
620-14747-1	620-14747-25	360175-SB-6-2	E1633	N	Perfluorooctanoic acid (PFOA)	0.114	J	0.114	J+	LCSH	NG/G
620-14747-1	620-14747-11	360175-SB-3A-0 D	E1633	N	Perfluorononanoic acid (PFNA)	0.467	I *+	0.467	J+	LCSH, IR	NG/G
620-14747-1	620-14747-26	360175-SB-6-5	E1633	N	Perfluorooctanoic acid (PFOA)	0.0784	J	0.0784	J+	LCSH	NG/G
620-14747-1	620-14747-27	360175-SB-4-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.122	J	0.122	J+	LCSH	NG/G
620-14747-1	620-14747-14	360175-SB-1A-0	E1633	N	Perfluorononanoic acid (PFNA)	0.149	J I *+	0.149	J+	LCSH, IR	NG/G
620-14747-1	620-14747-15	360175-SB-1A-2	E1633	N	Perfluorononanoic acid (PFNA)	0.514	I *+	0.514	J+	LCSH, IR	NG/G
620-14747-1	620-14747-28	360175-SB-4-2	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.135	J	0.135	J+	LCSH	NG/G
620-14747-1	620-14747-28	360175-SB-4-2	E1633	N	Perfluorononanoic acid (PFNA)	0.11	J *+	0.11	J+	LCSH	NG/G
620-14747-1	620-14747-28	360175-SB-4-2	E1633	N	Perfluorooctanoic acid (PFOA)	0.109	J	0.109	J+	LCSH	NG/G
620-14747-1	620-14747-29	360175-SB-4-5	E1633	N	Perfluorononanoic acid (PFNA)	0.07	J *+	0.07	J+	LCSH	NG/G
620-14747-1	620-14747-3	360175-SB-5-0	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.123	J	0.123	J+	LCSH, MSH	NG/G
620-14747-1	620-14747-3	360175-SB-5-0	E1633	N	Perfluorododecanoic acid (PFDoA)	0.577		0.577	J+	LCSH	NG/G
620-14747-1	620-14747-3	360175-SB-5-0	E1633	N	Perfluorononanoic acid (PFNA)	0.185	J F1 *+	0.185	J+	LCSH, MSH	NG/G

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Lab Sample ID	Field Sample ID	Method	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
620-14747-1	620-14747-4	360175-SB-5-0 D	E1633	N	Perfluorononanoic acid (PFNA)	0.187	J I	0.187	J+	LCSH, MSH, IR	NG/G
620-14747-1	620-14747-3	360175-SB-5-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.202		0.202	J+	LCSH, MSH	NG/G
620-14747-1	620-14747-3	360175-SB-5-0	E1633	N	Perfluoropentanoic acid (PFPeA)	0.139	J I F1	0.139	J+	LCSH, MSH	NG/G
620-14747-1	620-14747-30	360175-SB-9-0	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.126	J	0.126	J+	LCSH	NG/G
620-14747-1	620-14747-20	360175-SB-8-2	E1633	N	Perfluorononanoic acid (PFNA)	0.0819	J I *+	0.0819	J+	LCSH, IR	NG/G
620-14747-1	620-14747-30	360175-SB-9-0	E1633	N	Perfluorononanoic acid (PFNA)	0.484	*+	0.484	J+	LCSH	NG/G
620-14747-1	620-14747-26	360175-SB-6-5	E1633	N	Perfluorononanoic acid (PFNA)	0.195	J I *+	0.195	J+	LCSH, IR	NG/G
620-14747-1	620-14747-30	360175-SB-9-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.489		0.489	J+	LCSH	NG/G
620-14747-1	620-14747-31	360175-SB-9-2	E1633	N	Perfluorononanoic acid (PFNA)	0.248	*+	0.248	J+	LCSH	NG/G
620-14747-1	620-14747-3	360175-SB-5-0	E1633	N	Perfluoroundecanoic acid (PFUnA)	0.254		0.254	J+	LCSH	NG/G
620-14747-1	620-14747-31	360175-SB-9-2	E1633	N	Perfluorooctanoic acid (PFOA)	0.156	J	0.156	J+	LCSH	NG/G
620-14747-1	620-14747-32	360175-SB-10-1	E1633	N	Perfluorononanoic acid (PFNA)	0.653	*+	0.653	J+	LCSH	NG/G
620-14747-1	620-14747-32	360175-SB-10-1	E1633	N	Perfluorooctanoic acid (PFOA)	0.473		0.473	J+	LCSH	NG/G
620-14747-1	620-14747-32	360175-SB-10-1	E1633	N	Perfluoroheptanoic acid (PFHpA)	0.183	J	0.183	J+	LCSH	NG/G
620-14747-1	620-14747-32	360175-SB-10-1	E1633	N	Perfluoropentanoic acid (PFPeA)	0.34	J I	0.34	J+	LCSH	NG/G
620-14747-1	620-14747-7	360175-SB-2A-0	E1633	N	Perfluorononanoic acid (PFNA)	0.122	J I *+	0.122	J+	LCSH, IR	NG/G
620-14747-1	620-14747-30	360175-SB-9-0	E1633	N	Perfluorooctanesulfonamide (PFOSA)	0.0758	J I	0.0758	J	IR	NG/G
620-14747-1	620-14747-5	360175-SB-5-2	E1633	N	Perfluorohexanoic acid (PFHxA)	0.0697	J	0.0697	J+	LCSH	NG/G
620-14747-1	620-14747-5	360175-SB-5-2	E1633	N	Perfluorooctanoic acid (PFOA)	0.352		0.352	J+	LCSH	NG/G
620-14747-1	620-14747-5	360175-SB-5-2	E1633	N	Perfluoroheptanesulfonic acid (PFHpS)	0.0973	J	0.0973	J+	LCSH	NG/G
620-14747-1	620-14747-5	360175-SB-5-2	E1633	N	Perfluoropentanoic acid (PFPeA)	0.187	J I	0.187	J+	LCSH	NG/G
620-14747-1	620-14747-5	360175-SB-5-2	E1633	N	Perfluorononanoic acid (PFNA)	1.29	*+	1.29	J+	LCSH	NG/G
620-14747-1	620-14747-6	360175-SB-5-5	E1633	N	Perfluorononanoic acid (PFNA)	0.138	J *+	0.138	J+	LCSH	NG/G
620-14747-1	620-14747-6	360175-SB-5-5	E1633	N	Perfluorooctanoic acid (PFOA)	0.106	J	0.106	J+	LCSH	NG/G
620-14747-1	620-14747-6	360175-SB-5-5	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.0583	J	0.0583	J+	LCSH	NG/G
620-14747-1	620-14747-7	360175-SB-2A-0	E1633	N	Perfluorooctanoic acid (PFOA)	0.163	J	0.163	J+	LCSH	NG/G
620-14747-1	620-14747-7	360175-SB-2A-0	E1633	N	Perfluoroundecanoic acid (PFUnA)	0.358		0.358	J+	LCSH	NG/G
620-14747-1	620-14747-7	360175-SB-2A-0	E1633	N	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.432		0.432	J+	LCSH	NG/G
620-14747-1	620-14747-7	360175-SB-2A-0	E1633	N	Perfluorododecanoic acid (PFDoA)	0.768		0.768	J+	LCSH	NG/G
620-14747-1	620-14747-7	360175-SB-2A-0	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.0517	J	0.0517	J+	LCSH	NG/G
620-14747-1	620-14747-8	360175-SB-2A-2	E1633	N	Perfluorooctanesulfonic acid (PFOS)	4.08	I	4.08	J	IR	NG/G
620-14747-1	620-14747-7	360175-SB-2A-0	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.2		0.2	J+	LCSH	NG/G
620-14747-1	620-14747-8	360175-SB-2A-2	E1633	N	Perfluoropentanoic acid (PFPeA)	0.134	J I	0.134	J+	LCSH	NG/G
620-14747-1	620-14747-8	360175-SB-2A-2	E1633	N	Perfluorooctanoic acid (PFOA)	1.18		1.18	J+	LCSH	NG/G
620-14747-1	620-14747-15	360175-SB-1A-2	E1633	N	Perfluorooctanoic acid (PFOA)	0.178	J I	0.178	J+	LCSH, IR	NG/G
620-14747-1	620-14747-8	360175-SB-2A-2	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.132	J	0.132	J+	LCSH	NG/G
620-14747-1	620-14747-8	360175-SB-2A-2	E1633	N	Perfluorohexanoic acid (PFHxA)	0.117	J	0.117	J+	LCSH	NG/G
620-14747-1	620-14747-8	360175-SB-2A-2	E1633	N	Perfluoroheptanesulfonic acid (PFHpS)	0.223		0.223	J+	LCSH	NG/G
620-14747-1	620-14747-8	360175-SB-2A-2	E1633	N	Perfluorononanoic acid (PFNA)	2.85	*+	2.85	J+	LCSH	NG/G

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Lab Sample ID	Field Sample ID	Method	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
620-14747-1	620-14747-9	360175-SB-2A-5	E1633	N	Perfluorononanoic acid (PFNA)	0.289	*+	0.289	J+	LCSH	NG/G
620-14747-1	620-14747-9	360175-SB-2A-5	E1633	N	Perfluorooctanoic acid (PFOA)	0.12	J	0.12	J+	LCSH	NG/G
620-14747-1	620-14747-9	360175-SB-2A-5	E1633	N	Perfluorobutanesulfonic acid (PFBS)	0.061	J	0.061	J+	LCSH	NG/G
620-14747-1	620-14747-4	360175-SB-5-0 D	E1633	N	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.123	J	0.123	J+	MSH	NG/G
620-14747-1	620-14747-4	360175-SB-5-0 D	E1633	N	Perfluorooctanoic acid (PFOA)	0.202		0.202	J+	MSH	NG/G
620-14747-1	620-14747-4	360175-SB-5-0 D	E1633	N	Perfluoropentanoic acid (PFPeA)	0.139	J I F1	0.139	J+	MSH	NG/G

Created by: KLD 2/6/2024
Checked by: ALJ 2/6/2024

ATTACHMENT A
SUMMARY OF VALIDATION QC LIMITS FOR SURROGATES, SPIKES, AND DUPLICATES
BASED ON THE REGION 2 VALIDATION GUIDELINES

PARAMETER	QC TEST	ANALYTE	SOIL (%R)	SOIL (RPD)
Per- and Polyfluorinated Alkyl Substances (PFAS)	Surrogate	All Surrogate Compounds	50 - 150	
	LCS	All Target Compounds	70 - 130	
	MS/MSD	All Target Compounds	70 - 130	30
	Field Duplicate	All Target Compounds		30

DATA USABILITY SUMMARY REPORT
OCTOBER 2023 SOIL SAMPLING
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

ATTACHMENT B

PFAS

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington October 2023 Soil
Method: USEPA 1633
Laboratory: Eurofins Lancaster (PA); subbed by RI **SDG(s):** 620-14747-1
Date: 2/5/2024
Reviewer: Amber Jones
Based on NYSDEC *Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids*, April 2023

Review Level [X] NYSDEC DUSR USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? yes, see attached
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)

2. ☑ **Holding time and Sample Collection**
   Were all samples extracted within the 28 day holding time? Were aqueous sample extracts analyzed with 28 days of extraction, soil sample extracts within 40 days of extraction per NYSDEC Data Review Guidelines? YES NO (circle one)

   Were all samples received in proper containers at cooler temp ≤6 degrees C and protected from light? YES NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)
   Are rinse blanks free of contamination? YES NO NA (circle one)
   Are field reagent blanks free of contamination? YES NO NA (circle one)

   Per NYSDEC guidelines, there should be no detections in the method blanks greater than the RLs. EBs, RBs, FBs should be evaluated in the same manner as method blanks. Use the most contaminated blank to evaluate associated sample results.

   Use the following table from NYSDEC Data Review Guidelines for qualification actions:

Blank Result	Sample Result	Qualification
Any detection	<Reporting limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting limit	>Reporting limit and <10x blank result	J+ biased high

4. ☑ **Mass Calibration Verification – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Extracted Internal Standards [EIS]** (water/soil limits: 50-150%; poor performing analytes [PFBA, PFPeA, fluorotelomer sulfonates] limits: 25-150%) RTs within 0.4 minutes (24 seconds) of CCAL standard (or ICAL mid-point if samples follow ICAL)
   Were all extracted internal standard results within limits? YES NO (circle one) see attached - subset UJ, EIS
   Were any extracted internal standard recoveries < 10%? (use professional judgment; reject ND)

samples 23, 27, and 30 - results reported at a 1x and 10x dil - subset reported from the 10x dil due to EIS recoveries

6. ☑ **Non-extracted Internal Standards (NIS) [Instrument Injected Internal Standards] – Data Package Narrative Review**
(Area Limits = -50% to +100%, RTs within 0.4 minutes (24 seconds) of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
Did the laboratory narrative identify any sample injected internal standards that were not within criteria? YES NO (circle one)

Did the laboratory qualify results based on injected internal standard exceedances? YES NO
If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Instrument Calibration – Data Package Narrative Review**
Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

Initial Calibration %RSD ≤20, Continuing Calibration % R 70-130, ICV % R 70-130, see attached - high bias, samples ND - no quals

Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO

Are the Signal to Noise ratios for all target compounds > 3 in the low point standard? YES NO

Were branched isomers included in calibration standards for PFOS and other compounds where standards are available? YES NO

8. ☑ **Matrix Spike** (70-130%) see attached - subset J+, MSH
Were MS/MSDs submitted/analyzed? YES NO

Were all results within limits? YES NO NA (circle one)

9. ☑ **Field Duplicates** (water/soil RPD limit: ≤30)
Were Field Duplicates submitted/analyzed? YES NO see attached - subset J, FD

10. ☑ **Laboratory Control Sample Results** (70-130%)
Were all results within limits? YES NO (circle one) see attached - high bias - detections J+, LCSH

11. ☑ **Raw Data Review and Calculation Checks (Note: checks 13 and 14 apply to sample(s) selected for calculation checks and raw data review)** see attached for calculations

12. ☑ **Bile Salt Standard Retention Time (RT) Check**
Did the laboratory analyze a bile salt standard? (required by Method 1633 for all sample matrices) YES NO (circle one)

Is the RT of the bile salt standard >1 minute from the RT window for PFOS (including linear and branched isomers)? YES NO (circle one)

NOTE: Three bile acids (TDCA, TCDCA, and TUDCA) have the same (<1 amu) primary transition masses as PFOS: m/z 498.9 ->79.9 for PFOS, and m/z 499.2 ->79.9 for the bile acids. As a result, the presence of these bile acids in samples can cause high bias to PFOS concentrations if co-eluting with PFOS. The bile salt standard must demonstrate chromatographic separation so there is no co-elution with any PFOS isomer. no bile salt standard included in report

13. ☑ **Signal-to-Noise (S/N) Ratio for positive identification/detection of Target Analytes and EIS--**
From NYSDEC guidance (April 2023): *The signal to noise ratio for the primary ion should be at least 3:1. If the ratio is less than 3:1, the peak is discernable from the baseline noise and symmetrical, the result can be reported. If the peak appears to be baseline noise and/or the shape is irregular, qualify the result as tentatively identified.*

From Method 1633 4th Draft: Quantitation ions and confirmation ions S/N ≥ 3; or if no confirmation ion is expected (Method 1633 4th Draft Table 9), quantitation ion must have S/N ≥10, as described in Method 1633 4th Draft Section 15.1.1: *For target analytes or EISs to be identified, peak responses of the quantitation and confirmation ions must be at least three times the background noise level (S/N 3:1). The quantitation ion must have a S/N ≥ 10:1 if there is no confirmation ion* [specified in Table 9]. *If the S/N ratio is not met due to high background noise, the laboratory must correct the issue (e.g., perform instrument troubleshooting and any necessary maintenance, such as cleaning the ion source, replacing the LC column, or if needed, repeat the cleanup steps to remove background due to the sample matrix). If the S/N ratio is not met but the background is low, then the analyte is to be considered a non-detect.* Note: If lab result is <RL or <LOQ and expected confirmation ion is not detected, qualify U at RL, or LOD or sample concentration, as appropriate. If lab result is >RL or >LOQ and expected confirmation ion is not detected, review raw data and use professional judgment.

14. ☑ **Ion Abundance Ratio (IAR) for positive identification/detection of Target Analytes and EIS--**
    - Confirm transition ions in Method 1633 4th Draft Table 9 (or "*Analyte Ions Monitored, Extracted Internal Standard, and Non-extracted Internal Standard Used for Quantification*" table in current draft Method 1633) were used for all analytes
    - As defined in Method 1633 4th Draft Section 14.3.5: AreaQ1/AreaQ2 where Q1 and Q2 are primary and secondary transition masses for detected compounds. Acceptance criteria are based on comparison with ion ratios established by the ICAL midpoint standard or daily CCV. If secondary transition masses are identified in Method 1633 4th Draft Table 9 (or "*Analyte Ions Monitored, Extracted Internal Standard, and Non-extracted Internal Standard Used for Quantification*" table in current draft Method 1633), IAR must be within ±50% of IAR established for the ICAL midpoint standard or daily CCV per Section 15.1.3. Check ion ratios reported for LCS and samples.

see attached - subset J, IR

15. ☑ **Electronic Data Review and Edits**

    Does the EDD match the Form Is? YES NO (circle one)

lab applied I qualfiiers to results outside acceptance criteria - PFPeA was not qualified due to insufficent ion transition

16. ☑ **Tables**

    Table 1 (Samples and Analytical Methods)
    Table 2 (Analytical Results)
    Table 3 (Qualification Actions)
    Were all tables produced and reviewed? YES NO (circle one)

Job ID: 620-14747-1

Laboratory: Eurofins New England

Narrative

Job Narrative
620-14747-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/19/2023 2:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C

Receipt Exceptions
The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): 360175-SB-7-0 (620-14747-1[MSD]) okay

PFAS
Method 1633: The recovery for labeled isotope: M2-6:2 FTS is outside the QC acceptance limits and biased high in the opening continuing calibration verification standard. Since the recovery for the labeled isotope is within QC limits in the following sample: 360175-SB-5-0 (620-14747-3), the data is reported. see attached for EIS review

Method 1633: The recovery for labeled isotope: M2-6:2 FTS is outside the QC acceptance limits and biased high in the closing continuing calibration verification standard. Since the recovery for the labeled isotope is within QC limits in the following samples: 360175-SB-1A-0 (620-14747-14), 360175-SB-1A-2 (620-14747-15) and 360175-SB-1A-5 (620-14747-16), the data is reported. see attached for EIS review

Method 1633: The recovery for target analyte 5:3 FTCA and 7:3 FTCA is outside the QC acceptance limits and biased high in the opening continuing calibration verification standard. Since the result is high and target 5:3 FTCA and 7:3 FTCA is not detected in the following samples: 360175-SB-1A-0 (620-14747-14), 360175-SB-1A-2 (620-14747-15) and 360175-SB-1A-5 (620-14747-16), the data is reported. high bias, samples ND - no quals

Method 1633: The recovery for target analyte 5:3 FTCA and 7:3 FTCA is outside the QC acceptance limits and biased high in the closing continuing calibration verification standard. Since the result is high and target 5:3 FTCA and 7:3 FTCA is not detected in the following samples: 360175-SB-5-2 (620-14747-5), 360175-SB-5-5 (620-14747-6), 360175-SB-2A-0 (620-14747-7), 360175-SB-2A-2 (620-14747-8), 360175-SB-2A-5 (620-14747-9), 360175-SB-3A-0 (620-14747-10), 360175-SB-3A-0 D (620-14747-11), 360175-SB-3A-2 (620-14747-12), 360175-SB-3A-5 (620-14747-13) and (620-14747-A-10-C DU), the data is reported. high bias, samples ND - no quals

Method 1633: The recovery for target analyte: Perfluorononanoic acid in the laboratory control spike samples associated with the following samples: 360175-SB-5-0 (620-14747-3), 360175-SB-5-2 (620-14747-5), 360175-SB-5-5 (620-14747-6), 360175-SB-2A-0 (620-14747-7), 360175-SB-2A-2 (620-14747-8), 360175-SB-2A-5 (620-14747-9), 360175-SB-3A-0 (620-14747-10), 360175-SB-3A-0 D (620-14747-11), 360175-SB-3A-2 (620-14747-12), 360175-SB-3A-5 (620-14747-13), 360175-SB-1A-0 (620-14747-14), 360175-SB-1A-2 (620-14747-15), 360175-SB-1A-5 (620-14747-16) and (620-14747-A-10-C DU) is outside the QC acceptance limits. The following action was taken: The client was contacted and the data is reported. see attached for LCS review

Method 1633: The recovery for a target analyte(s) Perfluorononanoic acid in the laboratory control spike samples associated with the following samples: 360175-SB-8-0.2 (620-14747-18), 360175-SB-8-1 (620-14747-19), 360175-SB-8-2 (620-14747-20), 360175-SB-6-0 (620-14747-22), 360175-SB-6-0.2 (620-14747-23), 360175-SB-6-1 (620-14747-24), 360175-SB-6-2 (620-14747-25), 360175-SB-6-5 (620-14747-26), 360175-SB-4-2 (620-14747-28), 360175-SB-4-5 (620-14747-29), 360175-SB-9-0 (620-14747-30), 360175-SB-9-2 (620-14747-31), 360175-SB-10-1 (620-14747-32) and (620-14747-A-32-B DU) is outside the QC acceptance limits. The following action was taken: The client was contacted and the data is reported. see attached for LCS review

Job ID: 620-14747-1 (Continued)

Laboratory: Eurofins New England (Continued)

Method 1633: The recovery for target analyte Perfluorononanoic acid is outside of QC acceptance limits in the laboratory control spike samples associated with samples: 360175-SB-8-0 (620-14747-17), 360175-SB-8-5 (620-14747-21) and 360175-SB-4-0 (620-14747-27) . Since the result is high and target analyte Perfluorononanoic acid is not detected in the samples, the data is reported. see attached for LCS review

Method 1633: The recovery for labeled isotope: M2-6:2 FTS is outside the QC acceptance limits in the opening continuing calibration verification standard, biased high. Since the recovery for the labeled isotope is within QC limits in the following sample: 360175-Source Blank (620-14747-33) , the data is reported. EIS in QC sample - no quals

Method 1633: The recovery for target analyte Perfluorooctanoic acid is outside of QC acceptance limits in the laboratory control spike samples associated with samples: 360175-Source Blank (620-14747-33) . Since the result is high and target analyte Perfluorooctanoic acid is not detected in the samples, the data is reported. associated with FB only - no quals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	96.8		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C5 PFPeA	103		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C5 PFHxA	100		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C4 PFHpA	115		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C8 PFOA	118		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C9 PFNA	98.6		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C6 PFDA	91.3		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C7 PFUnA	88.5		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C2-PFDoDA	90.7		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C2 PFTeDA	81.2		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C3 PFBS	104		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C3 PFHxS	102		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C8 PFOS	96.8		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C8 FOSA	104		20 - 150	11/01/23 07:11	11/16/23 15:17	1
d3-NMeFOSAA	101		20 - 150	11/01/23 07:11	11/16/23 15:17	1
d5-NEtFOSAA	90.6		20 - 150	11/01/23 07:11	11/16/23 15:17	1
M2-4:2 FTS	101		20 - 150	11/01/23 07:11	11/16/23 15:17	1
M2-6:2 FTS	113		20 - 150	11/01/23 07:11	11/16/23 15:17	1
M2-8:2 FTS	93.6		20 - 150	11/01/23 07:11	11/16/23 15:17	1
13C3 HFPO-DA	100		20 - 150	11/01/23 07:11	11/16/23 15:17	1
d7-N-MeFOSE-M	79.0		20 - 150	11/01/23 07:11	11/16/23 15:17	1
d9-N-EtFOSE-M	75.0		20 - 150	11/01/23 07:11	11/16/23 15:17	1
d5-NEtPFOSA	77.2		20 - 150	11/01/23 07:11	11/16/23 15:17	1
d3-NMePFOSA	83.5		20 - 150	11/01/23 07:11	11/16/23 15:17	1

Lab Sample ID: LCS 410-438117/2-A
Matrix: Solid
Analysis Batch: 444158

70-130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438117

associated with samples 1,2,4

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	10.0	11.08		ng/g		111	40 - 150
Perfluoropentanoic acid	5.01	5.617		ng/g		112	40 - 150
Perfluorohexanoic acid	2.50	2.884		ng/g		115	40 - 150
Perfluoroheptanoic acid	2.50	2.358		ng/g		94	40 - 150
Perfluorooctanoic acid	2.50	2.913		ng/g		116	40 - 150
Perfluorononanoic acid	2.50	3.439		ng/g		137	40 - 150
Perfluorodecanoic acid	2.50	2.898		ng/g		116	40 - 150
Perfluoroundecanoic acid	2.50	2.760		ng/g		110	40 - 150
Perfluorododecanoic acid	2.50	2.726		ng/g		109	40 - 150
Perfluorotridecanoic acid	2.50	2.766		ng/g		110	40 - 150
Perfluorotetradecanoic acid	2.50	2.947		ng/g		118	40 - 150
Perfluorobutanesulfonic acid	2.22	2.577		ng/g		116	40 - 150
Perfluoropentanesulfonic acid	2.36	2.652		ng/g		113	40 - 150
Perfluorohexanesulfonic acid	2.29	2.521		ng/g		110	40 - 150
Perfluoroheptanesulfonic acid	2.39	2.614		ng/g		110	40 - 150
Perfluorooctanesulfonic acid	2.32	2.613		ng/g		112	40 - 150
Perfluorononanesulfonic acid	2.41	2.629		ng/g		109	40 - 150
Perfluorodecanesulfonic acid	2.42	2.632		ng/g		109	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	2.43	2.387		ng/g		98	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	9.39	10.53		ng/g		112	40 - 150

high bias, detections J+, LCSH

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-438117/2-A
Matrix: Solid
Analysis Batch: 444158 associated with samples 1,2,4

70-130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	9.52	9.828		ng/g		103	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	9.62	11.04		ng/g		115	40 - 150
Perfluorooctanesulfonamide	2.50	2.500		ng/g		100	40 - 150
NMeFOSA	2.50	2.579		ng/g		103	40 - 150
N-ethylperfluoro-1-octanesulfonamide	2.50	2.553		ng/g		102	40 - 150
NMeFOSAA	2.50	2.807		ng/g		112	40 - 150
NEtFOSAA	2.50	2.943		ng/g		118	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	25.0	26.58		ng/g		106	40 - 150
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	25.0	29.77		ng/g		119	40 - 150
HFPO-DA	10.0	9.891		ng/g		99	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9.42	9.877		ng/g		105	40 - 150
Perfluoro-3-methoxypropanoic acid	5.01	4.480		ng/g		89	40 - 150
Perfluoro(4-methoxybutanoic acid)	5.01	5.784		ng/g		115	40 - 150
Perfluoro-3,6-dioxaheptanoic acid	5.01	5.435		ng/g		109	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9.32	9.405		ng/g		101	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	9.42	9.306		ng/g		99	40 - 150
PFEESA	4.46	4.919		ng/g		110	40 - 150
3:3 FTCA	12.5	16.35		ng/g		131	40 - 150
5:3 FTCA	62.6	68.60		ng/g		110	40 - 150
7:3 FTCA	62.6	67.02		ng/g		107	40 - 150

high bias, samples ND - no quals

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*44.0*		*20 - 150*
13C5 PFPeA	*97.9*		*20 - 150*
13C5 PFHxA	*92.6*		*20 - 150*
13C4 PFHpA	*108*		*20 - 150*
13C8 PFOA	*100*		*20 - 150*
13C9 PFNA	*89.9*		*20 - 150*
13C6 PFDA	*101*		*20 - 150*
13C7 PFUnA	*107*		*20 - 150*
13C2-PFDoDA	*103*		*20 - 150*
13C2 PFTeDA	*90.7*		*20 - 150*
13C3 PFBS	*93.1*		*20 - 150*
13C3 PFHxS	*103*		*20 - 150*
13C8 PFOS	*101*		*20 - 150*
13C8 FOSA	*111*		*20 - 150*
d3-NMeFOSAA	*95.2*		*20 - 150*
d5-NEtFOSAA	*97.0*		*20 - 150*
M2-4:2 FTS	*105*		*20 - 150*

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-14747-1 MS
Matrix: Solid
Analysis Batch: 444158

70-130

Client Sample ID: 360175-SB-7-0
Prep Type: Total/NA
Prep Batch: 438117

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanoic acid	0.166	J	5.00	6.029		ng/g	☼	117	40 - 150
Perfluorohexanoic acid	0.0892	J F2 I	2.50	2.685		ng/g	☼	104	40 - 150
Perfluoroheptanoic acid	0.112	J	2.50	2.893		ng/g	☼	111	40 - 150
Perfluorooctanoic acid J+, MSH	0.366		2.50	3.732		ng/g	☼	135	40 - 150
Perfluorononanoic acid	0.191	J	2.50	3.339		ng/g	☼	126	40 - 150
Perfluorodecanoic acid	0.462		2.50	2.986		ng/g	☼	101	40 - 150
Perfluoroundecanoic acid	0.555		2.50	3.377		ng/g	☼	113	40 - 150
Perfluorododecanoic acid	0.465		2.50	3.236		ng/g	☼	111	40 - 150
Perfluorotridecanoic acid	0.211		2.50	2.730		ng/g	☼	101	40 - 150
Perfluorotetradecanoic acid	0.211		2.50	3.006		ng/g	☼	112	40 - 150
Perfluorobutanesulfonic acid	0.0796	J I	2.22	2.308		ng/g	☼	101	40 - 150
Perfluoropentanesulfonic acid	ND	U	2.35	2.439		ng/g	☼	104	40 - 150
Perfluorohexanesulfonic acid	ND	U	2.29	2.636		ng/g	☼	115	40 - 150
Perfluoroheptanesulfonic acid	ND	U	2.38	2.816		ng/g	☼	118	40 - 150
Perfluorooctanesulfonic acid	2.24		2.32	4.380		ng/g	☼	92	40 - 150
Perfluorononanesulfonic acid	ND	U	2.41	2.624		ng/g	☼	109	40 - 150
Perfluorodecanesulfonic acid	0.150	J	2.41	2.538		ng/g	☼	99	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	ND	U	2.43	2.438		ng/g	☼	101	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND	U	9.38	8.871		ng/g	☼	95	40 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND	U	9.50	11.87		ng/g	☼	125	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND	U	9.60	10.07		ng/g	☼	105	40 - 150
Perfluorooctanesulfonamide	ND	U	2.50	2.572		ng/g	☼	103	40 - 150
NMeFOSA	ND	U	2.50	2.603		ng/g	☼	104	40 - 150
N-ethylperfluoro-1-octanesulfonamide	ND	U	2.50	2.491		ng/g	☼	100	40 - 150
NMeFOSAA	ND	U	2.50	2.826		ng/g	☼	113	40 - 150
NEtFOSAA	0.0585	J	2.50	2.863		ng/g	☼	112	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND	U	25.0	26.97		ng/g	☼	108	40 - 150
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND	U	25.0	29.86		ng/g	☼	119	40 - 150
HFPO-DA	ND	U	9.98	9.872		ng/g	☼	99	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	U	9.41	10.24		ng/g	☼	109	40 - 150
Perfluoro-3-methoxypropanoic acid	ND	U	5.00	5.440		ng/g	☼	109	40 - 150
Perfluoro(4-methoxybutanoic acid)	ND	U	5.00	6.033		ng/g	☼	121	40 - 150
Perfluoro-3,6-dioxaheptanoic acid	ND	U	5.00	4.867		ng/g	☼	97	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	U	9.31	9.958		ng/g	☼	107	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	U	9.41	9.818		ng/g	☼	104	40 - 150
PFEESA	ND	U	4.45	4.671		ng/g	☼	105	40 - 150
3:3 FTCA	ND	U	12.5	15.80		ng/g	☼	126	40 - 150

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-14747-1 MS
Matrix: Solid
Analysis Batch: 444158

Client Sample ID: 360175-SB-7-0
Prep Type: Total/NA
Prep Batch: 438117

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
5:3 FTCA	ND	U	62.5	62.57		ng/g	☼	100	40 - 150
7:3 FTCA	ND	U	62.5	68.77		ng/g	☼	110	40 - 150

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*90.0*		*20 - 150*
13C5 PFPeA	*90.4*		*20 - 150*
13C5 PFHxA	*95.9*		*20 - 150*
13C4 PFHpA	*95.8*		*20 - 150*
13C8 PFOA	*96.1*		*20 - 150*
13C9 PFNA	*101*		*20 - 150*
13C6 PFDA	*98.7*		*20 - 150*
13C7 PFUnA	*88.6*		*20 - 150*
13C2-PFDoDA	*99.8*		*20 - 150*
13C2 PFTeDA	*88.3*		*20 - 150*
13C3 PFBS	*104*		*20 - 150*
13C3 PFHxS	*102*		*20 - 150*
13C8 PFOS	*94.9*		*20 - 150*
13C8 FOSA	*97.4*		*20 - 150*
d3-NMeFOSAA	*90.1*		*20 - 150*
d5-NEtFOSAA	*91.9*		*20 - 150*
M2-4:2 FTS	*125*		*20 - 150*
M2-6:2 FTS	*111*		*20 - 150*
M2-8:2 FTS	*128*		*20 - 150*
13C3 HFPO-DA	*89.6*		*20 - 150*
d7-N-MeFOSE-M	*72.9*		*20 - 150*
d9-N-EtFOSE-M	*75.3*		*20 - 150*
d5-NEtPFOSA	*72.1*		*20 - 150*
d3-NMePFOSA	*77.6*		*20 - 150*

Lab Sample ID: 620-14747-1 MSD
Matrix: Solid
Analysis Batch: 444158

70-130

Client Sample ID: 360175-SB-7-0
Prep Type: Total/NA
Prep Batch: 438117

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid	0.143	J	9.97	10.97		ng/g	☼	109	40 - 150	2	30
Perfluoropentanoic acid	0.166	J	4.99	6.519		ng/g	☼	127	40 - 150	8	30
Perfluorohexanoic acid J+, MSH, MSRPD	0.0892	J F2 I	2.49	3.783	F2	ng/g	☼	148	40 - 150	34	30
Perfluoroheptanoic acid	0.112	J	2.49	3.242		ng/g	☼	126	40 - 150	11	30
Perfluorooctanoic acid	0.366		2.49	3.616		ng/g	☼	130	40 - 150	3	30
Perfluorononanoic acid J+, MSH	0.191	J	2.49	3.548		ng/g	☼	135	40 - 150	6	30
Perfluorodecanoic acid	0.462		2.49	3.505		ng/g	☼	122	40 - 150	16	30
Perfluoroundecanoic acid	0.555		2.49	3.503		ng/g	☼	118	40 - 150	4	30
Perfluorododecanoic acid	0.465		2.49	3.345		ng/g	☼	115	40 - 150	3	30
Perfluorotridecanoic acid	0.211		2.49	2.979		ng/g	☼	111	40 - 150	9	30
Perfluorotetradecanoic acid	0.211		2.49	3.228		ng/g	☼	121	40 - 150	7	30
Perfluorobutanesulfonic acid	0.0796	J I	2.21	2.351		ng/g	☼	103	40 - 150	2	30
Perfluoropentanesulfonic acid	ND	U	2.35	2.512		ng/g	☼	107	40 - 150	3	30
Perfluorohexanesulfonic acid	ND	U	2.28	2.615		ng/g	☼	115	40 - 150	1	30
Perfluoroheptanesulfonic acid	ND	U	2.38	2.371		ng/g	☼	100	40 - 150	17	30

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-442336/2-A
Matrix: Solid
Analysis Batch: 445103

associated with samples 3, 5-16

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442336

high bias - detections J+, LCSH; ND - no quals

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	10.0	12.01		ng/g		120	40 - 150
Perfluoropentanoic acid	5.01	7.182		ng/g		143	40 - 150
Perfluorohexanoic acid	2.50	3.290		ng/g		131	40 - 150
Perfluoroheptanoic acid	2.50	3.243		ng/g		130	40 - 150
Perfluorooctanoic acid	2.50	3.660		ng/g		146	40 - 150
Perfluorononanoic acid	2.50	3.808	*+	ng/g		152	40 - 150
Perfluorodecanoic acid	2.50	3.062		ng/g		122	40 - 150
Perfluoroundecanoic acid	2.50	3.171		ng/g		127	40 - 150
Perfluorododecanoic acid	2.50	3.412		ng/g		136	40 - 150
Perfluorotridecanoic acid	2.50	3.255		ng/g		130	40 - 150
Perfluorotetradecanoic acid	2.50	3.201		ng/g		128	40 - 150
Perfluorobutanesulfonic acid	2.22	3.034		ng/g		137	40 - 150
Perfluoropentanesulfonic acid	2.36	2.914		ng/g		124	40 - 150
Perfluorohexanesulfonic acid	2.29	2.719		ng/g		119	40 - 150
Perfluoroheptanesulfonic acid	2.39	3.146		ng/g		132	40 - 150
Perfluorooctanesulfonic acid	2.32	2.903		ng/g		125	40 - 150
Perfluorononanesulfonic acid	2.41	2.933		ng/g		122	40 - 150
Perfluorodecanesulfonic acid	2.42	2.790		ng/g		115	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	2.43	2.783		ng/g		115	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	9.39	13.54		ng/g		144	40 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	9.52	11.73		ng/g		123	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	9.62	12.63		ng/g		131	40 - 150
Perfluorooctanesulfonamide	2.50	2.881		ng/g		115	40 - 150
NMeFOSA	2.50	2.719		ng/g		109	40 - 150
N-ethylperfluoro-1-octanesulfonamide	2.50	2.685		ng/g		107	40 - 150
NMeFOSAA	2.50	3.351		ng/g		134	40 - 150
NEtFOSAA	2.50	3.449		ng/g		138	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	25.0	28.38		ng/g		113	40 - 150
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	25.0	31.63		ng/g		126	40 - 150
HFPO-DA	10.0	11.36		ng/g		114	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9.42	11.78		ng/g		125	40 - 150
Perfluoro-3-methoxypropanoic acid	5.01	6.630		ng/g		132	40 - 150
Perfluoro(4-methoxybutanoic acid)	5.01	6.409		ng/g		128	40 - 150
Perfluoro-3,6-dioxaheptanoic acid	5.01	6.307		ng/g		126	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9.32	11.86		ng/g		127	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	9.42	12.06		ng/g		128	40 - 150
PFEESA	4.46	5.146		ng/g		115	40 - 150

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-442336/2-A 70-130
Matrix: Solid
Analysis Batch: 445103 associated with samples 3, 5-16

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442336

high bias - detections J+, LCSH; ND - no quals

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	10.0	12.01		ng/g		120	40 - 150
Perfluoropentanoic acid	5.01	7.182		ng/g		143	40 - 150
Perfluorohexanoic acid	2.50	3.290		ng/g		131	40 - 150
Perfluoroheptanoic acid	2.50	3.243		ng/g		130	40 - 150
Perfluorooctanoic acid	2.50	3.660		ng/g		146	40 - 150
Perfluorononanoic acid	2.50	3.808	*+	ng/g		152	40 - 150
Perfluorodecanoic acid	2.50	3.062		ng/g		122	40 - 150
Perfluoroundecanoic acid	2.50	3.171		ng/g		127	40 - 150
Perfluorododecanoic acid	2.50	3.412		ng/g		136	40 - 150
Perfluorotridecanoic acid	2.50	3.255		ng/g		130	40 - 150
Perfluorotetradecanoic acid	2.50	3.201		ng/g		128	40 - 150
Perfluorobutanesulfonic acid	2.22	3.034		ng/g		137	40 - 150
Perfluoropentanesulfonic acid	2.36	2.914		ng/g		124	40 - 150
Perfluorohexanesulfonic acid	2.29	2.719		ng/g		119	40 - 150
Perfluoroheptanesulfonic acid	2.39	3.146		ng/g		132	40 - 150
Perfluorooctanesulfonic acid	2.32	2.903		ng/g		125	40 - 150
Perfluorononanesulfonic acid	2.41	2.933		ng/g		122	40 - 150
Perfluorodecanesulfonic acid	2.42	2.790		ng/g		115	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	2.43	2.783		ng/g		115	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	9.39	13.54		ng/g		144	40 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	9.52	11.73		ng/g		123	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	9.62	12.63		ng/g		131	40 - 150
Perfluorooctanesulfonamide	2.50	2.881		ng/g		115	40 - 150
NMeFOSA	2.50	2.719		ng/g		109	40 - 150
N-ethylperfluoro-1-octanesulfonamide	2.50	2.685		ng/g		107	40 - 150
NMeFOSAA	2.50	3.351		ng/g		134	40 - 150
NEtFOSAA	2.50	3.449		ng/g		138	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	25.0	28.38		ng/g		113	40 - 150
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	25.0	31.63		ng/g		126	40 - 150
HFPO-DA	10.0	11.36		ng/g		114	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9.42	11.78		ng/g		125	40 - 150
Perfluoro-3-methoxypropanoic acid	5.01	6.630		ng/g		132	40 - 150
Perfluoro(4-methoxybutanoic acid)	5.01	6.409		ng/g		128	40 - 150
Perfluoro-3,6-dioxaheptanoic acid	5.01	6.307		ng/g		126	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9.32	11.86		ng/g		127	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	9.42	12.06		ng/g		128	40 - 150
PFEESA	4.46	5.146		ng/g		115	40 - 150

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-442336/2-A
Matrix: Solid
Analysis Batch: 445103

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442336

associated with samples 3, 5-16

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
3:3 FTCA	12.5	17.42		ng/g		139	40 - 150
5:3 FTCA	62.6	68.32		ng/g		109	40 - 150
7:3 FTCA	62.6	74.97		ng/g		120	40 - 150

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*95.4*		*20 - 150*
13C5 PFPeA	*84.3*		*20 - 150*
13C5 PFHxA	*87.4*		*20 - 150*
13C4 PFHpA	*86.1*		*20 - 150*
13C8 PFOA	*107*		*20 - 150*
13C9 PFNA	*100*		*20 - 150*
13C6 PFDA	*97.6*		*20 - 150*
13C7 PFUnA	*91.8*		*20 - 150*
13C2-PFDoDA	*81.6*		*20 - 150*
13C2 PFTeDA	*83.6*		*20 - 150*
13C3 PFBS	*82.8*		*20 - 150*
13C3 PFHxS	*97.1*		*20 - 150*
13C8 PFOS	*97.1*		*20 - 150*
13C8 FOSA	*97.0*		*20 - 150*
d3-NMeFOSAA	*89.1*		*20 - 150*
d5-NEtFOSAA	*86.3*		*20 - 150*
M2-4:2 FTS	*98.6*		*20 - 150*
M2-6:2 FTS	*89.4*		*20 - 150*
M2-8:2 FTS	*92.5*		*20 - 150*
13C3 HFPO-DA	*85.5*		*20 - 150*
d7-N-MeFOSE-M	*75.8*		*20 - 150*
d9-N-EtFOSE-M	*73.2*		*20 - 150*
d5-NEtPFOSA	*58.2*		*20 - 150*
d3-NMePFOSA	*66.2*		*20 - 150*

Lab Sample ID: LLCS 410-442336/3-A
Matrix: Solid
Analysis Batch: 444874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442336

associated with samples 3, 5-16

high bias, detections - J+, LCSH; ND - no quals

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	1.60	1.738		ng/g		109	40 - 150
Perfluoropentanoic acid	0.800	1.023	I	ng/g		128	40 - 150
Perfluorohexanoic acid	0.400	0.5782		ng/g		145	40 - 150
Perfluoroheptanoic acid	0.400	0.4893		ng/g		122	40 - 150
Perfluorooctanoic acid	0.400	0.5485		ng/g		137	40 - 150
Perfluorononanoic acid	0.400	0.5672		ng/g		142	40 - 150
Perfluorodecanoic acid	0.400	0.4848		ng/g		121	40 - 150
Perfluoroundecanoic acid	0.400	0.5254		ng/g		131	40 - 150
Perfluorododecanoic acid	0.400	0.4638		ng/g		116	40 - 150
Perfluorotridecanoic acid	0.400	0.3733		ng/g		93	40 - 150
Perfluorotetradecanoic acid	0.400	0.4081		ng/g		102	40 - 150
Perfluorobutanesulfonic acid	0.355	0.3771		ng/g		106	40 - 150
Perfluoropentanesulfonic acid	0.376	0.4315		ng/g		115	40 - 150
Perfluorohexanesulfonic acid	0.366	0.3825		ng/g		105	40 - 150

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-442336/3-A
Matrix: Solid
Analysis Batch: 444874

associated with samples 3, 5-16

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442336

high bias - detections J+, LCSH; ND - no quals

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanesulfonic acid	0.381	0.4453		ng/g		117	40 - 150
Perfluorooctanesulfonic acid	0.371	0.3948		ng/g		106	40 - 150
Perfluorononanesulfonic acid	0.385	0.3840		ng/g		100	40 - 150
Perfluorodecanesulfonic acid	0.386	0.3678		ng/g		95	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	0.388	0.3813		ng/g		98	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	1.50	1.730		ng/g		115	40 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	1.52	1.765		ng/g		116	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	1.54	1.827		ng/g		119	40 - 150
Perfluorooctanesulfonamide	0.400	0.3901		ng/g		98	40 - 150
NMeFOSA	0.400	0.4024		ng/g		101	40 - 150
N-ethylperfluoro-1-octanesulfonamide	0.400	0.4050		ng/g		101	40 - 150
NMeFOSAA	0.400	0.4740		ng/g		119	40 - 150
NEtFOSAA	0.400	0.5002		ng/g		125	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	4.00	4.164		ng/g		104	40 - 150
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	4.00	4.424		ng/g		111	40 - 150
HFPO-DA	1.60	1.819		ng/g		114	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.51	1.756		ng/g		116	40 - 150
Perfluoro-3-methoxypropanoic acid	0.800	1.067		ng/g		133	40 - 150
Perfluoro(4-methoxybutanoic acid)	0.800	1.066		ng/g		133	40 - 150
Perfluoro-3,6-dioxaheptanoic acid	0.800	0.9035		ng/g		113	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.49	1.648		ng/g		111	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.51	1.466		ng/g		97	40 - 150
PFEESA	0.712	0.9738		ng/g		137	40 - 150
3:3 FTCA	2.00	2.876		ng/g		144	40 - 150
5:3 FTCA	10.0	15.02		ng/g		150	40 - 150
7:3 FTCA	10.0	14.65		ng/g		146	40 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFBA	*97.2*		*20 - 150*
13C5 PFPeA	*84.7*		*20 - 150*
13C5 PFHxA	*76.7*		*20 - 150*
13C4 PFHpA	*101*		*20 - 150*
13C8 PFOA	*93.2*		*20 - 150*
13C9 PFNA	*90.1*		*20 - 150*
13C6 PFDA	*93.8*		*20 - 150*
13C7 PFUnA	*80.9*		*20 - 150*
13C2-PFDoDA	*94.4*		*20 - 150*

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-442336/3-A
Matrix: Solid
Analysis Batch: 444874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442336

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
13C2 PFTeDA	95.1		20 - 150
13C3 PFBS	102		20 - 150
13C3 PFHxS	104		20 - 150
13C8 PFOS	101		20 - 150
13C8 FOSA	112		20 - 150
d3-NMeFOSAA	81.9		20 - 150
d5-NEtFOSAA	77.7		20 - 150
M2-4:2 FTS	118		20 - 150
M2-6:2 FTS	121		20 - 150
M2-8:2 FTS	93.2		20 - 150
13C3 HFPO-DA	96.9		20 - 150
d7-N-MeFOSE-M	76.2		20 - 150
d9-N-EtFOSE-M	76.2		20 - 150
d5-NEtPFOSA	53.1		20 - 150
d3-NMePFOSA	56.6		20 - 150

Lab Sample ID: 620-14747-3 MS
Matrix: Solid
Analysis Batch: 444874

70-130

Client Sample ID: 360175-SB-5-0
Prep Type: Total/NA
Prep Batch: 442336

all other highlights - high bias, samples ND - no quals

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	ND	U	9.92	12.13		ng/g	☼	122	40 - 150
Perfluoropentanoic acid J+, MSH	0.139	J I F1	4.96	8.085	F1	ng/g	☼	160	40 - 150
Perfluorohexanoic acid	ND	U F1	2.48	3.962	F1	ng/g	☼	160	40 - 150
Perfluoroheptanoic acid	0.112	J	2.48	3.338		ng/g	☼	130	40 - 150
Perfluorooctanoic acid J+, MSH	0.202		2.48	3.710		ng/g	☼	141	40 - 150
Perfluorononanoic acid J+, MSH	0.185	J F1 *+	2.48	4.251	F1	ng/g	☼	164	40 - 150
Perfluorodecanoic acid	1.38		2.48	3.839		ng/g	☼	99	40 - 150
Perfluoroundecanoic acid	0.254		2.48	3.324		ng/g	☼	124	40 - 150
Perfluorododecanoic acid	0.577		2.48	3.431		ng/g	☼	115	40 - 150
Perfluorotridecanoic acid	0.0682	J	2.48	2.812		ng/g	☼	111	40 - 150
Perfluorotetradecanoic acid	0.171	J	2.48	2.960		ng/g	☼	112	40 - 150
Perfluorobutanesulfonic acid	ND	U	2.20	2.911		ng/g	☼	132	40 - 150
Perfluoropentanesulfonic acid	ND	U	2.33	2.820		ng/g	☼	121	40 - 150
Perfluorohexanesulfonic acid	0.0967	J	2.27	2.686		ng/g	☼	114	40 - 150
Perfluoroheptanesulfonic acid	ND	U	2.36	3.098		ng/g	☼	131	40 - 150
Perfluorooctanesulfonic acid	12.3		2.30	17.17	4	ng/g	☼	214	40 - 150
Perfluorononanesulfonic acid	ND	U	2.39	2.537		ng/g	☼	106	40 - 150
Perfluorodecanesulfonic acid	ND	U	2.39	2.538		ng/g	☼	106	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	ND	U	2.41	2.663		ng/g	☼	111	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND	U	9.30	10.86		ng/g	☼	117	40 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND	U	9.43	11.48		ng/g	☼	122	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND	U	9.53	12.24		ng/g	☼	128	40 - 150
Perfluorooctanesulfonamide	0.151	J	2.48	2.810		ng/g	☼	107	40 - 150
NMeFOSA	ND	U	2.48	2.565		ng/g	☼	103	40 - 150

sample result >4x spike - no quals

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-14747-3 MS
Matrix: Solid
Analysis Batch: 444874

all other highlights - high bias, samples ND - no quals

Client Sample ID: 360175-SB-5-0
Prep Type: Total/NA
Prep Batch: 442336

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
N-ethylperfluoro-1-octanesulfonamide	ND	U	2.48	2.537		ng/g	☼	102	40 - 150
NMeFOSAA J+, MSH	0.123	J	2.48	3.452		ng/g	☼	134	40 - 150
NEtFOSAA	ND	U	2.48	3.423		ng/g	☼	138	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND	U	24.8	26.81		ng/g	☼	108	40 - 150
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND	U	24.8	28.25		ng/g	☼	114	40 - 150
HFPO-DA	ND	U	9.91	11.35		ng/g	☼	114	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	U	9.33	11.36		ng/g	☼	122	40 - 150
Perfluoro-3-methoxypropanoic acid	ND	U	4.96	7.280		ng/g	☼	147	40 - 150
Perfluoro(4-methoxybutanoic acid)	ND	U F1	4.96	8.381	F1	ng/g	☼	169	40 - 150
Perfluoro-3,6-dioxaheptanoic acid	ND	U	4.96	4.978		ng/g	☼	100	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	U	9.24	10.94		ng/g	☼	118	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	U	9.33	9.164		ng/g	☼	98	40 - 150
PFEESA	ND	U	4.42	5.776		ng/g	☼	131	40 - 150
3:3 FTCA	ND	U F1	12.4	20.43	F1	ng/g	☼	165	40 - 150
5:3 FTCA	ND	U	62.0	89.14		ng/g	☼	144	40 - 150
7:3 FTCA	ND	U	62.0	82.92		ng/g	☼	134	40 - 150

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*98.9*		*20 - 150*
13C5 PFPeA	*78.1*		*20 - 150*
13C5 PFHxA	*83.7*		*20 - 150*
13C4 PFHpA	*96.9*		*20 - 150*
13C8 PFOA	*82.8*		*20 - 150*
13C9 PFNA	*102*		*20 - 150*
13C6 PFDA	*94.9*		*20 - 150*
13C7 PFUnA	*80.1*		*20 - 150*
13C2-PFDoDA	*85.1*		*20 - 150*
13C2 PFTeDA	*78.3*		*20 - 150*
13C3 PFBS	*93.8*		*20 - 150*
13C3 PFHxS	*102*		*20 - 150*
13C8 PFOS	*102*		*20 - 150*
13C8 FOSA	*110*		*20 - 150*
d3-NMeFOSAA	*80.6*		*20 - 150*
d5-NEtFOSAA	*84.1*		*20 - 150*
M2-4:2 FTS	*123*		*20 - 150*
M2-6:2 FTS	*120*		*20 - 150*
M2-8:2 FTS	*101*		*20 - 150*
13C3 HFPO-DA	*90.9*		*20 - 150*
d7-N-MeFOSE-M	*69.7*		*20 - 150*
d9-N-EtFOSE-M	*64.2*		*20 - 150*

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-14747-3 MS
Matrix: Solid
Analysis Batch: 444874

Client Sample ID: 360175-SB-5-0
Prep Type: Total/NA
Prep Batch: 442336

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
d5-NEtPFOSA	53.5		20 - 150
d3-NMePFOSA	62.5		20 - 150

Lab Sample ID: 620-14747-3 MSD
Matrix: Solid
Analysis Batch: 444874

all other highlights - high bias, samples ND - no quals

Client Sample ID: 360175-SB-5-0
Prep Type: Total/NA
Prep Batch: 442336

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid	ND	U	9.86	11.74		ng/g	☼	119	40 - 150	3	30
Perfluoropentanoic acid J+, MSH	0.139	J I F1	4.93	6.843		ng/g	☼	136	40 - 150	17	30
Perfluorohexanoic acid	ND	U F1	2.46	3.646		ng/g	☼	148	40 - 150	8	30
Perfluoroheptanoic acid	0.112	J	2.46	3.174		ng/g	☼	124	40 - 150	5	30
Perfluorooctanoic acid J+, MSH	0.202		2.46	3.819		ng/g	☼	147	40 - 150	3	30
Perfluorononanoic acid J+, MSH	0.185	J F1 *+	2.46	4.176	F1	ng/g	☼	162	40 - 150	2	30
Perfluorodecanoic acid	1.38		2.46	3.785		ng/g	☼	98	40 - 150	1	30
Perfluoroundecanoic acid	0.254		2.46	3.448		ng/g	☼	130	40 - 150	4	30
Perfluorododecanoic acid	0.577		2.46	3.552		ng/g	☼	121	40 - 150	3	30
Perfluorotridecanoic acid	0.0682	J	2.46	2.880		ng/g	☼	114	40 - 150	2	30
Perfluorotetradecanoic acid	0.171	J	2.46	3.073		ng/g	☼	118	40 - 150	4	30
Perfluorobutanesulfonic acid	ND	U	2.19	3.012		ng/g	☼	138	40 - 150	3	30
Perfluoropentanesulfonic acid	ND	U	2.32	2.736		ng/g	☼	118	40 - 150	3	30
Perfluorohexanesulfonic acid	0.0967	J	2.25	2.632		ng/g	☼	113	40 - 150	2	30
Perfluoroheptanesulfonic acid	ND	U	2.35	3.011		ng/g	☼	128	40 - 150	3	30
Perfluorooctanesulfonic acid sample result >4x spike - no quals	12.3		2.29	15.74	4	ng/g	☼	152	40 - 150	9	30
Perfluorononanesulfonic acid	ND	U	2.37	2.659		ng/g	☼	112	40 - 150	5	30
Perfluorodecanesulfonic acid	ND	U	2.38	2.715		ng/g	☼	114	40 - 150	7	30
Perfluorododecanesulfonic acid (PFDoS)	ND	U	2.39	2.586		ng/g	☼	108	40 - 150	3	30
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND	U	9.24	12.18		ng/g	☼	132	40 - 150	12	30
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND	U	9.36	10.90		ng/g	☼	116	40 - 150	5	30
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND	U	9.46	10.38		ng/g	☼	110	40 - 150	16	30
Perfluorooctanesulfonamide	0.151	J	2.46	2.835		ng/g	☼	109	40 - 150	1	30
NMeFOSA	ND	U	2.46	2.743		ng/g	☼	111	40 - 150	7	30
N-ethylperfluoro-1-octanesulfonamide	ND	U	2.46	2.497		ng/g	☼	101	40 - 150	2	30
NMeFOSAA	0.123	J	2.46	3.054		ng/g	☼	119	40 - 150	12	30
NEtFOSAA	ND	U	2.46	3.370		ng/g	☼	137	40 - 150	2	30
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND	U	24.6	25.28		ng/g	☼	103	40 - 150	6	30
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND	U	24.6	28.00		ng/g	☼	114	40 - 150	1	30
HFPO-DA	ND	U	9.84	11.48		ng/g	☼	117	40 - 150	1	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	U	9.27	11.17		ng/g	☼	121	40 - 150	2	30
Perfluoro-3-methoxypropanoic acid	ND	U	4.93	6.405		ng/g	☼	130	40 - 150	13	30

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-14747-3 MSD
Matrix: Solid
Analysis Batch: 444874

all other highlights - high bias, samples ND - no quals

Client Sample ID: 360175-SB-5-0
Prep Type: Total/NA
Prep Batch: 442336

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoro(4-methoxybutanoic acid)	ND	U F1	4.93	7.164		ng/g	☼	145	40 - 150	16	30
Perfluoro-3,6-dioxaheptanoic acid	ND	U	4.93	4.756		ng/g	☼	97	40 - 150	5	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	U	9.17	10.98		ng/g	☼	120	40 - 150	0	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	U	9.27	9.523		ng/g	☼	103	40 - 150	4	30
PFEESA	ND	U	4.39	5.041		ng/g	☼	115	40 - 150	14	30
3:3 FTCA	ND	U F1	12.3	17.06		ng/g	☼	139	40 - 150	18	30
5:3 FTCA	ND	U	61.6	82.83		ng/g	☼	135	40 - 150	7	30
7:3 FTCA	ND	U	61.6	80.21		ng/g	☼	130	40 - 150	3	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*102*		*20 - 150*
13C5 PFPeA	*87.9*		*20 - 150*
13C5 PFHxA	*86.2*		*20 - 150*
13C4 PFHpA	*94.2*		*20 - 150*
13C8 PFOA	*92.2*		*20 - 150*
13C9 PFNA	*104*		*20 - 150*
13C6 PFDA	*93.4*		*20 - 150*
13C7 PFUnA	*82.4*		*20 - 150*
13C2-PFDoDA	*86.8*		*20 - 150*
13C2 PFTeDA	*79.2*		*20 - 150*
13C3 PFBS	*95.3*		*20 - 150*
13C3 PFHxS	*105*		*20 - 150*
13C8 PFOS	*99.7*		*20 - 150*
13C8 FOSA	*110*		*20 - 150*
d3-NMeFOSAA	*85.5*		*20 - 150*
d5-NEtFOSAA	*82.9*		*20 - 150*
M2-4:2 FTS	*110*		*20 - 150*
M2-6:2 FTS	*137*		*20 - 150*
M2-8:2 FTS	*119*		*20 - 150*
13C3 HFPO-DA	*89.3*		*20 - 150*
d7-N-MeFOSE-M	*66.7*		*20 - 150*
d9-N-EtFOSE-M	*56.6*		*20 - 150*
d5-NEtPFOSA	*52.2*		*20 - 150*
d3-NMePFOSA	*58.6*		*20 - 150*

Lab Sample ID: 620-14747-10 DU
Matrix: Solid
Analysis Batch: 444874

Client Sample ID: 360175-SB-3A-0
Prep Type: Total/NA
Prep Batch: 442336

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Perfluorobutanoic acid	ND	U	ND	U	ng/g	☼	NC	30
Perfluoropentanoic acid	ND	U	ND	U	ng/g	☼	NC	30
Perfluorohexanoic acid	ND	U	ND	U	ng/g	☼	NC	30
Perfluoroheptanoic acid	0.0530	J	ND	U	ng/g	☼	NC	30
Perfluorooctanoic acid	0.157	J	0.2864	F5	ng/g	☼	58	30
Perfluorononanoic acid	0.557	I *+	0.5056	I *+	ng/g	☼	10	30

result <RL - no quals

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 410-442547/1-A
Matrix: Water
Analysis Batch: 445884

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442547

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-8:2 FTS	91.7		50 - 200	11/13/23 07:16	11/21/23 11:15	1
13C3 HFPO-DA	80.7		25 - 160	11/13/23 07:16	11/21/23 11:15	1
d7-N-MeFOSE-M	68.7		10 - 150	11/13/23 07:16	11/21/23 11:15	1
d9-N-EtFOSE-M	69.6		10 - 150	11/13/23 07:16	11/21/23 11:15	1
d5-NEtPFOSA	57.6		10 - 130	11/13/23 07:16	11/21/23 11:15	1
d3-NMePFOSA	60.6		15 - 130	11/13/23 07:16	11/21/23 11:15	1

Lab Sample ID: LCS 410-442547/2-A
Matrix: Water
Analysis Batch: 445884

associated with source blank only - no quals

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442547

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	100	109.3		ng/L		109	58 - 148
Perfluoropentanoic acid	50.1	63.66		ng/L		127	54 - 152
Perfluorohexanoic acid	25.0	33.45		ng/L		134	55 - 152
Perfluoroheptanoic acid	25.0	31.56		ng/L		126	54 - 154
Perfluorooctanoic acid	25.0	36.08		ng/L		144	52 - 161
Perfluorononanoic acid	25.0	34.98		ng/L		140	59 - 149
Perfluorodecanoic acid	25.0	32.99		ng/L		132	52 - 147
Perfluoroundecanoic acid	25.0	31.83		ng/L		127	48 - 159
Perfluorododecanoic acid	25.0	30.47		ng/L		122	64 - 142
Perfluorotridecanoic acid	25.0	30.18		ng/L		121	49 - 148
Perfluorotetradecanoic acid	25.0	26.89		ng/L		107	47 - 161
Perfluorobutanesulfonic acid	22.2	26.76		ng/L		120	62 - 144
Perfluoropentanesulfonic acid	23.6	28.87		ng/L		123	59 - 151
Perfluorohexanesulfonic acid	22.9	25.52		ng/L		111	57 - 146
Perfluoroheptanesulfonic acid	23.9	32.07		ng/L		134	55 - 152
Perfluorooctanesulfonic acid	23.2	27.96		ng/L		120	58 - 149
Perfluorononanesulfonic acid	24.1	26.45		ng/L		110	52 - 148
Perfluorodecanesulfonic acid	24.2	27.78		ng/L		115	51 - 147
Perfluorododecanesulfonic acid (PFDoS)	24.3	29.56		ng/L		122	36 - 145
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	93.9	94.18		ng/L		100	67 - 146
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	95.2	117.9		ng/L		124	61 - 151
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	96.2	101.3		ng/L		105	63 - 152
Perfluorooctanesulfonamide	25.0	25.26		ng/L		101	61 - 148
NMeFOSA	25.0	27.03		ng/L		108	63 - 145
N-ethylperfluoro-1-octanesulfonamide	25.0	28.00		ng/L		112	65 - 139
NMeFOSAA	25.0	28.58		ng/L		114	58 - 144
NEtFOSAA	25.0	30.69		ng/L		123	59 - 146
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	250	276.4		ng/L		110	71 - 136
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	250	316.2		ng/L		126	69 - 137
HFPO-DA	100	101.5		ng/L		102	63 - 144

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-442547/2-A
Matrix: Water
Analysis Batch: 445884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442547

associated with source blank only - no quals

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	94.2	102.8		ng/L		109	68 - 146
Perfluoro-3-methoxypropanoic acid	50.1	59.85		ng/L		120	51 - 145
Perfluoro(4-methoxybutanoic acid)	50.1	61.10		ng/L		122	55 - 148
Perfluoro-3,6-dioxaheptanoic acid	50.1	66.27		ng/L		132	48 - 161
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	93.2	95.76		ng/L		103	56 - 156
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	94.2	97.86		ng/L		104	46 - 156
PFEESA	44.6	56.67		ng/L		127	56 - 151
3:3 FTCA	125	161.1		ng/L		129	62 - 129
5:3 FTCA	626	743.4		ng/L		119	63 - 134
7:3 FTCA	626	746.3		ng/L		119	50 - 138

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*90.3*		*10 - 130*
13C5 PFPeA	*76.4*		*40 - 150*
13C5 PFHxA	*75.8*		*40 - 150*
13C4 PFHpA	*82.3*		*40 - 150*
13C8 PFOA	*76.5*		*30 - 140*
13C9 PFNA	*80.8*		*30 - 140*
13C6 PFDA	*75.7*		*20 - 140*
13C7 PFUnA	*72.7*		*20 - 140*
13C2-PFDoDA	*76.0*		*10 - 150*
13C2 PFTeDA	*79.6*		*10 - 130*
13C3 PFBS	*88.2*		*25 - 150*
13C3 PFHxS	*82.5*		*25 - 150*
13C8 PFOS	*78.0*		*20 - 140*
13C8 FOSA	*84.5*		*10 - 130*
d3-NMeFOSAA	*73.5*		*10 - 200*
d5-NEtFOSAA	*75.7*		*10 - 200*
M2-4:2 FTS	*103*		*25 - 200*
M2-6:2 FTS	*91.8*		*25 - 200*
M2-8:2 FTS	*91.6*		*25 - 200*
13C3 HFPO-DA	*85.5*		*25 - 160*
d7-N-MeFOSE-M	*69.0*		*10 - 150*
d9-N-EtFOSE-M	*71.7*		*10 - 150*
d5-NEtPFOSA	*61.3*		*10 - 130*
d3-NMePFOSA	*66.3*		*10 - 130*

Lab Sample ID: LLCS 410-442547/3-A
Matrix: Water
Analysis Batch: 445884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442547

associated with source blank only - no quals

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	16.0	17.98		ng/L		112	44 - 157
Perfluoropentanoic acid	8.00	11.00		ng/L		138	57 - 148

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-442547/3-A
Matrix: Water
Analysis Batch: 445884

associated with source blank only - no quals

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442547

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanoic acid	4.00	4.740		ng/L		119	62 - 149
Perfluoroheptanoic acid	4.00	4.818		ng/L		120	56 - 150
Perfluorooctanoic acid	4.00	6.757	*+	ng/L		169	57 - 161
Perfluorononanoic acid	4.00	5.116		ng/L		128	53 - 157
Perfluorodecanoic acid	4.00	5.344		ng/L		134	43 - 158
Perfluoroundecanoic acid	4.00	4.796		ng/L		120	50 - 155
Perfluorododecanoic acid	4.00	4.594		ng/L		115	60 - 141
Perfluorotridecanoic acid	4.00	4.923		ng/L		123	52 - 140
Perfluorotetradecanoic acid	4.00	4.716		ng/L		118	52 - 156
Perfluorobutanesulfonic acid	3.55	4.624		ng/L		130	63 - 145
Perfluoropentanesulfonic acid	3.76	4.471		ng/L		119	58 - 144
Perfluorohexanesulfonic acid	3.66	4.587		ng/L		125	44 - 158
Perfluoroheptanesulfonic acid	3.81	4.156		ng/L		109	51 - 150
Perfluorooctanesulfonic acid	3.71	4.362		ng/L		118	43 - 162
Perfluorononanesulfonic acid	3.85	4.094		ng/L		106	46 - 151
Perfluorodecanesulfonic acid	3.86	4.293		ng/L		111	50 - 144
Perfluorododecanesulfonic acid (PFDoS)	3.88	4.122		ng/L		106	30 - 138
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	15.0	17.10		ng/L		114	52 - 158
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	15.2	18.44		ng/L		121	48 - 158
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	15.4	17.49		ng/L		114	46 - 165
Perfluorooctanesulfonamide	4.00	4.008		ng/L		100	47 - 163
NMeFOSA	4.00	4.265		ng/L		107	54 - 155
N-ethylperfluoro-1-octanesulfonamide	4.00	4.300		ng/L		108	49 - 156
NMeFOSAA	4.00	5.155		ng/L		129	32 - 160
NEtFOSAA	4.00	4.359		ng/L		109	51 - 154
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	40.0	43.78		ng/L		109	56 - 151
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	40.0	48.55		ng/L		121	60 - 147
HFPO-DA	16.0	17.37		ng/L		109	58 - 154
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	15.1	16.96		ng/L		113	61 - 148
Perfluoro-3-methoxypropanoic acid	8.00	9.579		ng/L		120	48 - 150
Perfluoro(4-methoxybutanoic acid)	8.00	10.01		ng/L		125	49 - 154
Perfluoro-3,6-dioxaheptanoic acid	8.00	9.175		ng/L		115	47 - 160
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	14.9	15.65		ng/L		105	44 - 167
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	15.1	16.39		ng/L		109	36 - 158
PFEESA	7.12	7.672		ng/L		108	56 - 144
3:3 FTCA	20.0	26.50		ng/L		132	32 - 161
5:3 FTCA	100	101.2		ng/L		101	39 - 156

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 410-442667/1-A
Matrix: Solid
Analysis Batch: 445103

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 442667

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	99.4		20 - 150	11/13/23 09:43	11/18/23 13:43	1
d5-NEtFOSAA	97.0		20 - 150	11/13/23 09:43	11/18/23 13:43	1
M2-4:2 FTS	133		20 - 150	11/13/23 09:43	11/18/23 13:43	1
M2-6:2 FTS	137		20 - 150	11/13/23 09:43	11/18/23 13:43	1
M2-8:2 FTS	119		20 - 150	11/13/23 09:43	11/18/23 13:43	1
13C3 HFPO-DA	110		20 - 150	11/13/23 09:43	11/18/23 13:43	1
d7-N-MeFOSE-M	92.9		20 - 150	11/13/23 09:43	11/18/23 13:43	1
d9-N-EtFOSE-M	88.6		20 - 150	11/13/23 09:43	11/18/23 13:43	1
d5-NEtPFOSA	74.4		20 - 150	11/13/23 09:43	11/18/23 13:43	1
d3-NMePFOSA	80.7		20 - 150	11/13/23 09:43	11/18/23 13:43	1

Lab Sample ID: LCS 410-442667/2-A
Matrix: Solid
Analysis Batch: 445103

associated with samples 17-32

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442667

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	10.0	11.51		ng/g		115	40 - 150
Perfluoropentanoic acid	5.01	6.280		ng/g		125	40 - 150
Perfluorohexanoic acid	2.50	2.996		ng/g		120	40 - 150
Perfluoroheptanoic acid	2.50	3.355		ng/g		134	40 - 150
Perfluorooctanoic acid	2.50	3.069		ng/g		123	40 - 150
Perfluorononanoic acid	2.50	3.917	*+	ng/g		156	40 - 150
Perfluorodecanoic acid	2.50	2.821		ng/g		113	40 - 150
Perfluoroundecanoic acid	2.50	2.855		ng/g		114	40 - 150
Perfluorododecanoic acid	2.50	3.071		ng/g		123	40 - 150
Perfluorotridecanoic acid	2.50	2.799		ng/g		112	40 - 150
Perfluorotetradecanoic acid	2.50	2.761		ng/g		110	40 - 150
Perfluorobutanesulfonic acid	2.22	2.912		ng/g		131	40 - 150
Perfluoropentanesulfonic acid	2.36	2.753		ng/g		117	40 - 150
Perfluorohexanesulfonic acid	2.29	2.456		ng/g		107	40 - 150
Perfluoroheptanesulfonic acid	2.39	2.715		ng/g		114	40 - 150
Perfluorooctanesulfonic acid	2.32	2.568		ng/g		111	40 - 150
Perfluorononanesulfonic acid	2.41	2.463		ng/g		102	40 - 150
Perfluorodecanesulfonic acid	2.42	2.614		ng/g		108	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	2.43	2.467		ng/g		102	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	9.39	11.33		ng/g		121	40 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	9.52	11.59		ng/g		122	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	9.62	11.45		ng/g		119	40 - 150
Perfluorooctanesulfonamide	2.50	2.577		ng/g		103	40 - 150
NMeFOSA	2.50	2.573		ng/g		103	40 - 150
N-ethylperfluoro-1-octanesulfonamide	2.50	2.592		ng/g		104	40 - 150
NMeFOSAA	2.50	3.281		ng/g		131	40 - 150
NEtFOSAA	2.50	3.093		ng/g		124	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	25.0	27.22		ng/g		109	40 - 150

detections - J+, LCSH; ND - no quals

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 410-442667/2-A
Matrix: Solid
Analysis Batch: 445103

associated with samples 17-32

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442667

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol			25.0	29.85		ng/g		119	40 - 150		
HFPO-DA			10.0	10.13		ng/g		101	40 - 150		
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)			9.42	10.60		ng/g		113	40 - 150		
Perfluoro-3-methoxypropanoic acid			5.01	6.391		ng/g		128	40 - 150		
Perfluoro(4-methoxybutanoic acid)			5.01	5.905		ng/g		118	40 - 150		
Perfluoro-3,6-dioxaheptanoic acid			5.01	5.794		ng/g		116	40 - 150		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid			9.32	11.28		ng/g		121	40 - 150		
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid			9.42	10.82		ng/g		115	40 - 150		
PFEESA	detections - J+, LCSH; ND - no quals		4.46	4.771		ng/g		107	40 - 150		
3:3 FTCA			12.5	17.41		ng/g		139	40 - 150		
5:3 FTCA			62.6	64.25		ng/g		103	40 - 150		
7:3 FTCA			62.6	70.03		ng/g		112	40 - 150		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*97.3*		*20 - 150*
13C5 PFPeA	*98.1*		*20 - 150*
13C5 PFHxA	*106*		*20 - 150*
13C4 PFHpA	*104*		*20 - 150*
13C8 PFOA	*112*		*20 - 150*
13C9 PFNA	*93.3*		*20 - 150*
13C6 PFDA	*107*		*20 - 150*
13C7 PFUnA	*104*		*20 - 150*
13C2-PFDoDA	*96.9*		*20 - 150*
13C2 PFTeDA	*95.2*		*20 - 150*
13C3 PFBS	*91.5*		*20 - 150*
13C3 PFHxS	*110*		*20 - 150*
13C8 PFOS	*111*		*20 - 150*
13C8 FOSA	*116*		*20 - 150*
d3-NMeFOSAA	*92.7*		*20 - 150*
d5-NEtFOSAA	*100*		*20 - 150*
M2-4:2 FTS	*111*		*20 - 150*
M2-6:2 FTS	*109*		*20 - 150*
M2-8:2 FTS	*103*		*20 - 150*
13C3 HFPO-DA	*98.2*		*20 - 150*
d7-N-MeFOSE-M	*95.9*		*20 - 150*
d9-N-EtFOSE-M	*92.2*		*20 - 150*
d5-NEtPFOSA	*75.1*		*20 - 150*
d3-NMePFOSA	*83.0*		*20 - 150*

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 410-442667/3-A
Matrix: Solid
Analysis Batch: 445103

associated with samples 17-32

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 442667

detections - J+, LCSH; ND - no quals

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid	1.60	1.667		ng/g		104	40 - 150
Perfluoropentanoic acid	0.800	1.051		ng/g		131	40 - 150
Perfluorohexanoic acid	0.400	0.5086		ng/g		127	40 - 150
Perfluoroheptanoic acid	0.400	0.4603		ng/g		115	40 - 150
Perfluorooctanoic acid	0.400	0.5484		ng/g		137	40 - 150
Perfluorononanoic acid	0.400	0.6261	*+	ng/g		157	40 - 150
Perfluorodecanoic acid	0.400	0.4662		ng/g		117	40 - 150
Perfluoroundecanoic acid	0.400	0.4394		ng/g		110	40 - 150
Perfluorododecanoic acid	0.400	0.5063		ng/g		127	40 - 150
Perfluorotridecanoic acid	0.400	0.4461		ng/g		112	40 - 150
Perfluorotetradecanoic acid	0.400	0.4830		ng/g		121	40 - 150
Perfluorobutanesulfonic acid	0.355	0.4109		ng/g		116	40 - 150
Perfluoropentanesulfonic acid	0.376	0.4120		ng/g		109	40 - 150
Perfluorohexanesulfonic acid	0.366	0.4116		ng/g		113	40 - 150
Perfluoroheptanesulfonic acid	0.381	0.4221		ng/g		111	40 - 150
Perfluorooctanesulfonic acid	0.371	0.4120		ng/g		111	40 - 150
Perfluorononanesulfonic acid	0.385	0.3920		ng/g		102	40 - 150
Perfluorodecanesulfonic acid	0.386	0.3703		ng/g		96	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	0.388	0.3636		ng/g		94	40 - 150
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	1.50	1.686		ng/g		112	40 - 150
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	1.52	1.523		ng/g		100	40 - 150
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	1.54	1.599		ng/g		104	40 - 150
Perfluorooctanesulfonamide	0.400	0.3923		ng/g		98	40 - 150
NMeFOSA	0.400	0.4405		ng/g		110	40 - 150
N-ethylperfluoro-1-octanesulfonamide	0.400	0.4130		ng/g		103	40 - 150
NMeFOSAA	0.400	0.5020		ng/g		126	40 - 150
NEtFOSAA	0.400	0.5162		ng/g		129	40 - 150
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	4.00	4.323		ng/g		108	40 - 150
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	4.00	4.781		ng/g		120	40 - 150
HFPO-DA	1.60	1.571		ng/g		98	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.51	1.685		ng/g		112	40 - 150
Perfluoro-3-methoxypropanoic acid	0.800	1.015		ng/g		127	40 - 150
Perfluoro(4-methoxybutanoic acid)	0.800	1.001		ng/g		125	40 - 150
Perfluoro-3,6-dioxaheptanoic acid	0.800	0.9323		ng/g		117	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.49	1.683		ng/g		113	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	1.51	1.636		ng/g		109	40 - 150
PFEESA	0.712	0.7671		ng/g		108	40 - 150

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoDA (20-150)	PFTDA (20-150)	C3PFBS (20-150)	C3PFHS (20-150)	C8PFOS (20-150)	PFOSA (20-150)	d3NMFOS (20-150)	d5NEFOS (20-150)
LLCS 410-442667/3-A	Lab Control Sample	94.5	95.2	103	111	109	109	97.0	91.0
MB 410-438117/1-A	Method Blank	90.7	81.2	104	102	96.8	104	101	90.6
MB 410-442336/1-A	Method Blank	91.2	87.3	99.7	107	99.8	118	81.9	91.9
MB 410-442667/1-A	Method Blank	99.9	103	101	105	106	113	99.4	97.0

50-150

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M242FTS (20-150)	M262FTS (20-150)	M282FTS (20-150)	HFPODA (20-150)	NMFM (20-150)	NEFM (20-150)	d5NPFSA (20-150)	d3NMFSA (20-150)
620-14747-1	360175-SB-7-0	107	117	124	90.1	73.2	75.9	73.4	77.4
620-14747-1 MS	360175-SB-7-0	125	111	128	89.6	72.9	75.3	72.1	77.6
620-14747-1 MSD	360175-SB-7-0	144	124	139	85.5	70.8	72.1	72.2	76.5
620-14747-2	360175-SB-7-1	127	143	122	112	79.7	81.2	76.3	85.3
620-14747-3	360175-SB-5-0	125	122	104	87.9	71.2	65.5	54.2	61.4
620-14747-3 MS	360175-SB-5-0	123	120	101	90.9	69.7	64.2	53.5	62.5
620-14747-3 MSD	360175-SB-5-0	110	137	119	89.3	66.7	56.6	52.2	58.6
620-14747-4	360175-SB-5-0 D	112	137	95.9	109	78.9	68.0	80.0	91.8
620-14747-5	360175-SB-5-2	121	140	104	90.4	74.7	66.0	55.4	66.5
620-14747-6	360175-SB-5-5	117	122	111	87.2	73.3	69.2	52.8	61.6
620-14747-7	360175-SB-2A-0	103	139	103	94.7	76.2	76.7	68.0	67.4
620-14747-8	360175-SB-2A-2	125	116	112	86.3	62.7	55.7	56.3	58.1
620-14747-9	360175-SB-2A-5	125	119	94.4	93.4	77.3	75.8	57.9	64.6
620-14747-10	360175-SB-3A-0	123	123	103	86.6	76.9	75.6	62.2	67.6
620-14747-10 DU	360175-SB-3A-0	118	112	99.8	93.2	69.5	67.4	56.9	62.6
620-14747-11	360175-SB-3A-0 D	116	125	112	92.1	63.5	57.3	52.2	57.5
620-14747-12	360175-SB-3A-2	107	120	106	88.4	67.8	60.4	53.2	59.5
620-14747-13	360175-SB-3A-5	121	127	108	89.7	75.3	67.6	55.3	65.2
620-14747-14	360175-SB-1A-0	123	145	141	89.2	81.1	81.0	70.4	73.1
620-14747-15	360175-SB-1A-2	135	127	113	92.1	71.0	62.7	58.3	63.8
620-14747-16	360175-SB-1A-5 UJ, EIS	113	126	103	85.7	63.8	51.9	49.0	58.2
620-14747-17	360175-SB-8-0	139	127	128	104	87.0	82.1	76.2	82.0
620-14747-18	360175-SB-8-0.2	129	130	123	95.9	86.0	77.1	74.7	82.1
620-14747-19	360175-SB-8-1	116	112	103	95.2	83.0	74.5	64.9	77.9
620-14747-20	360175-SB-8-2	115	101	109	110	86.6	75.1	69.8	82.9
620-14747-21	360175-SB-8-5	120	129	104	104	93.7	89.0	77.8	84.5
620-14747-22	360175-SB-6-0	145	136	136	92.8	95.3	85.6	88.5	91.5
620-14747-23	360175-SB-6-0.2	139		122	90.0	84.6	73.1	74.7	76.4
620-14747-23 - DL	360175-SB-6-0.2		101						
620-14747-24	360175-SB-6-1	134	140	112	97.0	87.6	78.9	73.4	80.5
620-14747-25	360175-SB-6-2	125	119	104	111	70.2	54.2	68.1	78.6
620-14747-26	360175-SB-6-5	119	128	101	111	81.9	82.9	74.1	85.4
620-14747-27	360175-SB-4-0	144		149	111	88.7	84.2	80.7	85.4
620-14747-27 - DL	360175-SB-4-0		99.4						
620-14747-28	360175-SB-4-2	124	109	109	100	76.7	64.2	71.1	79.7
620-14747-29	360175-SB-4-5	131	99.5	107	104	82.2	74.6	65.5	73.4
620-14747-30	360175-SB-9-0				82.2	87.8	85.4	81.1	87.7
620-14747-30 - DL	360175-SB-9-0	138	143	102					
620-14747-31	360175-SB-9-2	120	114	95.2	101	70.2	56.3	64.7	77.3
620-14747-32	360175-SB-10-1	132	114	110	108	75.1	59.3	70.4	81.0
620-14747-32 DU	360175-SB-10-1	133	134	124	105	75.7	64.0	64.7	75.5
LCS 410-438117/2-A	Lab Control Sample	105	111	98.8	94.3	77.3	75.6	72.4	79.7
LCS 410-442336/2-A	Lab Control Sample	98.6	89.4	92.5	85.5	75.8	73.2	58.2	66.2

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)
LLCS 410-442667/3-A	Lab Control Sample	94.5	95.2	103	111	109	109	97.0	91.0
MB 410-438117/1-A	Method Blank	90.7	81.2	104	102	96.8	104	101	90.6
MB 410-442336/1-A	Method Blank	91.2	87.3	99.7	107	99.8	118	81.9	91.9
MB 410-442667/1-A	Method Blank	99.9	103	101	105	106	113	99.4	97.0

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M262FTS	M282FTS	HFPODA	NMFM	NEFM	d5NPFSA	d3NMFSA
Lab Sample ID	Client Sample ID	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)	(20-150)
620-14747-1	360175-SB-7-0	107	117	124	90.1	73.2	75.9	73.4	77.4
620-14747-1 MS	360175-SB-7-0	125	111	128	89.6	72.9	75.3	72.1	77.6
620-14747-1 MSD	360175-SB-7-0	144	124	139	85.5	70.8	72.1	72.2	76.5
620-14747-2	360175-SB-7-1	127	143	122	112	79.7	81.2	76.3	85.3
620-14747-3	360175-SB-5-0	125	122	104	87.9	71.2	65.5	54.2	61.4
620-14747-3 MS	360175-SB-5-0	123	120	101	90.9	69.7	64.2	53.5	62.5
620-14747-3 MSD	360175-SB-5-0	110	137	119	89.3	66.7	56.6	52.2	58.6
620-14747-4	360175-SB-5-0 D	112	137	95.9	109	78.9	68.0	80.0	91.8
620-14747-5	360175-SB-5-2	121	140	104	90.4	74.7	66.0	55.4	66.5
620-14747-6	360175-SB-5-5	117	122	111	87.2	73.3	69.2	52.8	61.6
620-14747-7	360175-SB-2A-0	103	139	103	94.7	76.2	76.7	68.0	67.4
620-14747-8	360175-SB-2A-2	125	116	112	86.3	62.7	55.7	56.3	58.1
620-14747-9	360175-SB-2A-5	125	119	94.4	93.4	77.3	75.8	57.9	64.6
620-14747-10	360175-SB-3A-0	123	123	103	86.6	76.9	75.6	62.2	67.6
620-14747-10 DU	360175-SB-3A-0	118	112	99.8	93.2	69.5	67.4	56.9	62.6
620-14747-11	360175-SB-3A-0 D	116	125	112	92.1	63.5	57.3	52.2	57.5
620-14747-12	360175-SB-3A-2	107	120	106	88.4	67.8	60.4	53.2	59.5
620-14747-13	360175-SB-3A-5	121	127	108	89.7	75.3	67.6	55.3	65.2
620-14747-14	360175-SB-1A-0	123	145	141	89.2	81.1	81.0	70.4	73.1
620-14747-15	360175-SB-1A-2	135	127	113	92.1	71.0	62.7	58.3	63.8
620-14747-16	360175-SB-1A-5	113	126	103	85.7	63.8	51.9	49.0	58.2
620-14747-17	360175-SB-8-0	139	127	128	104	87.0	82.1	76.2	82.0
620-14747-18	360175-SB-8-0.2	129	130	123	95.9	86.0	77.1	74.7	82.1
620-14747-19	360175-SB-8-1	116	112	103	95.2	83.0	74.5	64.9	77.9
620-14747-20	360175-SB-8-2	115	101	109	110	86.6	75.1	69.8	82.9
620-14747-21	360175-SB-8-5	120	129	104	104	93.7	89.0	77.8	84.5
620-14747-22	360175-SB-6-0	145	136	136	92.8	95.3	85.6	88.5	91.5
620-14747-23	360175-SB-6-0.2 reported from 10x dil - no quals	139	152 *5+	122	90.0	84.6	73.1	74.7	76.4
620-14747-23 - DL	360175-SB-6-0.2	99.3	101	103	90.9	71.3	63.7	71.8	74.6
620-14747-24	360175-SB-6-1	134	140	112	97.0	87.6	78.9	73.4	80.5
620-14747-25	360175-SB-6-2	125	119	104	111	70.2	54.2	68.1	78.6
620-14747-26	360175-SB-6-5	119	128	101	111	81.9	82.9	74.1	85.4
620-14747-27	360175-SB-4-0 reported from 10x dil - no quals	144	156 *5+	149	111	88.7	84.2	80.7	85.4
620-14747-27 - DL	360175-SB-4-0	136	99.4	91.9	106	87.5	84.9	82.1	84.9
620-14747-28	360175-SB-4-2	124	109	109	100	76.7	64.2	71.1	79.7
620-14747-29	360175-SB-4-5 reported from 10x dil - no quals	131	99.5	107	104	82.2	74.6	65.5	73.4
620-14747-30	360175-SB-9-0	176 *5+	156 *5+	158 *5+	82.2	87.8	85.4	81.1	87.7
620-14747-30 - DL	360175-SB-9-0	138	143	102	84.2	76.0	73.9	75.1	80.9
620-14747-31	360175-SB-9-2	120	114	95.2	101	70.2	56.3	64.7	77.3
620-14747-32	360175-SB-10-1	132	114	110	108	75.1	59.3	70.4	81.0
620-14747-32 DU	360175-SB-10-1	133	134	124	105	75.7	64.0	64.7	75.5
LCS 410-438117/2-A	Lab Control Sample	105	111	98.8	94.3	77.3	75.6	72.4	79.7
LCS 410-442336/2-A	Lab Control Sample	98.6	89.4	92.5	85.5	75.8	73.2	58.2	66.2

Sample ID: 360175-SB-3A-0/360175-SB-3A-0 D

Compund	Result	LabQual	Dup	LabQual	RPD	
Perfluorodecanoic acid (PFDA)	0.904		0.866		4.293785	
Perfluorooctanesulfonamide (PFOSA)	0.238		0.221		7.407407	
Perfluorooctanesulfonic acid (PFOS)	0.869		0.854		1.741149	
Perfluorododecanoic acid (PFDoA)	2.26		2.08		8.294931	
Perfluorooctanoic acid (PFOA)	0.157		0.221		33.86243	J, FD
Perfluorotetradecanoic acid (PFTeDA)	0.665		0.616		7.650273	
Perfluorotridecanoic acid (PFTrDA)	0.238		0.194		20.37037	
Perfluoroundecanoic acid (PFUnA)	0.837		0.794		5.272839	

Sample ID: 360175-SB-5-0/360175-SB-5-0 D

Compund	Result	LabQual	Dup	LabQual	RPD
Perfluorodecanoic acid (PFDA)	1.38		1.66		18.42105
Perfluorododecanoic acid (PFDoA)	0.577		0.450		24.73223
Perfluorooctanesulfonic acid (PFOS)	13.4		12.3		8.560311
Perfluorooctanoic acid (PFOA)	0.202		0.243		18.42697
Perfluoroundecanoic acid (PFUnA)	0.254		0.261		2.718447

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 620-14747-1 Analy Batch No.: 441614

SDG No.:

Instrument ID: 30729 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/09/2023 17:08 Calibration End Date: 11/09/2023 18:26 Calibration ID: 55572

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PFEESA	21.427 25.898	23.867 25.616	23.472	26.016	25.292	AveID		24.513				6.9		20.0			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.9860 2.2904	2.2007 2.3544	2.0551	2.0682	2.0906	AveID		2.1493				6.3		20.0			
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	3.3858 3.2251	4.2957 3.4477	4.1812	4.0750	4.1987	AveID		3.8299				11.9		20.0			
Perfluoropentanesulfonic acid	0.8044 0.9592	0.8005 0.9686	0.8574	0.8140	0.7443	AveID		0.8498				10.0		20.0			
Perfluorooctanoic acid	0.4650 0.5139	0.5555 0.5240	0.4884	0.4896	0.4559	AveID		0.4989				7.0		20.0			
Perfluorohexanesulfonic acid	0.7067 0.8301	0.6981 0.7982	0.7925	0.7191	0.6851	AveID		0.7471				7.8		20.0			
7:3 FTCA	0.9405 0.9951	1.1135 0.9451	1.0766	1.0573	1.1210	AveID		1.0356				7.3		20.0			
Perfluorononanoic acid	0.5732 0.6843	0.7102 0.7118	0.6657	0.5430	0.6116	AveID		0.6429				10.5		20.0			
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	4.7011 5.8250	5.0615 +++++	5.7562	5.1435	5.3223	AveID		5.3016				8.1		20.0			
Perfluoroheptanesulfonic acid	0.7713 0.8196	0.7570 0.8290	0.7989	0.7137	0.7791	AveID		0.7812				5.0		20.0			
NMeFOSAA	0.8936 0.8107	0.7135 0.8154	0.8677	0.7795	0.7683	AveID		0.8070				7.5		20.0			
Perfluorodecanoic acid	0.7585 0.7319	0.5795 0.7940	0.6619	0.6420	0.6970	AveID		0.6950				10.6		20.0			
NEtFOSAA	0.7246 0.6266	0.7015 0.6638	0.6683	0.6431	0.6761	AveID		0.6720				4.9		20.0			
Perfluorooctanesulfonic acid	0.7815 0.9195	0.9484 0.9598	0.8420	0.8061	0.8444	AveID		0.8717				8.1		20.0			
Perfluoroundecanoic acid	0.6713 0.7561	0.6628 0.8055	0.6958	0.7174	0.7698	AveID		0.7255				7.4		20.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	1.9958 2.3380	2.1743 2.2713	2.2498	2.1381	2.0531	AveID		2.1743				5.6		20.0			
Perfluorononanesulfonic acid	0.7137 0.8339	0.8414 0.8398	0.8297	0.7260	0.7558	AveID		0.7915				7.2		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM I
PFAS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 620-14747-1

SDG No.:

Client Sample ID: 360175-SB-5-0 Lab Sample ID: 620-14747-3

Matrix: Solid Lab File ID: 23NOV17-46.d

Analysis Method: 1633 Date Collected: 10/18/2023 09:18

Extraction Method: 1633 Shake Date Extracted: 11/11/2023 09:46

Sample wt/vol: 5.67(g) Date Analyzed: 11/17/2023 23:20

Con. Extract Vol.: 5(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: Gemini C18 50mm ID: 3(mm)

% Moisture: 10.7 % Solids: 89.3 GPC Cleanup:(Y/N) N

Cleanup Factor:

Analysis Batch No.: 444874 Units: ng/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	ND	U	0.790	0.0987
2706-90-3	Perfluoropentanoic acid	0.139	J I F1	0.395	0.0987
307-24-4	Perfluorohexanoic acid	ND	U F1	0.197	0.0583
375-85-9	Perfluoroheptanoic acid	0.112	J	0.197	0.0494
335-67-1	Perfluorooctanoic acid	0.202		0.197	0.0504
375-95-1	Perfluorononanoic acid	0.185	J F1 *+	0.197	0.0494
335-76-2	Perfluorodecanoic acid	1.38		0.197	0.0494
2058-94-8	Perfluoroundecanoic acid	0.254		0.197	0.0494
307-55-1	Perfluorododecanoic acid	0.577		0.197	0.0494
72629-94-8	Perfluorotridecanoic acid	0.0682	J	0.197	0.0494
376-06-7	Perfluorotetradecanoic acid	0.171	J	0.197	0.0494
375-73-5	Perfluorobutanesulfonic acid	ND	U	0.197	0.0494
2706-91-4	Perfluoropentanesulfonic acid	ND	U	0.197	0.0494
355-46-4	Perfluorohexanesulfonic acid	0.0967	J	0.197	0.0494
375-92-8	Perfluoroheptanesulfonic acid	ND	U	0.197	0.0494
1763-23-1	Perfluorooctanesulfonic acid	12.3		0.197	0.0504
68259-12-1	Perfluorononanesulfonic acid	ND	U	0.197	0.0494
335-77-3	Perfluorodecanesulfonic acid	ND	U	0.197	0.0494
79780-39-5	Perfluorododecanesulfonic acid (PFDoS)	ND	U	0.197	0.0494
757124-72-4	1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND	U	0.790	0.197
27619-97-2	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND	U	0.987	0.346
39108-34-4	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND	U	0.987	0.346
754-91-6	Perfluorooctanesulfonamide	0.151	J	0.197	0.0494
31506-32-8	NMeFOSA	ND	U	0.197	0.0494
4151-50-2	N-ethylperfluoro-1-octanesulfonamide	ND	U	0.197	0.0494
2355-31-9	NMeFOSAA	0.123	J	0.197	0.0494
2991-50-6	NEtFOSAA	ND	U	0.197	0.0494

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 PFBS										
298.70 > 79.90	4.023	3.986	0.037	0.997	18306	0.0498	Target=3.18		537	
298.70 > 98.80	4.023	3.986	0.037	0.997	6004		3.05(1.59-4.77)		295	
21 TCDCA										
498.10 > 80.00	4.023	4.049	-0.026	0.762	2153	0.004496			97.1	
D 25 13C4 PFHpA										
367.10 > 322.00	4.178	4.127	0.051	1.067	1238830	2.17		86.9	85080	
24 PFHpA										
363.10 > 319.00	4.178	4.129	0.049	1.000	43528	0.1133	Target=3.13		597	
363.10 > 169.00	4.167	4.129	0.038	0.997	13491		3.23(1.56-4.69)		761	
23 PFEESA										R
314.80 > 134.90	4.178	4.129	0.049	1.067	2984	0.003114	Target=13.09		56.7	R
314.80 > 82.90	4.296	4.129	0.167	1.097	1824		1.64(6.54-19.63)		21.4	
D 29 13C2-6:2FTS										
429.10 > 80.90	4.285	4.238	0.047	0.937	152531	5.80		122	8004	
* 30 13C4 PFOA										
417.10 > 172.00	4.423	4.371	0.052		82787	2.50			6090	
D 31 13C8 PFOA										
421.10 > 376.00	4.423	4.371	0.052	1.000	1615029	2.13		85.2	118772	
32 PFOA										M
413.00 > 369.00	4.423	4.373	0.050	1.000	65874	0.2044	Target=2.07		23.8	M
413.00 > 169.00	4.423	4.373	0.050	1.000	28200		2.34(1.03-3.10)		36.8	M
* 35 18O2 PFHxS										
403.00 > 83.90	4.574	4.519	0.055		1046587	2.37			76230	
D 36 13C3 PFHxS										
402.10 > 79.90	4.585	4.529	0.056	1.002	1149557	2.46		104	83068	
34 PFHxS										
398.70 > 79.90	4.585	4.540	0.045	1.000	35576	0.0980	Target=3.35		75.8	
398.70 > 98.90	4.585	4.540	0.045	1.000	9824		3.62(1.68-5.03)		35.3	
* 37 13C5 PFNA										
468.00 > 423.00	4.665	4.608	0.057		529168	1.25			36965	
D 38 13C9 PFNA										
472.10 > 427.00	4.676	4.618	0.058	1.002	527324	1.27		102	37871	
39 PFNA										
463.00 > 419.00	4.676	4.628	0.048	1.000	50813	0.1874	Target=3.99		36.4	
463.00 > 219.00	4.676	4.628	0.048	1.000	10382		4.89(1.99-5.98)		39.1	
D 41 13C2-8:2FTS										
529.10 > 80.90	4.801	4.728	0.073	1.050	71978	4.97		104	5040	
42 PFHpS										
449.00 > 79.90	4.886	4.824	0.062	0.925	11179	0.0299	Target=3.62		481	
449.00 > 98.80	4.877	4.824	0.053	0.924	4314		2.59(1.81-5.43)		262	
D 44 d3-NMeFOSAA										
573.20 > 419.00	4.935	4.862	0.073	0.933	893015	4.04		80.8	63793	
43 NMeFOSAA										
570.10 > 419.00	4.944	4.872	0.072	1.002	17894	0.1242	Target=1.71		83.5	
570.10 > 483.00	4.935	4.872	0.063	1.000	9498		1.88(0.85-2.56)		2811	
D 47 13C6 PFDA										
519.10 > 474.10	4.999	4.918	0.081	1.000	647439	1.22		97.5	47071	

DUSR Calculations Sheet
PFAS

Sample ID: 360175-SB-5-0
TC: PFOA
Val File Result for TC: 0.202

Sample Calc

Area TC	65874	**DF**	1
Area IS	1615029	**Sample Wt (g)**	5.67
		final vol (ml)	5
Conc IS	2.5	**inj vol (ul)**	2
Avg RRF	0.4989	**TS**	0.893
Conc (ng/mL) TC =	0.20439	**Conc (ng/g)**	0.20183464

Notes:
Green = matched reported value
Red = did not match reported value

DATA USABILITY SUMMARY REPORT
MARCH 2024 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

1.0 INTRODUCTION

Groundwater samples were collected in March 2024 at the Irvington Rugs and Cleaners Site in Irvington, New York, and shipped to Eurofins Lancaster located in Lancaster, PA, for analysis. Samples were analyzed by the following methods:

- Per- and Polyfluorinated Alkyl Substances (PFAS) by Method 1633

Results were reported in the following sample delivery group (SDG):

- 620-17311-1

A Data Usability Summary Report (DUSR) review was completed based on the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation guidance (NYSDEC, 2010). Sample event information included in this DUSR is presented in the following tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Qualification Action Summary

A summary of table notes applicable to Tables 1, 2, and 3 is presented just before Table 1.

Laboratory deliverables included:

- Category B deliverables as defined in the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

The DUSR review included the following evaluations as applicable. A table of the project control limits for PFAS is presented in Attachment A. DUSR review checklists and applicable laboratory QC summary forms are included in Attachment B to document QC outliers associated with qualification actions.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- Instrument Calibration (report narrative/lab-qualifier evaluation)
- QC Blanks
- Laboratory Control Samples (LCS)
- Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- Surrogate Spikes (if applicable)
- Internal Standards (if applicable)
- Field Duplicates

- Target Analyte Identification and Quantitation
- Raw Data (chromatograms), Calculation Checks and Transcription Verifications
- Reporting Limits
- Electronic Data Qualification and Verification

Data qualification actions were based on general procedures identified in the NYSDEC validation guideline for PFAS (NYSDEC, 2023).The following laboratory or data review qualifiers are used in the final data presentation:

U = target analyte is not detected above the reported detection limit
J = concentration is estimated
UJ = target analyte is not detected, value is estimated
J+ = concentration is estimated and potentially biased high
J- = concentration is estimated and potentially bias low

Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

2.0 POTENTIAL DATA LIMITATIONS

Based on the DUSR review the majority of data meet the data quality objectives; however, the following potential limitations were identified.

PFAS

The result for perfluorobutanesulfonic acid (PFBS) in sample 360175-DP004012 was qualified as estimated with potential high bias (J+) based on percent recoveries in the associated MS/MSD that were greater than QC limits. The MS/MSD relative percent difference (RPD) also exceeded QC limits. The qualified result is included in Table 3 with reason codes MSH and MSRPD.

The result for perfluoropentanesulfonic acid (PFPeS) in sample 360175-DP004012 was qualified as estimated with potential low bias (J-) based on percent recoveries in the associated MS/MSD that were less than QC limits. The MS/MSD RPD also exceeded QC limits. The qualified result is included in Table 3 with reason codes MSL and MSRPD.

The reporting limit for perfluorododecanesulfonic acid (PFDoS) in sample 360175-DP004012 was qualified as estimated (UJ) based on percent recoveries in the associated MS/MSD that were less than QC limits. The qualified result is included in Table 3 with reason code MSL.

Reporting limits for 8:2 fluorotelomer sulfonic acid (8:2FTS) and N-methyl perfluorooctane sulfonamide (NMeFOSA) in sample 360175-DP004012 were qualified as estimated (UJ) based on recoveries of the associated extracted internal standards greater than the 50-150 control limits specified by NYSDEC (NYSDEC, 2023). Qualified results are included in Table 3 with reason code EIS.

The lab qualified perfluorononanoic acid (PFNA) in samples 360175-DW006 and 360175-DW006D, perfluoropentanesulfonic acid (PFPeS) in sample 360175-DP004012,

and perfluorooctanesulfonic acid (PFOS) in sample 360175-MW003D027 as estimated due to the associated qualifier ion ratios being outside of acceptance limits. Based on professional judgement, results for the affected analytes in the associated samples were qualified estimated (J) and are listed in Table 3 with reason code IR.

3.0 ADDITIONAL QC EXCEEDANCES AND OBSERVATIONS

The following items were not reviewed because data were not available from the laboratory:

- Bile Salt Standard

There were no additional observations or quality control exceedances not specifically addressed above (Section 2.0).

Reference:

NYSDEC, 2005. "Analytical Services Protocols"; July 2005.

NYSDEC, 2010. "Technical Guidance for Site Investigation and Remediation-Appendix 2B"; DER-10; Division of Environmental Remediation; May 2010.

NYSDEC, 2023. “Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids; April 2023.

Data Validator: Gabrielle Davis

5/1/2024

Reviewed by: Julie Ricardi

5/1/2024

Standard Table Notes:

Sample Type (QC Code)

FS – field sample

FD – field duplicate

TB – trip blank

EB – equipment blank

FB – field blank

Matrix

GW – ground water

BW – blank water

TW – tap water

SV – soil vapor

SED – sediment

SW – surface water

S – soil

L – water

Units

mg/L – milligrams per liter

ng/L – nanograms per liter

µg/L – micrograms per liter

mg/kg – milligrams per kilogram

µg/kg – micrograms per kilogram

µg/m^3 – micrograms per cubic meter

Qualifiers

U – not detected above quantitation limit

J – estimated quantity

J+ - estimated quantity, biased high

J- - estimated quantity, biased low

R – data unusable

Fraction

T – total

D – dissolved

N – normal

Qualification Reason Codes

BL1 – method blank qualifier

BL2 – field or trip blank qualifier

CCV – continuing calibration verification recovery outside limits

CCV%D – continuing calibration verification percent difference exceeds goal

CCVRRF – continuing calibration relative response factor low

CI – chromatographic interference present

DCPD – dual column percent difference exceeds limit

E – result exceeds calibration range

EIS - extracted internal standard outside of acceptance criteria

FD – field duplicate precision goal exceeded

FP – false positive interference

HT – holding time for prep or analysis exceeded

HTG – holding time for prep or analysis grossly exceeded

ICV – initial calibration verification recovery outside limit

ICVRRF – initial calibration verification relative response factor low

ICVRSD – initial calibration verification % relative standard deviation exceeds goal

IR – ion ratio was outside of acceptance criteria

ISH – internal standard response greater than limit

ISL – internal standard response less than limit

LCSH – laboratory control sample recovery high

LCSL – laboratory control sample recovery low

LCSRPD – laboratory control sample/duplicate relative % difference precision goal exceeded

LD – lab duplicate precision goal exceeded

MSH – matrix spike and/or MS duplicate recovery high

MSL – matrix spike and/or MS duplicate recovery low

MSRPD – matrix spike/duplicate relative % difference precision goal exceeded

N – analyte identification is not certain

PEM – performance evaluation mixture exceeds limit

PM – sample percent moisture exceeds EPA guideline

SD – serial dilution result exceeds percent difference limit

SP – sample preservation/collection does not meet method requirement

SSH – surrogate recovery high

SSL – surrogate recovery low

TD – dissolved concentration exceeds total

PAHs – polycyclic aromatic hydrocarbons

TABLE 1 - SUMMARY OF SAMPLES AND ANALYTICAL METHODS
DATA USABILITY SUMMARY REPORT
MARCH 2024 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

					Method Class	PFAS
					Analysis Method	E1633
					Fraction	N
SDG	**Location**	**Field Sample ID**	**Sample Date**	**Media**	**Qc Code**	Parameters
620-17311-1	DP-04	360175-DP004012	3/8/2024	GW	FS	40
620-17311-1	DW-06	360175-DW006	3/8/2024	GW	FS	40
620-17311-1	DW-06	360175-DW006D	3/8/2024	GW	FD	40
620-17311-1	MW-03D	360175-MW003D027	3/8/2024	GW	FS	40

Created by: KLD 4/15/2024
Checked by: GTD 4/30/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
MARCH 2024 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	DP-04		DW-06		DW-06		MW-03D	
		Lab Sample Delivery Group	620-17311-1		620-17311-1		620-17311-1		620-17311-1	
		Field Sample Date	3/8/2024		3/8/2024		3/8/2024		3/8/2024	
		Field Sample ID	360175-DP004012		360175-DW006		360175-DW006D		360175-MW003D027	
		Qc Code	FS		FS		FD		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	11-Chlororeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	NG/L	8.53	U	7.84	U	8.24	U	7.78	U
E1633	2H,2H,3H,3H-Perfluorooctanoic acid (5:3FTCA)	NG/L	53.3	U	49	U	51.5	U	48.6	U
E1633	3-Perfluoroheptyl propanoic acid (7:3FTCA)	NG/L	53.3	U	49	U	51.5	U	48.6	U
E1633	3-Perfluoropropyl propanoic acid (3:3FTCA)	NG/L	10.7	U	9.79	U	10.3	U	9.73	U
E1633	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	NG/L	8.53	U	7.84	U	8.24	U	7.78	U
E1633	4:2 Fluorotelomer sulfonic acid (4:2FTS)	NG/L	8.53	U	7.84	U	8.24	U	7.78	U
E1633	6:2 Fluorotelomer sulfonic acid (6:2FTS)	NG/L	8.53	U	7.84	U	8.24	U	7.78	U
E1633	8:2 Fluorotelomer sulfonic acid (8:2FTS)	NG/L	8.53	UJ	7.84	U	8.24	U	7.78	U
E1633	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	NG/L	8.53	U	7.84	U	8.24	U	7.78	U
E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	NG/L	8.53	U	7.84	U	8.24	U	7.78	U
E1633	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	NG/L	2.13	U	1.96	U	2.06	U	1.95	U
E1633	N-Ethyl perfluorooctane sulfonamidoethanol (NEtFOSE)	NG/L	21.3	U	19.6	U	20.6	U	19.5	U
E1633	N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	NG/L	3.2		1.96	U	2.06	U	1.95	U
E1633	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	NG/L	2.13	UJ	1.96	U	2.06	U	1.95	U
E1633	N-Methyl Perfluorooctane Sulfonamidoethanol (NMEFOSE)	NG/L	21.3	U	19.6	U	20.6	U	19.5	U
E1633	N-Methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	NG/L	1.76	J	3.92	U	4.12	U	3.89	U
E1633	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NG/L	4.27	U	3.92	U	4.12	U	3.89	U
E1633	Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NG/L	4.27	U	3.92	U	4.12	U	3.89	U
E1633	Perfluoro-3-methoxypropanoic acid (PFMPA)	NG/L	4.27	U	3.92	U	4.12	U	3.89	U
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	NG/L	4.27	U	3.92	U	4.12	U	3.89	U
E1633	Perfluorobutanesulfonic acid (PFBS)	NG/L	20.9	J+	7.36		7.41		6.97	
E1633	Perfluorobutanoic acid (PFBA)	NG/L	23.3		5.94	J	6.5	J	9.49	
E1633	Perfluorodecanesulfonic acid (PFDS)	NG/L	2.13	U	1.96	U	2.06	U	1.95	U
E1633	Perfluorodecanoic acid (PFDA)	NG/L	15.5		1.96	U	2.06	U	1.95	U
E1633	Perfluorododecanesulfonic acid (PFDoS)	NG/L	2.13	UJ	1.96	U	2.06	U	1.95	U
E1633	Perfluorododecanoic acid (PFDoA)	NG/L	2.13	U	1.96	U	2.06	U	1.95	U
E1633	Perfluoroheptanesulfonic acid (PFHpS)	NG/L	2.53		1.96	U	2.06	U	1.95	U
E1633	Perfluoroheptanoic acid (PFHpA)	NG/L	47.3		2.64		2.6		6.29	
E1633	Perfluorohexanesulfonic acid (PFHxS)	NG/L	15.1		1.95	J	1.93	J	2.54	
E1633	Perfluorohexanoic acid (PFHxA)	NG/L	48.3		3.66		3.49		14.6	
E1633	Perfluorononanesulfonate	NG/L	2.13	U	1.96	U	2.06	U	1.95	U
E1633	Perfluorononanoic acid (PFNA)	NG/L	22.7		0.854	J	0.766	J	1.95	U

Created by: KLD 4/30/2024
Checked by: GTD 5/1/2024

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA USABILITY SUMMARY REPORT
MARCH 2024 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

		Location	DP-04		DW-06		DW-06		MW-03D	
		Lab Sample Delivery Group	620-17311-1		620-17311-1		620-17311-1		620-17311-1	
		Field Sample Date	3/8/2024		3/8/2024		3/8/2024		3/8/2024	
		Field Sample ID	360175-DP004012		360175-DW006		360175-DW006D		360175-MW003D027	
		Qc Code	FS		FS		FD		FS	
Method	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
E1633	Perfluorooctanesulfonamide (PFOSA)	NG/L	3.62		1.96	U	2.06	U	1.95	U
E1633	Perfluorooctanesulfonic acid (PFOS)	NG/L	331		11.3		11.2		2.3	J
E1633	Perfluorooctanoic acid (PFOA)	NG/L	66.7		13.6		13.9		21.9	
E1633	Perfluoropentanesulfonic acid (PFPeS)	NG/L	33.7	J-	0.513	J	2.06	U	1.95	U
E1633	Perfluoropentanoic acid (PFPeA)	NG/L	61.5		2.96	J	3.62	J	15.6	
E1633	Perfluorotetradecanoic acid (PFTeDA)	NG/L	2.13	U	1.96	U	2.06	U	1.95	U
E1633	Perfluorotridecanoic acid (PFTrDA)	NG/L	2.13	U	1.96	U	2.06	U	1.95	U
E1633	Perfluoroundecanoic acid (PFUnA)	NG/L	2.13	U	1.96	U	2.06	U	1.95	U

TABLE 3 - SUMMARY OF QUALIFICATION ACTIONS
DATA USABILITY SUMMARY REPORT
MARCH 2024 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

Lab SDG	Lab Sample ID	Field Sample ID	Method	Fraction	Parameter	Lab Result	Lab Qualifier	Final Result	Final Qualifier	Val Reason Code	Units
620-17311-1	620-17311-1	360175-DW006	E1633	N	Perfluorononanoic acid (PFNA)	0.854	J I	0.854	J	IR	NG/L
620-17311-1	620-17311-2	360175-DW006D	E1633	N	Perfluorononanoic acid (PFNA)	0.766	J I	0.766	J	IR	NG/L
620-17311-1	620-17311-3	360175-DP004012	E1633	N	N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	2.13	U	2.13	UJ	EIS	NG/L
620-17311-1	620-17311-3	360175-DP004012	E1633	N	Perfluoropentanesulfonic acid (PFPeS)	33.7	F2 I F1	33.7	J-	MSL, MSRPD, IR	NG/L
620-17311-1	620-17311-3	360175-DP004012	E1633	N	Perfluorobutanesulfonic acid (PFBS)	20.9	F2 F1	20.9	J+	MSH, MSRPD	NG/L
620-17311-1	620-17311-3	360175-DP004012	E1633	N	8:2 Fluorotelomer sulfonic acid (8:2FTS)	8.53	U	8.53	UJ	EIS	NG/L
620-17311-1	620-17311-3	360175-DP004012	E1633	N	Perfluorododecanesulfonic acid (PFDoS)	2.13	U	2.13	UJ	MSL	NG/L
620-17311-1	620-17311-4	360175-MW003D027	E1633	N	Perfluorooctanesulfonic acid (PFOS)	2.3	I	2.3	J	IR	NG/L

Created by: KLD 4/30/2024
Checked by: GTD 5/1/2024

ATTACHMENT A
SUMMARY OF VALIDATION QC LIMITS FOR SURROGATES, SPIKES, AND DUPLICATES
BASED ON THE REGION 2 VALIDATION GUIDELINES

PARAMETER	QC TEST	ANALYTE	WATER (%R)	WATER (RPD)
Per- and Polyfluorinated Alkyl Substances (PFAS)	Surrogate	All Surrogate Compounds	50 - 150	
	LCS	All Target Compounds	70 - 130	
	MS/MSD	All Target Compounds	70 - 130	30
	Field Duplicate	All Target Compounds		30

DATA USABILITY SUMMARY REPORT
MARCH 2024 SAMPLING EVENT
IRVINGTON RUGS AND CLEANERS
IRVINGTON, NEW YORK

ATTACHMENT B

PFAS

NYSDEC DUSR PROJECT CHEMIST REVIEW RECORD
Project: Irvington Rugs March 2024
Method: USEPA 1633
Laboratory: TAL New England **SDG(s):** 620-17311-1
Date: 4/30/2024
Reviewer: Gabrielle Davis
Based on NYSDEC *Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids,* April 2023

Review Level [X] NYSDEC DUSR [ ] USEPA Region II Guideline

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were problems noted? No
   Were all the samples on the COC analyzed for the requested analyses? YES NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? YES NO (circle one)

2. ☑ **Holding time and Sample Collection**
   Were all samples extracted within the 28 day holding time? Were aqueous sample extracts analyzed with 28 days of extraction, soil sample extracts within 40 days of extraction per NYSDEC Data Review Guidelines? YES NO (circle one)

   Were all samples received in proper containers at cooler temp ≤6 degrees C and protected from light? YES NO (circle one)

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES NO (circle one)
   Are rinse blanks free of contamination? YES NO NA (circle one)
   Are field reagent blanks free of contamination? YES NO NA (circle one)

   Per NYSDEC guidelines, there should be no detections in the method blanks greater than the RLs. EBs, RBs, FBs should be evaluated in the same manner as method blanks. Use the most contaminated blank to evaluate associated sample results.

   Use the following table from NYSDEC Data Review Guidelines for qualification actions:

Blank Result	Sample Result	Qualification
Any detection	<Reporting limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting limit	>Reporting limit and <10x blank result	J+ biased high

4. ☑ **Mass Calibration Verification – Data Package Narrative Review**
   Did the laboratory narrative identify any results that were not within method criteria? YES NO (circle one)
   If yes, use professional judgment to evaluate data and qualify results if needed

5. ☑ **Extracted Internal Standards [EIS]** (water/soil limits: 50-150%; poor performing analytes [PFBA, PFPeA, fluorotelomer sulfonates] limits: 25-150%) RTs within 0.4 minutes (24 seconds) of CCAL standard (or ICAL mid-point if samples follow ICAL)
   Were all extracted internal standard results within limits? YES NO (circle one) See attached - UJ, EIS
   Were any extracted internal standard recoveries < 10%? (use professional judgment; reject ND)

GTD 4/30/2024

6. ☑ **Non-extracted Internal Standards (NIS) [Instrument Injected Internal Standards] – Data Package Narrative Review**
(Area Limits = -50% to +100%, RTs within 0.4 minutes (24 seconds) of daily CCAL standard (or ICAL mid-point if samples follow ICAL))
Did the laboratory narrative identify any sample injected internal standards that were not within criteria? YES NO (circle one)

Did the laboratory qualify results based on injected internal standard exceedances? YES NO
If yes to above, use professional judgment to evaluate data and qualify results if needed

7. ☑ **Instrument Calibration – Data Package Narrative Review**
Did the laboratory narrative identify compounds that were not within criteria in the initial and/or continuing calibration standards? YES NO (circle one)

Initial Calibration %RSD ≤20, Continuing Calibration % R 70-130, ICV % R 70-130,

Did the laboratory qualify results based on initial or continuing calibration exceedances? YES NO

Are the Signal to Noise ratios for all target compounds > 3 in the low point standard? YES NO

Were branched isomers included in calibration standards for PFOS and other compounds where standards are available? YES NO

8. ☑ **Matrix Spike** (70-130%)
Were MS/MSDs submitted/analyzed? YES NO

See attached - J+, MSH, MSRPD, J-, MSL, MSRPD and UJ, MSL

Were all results within limits? YES NO NA (circle one)

9. ☑ **Field Duplicates** (water/soil RPD limit: ≤30)
Were Field Duplicates submitted/analyzed? YES NO

10. ☑ **Laboratory Control Sample Results** (70-130%)
Were all results within limits? YES NO (circle one)

11. ☑ **Raw Data Review and Calculation Checks (Note: checks 13 and 14 apply to sample(s) selected for calculation checks and raw data review)**

See attached for calculation checks

12. ☑ **Bile Salt Standard Retention Time (RT) Check**
Did the laboratory analyze a bile salt standard? (required by Method 1633 for all sample matrices) YES NO (circle one)

Is the RT of the bile salt standard >1 minute from the RT window for PFOS (including linear and branched isomers)? YES NO (circle one)

NA

NOTE: Three bile acids (TDCA, TCDCA, and TUDCA) have the same (<1 amu) primary transition masses as PFOS: m/z 498.9 ->79.9 for PFOS, and m/z 499.2 ->79.9 for the bile acids. As a result, the presence of these bile acids in samples can cause high bias to PFOS concentrations if co-eluting with PFOS. The bile salt standard must demonstrate chromatographic separation so there is no co-elution with any PFOS isomer.

13. ☑ **Signal-to-Noise (S/N) Ratio for positive identification/detection of Target Analytes and EIS--**
From NYSDEC guidance (April 2023): *The signal to noise ratio for the primary ion should be at least 3:1. If the ratio is less than 3:1, the peak is discernable from the baseline noise and symmetrical, the result can be reported. If the peak appears to be baseline noise and/or the shape is irregular, qualify the result as tentatively identified.*

From Method 1633 4th Draft: Quantitation ions and confirmation ions S/N ≥ 3; or if no confirmation ion is expected (Method 1633 4th Draft Table 9), quantitation ion must have S/N ≥10, as described in Method 1633 4th Draft Section 15.1.1: *For target analytes or EISs to be identified, peak responses of the quantitation and confirmation ions must be at least three times the background noise level (S/N 3:1). The quantitation ion must have a S/N ≥ 10:1 if there is no confirmation ion* [specified in Table 9]. *If the S/N ratio is not met due to high background noise, the laboratory must correct the issue (e.g., perform instrument troubleshooting and any necessary maintenance, such as cleaning the ion source, replacing the LC column, or if needed, repeat the cleanup steps to remove background due to the sample matrix). If the S/N ratio is not met but the background is low, then the analyte is to be considered a non-detect.* Note: If lab result is <RL or <LOQ and expected confirmation ion is not detected, qualify U at RL, or LOD or sample concentration, as appropriate. If lab result is >RL or >LOQ and expected confirmation ion is not detected, review raw data and use professional judgment. Okay

14. ☑ **Ion Abundance Ratio (IAR) for positive identification/detection of Target Analytes and EIS--**
    - Confirm transition ions in Method 1633 4th Draft Table 9 (or "*Analyte Ions Monitored, Extracted Internal Standard, and Non-extracted Internal Standard Used for Quantification*" table in current draft Method 1633) were used for all analytes Okay
    - As defined in Method 1633 4th Draft Section 14.3.5: AreaQ1/AreaQ2 where Q1 and Q2 are primary and secondary transition masses for detected compounds. Acceptance criteria are based on comparison with ion ratios established by the ICAL midpoint standard or daily CCV. If secondary transition masses are identified in Method 1633 4th Draft Table 9 (or "*Analyte Ions Monitored, Extracted Internal Standard, and Non-extracted Internal Standard Used for Quantification*" table in current draft Method 1633), IAR must be within ±50% of IAR established for the ICAL midpoint standard or daily CCV per Section 15.1.3. Check ion ratios reported for LCS and samples. See attached - subset J, IR

15. ☑ **Electronic Data Review and Edits**
    Does the EDD match the Form Is? YES NO (circle one)

16. ☑ **Tables**
    Table 1 (Samples and Analytical Methods)
    Table 2 (Analytical Results)
    Table 3 (Qualification Actions)
    Were all tables produced and reviewed? YES NO (circle one)

GTD 4/30/2024

Isotope Dilution Summary

Client: WSP USA Environment & Infrastructure Inc. Job ID: 620-17311-1
Project/Site: Irvington R&C

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water **Prep Type: Total/NA**

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (5-130)	PFPeA (40-130)	13C5PHA (40-130)	C4PFHA (40-130)	C8PFOA (40-130)	C9PFNA (40-130)	C6PFDA (40-130)	13C7PUA (30-130)
620-17311-1	360175-DW006	85.3	82.4	84.9	82.3	99.9	83.8	82.3	70.6
620-17311-2	360175-DW006D	89.5	85.7	86.1	88.8	82.5	82.6	78.0	73.1
620-17311-3	360175-DP004012	80.3	77.3	82.1	89.3	74.1	88.1	81.3	80.0
620-17311-3 MS	360175-DP004012	84.6	79.7	86.0	90.4	100	95.6	93.5	89.1
620-17311-3 MSD	360175-DP004012	79.9	82.1	86.9	94.3	109	95.1	86.2	91.2
620-17311-4	360175-MW003D027	89.0	84.9	89.4	87.5	96.7	88.4	89.5	83.3
LCS 410-483195/2-A	Lab Control Sample	93.9	87.7	90.0	83.8	99.3	92.1	92.0	90.5
LLCS 410-483195/3-A	Lab Control Sample	92.4	91.4	95.3	101	96.8	96.6	89.1	87.1
MB 410-483195/1-A	Method Blank	87.0	86.0	82.5	80.4	92.5	87.6	86.7	82.3

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDoDA (10-130)	PFTDA (10-130)	C3PFBS (40-135)	C3PFHS (40-130)	C8PFOS (40-130)	PFOSA (40-130)	d3NMFOS (40-170)	d5NEFOS (25-135)
620-17311-1	360175-DW006	58.8	51.2	90.3	83.6	78.7	71.0	70.9	62.6
620-17311-2	360175-DW006D	60.3	51.3	89.8	90.9	83.0	73.3	74.7	66.5
620-17311-3	360175-DP004012	70.1	52.4	91.5	106	91.1	93.4	75.3	73.7
620-17311-3 MS	360175-DP004012	77.9	66.8	125	98.8	94.6	99.9	78.9	77.1
620-17311-3 MSD	360175-DP004012	76.4	61.6	103	106	88.1	98.4	82.0	75.6
620-17311-4	360175-MW003D027	76.7	71.9	97.8	85.2	88.7	72.8	82.9	79.3
LCS 410-483195/2-A	Lab Control Sample	85.2	81.1	102	103	90.4	81.6	89.5	92.8
LLCS 410-483195/3-A	Lab Control Sample	85.0	81.3	97.5	91.5	93.3	80.3	91.2	82.7
MB 410-483195/1-A	Method Blank	78.4	78.0	89.6	86.0	89.5	80.6	86.8	86.7

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M242FTS (40-200)	M262FTS (40-200)	M282FTS (40-300)	HFPODA (40-130)	NMFM (10-130)	NEFM (10-130)	d5NPFSA (10-130)	d3NMFSA (10-130)	
620-17311-1	360175-DW006	91.0	97.2	70.2	77.8	53.7	51.5	50.9	53.1	
620-17311-2	360175-DW006D	112	88.9	85.6	84.4	56.4	55.9	56.3	58.7	
620-17311-3	360175-DP004012	134	139	153	73.3	65.6	55.9	64.3	47.1	UJ, EIS
620-17311-3 MS	360175-DP004012	113	116	131	76.7	73.5	62.6	75.2	59.9	
620-17311-3 MSD	360175-DP004012	138	150	144	73.8	78.2	59.0	60.4	45.4	MSD - no quals
620-17311-4	360175-MW003D027	101	86.5	84.4	84.9	73.9	72.8	67.0	67.0	
LCS 410-483195/2-A	Lab Control Sample	99.6	98.9	93.6	84.7	91.0	88.1	74.5	71.9	
LLCS 410-483195/3-A	Lab Control Sample	106	86.6	92.8	93.7	90.1	85.9	74.0	70.9	
MB 410-483195/1-A	Method Blank	82.6	82.7	80.8	78.3	84.2	82.0	73.2	71.7	

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA

GTD 4/30/2024

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-17311-3 MS
Matrix: Water
Analysis Batch: 483605

Client Sample ID: 360175-DP004012
Prep Type: Total/NA
Prep Batch: 483195

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanoic acid	61.5		49.9	115.8		ng/L		109	65 - 135
Perfluorohexanoic acid	48.3		25.0	70.24		ng/L		88	70 - 145
Perfluoroheptanoic acid	47.3		25.0	71.86		ng/L		98	70 - 150
Perfluorooctanoic acid	66.7		25.0	87.84		ng/L		85	70 - 150
Perfluorononanoic acid	22.7		25.0	46.90		ng/L		97	70 - 150
Perfluorodecanoic acid	15.5		25.0	38.07		ng/L		91	70 - 140
Perfluoroundecanoic acid	ND	U	25.0	24.47		ng/L		98	70 - 145
Perfluorododecanoic acid	ND	U	25.0	26.57		ng/L		106	70 - 140
Perfluorotridecanoic acid	ND	U	25.0	24.40		ng/L		98	65 - 140
Perfluorotetradecanoic acid	ND	U	25.0	25.20		ng/L		101	60 - 140
Perfluorobutanesulfonic acid J+, MSH	20.9	F2 F1	22.1	101.3	I F1	ng/L		364	60 - 145
Perfluoropentanesulfonic acid J-, MSL	33.7	F2 I F1	23.4	37.02	F1 I	ng/L		14	65 - 140
Perfluorohexanesulfonic acid	15.1		22.7	34.80		ng/L		87	65 - 145
Perfluoroheptanesulfonic acid	2.53		23.8	26.26		ng/L		100	70 - 150
Perfluorooctanesulfonic acid Sample result >4X spike - no quals	331		23.2	345.6	4	ng/L		62	55 - 150
Perfluorononanesulfonic acid	ND	U	24.0	22.33		ng/L		93	65 - 145
Perfluorodecanesulfonic acid	ND	U	24.1	19.59		ng/L		81	60 - 145
Perfluorododecanesulfonic acid (PFDoS) UJ, MSL	ND	U	24.2	13.23		ng/L		55	50 - 145
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND	U	93.3	93.50		ng/L		100	70 - 145
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND	U	94.7	106.5		ng/L		113	65 - 155
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND	U	95.7	99.97		ng/L		105	60 - 150
Perfluorooctanesulfonamide	3.62		25.0	26.78		ng/L		93	70 - 145
NMeFOSA	ND	U	25.0	25.90		ng/L		104	60 - 150
N-ethylperfluoro-1-octanesulfonamide	ND	U	25.0	23.56		ng/L		94	65 - 145
NMeFOSAA	1.76	J	25.0	25.47		ng/L		95	50 - 140
NEtFOSAA	3.20		25.0	28.43		ng/L		101	70 - 145
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND	U	250	235.9		ng/L		95	70 - 145
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND	U	250	241.0		ng/L		97	70 - 135
HFPO-DA	ND	U	99.9	96.26		ng/L		96	70 - 140
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	U	94.1	103.4		ng/L		110	65 - 145
Perfluoro-3-methoxypropanoic acid	ND	U	49.9	54.13		ng/L		108	55 - 140
Perfluoro(4-methoxybutanoic acid)	ND	U	49.9	57.07		ng/L		114	60 - 150
Perfluoro-3,6-dioxaheptanoic acid	ND	U	49.9	44.04		ng/L		88	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	U	93.1	117.2		ng/L		126	70 - 155
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	U	94.1	91.26		ng/L		97	55 - 160
PFEESA	ND	U	44.4	41.84		ng/L		94	70 - 140
3:3 FTCA	ND	U	125	147.5		ng/L		118	65 - 130

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-17311-3 MS
Matrix: Water
Analysis Batch: 483605

Client Sample ID: 360175-DP004012
Prep Type: Total/NA
Prep Batch: 483195

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
5:3 FTCA	ND	U	624	689.5		ng/L		110	70 - 135
7:3 FTCA	ND	U	624	839.7		ng/L		135	50 - 145

High bias, sample ND - no quals

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*84.6*		*5 - 130*
13C5 PFPeA	*79.7*		*40 - 130*
13C5 PFHxA	*86.0*		*40 - 130*
13C4 PFHpA	*90.4*		*40 - 130*
13C8 PFOA	*100*		*40 - 130*
13C9 PFNA	*95.6*		*40 - 130*
13C6 PFDA	*93.5*		*40 - 130*
13C7 PFUnA	*89.1*		*30 - 130*
13C2-PFDoDA	*77.9*		*10 - 130*
13C2 PFTeDA	*66.8*		*10 - 130*
13C3 PFBS	*125*		*40 - 135*
13C3 PFHxS	*98.8*		*40 - 130*
13C8 PFOS	*94.6*		*40 - 130*
13C8 FOSA	*99.9*		*40 - 130*
d3-NMeFOSAA	*78.9*		*40 - 170*
d5-NEtFOSAA	*77.1*		*25 - 135*
M2-4:2 FTS	*113*		*40 - 200*
M2-6:2 FTS	*116*		*40 - 200*
M2-8:2 FTS	*131*		*40 - 300*
13C3 HFPO-DA	*76.7*		*40 - 130*
d7-N-MeFOSE-M	*73.5*		*10 - 130*
d9-N-EtFOSE-M	*62.6*		*10 - 130*
d5-NEtPFOSA	*75.2*		*10 - 130*
d3-NMePFOSA	*59.9*		*10 - 130*

Lab Sample ID: 620-17311-3 MSD
Matrix: Water
Analysis Batch: 483605

Client Sample ID: 360175-DP004012
Prep Type: Total/NA
Prep Batch: 483195

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanoic acid	23.3		105	138.7		ng/L		110	70 - 140	4	30
Perfluoropentanoic acid	61.5		52.6	124.4		ng/L		120	65 - 135	7	30
Perfluorohexanoic acid	48.3		26.3	70.91		ng/L		86	70 - 145	1	30
Perfluoroheptanoic acid	47.3		26.3	68.61		ng/L		81	70 - 150	5	30
Perfluorooctanoic acid	66.7		26.3	96.73		ng/L		114	70 - 150	10	30
Perfluorononanoic acid	22.7		26.3	46.24		ng/L		90	70 - 150	1	30
Perfluorodecanoic acid	15.5		26.3	40.22		ng/L		94	70 - 140	5	30
Perfluoroundecanoic acid	ND	U	26.3	24.93		ng/L		95	70 - 145	2	30
Perfluorododecanoic acid	ND	U	26.3	27.30		ng/L		104	70 - 140	3	30
Perfluorotridecanoic acid	ND	U	26.3	25.61		ng/L		97	65 - 140	5	30
Perfluorotetradecanoic acid	ND	U	26.3	26.77		ng/L		102	60 - 140	6	30
Perfluorobutanesulfonic acid	20.9	F2 F1	23.2	266.1	I F1 F2	ng/L		1055	60 - 145	90	30
Perfluoropentanesulfonic acid	33.7	F2 I F1	24.7	61.85	I F2	ng/L		114	65 - 140	50	30
Perfluorohexanesulfonic acid	15.1		23.9	45.08		ng/L		125	65 - 145	26	30
Perfluoroheptanesulfonic acid	2.53		25.0	29.04		ng/L		106	70 - 150	10	30

Add MSRPD

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 620-17311-3 MSD **Client Sample ID: 360175-DP004012**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 483605 **Prep Batch: 483195**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorooctanesulfonic acid	331		24.4	361.7	4	ng/L		124	55 - 150	5	30
Perfluorononanesulfonic acid	ND	U	25.2	24.17		ng/L		96	65 - 145	8	30
Perfluorodecanesulfonic acid	ND	U	25.3	20.71		ng/L		82	60 - 145	6	30
Perfluorododecanesulfonic acid (PFDoS)	ND	U	25.4	14.14		ng/L		56	50 - 145	7	30
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	ND	U	98.2	74.21		ng/L		76	70 - 145	23	30
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND	U	99.7	99.20		ng/L		100	65 - 155	7	30
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND	U	101	110.5		ng/L		110	60 - 150	10	30
Perfluorooctanesulfonamide	3.62		26.3	28.30		ng/L		94	70 - 145	6	30
NMeFOSA	ND	U	26.3	30.01		ng/L		114	60 - 150	15	30
N-ethylperfluoro-1-octanesulfonamide	ND	U	26.3	25.62		ng/L		97	65 - 145	8	30
NMeFOSAA	1.76	J	26.3	24.25		ng/L		86	50 - 140	5	30
NEtFOSAA	3.20		26.3	28.75		ng/L		97	70 - 145	1	30
2-(N-methylperfluoro-1-octanesulfonamido) ethanol	ND	U	263	260.0		ng/L		99	70 - 145	10	30
2-(N-ethylperfluoro-1-octanesulfonamido) ethanol	ND	U	263	263.4		ng/L		100	70 - 135	9	30
HFPO-DA	ND	U	105	106.7		ng/L		101	70 - 140	10	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	U	99.1	116.2		ng/L		117	65 - 145	12	30
Perfluoro-3-methoxypropanoic acid	ND	U	52.6	53.98		ng/L		103	55 - 140	0	30
Perfluoro(4-methoxybutanoic acid)	ND	U	52.6	55.28		ng/L		105	60 - 150	3	30
Perfluoro-3,6-dioxaheptanoic acid	ND	U	52.6	44.87		ng/L		85	50 - 150	2	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	ND	U	98.0	134.7		ng/L		137	70 - 155	14	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	U	99.1	103.4		ng/L		104	55 - 160	12	30
PFEESA	ND	U	46.8	40.64		ng/L		87	70 - 140	3	30
3:3 FTCA	ND	U	131	154.4		ng/L		117	65 - 130	5	30
5:3 FTCA	ND	U	657	747.9		ng/L		114	70 - 135	8	30
7:3 FTCA	ND	U	657	914.4		ng/L		139	50 - 145	9	30

Already qual'd UJ, MSL

High bias, sample ND - no quals

High bias, sample ND - no quals

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*79.9*		*5 - 130*
13C5 PFPeA	*82.1*		*40 - 130*
13C5 PFHxA	*86.9*		*40 - 130*
13C4 PFHpA	*94.3*		*40 - 130*
13C8 PFOA	*109*		*40 - 130*
13C9 PFNA	*95.1*		*40 - 130*
13C6 PFDA	*86.2*		*40 - 130*
13C7 PFUnA	*91.2*		*30 - 130*
13C2-PFDoDA	*76.4*		*10 - 130*
13C2 PFTeDA	*61.6*		*10 - 130*

GTD 4/30/2024

Sample ID: 360175-DW006 / 360175-DW006D

Compound	Result	LabQual	Dup	LabQual	RPD
Perfluorobutanesulfonic acid (PFBS)	7.36		7.41		0.7
Perfluoroheptanoic acid (PFHpA)	2.64		2.60		1.5
Perfluorohexanoic acid (PFHxA)	3.66		3.49		4.8
Perfluorooctanesulfonic acid (PFOS)	11.3		11.2		0.9
Perfluorooctanoic acid (PFOA)	13.6		13.9		2.2

GTD 4/30/2024

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 22 13C4 PFHpA										
367.10 > 322.00	3.834	3.826	0.008	1.071	763577	2.06		82.3	62185	
23 PFHpA										
363.10 > 319.00	3.824	3.834	-0.010	0.998	86011	0.2693	Target=3.34		1003	
363.10 > 169.00	3.824	3.834	-0.010	0.998	27337		3.15(1.67-5.01)		1199	
D 26 13C2-6:2FTS										
429.10 > 80.90	3.954	3.936	0.018	0.939	91416	4.62		97.2	3009	
27 PFPeS										
349.10 > 79.90	3.954	3.955	-0.001	0.939	16604	0.0524	Target=2.51		854	
349.10 > 98.90	3.954	3.955	-0.001	0.939	7038		2.36(1.25-3.76)		543	
D 28 13C8 PFOA										
421.10 > 376.00	4.067	4.059	0.008	1.000	781560	2.50		99.9	61515	
* 30 13C4 PFOA										
417.10 > 172.00	4.067	4.059	0.008		26504	2.50			2052	
29 PFOA										
413.00 > 369.00	4.067	4.068	-0.001	1.000	296931	1.39	Target=1.62		197	
413.00 > 169.00	4.067	4.068	-0.001	1.000	174321		1.70(0.81-2.42)		265	
* 33 18O2 PFHxS										
403.00 > 83.90	4.212	4.206	0.006		1010046	2.37			84487	
D 32 13C3 PFHxS										
402.10 > 79.90	4.212	4.206	0.006	1.000	898250	1.98		83.6	56186	
34 PFHxS										
398.70 > 79.90	4.212	4.213	-0.001	1.000	42638	0.1996	Target=2.94		63.0	
398.70 > 98.90	4.204	4.213	-0.009	0.998	16955		2.51(1.47-4.41)		66.7	
* 36 13C5 PFNA										
468.00 > 423.00	4.301	4.293	0.008		394707	1.25			31269	
D 35 13C9 PFNA										
472.10 > 427.00	4.301	4.293	0.008	1.000	322837	1.05		83.8	25548	
37 PFNA J, IR										R
463.00 > 419.00	4.301	4.301	0.0	1.000	16273	0.0872	Target=3.99		20.3	R
463.00 > 219.00	4.310	4.301	0.009	1.002	2693		6.04(2.00-5.99)		10.0	
D 38 13C2-8:2FTS										
529.10 > 80.90	4.408	4.402	0.006	1.047	38189	3.36		70.2	3099	
D 41 d3-NMeFOSAA										
573.20 > 419.00	4.516	4.510	0.006	0.945	508598	3.55		70.9	42517	
D 43 13C6 PFDA										
519.10 > 474.10	4.564	4.558	0.006	1.000	276660	1.03		82.3	23429	
* 44 13C2 PFDA										
515.10 > 470.10	4.564	4.558	0.006		311792	1.25			26292	
D 46 d5-NEtFOSAA										
589.20 > 419.00	4.656	4.643	0.013	0.974	372942	3.13		62.6	30782	
D 48 13C8 PFOS										
507.10 > 79.90	4.778	4.772	0.006	1.000	568960	1.88		78.7	34313	
* 49 13C4 PFOS										
502.80 > 79.90	4.778	4.772	0.006		539936	2.39			43509	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 22 13C4 PFHpA										
367.10 > 322.00	3.839	3.826	0.013	1.072	810434	2.22		88.8	65949	
23 PFHpA										
363.10 > 319.00	3.830	3.834	-0.004	0.998	85512	0.2523	Target=3.34		1102	
363.10 > 169.00	3.830	3.834	-0.004	0.998	29791		2.87(1.67-5.01)		1389	
D 26 13C2-6:2FTS										
429.10 > 80.90	3.950	3.936	0.014	0.937	81565	4.23		88.9	3200	
27 PFPeS										
349.10 > 79.90	3.960	3.955	0.005	0.939	12619	0.0375	Target=2.51		771	
349.10 > 98.90	3.950	3.955	-0.005	0.937	7419		1.70(1.25-3.76)		426	
D 28 13C8 PFOA										
421.10 > 376.00	4.073	4.059	0.014	1.000	772106	2.06		82.5	60538	
* 30 13C4 PFOA										
417.10 > 172.00	4.073	4.059	0.014		31702	2.50			2507	
29 PFOA										
413.00 > 369.00	4.073	4.068	0.005	1.000	285584	1.35	Target=1.62		257	
413.00 > 169.00	4.073	4.068	0.005	1.000	161112		1.77(0.81-2.42)		244	
* 33 18O2 PFHxS										
403.00 > 83.90	4.216	4.206	0.010		984824	2.37			82332	
D 32 13C3 PFHxS										
402.10 > 79.90	4.216	4.206	0.010	1.000	952305	2.15		90.9	80637	
34 PFHxS										
398.70 > 79.90	4.216	4.213	0.003	1.000	42494	0.1876	Target=2.94		113	
398.70 > 98.90	4.216	4.213	0.003	1.000	12225		3.48(1.47-4.41)		19.3	
* 36 13C5 PFNA										
468.00 > 423.00	4.305	4.293	0.012		377474	1.25			29959	
D 35 13C9 PFNA										
472.10 > 427.00	4.305	4.293	0.012	1.000	304136	1.03		82.6	24073	
37 PFNA J, IR										RM
463.00 > 419.00	4.305	4.301	0.004	1.000	13073	0.0743	Target=3.99		25.6	RM
463.00 > 219.00	4.314	4.301	0.013	1.002	1622		8.06(2.00-5.99)		6.3	M
D 38 13C2-8:2FTS										
529.10 > 80.90	4.412	4.402	0.010	1.046	45418	4.10		85.6	3821	
D 41 d3-NMeFOSAA										
573.20 > 419.00	4.520	4.510	0.010	0.945	516260	3.73		74.7	43517	
D 43 13C6 PFDA										
519.10 > 474.10	4.568	4.558	0.010	1.000	267873	0.9753		78.0	22830	
* 44 13C2 PFDA										
515.10 > 470.10	4.568	4.558	0.010		318470	1.25			27188	
D 46 d5-NEtFOSAA										
589.20 > 419.00	4.651	4.643	0.008	0.973	381996	3.33		66.5	31625	
D 48 13C8 PFOS										
507.10 > 79.90	4.782	4.772	0.010	1.000	578575	1.98		83.0	34780	
* 49 13C4 PFOS										
502.80 > 79.90	4.782	4.772	0.010		520632	2.39			41804	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C3 HFPO-DA										
286.90 > 168.90	3.690	3.678	0.012	1.033	1318647	7.33		73.3	79951	
73 TUDCA										
498.10 > 80.00	3.736	3.706	0.030		3644	NR			115	
74 TCDCA										
498.20 > 80.00	3.756	3.774	-0.018		4002	NR			118	
D 22 13C4 PFHpA										
367.10 > 322.00	3.837	3.826	0.011	1.074	852229	2.23		89.3	68718	
23 PFHpA										
363.10 > 319.00	3.828	3.834	-0.006	0.998	1581375	4.44	Target=3.34		6188	
363.10 > 169.00	3.828	3.834	-0.006	0.998	442233		3.58(1.67-5.01)		13264	
D 26 13C2-6:2FTS										
429.10 > 80.90	3.948	3.936	0.012	0.938	144763	6.60		139	2875	
27 PFPeS J, IR										RM
349.10 > 79.90	4.042	3.955	0.087	0.961	1406781	3.16	Target=2.51		408	RM
349.10 > 98.90	3.948	3.955	-0.007	0.938	34923		40.28(1.25-3.76)		425	
D 28 13C8 PFOA										
421.10 > 376.00	4.071	4.059	0.012	1.000	1008642	1.85		74.1	78958	
* 30 13C4 PFOA										
417.10 > 172.00	4.071	4.059	0.012		46097	2.50			3652	
29 PFOA										
413.00 > 369.00	4.071	4.068	0.003	1.000	1729782	6.25	Target=1.62		471	
413.00 > 169.00	4.061	4.068	-0.007	0.998	917541		1.89(0.81-2.42)		950	
* 33 18O2 PFHxS										
403.00 > 83.90	4.207	4.206	0.001		1118912	2.37			69946	
D 32 13C3 PFHxS										
402.10 > 79.90	4.207	4.206	0.001	1.000	1260612	2.51		106	4677	
34 PFHxS										
398.70 > 79.90	4.215	4.213	0.002	1.002	425530	1.42	Target=2.94		22.8	
398.70 > 98.90	4.207	4.213	-0.006	1.000	118249		3.60(1.47-4.41)		285	
* 36 13C5 PFNA										
468.00 > 423.00	4.303	4.293	0.010		524857	1.25			41556	
D 35 13C9 PFNA										
472.10 > 427.00	4.303	4.293	0.010	1.000	451074	1.10		88.1	35718	
37 PFNA										
463.00 > 419.00	4.303	4.301	0.002	1.000	555448	2.13	Target=3.99		346	
463.00 > 219.00	4.303	4.301	0.002	1.000	111815		4.97(2.00-5.99)		189	
D 38 13C2-8:2FTS										
529.10 > 80.90	4.411	4.402	0.009	1.048	92062	7.31		153	5644	
40 PFHpS										M
449.00 > 79.90	4.461	4.468	-0.007	0.933	94282	0.2370	Target=5.36		200	M
449.00 > 98.80	4.461	4.468	-0.007	0.933	20798		4.53(2.68-8.04)		1244	
D 41 d3-NMeFOSAA										
573.20 > 419.00	4.511	4.510	0.001	0.944	631153	3.76		75.3	52848	
42 NMeFOSAA										
570.10 > 419.00	4.519	4.517	0.002	1.002	19171	0.1654	Target=2.08		6003	
570.10 > 483.00	4.519	4.517	0.002	1.002	8543		2.24(1.04-3.12)		6.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 22 13C4 PFHpA										
367.10 > 322.00	3.828	3.826	0.002	1.071	747220	2.19		87.5	59949	
23 PFHpA										
363.10 > 319.00	3.828	3.834	-0.006	1.000	202129	0.6467	Target=3.34		3312	
363.10 > 169.00	3.828	3.834	-0.006	1.000	57778		3.50(1.67-5.01)		2735	
D 26 13C2-6:2FTS										
429.10 > 80.90	3.948	3.936	0.012	0.938	77119	4.11		86.5	2617	
27 PFPeS										
349.10 > 79.90	3.948	3.955	-0.007	0.938	11039	0.0361	Target=2.51		554	
349.10 > 98.90	3.948	3.955	-0.007	0.938	2990		3.69(1.25-3.76)		189	
D 28 13C8 PFOA										
421.10 > 376.00	4.071	4.059	0.012	1.000	724674	2.42		96.7	56212	
* 30 13C4 PFOA										
417.10 > 172.00	4.071	4.059	0.012		25388	2.50			1966	
29 PFOA										
413.00 > 369.00	4.071	4.068	0.003	1.000	448201	2.26	Target=1.62		375	
413.00 > 169.00	4.061	4.068	-0.007	0.998	237485		1.89(0.81-2.42)		349	
* 33 18O2 PFHxS										
403.00 > 83.90	4.207	4.206	0.001		957294	2.37			80145	
D 32 13C3 PFHxS										
402.10 > 79.90	4.207	4.206	0.001	1.000	867104	2.01		85.2	54416	
34 PFHxS										
398.70 > 79.90	4.215	4.213	0.002	1.002	53787	0.2608	Target=2.94		76.5	
398.70 > 98.90	4.207	4.213	-0.006	1.000	15026		3.58(1.47-4.41)		72.7	
* 36 13C5 PFNA										
468.00 > 423.00	4.294	4.293	0.001		373233	1.25			29156	
D 35 13C9 PFNA										
472.10 > 427.00	4.303	4.293	0.010	1.002	321724	1.10		88.4	25380	
D 38 13C2-8:2FTS										
529.10 > 80.90	4.402	4.402	0.0	1.046	43543	4.04		84.4	3596	
D 41 d3-NMeFOSAA										
573.20 > 419.00	4.511	4.510	0.001	0.945	569360	4.15		82.9	47702	
D 43 13C6 PFDA										
519.10 > 474.10	4.559	4.558	0.001	1.000	290026	1.12		89.5	24393	
* 44 13C2 PFDA										
515.10 > 470.10	4.559	4.558	0.001		300546	1.25			25204	
D 46 d5-NEtFOSAA										
589.20 > 419.00	4.643	4.643	0.0	0.973	452083	3.96		79.3	37954	
D 48 13C8 PFOS										
507.10 > 79.90	4.773	4.772	0.001	1.000	614307	2.12		88.7	37033	
* 49 13C4 PFOS										
502.80 > 79.90	4.773	4.772	0.001		517208	2.39			41867	
50 PFOS J, IR										RM
498.90 > 79.90	4.650	4.787	-0.137	0.974	58608	0.2369	Target=3.89		49.0	RM
498.90 > 98.80	4.773	4.787	-0.014	1.000	9059		6.47(1.95-5.84)		16.4	
D 51 13C7 PFUnA										
570.00 > 525.10	4.901	4.901	0.0	1.075	173772	1.04		83.3	13778	

FORM VI
PFAS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 620-17311-1 Analy Batch No.: 483008

SDG No.:

Instrument ID: 29347 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 03/13/2024 13:56 Calibration End Date: 03/13/2024 15:20 Calibration ID: 59608

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluoroheptanoic acid	1.0774 1.1687	0.9438 1.1429	0.9677	0.9604	1.0590	AveI D		1.0457				8.7		20.0			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	2.8247 2.5502	2.9614 +++++	2.8608	2.7451	3.0872	AveI D		2.8382				6.5		20.0			
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	3.0348 4.3144	4.7458 3.2590	3.7707	3.9633	3.5750	AveI D		3.8090				15.6		20.0			
Perfluoropentanesulfonic acid	0.8250 0.8833	0.7950 0.9121	0.8560	0.7910	0.7826	AveI D		0.8350				6.0		20.0			
Perfluorooctanoic acid	0.6774 0.7245	0.6455 0.8013	0.6732	0.6608	0.6162	AveI D		0.6856				8.9		20.0			
7:3 FTCA	0.0487 0.0624	0.0613 0.0661	0.0606	0.0553	0.0604	AveI D		0.0593				9.5		20.0			
Perfluorohexanesulfonic acid	0.5692 0.5725	0.5448 0.6222	0.5575	0.5433	0.5282	AveI D		0.5625				5.4		20.0			
Perfluorononanoic acid	0.6742 0.7459	0.7692 0.8295	0.7129	0.6322	0.6965	AveI D		0.7229				9.0		20.0			
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	5.2038 4.2524	4.6157 +++++	4.7715	3.9115	3.7299	AveI D		4.4142				12.6		20.0			
Perfluoroheptanesulfonic acid	1.1788 1.2494	1.3076 1.3326	1.2643	1.1347	1.1722	AveI D		1.2342				6.0		20.0			
NMeFOSAA	0.8026 0.9875	1.0090 0.9849	0.9163	0.8464	0.8812	AveI D		0.9183				8.6		20.0			
Perfluorodecanoic acid	0.6982 0.8347	0.8276 0.8890	0.8969	0.7433	0.8084	AveI D		0.8140				8.9		20.0			
NEtFOSAA	0.8110 0.7797	0.8626 0.8352	0.8158	0.7046	0.7594	AveI D		0.7955				6.6		20.0			
Perfluorooctanesulfonic acid	1.0657 0.8982	0.9965 1.0201	0.9863	0.8899	0.8801	AveI D		0.9624				7.6		20.0			
Perfluoroundecanoic acid	1.0049 1.0513	1.0152 1.0812	1.1164	0.9267	1.0070	AveI D		1.0290				6.0		20.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	2.6322 2.5849	2.7964 2.4556	2.7166	2.5802	2.7715	AveI D		2.6482				4.6		20.0			
Perfluorononanesulfonic acid	0.5510 0.6677	0.6598 0.7522	0.6761	0.6037	0.6250	AveI D		0.6479				9.8		20.0			

GTD 4/30/2024

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 PFHxA										
313.00 > 269.00	3.579	3.573	0.006	1.000	547145	2.40	Target=11.64	96.1	17799	
313.00 > 118.90	3.579	3.573	0.006	1.000	47315		11.56(5.82-17.46)	96.1	4211	
D 13 13C5 PFHxA										
318.00 > 273.00	3.579	3.573	0.006	1.000	758630	2.86		114	65149	
* 14 13C2 PFHxA										
315.10 > 270.00	3.579	3.573	0.006		588374	2.50			50406	
16 5:3 FTCA										
341.00 > 237.10	3.623	3.625	-0.002	1.012	1662937	61.7	Target=2.83	98.8	81490	
341.00 > 217.00	3.623	3.625	-0.002	1.012	575684		2.89(1.41-4.24)	98.8	35564	
D 17 13C3 PFBS										
302.10 > 79.90	3.678	3.671	0.007	0.871	989348	2.63		113	79761	
18 PFBS										
298.70 > 79.90	3.678	3.671	0.007	1.000	481092	2.06	Target=2.81	93.0	38027	
298.70 > 98.80	3.669	3.671	-0.002	0.997	171926		2.80(1.40-4.21)	93.0	14054	
D 19 13C3 HFPO-DA										
286.90 > 168.90	3.696	3.689	0.007	1.033	1528007	11.4		114	123291	
20 HFPO-DA										
284.90 > 168.90	3.696	3.699	-0.003	1.000	1481733	9.91	Target=19.25	99.1	6096	
284.90 > 184.90	3.687	3.699	-0.012	0.998	73276		20.22(9.62-28.87)	99.1	5873	
21 PFEESA										
314.80 > 134.90	3.817	3.819	-0.002	1.066	3480187	4.16	Target=12.69	93.6	283487	
314.80 > 82.90	3.817	3.819	-0.002	1.066	276976		12.56(6.34-19.03)	93.6	11421	
D 22 13C4 PFHpA										
367.10 > 322.00	3.844	3.837	0.007	1.074	827279	2.90		116	67364	
23 PFHpA										
363.10 > 319.00	3.835	3.837	-0.002	0.998	794481	2.30	Target=3.34	91.8	38839	
363.10 > 169.00	3.835	3.837	-0.002	0.998	244512		3.25(1.67-5.01)	91.8	14902	
24 ADONA										
376.90 > 250.90	3.927	3.929	-0.002	1.062	3951260	9.11	Target=17.94	96.7	238700	
376.90 > 84.80	3.927	3.929	-0.002	1.062	213275		18.53(8.97-26.91)	96.7	17174	
D 26 13C2-6:2FTS										
429.10 > 80.90	3.955	3.948	0.007	0.937	87538	5.42		114	7002	
25 6:2FTS										
427.10 > 407.00	3.946	3.948	-0.002	0.998	692425	9.86	Target=1.59	104	54491	
427.10 > 80.90	3.946	3.948	-0.002	0.998	405863		1.71(0.79-2.38)	104	31976	
27 PFPeS										
349.10 > 79.90	3.965	3.967	-0.002	0.939	754005	2.22	Target=2.51	94.7	44645	
349.10 > 98.90	3.955	3.967	-0.012	0.937	301477		2.50(1.25-3.76)	94.7	23693	
* 30 13C4 PFOA										
417.10 > 172.00	4.078	4.071	0.007		24795	2.50			1921	
D 28 13C8 PFOA										
421.10 > 376.00	4.078	4.071	0.007	1.000	801739	2.74		110	63118	
29 PFOA										
413.00 > 369.00	4.078	4.081	-0.003	1.000	529779	2.41	Target=1.62	96.4	442	
413.00 > 169.00	4.078	4.081	-0.003	1.000	311697		1.70(0.81-2.42)	96.4	154	

GTD 4/30/2024

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 22 13C4 PFHpA										
367.10 > 322.00	3.834	3.826	0.008	1.071	763577	2.06		82.3	62185	
23 PFHpA										
363.10 > 319.00	3.824	3.834	-0.010	0.998	86011	0.2693	Target=3.34		1003	
363.10 > 169.00	3.824	3.834	-0.010	0.998	27337		3.15(1.67-5.01)		1199	
D 26 13C2-6:2FTS										
429.10 > 80.90	3.954	3.936	0.018	0.939	91416	4.62		97.2	3009	
27 PFPeS										
349.10 > 79.90	3.954	3.955	-0.001	0.939	16604	0.0524	Target=2.51		854	
349.10 > 98.90	3.954	3.955	-0.001	0.939	7038		2.36(1.25-3.76)		543	
D 28 13C8 PFOA										
421.10 > 376.00	4.067	4.059	0.008	1.000	781560	2.50		99.9	61515	
* 30 13C4 PFOA										
417.10 > 172.00	4.067	4.059	0.008		26504	2.50			2052	
29 PFOA										
413.00 > 369.00	4.067	4.068	-0.001	1.000	296931	1.39	Target=1.62		197	
413.00 > 169.00	4.067	4.068	-0.001	1.000	174321		1.70(0.81-2.42)		265	
* 33 18O2 PFHxS										
403.00 > 83.90	4.212	4.206	0.006		1010046	2.37			84487	
D 32 13C3 PFHxS										
402.10 > 79.90	4.212	4.206	0.006	1.000	898250	1.98		83.6	56186	
34 PFHxS										
398.70 > 79.90	4.212	4.213	-0.001	1.000	42638	0.1996	Target=2.94		63.0	
398.70 > 98.90	4.204	4.213	-0.009	0.998	16955		2.51(1.47-4.41)		66.7	
* 36 13C5 PFNA										
468.00 > 423.00	4.301	4.293	0.008		394707	1.25			31269	
D 35 13C9 PFNA										
472.10 > 427.00	4.301	4.293	0.008	1.000	322837	1.05		83.8	25548	
37 PFNA										R
463.00 > 419.00	4.301	4.301	0.0	1.000	16273	0.0872	Target=3.99		20.3	R
463.00 > 219.00	4.310	4.301	0.009	1.002	2693		6.04(2.00-5.99)		10.0	
D 38 13C2-8:2FTS										
529.10 > 80.90	4.408	4.402	0.006	1.047	38189	3.36		70.2	3099	
D 41 d3-NMeFOSAA										
573.20 > 419.00	4.516	4.510	0.006	0.945	508598	3.55		70.9	42517	
D 43 13C6 PFDA										
519.10 > 474.10	4.564	4.558	0.006	1.000	276660	1.03		82.3	23429	
* 44 13C2 PFDA										
515.10 > 470.10	4.564	4.558	0.006		311792	1.25			26292	
D 46 d5-NEtFOSAA										
589.20 > 419.00	4.656	4.643	0.013	0.974	372942	3.13		62.6	30782	
D 48 13C8 PFOS										
507.10 > 79.90	4.778	4.772	0.006	1.000	568960	1.88		78.7	34313	
* 49 13C4 PFOS										
502.80 > 79.90	4.778	4.772	0.006		539936	2.39			43509	

DUSR Calculations Sheet
PFAS

Sample ID: 360175-DW006
TC: Perfluorooctanoic acid (PFOA)
Val File Result for TC: 13.6 ng/l

Ical Calc

Area TC	529779
Area IS	801739
Conc TC	2.5
Conc IS	2.5
RRF =	0.660787

1	0.6774
2	0.6455
3	0.6732
4	0.6608
5	0.6162
6	0.7245
7	0.8013
8	
9	
10	
Avg RRF =	0.68555714
Std Dev =	0.06077293
%RSD =	8.86475107

Sample Calc

Area TC	296931
Area IS	781560
Conc IS	2.5
Avg RRF	0.685557
Conc (ng/mL) TC =	1.385446

DF	1
Sample Volume	510.5
final vol	5
Conc (ng/L)	2.71389986
Final Conc (ng/L)	13.5694993

Notes:
Green = matched reported value
Red = did not match reported value

GTD 4/30/2024

APPENDIX G

REMEDIAL ALTERNATIVE COST DETAILS

Appendix G
Detailed Cost Backup for All Alternatives

Cost Item No.	Applicable Alternative	Description	Quantity	Unit	Unit Cost	Total Cost	Notes
		PRE-DESIGN INVESTIGATIONS					
1A	***Alt 2***	***Pre-Design Investigation and Baseline Sampling for Alternative 2***				***$ 65,152***	
		To Support Excavation Design					**For design of 4-foot deep excavation (to meet background)**
		Property Survey	1	LS	$ 3,500	$ 3,500	Property survey also for institutional control - Labor and equipment
		Utility Survey	1	LS	$ 3,500	$ 3,500	One Day
		Structural Analysis of Buildings near excavations	2	Days	$ 3,000	$ 6,000	2 people, 2 days (labor day rates includes travel expenses)
		Soil Samples for Disposal Characterization					
		Labor for sampling	1	Days	$ 1,500	$ 1,500	One person via hand auger. Two composite samples, one from top two feet and one from 2-4 feet (5-point composites).
		Lab Data	2	Ea	$ 1,410	$ 2,820	Full pre-disposal parameters (TCLP Metals, VOCs, PCBs, SVOCs, PFAS, pH, Ignitability, reactivity)
		Baseline Sampling Round					**Assume Install 4 permanent monitoring wells**
		Well Installation					
		Geoprobe mob/demob	1	LS	$ 1,500	$ 1,500	
		Geoprobe Labor and Per Diem	2	Days	$ 2,500	$ 5,000	
		Well Construction - 1.5" Sch 80 CPVC Riser	40	ft	$ 4.28	$ 171	
		Well Construction - 1.5" Sch 80 CPVC Screen	40	ft	$ 3.03	$ 121	
		Well Cap - 1.5"	4	each	$ 13.60	$ 54	
		Grout	40	bag	$ 12.08	$ 483	
		Bentonite	4	bag	$ 23.05	$ 92	
		Sand	40	bag	$ 7.88	$ 315	
		Well Finish (Flush Mount with Concrete base)	4	each	$ 750	$ 3,000	
		Field Technician	2	Days	$ 1,500	$ 3,000	
		Regenesis					
		Flux Tracer / Mapping Test	1	LS	$ 25,000	$ 25,000	Includes on-site test in existing wells and lab/bench testing to support the design.
		Groundwater Sampling					
		Field Technician	1	Days	$ 3,000	$ 3,000	2 people, 1 day
		GW sampling Equipment	1	Days	$ 250	$ 250	$125 per set-up per day.
		Lab Analysis:					New wells, 2 sumps, dup for VOC and PFAS
		VOCs / Groundwater	7	Ea	$ 85	$ 595	
		PFAS / Groundwater	7	Ea	$ 450	$ 3,150	
		MNA Parameters	6	Ea	$ 350	$ 2,100	
1C	***Alt 3***	***Pre-Design Investigation and Baseline Sampling for Alternative 3***				***$ 32,232***	
		To Support Minor Excavation and Capping					**No structural analysis not required for 1 ft excavation**
		Property Survey	1	LS	$ 3,500	$ 3,500	Property survey also for institutional control
		Utility Survey	1	LS	$ 3,500	$ 3,500	
		Soil Samples for Disposal Characterization					
		Labor for sampling	1	Days	$ 1,500	$ 1,500	One person via hand auger. One composite sample, one from top foot (5-point composite).
		Lab Data	1	Ea	$ 900	$ 900	Full pre-disposal parameters (TCLP Metals, VOCs, PCBs, SVOCs, PFAS, pH, Ignitability, reactivity)
		Well Installation				**$ 13,737**	**Same as Alternative 2**
		Baseline Sampling Round				**$ 9,095**	**Same as Alternative 2 - Although remedy will not include PFAS groundwater, Capping PFAS soil may result in long term GW changes.**
1D	***Alt 4***	***Pre-Design Investigation for Alternative 4***				***$ 26,332***	
		Property Survey	1	LS	$ 3,500	$ 3,500	Property survey for institutional control
		Well Installation				**$ 13,737**	Same as Alternative 2
		Baseline Sampling Round				**$ 9,095**	Same as Alternative 2
1E	***Alt 5***	***Baseline Sampling for Alternative 5***				***$ 22,832***	
		Well Installation				**$ 13,737**	Same as Alternative 2
		Baseline Sampling Round				**$ 9,095**	Same as Alternative 2

Appendix G
Detailed Cost Backup for All Alternatives

Cost Item No.	Applicable Alternative	Description	Quantity	Unit	Unit Cost	Total Cost	Notes
FULL SCALE IMPLEMENTATION FOR ALL ALTERNATIVES							
2A	***Alt 2***	***Implement PFAS Soil Excavation (4-feet)***				***$ 301,258***	
		Work Plans, Schedules and Permits					**Contractor required submittals**
		Detailed Construction Plan	1	LS	$ 7,500	$ 7,500	
		Health & Safety Plan	1	LS	$ 5,000	$ 5,000	
		QA/QC Plan	1	LS	$ 5,000	$ 5,000	
		Mobilization, Temporary Facilities and Controls					**Not much room for temporary facilities - no field office**
		Temporary Storage Trailer 16' x 8'	1	MO	$ 2,000	$ 2,000	
		Portable Toilets	1	MO	$ 500	$ 500	
		Install silt fence	200	LF	$ 5	$ 1,000	
		Rented chain link, 6' high, to 1,000'	200	LF	$ 25	$ 5,000	
		Decontamination Area	1	LS	$ 4,300	$ 4,300	
		Traffic control Operator	1	LS	$ 10,000	$ 10,000	
		Excavation and Offsite Disposal					Assume direct load / no stockpiling, excavate to 4 feet or top of water (whichever is shallower), no excavation dewatering.
		Excavation Support	1	LS	$ 20,000	$ 20,000	Only excavating up to 4 feet, might need minor support (trench box), adjacent to building.
		Excavate and Load	257	CY	$ 25	$ 6,415	
		Transport and Dispose	385	Ton	$ 375	$ 144,333	
		Documentation Soil Sampling					Documentation samples - one per 25 X 25 ft
		Labor, Lab Coordination/Courier, Validation	3	EA	$ 500	$ 1,386	
		Lab Costs for PFAS	6	EA	$ 510	$ 3,060	
		Backfill and Restore					
		Backfill and Compact Common Fill	225	CY	$ 75	$ 16,839	Bottom 3.5 feet
		Compacted Road Base	12	CY	$ 100	$ 1,172	~3 inches on existing paved areas
		Asphalt on Existing Pave Area	1266	SF	$ 20	$ 25,320	Re-pave existing paved areas (3-inch thick)
		Topsoil and seed	9	CY	$ 55	$ 475	Existing yard area
		Construction Oversight					
		Labor & Per Diem	5	Week	$ 7,500	$ 37,500	
		Payment and Performance Bonds				$ 4,459	Assume 5% of cost (everything above except Transportation and Disposal and Construction Oversight).
2C	***Alt. 3a and 3b***	***Implement PFAS Minor Soil Excavation and Capping***				***$ 80,615***	
		Work Plans, Schedules and Permits				***$ 17,500***	Same as Alternative 2
		Mobilization, Temporary Facilities and Controls				$ 22,800	Same as Alternative 2
		Excavation and Offsite Disposal					Leave Existing Paved Road in-place. Assume direct load / no stockpiling, only Excavating 1 foot
		Excavate and Load	17	CY	$ 25	$ 431	
		Transport and Dispose	26	Ton	$ 375	$ 9,708	
		Backfill and Compaction					
		Backfill and Compact Crushed Stone Subbase	9	CY	$ 100	$ 863	6-inches
		Pave with 6" thick asphalt	466	SF	$ 25	$ 11,650	Although thickness of existing pavement is unknown, assume 6-inch for new/impermeable portion.
		Construction Oversight					
		Labor & Per Diem	2	Week	$ 7,500	$ 15,000	
		Payment and Performance Bonds				$ 2,662	Assume 5% of cost (everything above except Transportation and Disposal and Construction Oversight).

Appendix G
Detailed Cost Backup for All Alternatives

Cost Item No.	Applicable Alternative	Description	Quantity	Unit	Unit Cost	Total Cost	Notes
2D	***Alt. 2***	***Implement In-Situ Sorption (PFAS in GW) and ISCR/Bio (PCE in GW) - On and off-site locations***				***$ 1,366,895***	
		General Site Services					Items that are not included in Regenesis Proposal
		Permit / Access to Water Hydrant	1	LS	$ 2,500	$ 2,500	
		Private Utility Locate	1	LS	$ 4,000	$ 4,000	
		Provide Forklift to support injections	2	Month	$ 4,000	$ 8,000	To move totes/pumps around and unload from trucks
		Access Agreements	1	LS	$ 3,000	$ 3,000	
		Temporary Storage Trailer 16' x 8'	2	Month	$ 2,000	$ 4,000	
		Field Monitoring Equipment	2	Month	$ 800	$ 1,600	Water level indicator, Downhole YSI
		Porta Potty	2	Month	$ 500	$ 1,000	
		On-Site for Above including product deliveries	2	Week	$ 7,500	$ 15,000	
		Injection - Regenesis Quote					Regenesis Quote includes Drilling via geoprobe, provides range in costs, use high-end since will likely take more time than estimated.
		Dutcher Street PRB for CVOC	1	LS	$ 273,798	$ 273,798	Regenesis Quote & Calcs for Larger Area - Includes Aquifix, S-MZVI, BDI injections in 29 injection points for a 160 ft PRB. Estimated 8 days.
		Dutcher Street PFAS PRB	1	LS	$ 183,604	$ 183,604	Regenesis Quote & Calcs for Larger Area - Includes Plume Stop injections in 36 injection points for a 90 ft PRB. Estimated 6 days.
		Upcharge for Rotosonic	14	Day	$ 2,500	$ 35,000	Assume PRBs will need rotosonic rig instead of geoprobe that was included in Regenesis quote. Rotosonic Twice the cost of Geoprobe.
		Rotosonic Waste Disposal	4	Drum	$ 150	$ 600	Assume 65 boreholes 2" diameter, 20 ft depth
		Bld #49 CVOC Plume	1	LS	$ 166,000	$ 166,000	See Regenesis Quote - Includes Aquifix, S-MZVI, BDI injections in 26 injection points for a 2,585 SF area. Estimated 4 days.
		CVOC/PFAS Plume near DP-03	1	LS	$ 63,000	$ 63,000	See Regenesis Quote - Includes Aquifix, S-MZVI, BDI, Plume Stop injections in 26 injection points for a 300 SF area. Estimated 1 day.
		Construction Oversight					
		Labor & Per Diem	7	Week	$ 7,500	$ 52,500	Regenesis estimate 19 days, double not likely to be able to inject as quickly as they indicate.
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations - As Baseline prior to injections.
		Lab Costs for GW Samples (VOCs)	5	EA	$ 85	$ 425	1 sample from 5 locations - As Baseline prior to injections.
		Groundwater Sampling (6 locations, ~3 months after first injection)					
		Labor and Per Diem	4	Day	$ 3,000	$ 12,000	2 people, 2 days
		Monitoring well sampling equipment	4	Day	$ 250	$ 1,000	$125 per day per set-up
		VOCs / Groundwater	7	EA	$ 85	$ 595	6 samples plus one duplicate per event
		PFAS / Groundwater	7	EA	$ 450	$ 3,150	6 samples plus one duplicate per event
		Regenesis - 2nd injection - VOCs only					Based on prior experience, assume a second injection (~6 months later) will be required.
		Dutcher Street PRB for CVOC	1	LS	$ 273,798	$ 273,798	Regenesis Quote & Calcs for Larger Area - Includes Aquifix, S-MZVI, BDI injections in 29 injection points for a 160 ft PRB. Estimated 8 days.
		Upcharge for Rotosonic	8	Day	$ 2,500	$ 20,000	Assume PRBs will need rotosonic rig instead of geoprobe that was included in Regenesis quote. Additional $1,000 / day.
		Bld #49 CVOC Plume	1	LS	$ 166,000	$ 166,000	See Regenesis Quote - Includes Aquifix, S-MZVI, BDI injections in 26 injection points for a 2,585 SF area. Estimated 4 days.
		CVOC Plume near DP-03	1	LS	$ 36,000	$ 36,000	See Regenesis Quote - Includes Aquifix, S-MZVI, BDI injections in 6 injection points for a 300 SF area. Estimated 1 day.
		Construction Oversight					
		Labor & Per Diem	5	Week	$ 7,500	$ 37,500	Regenesis estimate 13 days, double not likely to be able to inject as quickly as they indicate.
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations - To compare to baseline.
		Lab Costs for GW Samples (VOCs)	5	EA	$ 85	$ 425	1 sample from 5 locations - To compare to baseline.
2E	***Alt 3a***	***Implement In-Situ Chemical Oxidation (PCE) - On-Site only (49 & 53 Main St)***				***$ 232,625***	
		General Site Services					Items that are not included in Regenesis Proposal
		Permit / Access to Water Hydrant	1	LS	$ 2,500	$ 2,500	
		Private Utility Locate	1	LS	$ 4,000	$ 4,000	
		Provide Forklift to support injections	1	Month	$ 4,000	$ 4,000	To move totes/pumps around and unload from trucks
		Access Agreements	1	LS	$ 3,000	$ 3,000	
		Field Monitoring Equipment	1	Month	$ 800	$ 800	Water level indicator, Downhole YSI
		Porta Potty	1	Month	$ 500	$ 500	
		On-Site for Above including product deliveries	1	Week	$ 7,500	$ 7,500	
		Injection Services and Materials - Activated Persulfate (VOCs) - Round 1					**Evonik Recommended 1 round, total 10,100 gallons. After internal review, add 20% to Quantity, conduct in two rounds (~66% / 33% per round).**
		Geoprobe mob/demob	1	LS	$ 1,500	$ 1,500	
		Geoprobe Labor and Per Diem	12	Day	$ 2,500	$ 30,000	Drillers labor and equipment
		Mixing Equipment - Totes, Pumps, Piping	1	LS	$ 15,000	$ 15,000	
		12 Injection points	12	Day	$ 4,000	$ 48,000	Inject ~4,000 gallons into up to 12 locations, ~350 gallons each, assume 1 day per location
		Construction Oversight - Round 1					
		Labor & Per Diem	12	Day	$ 1,500	$ 18,000	
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations - As Baseline prior to injections.
		Lab Costs for GW Samples (VOCs)	5	EA	$ 85	$ 425	1 sample from 5 locations - As Baseline prior to injections.
		Purchase Injection Amendments - Round 1					**Evonik's Quote was for amendments only, no labor, tax or delivery**
		Klozur® SP	7,000	lbs	$ 1.58	$ 11,060	Based on Quote from Evonik plus 20% X 66%
		25% NaOH - Klozur® Activator	11100	lbs	$ 0.45	$ 4,995	Based on Quote from Evonik plus 20% X 66%
		Product tax and shipping	25%	%	$ 16,055	$ 4,014	Based on Quote from Evonik plus 20% X 66%

Appendix G
Detailed Cost Backup for All Alternatives

Cost Item No.	Applicable Alternative	Description	Quantity	Unit	Unit Cost	Total Cost	Notes
		Injection Services and Materials - Activated Persulfate (VOCs) - Round 2					**Second Round - Assume Same as first.**
		Geoprobe mob/demob	1	LS	$ 1,500	$ 1,500	
		Geoprobe Labor and Per Diem	6	Day	$ 2,500	$ 15,000	
		Mixing Equipment - Totes, Pumps, Piping	1	LS	$ 15,000	$ 15,000	
		12 Injection points	6	Day	$ 4,000	$ 24,000	
		Construction Oversight - Round 2					
		Labor & Per Diem	6	Day	$ 1,500	$ 9,000	
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations - To compare to baseline.
		Lab Costs for GW Samples (VOCs)	5	EA	$ 85	$ 425	1 sample from 5 locations - To compare to baseline.
		Purchase Injection Amendments - Round 2					
		Klozur® SP	3,500	lbs	$ 1.58	$ 5,530	Based on Quote from Evonik plus 20% X 33%
		25% NaOH - Klozur® Activator	5500	lbs	$ 0.45	$ 2,475	Based on Quote from Evonik plus 20% X 33%
		Product tax and shipping	0.25	%	$ 8,005	$ 2,001	Based on Quote from Evonik plus 20% X 33%
2F	***Alt 3b***	***Implement In-Situ Bioaugmentation - On-Site only (49 & 53 Main St)***				***$ 111,985***	
		General Site Services					
		Permit / Access to Water Hydrant	1	LS	$ 2,500	$ 2,500	
		Private Utility Locate	1	LS	$ 4,000	$ 4,000	
		Provide Forklift to support injections	1	Month	$ 4,000	$ 4,000	To move totes/pumps around and unload from trucks
		Access Agreements	1	LS	$ 3,000	$ 3,000	
		Field Monitoring Equipment	1	Month	$ 800	$ 800	Water level indicator, Downhole YSI
		Porta Potty	1	Month	$ 500	$ 500	
		On-Site for Above including product deliveries	1	Week	$ 7,500	$ 7,500	
		Injection Services and Materials - Activated Persulfate (VOCs) - Round 1					**Evonik recommended 1 round to inject 2,012 gallons. After internal review, quantity if justified, but conduct in two rounds.**
		Geoprobe mob/demob	1	LS	$ 1,500	$ 1,500	
		Geoprobe Labor and Per Diem	4	Days	$ 2,500	$ 10,000	Drillers labor and equipment
		Mixing Equipment - Totes, Pumps, Piping	1	LS	$ 15,000	$ 15,000	
		Inject into existing wells - Labor Drill Rig	4	Days	$ 4,000	$ 16,000	Inject ~2,000 gallons into 12 locations, ~170 gallons each, assume 2 locations per day
		Purchase Injection Amendments - Round 1					
		ELS® Microemulsion	1,100	lbs	$ 1.39	$ 1,529	Based on Quote from Evonik (~66%)
		Additional pH buffer (KHCO3)	33	lbs	$ 3.70	$ 122	Based on Quote from Evonik (~66%)
		DHC Inoculum	10	L	$ 120	$ 1,200	Based on Quote from Evonik (~66%)
		Product tax and shipping	25%	%	$ 2,851	$ 713	Assumed tax and shipping
		Construction Oversight - Round 1					
		Labor & Per Diem	4	days	$ 1,500	$ 6,000	
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations - As Baseline prior to injections.
		Lab Costs for GW Samples (VOCs)	5	EA	$ 85	$ 425	1 sample from 5 locations - As Baseline prior to injections.
		Injection Services and Materials - Activated Persulfate (VOCs) - Round 2					**Second Round Same as the first**
		Geoprobe mob/demob	1	LS	$ 1,500	$ 1,500	
		Geoprobe Labor and Per Diem	2	Days	$ 2,500	$ 5,000	
		Mixing Equipment - Totes, Pumps, Piping	1	LS	$ 15,000	$ 15,000	
		Inject into existing wells - Labor Drill Rig	2	Days	$ 4,000	$ 8,000	
		Purchase Injection Amendments - Round 2					
		ELS® Microemulsion	600	lbs	$ 1.39	$ 834	Based on Quote from Evonik (~33%)
		Additional pH buffer (KHCO3)	17	lbs	$ 3.70	$ 63	Based on Quote from Evonik (~33%)
		DHC Inoculum	5	L	$ 120	$ 600	Based on Quote from Evonik (~33%)
		Product tax and shipping	25%	%	$ 1,497	$ 374	
		Construction Oversight - Round 2					
		Labor & Per Diem	2	days	$ 1,500	$ 3,000	
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations - To compare to baseline.
		Lab Costs for GW Samples (VOCs)	5	EA	$ 85	$ 425	1 sample from 5 locations - To compare to baseline.
2G	***Alt 4***	***Implement ISCO (Beneath 49 & 53 Main Streeet), Bio-Augmentation (Back of properties)***				***$ 258,588***	
		General Site Services					Items that are not included in Regenesis Proposal
		Permit / Access to Water Hydrant	1	LS	$ 2,500	$ 2,500	
		Private Utility Locate	1	LS	$ 4,000	$ 4,000	
		Provide Forklift to support injections	1	Month	$ 4,000	$ 4,000	To move totes/pumps around and unload from trucks
		Access Agreements	1	LS	$ 3,000	$ 3,000	
		Field Monitoring Equipment	1	Month	$ 800	$ 800	Water level indicator, Downhole YSI
		Porta Potty	1	Month	$ 500	$ 500	
		On-Site for Above including product deliveries	1	Week	$ 7,500	$ 7,500	

Appendix G
Detailed Cost Backup for All Alternatives

Cost Item No.	Applicable Alternative	Description	Quantity	Unit	Unit Cost	Total Cost	Notes
		Injection Services and Materials - Activated Persulfate (VOCs) - Round 1					**Evonik Recommended 1 round, total 10,100 gallons. After internal review, add 20% to Quantity, conduct in two rounds (~66% / 33% per round).**
		Geoprobe mob/demob	1	LS	$ 1,500	$ 1,500	
		Geoprobe Labor and Per Diem	14	Day	$ 2,500	$ 35,000	Drillers labor and equipment
		Mixing Equipment - Totes, Pumps, Piping	1	LS	$ 15,000	$ 15,000	
							Basements (ISCO): Inject ~4,000 gallons into up to 12 locations, ~350 gallons each, assume 1 day per location
		16 Injection points	14	Day	$ 4,000	$ 56,000	Back of Properties (BIO): 4 Locations, small quantities, 2 days total
		Construction Oversight - Round 1					
		Labor & Per Diem	14	Day	$ 1,500	$ 21,000	
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations, beneath building - As Baseline prior to injections.
		Lab Costs for GW Samples (VOCs)	6	EA	$ 85	$ 510	1 sample from 6 locations (include one back of property) - As Baseline prior to injections.
		Purchase ISCO Amendments - Round 1					**Evonik's Quote was for amendments only, no labor, tax or delivery**
		Klozur® SP	7,000	lbs	$ 1.58	$ 11,060	Based on Quote from Evonik plus 20% X 66%
		25% NaOH - Klozur® Activator	11,100	lbs	$ 0.45	$ 4,995	Based on Quote from Evonik plus 20% X 66%
		Product tax and shipping	25%	%	$ 16,055	$ 4,014	Based on Quote from Evonik plus 20% X 66%
		Purchase Bio Amendments - Round 1					
		ELS® Microemulsion	400	lbs	$ 1.39	$ 556	Based on Quote from Evonik - 1/3 the amount that would be needed beneath building (1/3 3B and 4B)
		Additional pH buffer (KHCO3)	11	lbs	$ 3.70	$ 40	Based on Quote from Evonik - 1/3 the amount that would be needed beneath building (1/3 3B and 4B)
		DHC Inoculum	3	L	$ 120	$ 360	Based on Quote from Evonik - 1/3 the amount that would be needed beneath building (1/3 3B and 4B)
		Product tax and shipping	25%	%	$ 956	$ 239	Assumed tax and shipping
		Injection Services and Materials - Activated Persulfate (VOCs) - Round 2					**Second Round - Assume Same as first.**
		Geoprobe mob/demob	1	LS	$ 1,500	$ 1,500	
		Geoprobe Labor and Per Diem	7	Day	$ 2,500	$ 17,500	
		Mixing Equipment - Totes, Pumps, Piping	1	LS	$ 15,000	$ 15,000	
							Basements (ISCO): Inject ~2,000 gallons into up to 12 locations, ~175 gallons each, assume 0.5 day per location
		16 Injection points	7	Day	$ 4,000	$ 28,000	Back of Properties (BIO): 4 Locations, small quantities, 1 days total
		Construction Oversight - Round 2					
		Labor & Per Diem	7	Day	$ 1,500	$ 10,500	
		Lab Costs for Soil Samples (VOCs)	10	EA	$ 120	$ 1,200	2 samples (shallow and deep) from 5 locations, beneath the building - To compare to baseline.
		Lab Costs for GW Samples (VOCs)	6	EA	$ 85	$ 510	1 sample from 6 locations (include one back of property) - To compare to baseline.
		Purchase Injection Amendments - Round 2					
		Klozur® SP	3,500	lbs	$ 1.58	$ 5,530	Based on Quote from Evonik plus 20% X 33%
		25% NaOH - Klozur® Activator	5,500	lbs	$ 0.45	$ 2,475	Based on Quote from Evonik plus 20% X 33%
		Product tax and shipping	25%	%	$ 8,005	$ 2,001	Based on Quote from Evonik plus 20% X 33%
		Purchase Bio Amendments - Round 2					
		ELS® Microemulsion	200	lbs	$ 1.39	$ 278	Half as much as first round
		Additional pH buffer (KHCO3)	5	lbs	$ 3.70	$ 20	Half as much as first round
		DHC Inoculum	1.5	L	$ 120	$ 180	Half as much as first round
		Product tax and shipping	25%	%	$ 478	$ 120	Assumed tax and shipping
2H	***Alt 3, 4, 5***	***Institute ICs/EC & Site Management Plan***				***$ 25,000***	
		Site Management Plan	1	LS	$ 25,000	$ 25,000	Contents of SMP will change depending on Alternative.

Appendix G
Detailed Cost Backup for All Alternatives

Cost Item No.	Applicable Alternative	Description	Quantity	Unit	Unit Cost	Total Cost	Notes
PERIODIC AND ANNUAL COSTS FOR ALL ALTERNATIVES							
3A	***Alt 2***	***LTM & Reporting - Alt 2 (Years 1 through 5)***				***$ 43,690***	
		Groundwater Sampling (6 locations, every 6 months)					
		Labor and Per Diem	8	Days	$ 3,000	$ 24,000	2 people, 2 days, two events
		Monitoring well sampling equipment	4	days	$ 250	$ 1,000	$125 per pay per set-up
		VOCs / Groundwater	14	EA	$ 85	$ 1,190	6 samples plus one duplicate per event
		PFAS / Groundwater	14	EA	$ 450	$ 6,300	6 samples plus one duplicate per event
		MNA Parameters	4	EA	$ 300	$ 1,200	4 samples, once per year. Assume since this is a final remedy with monitoring ending after 5 years, collect MNA as well to make a case that remaining impacts will attenuate.
		Annual Report	1	LS	$ 10,000	$ 10,000	
3B	***Alt 3a, Alt 4***	***LTM & Reporting - Alt 3a & 4 (Years 1 through 5)***				***$ 42,490***	
		Groundwater Sampling (6 locations, every 6 months)					
		Labor and Per Diem	8	Days	$ 3,000	$ 24,000	2 people, 2 days, two events
		Monitoring well sampling equipment	4	days	$ 250	$ 1,000	$125 per pay per set-up
		VOCs / Groundwater	14	EA	$ 85	$ 1,190	6 samples plus one duplicate per event
		PFAS / Groundwater	14	EA	$ 450	$ 6,300	6 samples plus one duplicate per event
		Annual Report	1	LS	$ 10,000	$ 10,000	
3C	***Alt 3a, Alt 4***	***LTM & Reporting - Alt 3a & 4 (Years 6 through 30)***				***$ 26,245***	
		Groundwater Sampling (6 wells, every 12 months)					
		Labor and Per Diem	4	Days	$ 3,000	$ 12,000	2 people, 2 days, 1 event
		Monitoring well sampling equipment	2	days	$ 250	$ 500	$125 per pay per set-up
		VOCs / Groundwater	7	EA	$ 85	$ 595	6 samples plus one duplicate
		PFAS / Groundwater	7	EA	$ 450	$ 3,150	6 samples plus one duplicate
		Annual Report	1	LS	$ 10,000	$ 10,000	
3D	***Alt 3b, Alt 5***	***LTM/MNA & Reporting - Alt 3b and 5 (Years 1 through 5)***				***$ 43,890***	
		Groundwater Sampling (6 locations, every 6 months)					
		Labor and Per Diem	8	Days	$ 3,000	$ 24,000	2 people, 2 days, two events
		Monitoring well sampling equipment	4	days	$ 250	$ 1,000	$125 per pay per set-up
		VOCs / Groundwater	14	EA	$ 85	$ 1,190	6 samples plus one duplicate per event
		PFAS / Groundwater	14	EA	$ 450	$ 6,300	6 samples plus one duplicate per event
		MNA Parameters	4	EA	$ 350	$ 1,400	4 samples, once per year
		Annual Report	1	LS	$ 10,000	$ 10,000	
3E	***Alt 3b, Alt 5***	***LTM/MNA & Reporting - Alt 3b and 5 (Years 6 through 30)***				***$ 27,645***	
		Groundwater Sampling (6 wells, every 12 months)					
		Labor and Per Diem	4	Days	$ 3,000	$ 12,000	2 people, 2 days, 1 event
		Monitoring well sampling equipment	2	days	$ 250	$ 500	$125 per pay per set-up
		VOCs / Groundwater	7	EA	$ 85	$ 595	6 samples plus one duplicate
		PFAS / Groundwater	7	EA	$ 450	$ 3,150	6 samples plus one duplicate
		MNA Parameters	4	EA	$ 350	$ 1,400	4 samples, once per year
		Annual Report	1	LS	$ 10,000	$ 10,000	
3F	***Alt 3, 4 and 5***	***Long Term IC/EC Inspections, Certifications and Reporting***				***$ 4,500***	
		Annual Inspection - ICs/ECs					
		Labor and Per Diem	1	Days	$ 1,500	$ 1,500	Inspect engineering controls
		Annual Report/Certifications	1	LS	$ 3,000	$ 3,000	

Appendix G
Quantity Calculations - Sheet 1 of 2

Alternative 2
Soil Excavation to Background for PFAS impacted soil:

Total Area of Excavation (existing paved and yard)	1732	SF	
Area of existing pavement	1266	SF	
Area of Existing yard	466	SF	
Depth	4	ft	
Volume (CF)	6928	CF	
Volume (CY)	257	CY	
Weight (Tons)	385	Tons	Assume 1.5 tons / cy
Documentation soil samples	3		25' X 25' grid
Backfill - Regular (CF)	6062	CF	
Backfill - Regular (CY)	225	CY	
Backfill / Compact Subbase	12	CY	
Place 3" Asphalt (existing asphalt area)	1266	SF	
Topsoil and Seed	9	CY	

Alternative 3
Impermeable cover for PFAS impacted soil:

Existing Asphalt is part of impermeable cover system:		
Total Area to Pave (existing yard)	466	SF
Remove top foot (CF)	466	CF
Remove top foot (CY)	17	CY
Weight of removed soil (tons)	26	Tons
Backfill Compact Subbase	9	CY
Place 6 inches asphalt	466	SF

Appendix G
Quantity Calculations - Sheet 2 of 2

Alternative 2 - On and Off-Property In-Situ Sorption, Enhanced Bioremediation & In-Situ Chemical Reduction

Original Regensis Quote:

Remediation Area	PRB Length	Grid Area	PlumeStop	AquiFix	S-MZVI	BDI	Direct-Push Inj.	Injection Volume	Project Duration	Cost range		
Vertical Thickness 8 ft	feet	sq. feet	lbs	lbs	lbs	Liters	Points	gallons	days	$		
N. Dutcher St CVOC PRB	45	585		3200	700	18	8	2965	2	$ 64,000	-	$ 77,000
N. Dutcher St PFAS PRB	75	975	7600				30	8279	5	$ 127,000	-	$ 153,000
Bldg #49 CVOC Plume Core		2585		8000	2000	18	26	7982	4	$ 138,000	-	$ 166,000
No. CVOC core area DP-03		300		800	200	18	6	1936	1	$ 30,000	-	$ 36,000
No. CVOC/PFAS area DP-03		300	1200	400	200	18	8	2937	2	$ 52,000	-	$ 63,000
Total	**120**	**4745**	**8800**	**12400**	**3100**	**72**	**78**	**24099**	**14**			

Revised Regenesis Quote (Increased PRB length):

Remediation Area	PRB Length	Grid Area	Plume Stop	Aquifix	S-MZVI	BDI	Direct-Push Inj.	Injection Volume	Project Duration	Cost Range		
Vertical Thickness 8 ft	feet	sq. feet	lbs	lbs	lbs	Liters	Points	gallons	days	$		
N. Dutcher St CVOC PRB	160	2080		11600	2489	64	29	10543	8	$ 227,572	-	$ 273,798
N. Dutcher St PFAS PRB	90		9120				36	9935	6	$ 152,403	-	$ 183,604
Bldg #49 CVOC Plume Core		2585		8000	2000	18	26	7982	4	$ 138,000	-	$ 166,000
No. CVOC core area DP-03		300		800	200	18	6	1936	1	$ 30,000	-	$ 36,000
No. CVOC/PFAS area DP-03		300	1200	400	200	18	8	2937	2	$ 52,000	-	$ 63,000
Total	**250**	**5265**	**10320**	**20800**	**4889**	**118**	**105**	**33333**	**21**			

Side-by-Side comparison:

Remediation Area	PRB Length	PRB Length	Grid Area	Grid Area	PlumeStop	Plume Stop	AquiFix	Aquifix	S-MZVI		S-MZVI	BDI	BDI	Direct-Push Inj.	Direct-Push Inj.	Injection Volume	Injection Volume	Project Duration	Project Duration	Cost range			Cost Range		
Vertical Thickness 8 ft	feet	feet	sq. feet	sq. feet	lbs	lbs	lbs	lbs	lbs		lbs	Liters	Liters	Points	Points	gallons	gallons	days	days	$			$		
N. Dutcher St CVOC PRB	45	160	585	2080			3200	11600	700		2489	18	64	8	29	2965	10543	2	8	$ 64,000	-	$ 77,000	$ 227,572	-	$ 273,798
N. Dutcher St PFAS PRB	75	90	975		7600	9120								30	36	8279	9935	5	6	$ 127,000	-	$ 153,000	$ 152,403	-	$ 183,604
Bldg #49 CVOC Plume Core			2585				8000		2000			18		26		7982		4		$ 138,000	-	$ 166,000	$ 138,000	-	$ 166,000
No. CVOC core area DP-03			300				800		200			18		6		1936		1		$ 30,000	-	$ 36,000	$ 30,000	-	$ 36,000
No. CVOC/PFAS area DP-03			300		1200		400		200			18		8		2937		2		$ 52,000	-	$ 63,000	$ 52,000	-	$ 63,000
Total	**120**		**4745**		**8800**	**10320**	**12400**	**20800**	**3100**		**4889**	**72**	**118**	**78**	**105**	**24099**	**33333**	**14**	**21**						

Rotosonic Drilling Waste

diameter of well(ft)	0.1666667
depth of well (ft)	20
volume of waste 1 well (ft^3)	0.4363323
# of wells	65
total ft^3 of waste	28
total gallons	212.17313
# of 55 gallon drums	4.0
cost of disposal	$ 600.00

APPENDIX G - PRESENT VALUE OF PERIODIC COSTS ALTERNATIVE 2

Year	Cost	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 2,535,000	1	0.000	NA	NA	NA	NA	$ 2,535,000	$ 2,535,000
LTM & Reporting - Alt 2 (Years 1 through 5)	$ 60,000	5	0.016	NA	NA	NA	NA	$ 300,000	$286,000.00
Total Annual Costs								**$ 300,000**	**$286,000**
Total Capital and Annual Costs								**$ 2,835,000**	**$ 2,821,000**

Note:
1. Discount rate of 1.6% was used for a 5-yr period, as published by the Office of Management and Budget (OMB) in November 2024.

APPENDIX G - PRESENT VALUE OF PERIODIC COSTS ALTERNATIVE 3A AND 3B

Year	Cost	Number of Annual Periods	Annual Discount Rate	Alternative 4A		Alternative 4B	
				Non-Discounted Cost	Present Value Cost	Non-Discounted Cost	Present Value Cost
Capital (Year 0) - 3A	$ 571,000	1	0.000	$ 571,000	$ 571,000	NA	NA
Capital (Year 0) - 3B	$ 387,000	1	0.000	NA	NA	$ 387,000	$ 387,000
LTM & Reporting - Alt 3a & 4 (Years 1 through 5)	$ 58,000	5	0.016	$ 290,000	$ 277,000	NA	NA
LTM & Reporting - Alt 3a & 4 (Years 6 through 30)	$ 36,000	25	0.023	$ 900,000	$ 606,000	NA	NA
LTM/MNA & Reporting - Alt 3b and 5 (Years 1 through 5)	$ 60,000	5	0.016	NA	NA	$ 300,000	$ 286,000
LTM/MNA & Reporting - Alt 3b and 5 (Years 6 through 30)	$ 38,000	25	0.023	NA	NA	$ 950,000	$ 639,000
Long Term IC/EC Inspections, Certifications and Reporting	$ 6,000	30	0.023	$ 180,000	$129,000.00	$ 180,000	$ 129,000
Total Annual Costs				**$ 1,370,000**	**$ 1,012,000**	**$ 1,430,000**	**$ 1,054,000**
Total Capital and Annual Costs - 4A & 4B				**$ 1,941,000**	**$ 1,583,000**	**$ 1,817,000**	**$ 1,441,000**

Note:

1. Discount rates of 1.6% and 2.3% were used for a 5-yr and 30-yr period respectively, as published by the Office of Management and Budget (OMB) in November 2024.

APPENDIX G - PRESENT VALUE OF PERIODIC COSTS ALTERNATIVE 4

Year	Cost	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 478,000	1	0.000	NA	NA	NA	NA	$ 478,000	$ 478,000
LTM & Reporting - Alt 3a & 4 (Years 1 through 5)	$ 58,000	5	0.016	NA	NA	NA	NA	$ 290,000	$ 277,000
LTM & Reporting - Alt 3a & 4 (Years 6 through 30)	$ 36,000	25	0.023	NA	NA	NA	NA	$ 900,000	$ 606,000
Long Term IC/EC Inspections, Certifications and Reporting	$ 6,000	30	0.023	NA	NA	NA	NA	$ 180,000	$ 129,000
Total Annual Costs								**$ 1,370,000**	**$ 1,012,000**
Total Capital and Annual Costs								**$ 1,848,000**	**$ 1,490,000**

Note:

1. Discount rates of 1.6% and 2.3% were used for a 5-yr and 30-yr period respectively, as published by the Office of Management and Budget (OMB) in November 2024.

APPENDIX G - PRESENT VALUE OF PERIODIC COSTS ALTERNATIVE 5

Year	Cost	Number of Annual Periods	Annual Discount Rate	Number of 5-Year Periods	5-Year Discount Rate	Number of 10-Year Periods	10-Year Discount Rate	Total Non-Discounted Cost	Present Value Cost
Capital (Year 0)	$ 63,000	1	0.000	NA	NA	NA	NA	$ 63,000	$ 63,000
LTM/MNA & Reporting - Alt 3b and 5 (Years 1 through 5)	$ 60,000	5	0.016	NA	NA	NA	NA	$ 300,000	$ 286,000
LTM/MNA & Reporting - Alt 3b and 5 (Years 6 through 30)	$ 38,000	25	0.023	NA	NA	NA	NA	$ 950,000	$ 639,000
Long Term IC/EC Inspections, Certifications and Reporting	$ 6,000	30	0.023	NA	NA	NA	NA	$ 180,000	$ 129,000
Total Annual Costs								**$ 1,430,000**	**$ 1,054,000**
Total Capital and Annual Costs								**$ 1,493,000**	**$ 1,117,000**

Note:

1. Discount rates of 1.6% and 2.3% were used for a 5-yr and 30-yr period respectively, as published by the Office of Management and Budget (OMB) in November 2024.

Appendix G - OMB Circular A-94 Interest Rates

OMB Circular No. A-94

APPENDIX C
(Revised November 14, 2024)

DISCOUNT RATES FOR COST-EFFECTIVENESS, LEASE PURCHASE, AND RELATED ANALYSES

Effective Dates. This appendix is updated annually. This version of the appendix is valid for calendar year 2025. A copy of the updated appendix can be obtained in electronic form through the OMB home page at https://www.whitehouse.gov/wp-content/uploads/2025/01/CircularA-94AppendixC.pdf. The text of the Circular is found at https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-94.pdf, and a table of past years' rates is located at https://www.whitehouse.gov/wp-content/uploads/2025/01/CircularA-94DiscountHistory.pdf. Updates of the appendix are also available upon request from OMB's Office of Economic Policy (a94@omb.eop.gov).

Nominal Discount Rates. A forecast of nominal or market interest rates for calendar year 2025 based on the economic assumptions for the 2026 Budget is presented below. These nominal rates are to be used for discounting nominal flows, which are often encountered in lease-purchase analysis.

Nominal Interest Rates on Treasury Notes and Bonds of Specified Maturities (in percent)

3-Year	5-Year	7-Year	10-Year	20-Year	30-Year
3.7	3.8	3.9	4.1	4.4	4.4

Real Discount Rates. A forecast of real interest rates from which the inflation premium has been removed and based on the economic assumptions for the 2026 Budget is presented below. These real rates are to be used for discounting constant-dollar flows, as is often required in cost-effectiveness analysis.

Real Interest Rates on Treasury Notes and Bonds of Specified Maturities (in percent)

3-Year	5-Year	7-Year	10-Year	20-Year	30-Year
1.5	1.6	1.8	1.9	2.2	2.3

Analyses of projects with terms different from those presented above may use a linear interpolation. For example, a four-year project can be evaluated with a rate equal to the average of the three-year and five-year rates. Projects with durations longer than 30 years may use the 30-year interest rate.

APPENDIX H

REMEDIAL ACTIVITY GREEN HOUSE GAS EMISSIONS

Remedial Alternatives	GHG Emissions	Total energy Used	Water Consumption	Electricity Usage	Onsite NO_x Emissions	Onsite SO_x Emissions	Onsite PM_{10} Emissions	Total NO_x Emissions	Total SO_x Emissions	Total PM_{10} Emissions	Accident Risk Fatality	Accident Risk Injury
	metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton		
2	134.79	7697.67	24100.00	0.00	0.34	0.03	0.03	0.58	0.24	0.15	0.00	0.04
3a	97.62	7318.34	12000.00	0.00	0.02	0.00	0.00	0.38	0.29	0.05	0.00	0.02
3b	108.74	7421.76	12000.00	0.00	0.02	0.00	0.00	0.44	0.33	0.04	0.00	0.02
4	90.42	7249.69	15000.00	0.00	0.02	0.00	0.00	0.37	0.29	0.04	0.00	0.02
5	97.23	7259.53	0.00	0.00	0.0130	0.00	0.00	0.42	0.31	0.04	0.00	0.01

Additional Sustainability Metrics

Remedial Alternatives	Non-Hazardous Waste Landfill Space	Hazardous Waste Landfill Space	Topsoil Consumption	Costing	Lost Hours - Injury	Percent Electricity from Renewable Sources	Final Cost with Footprint Reduction
	tons	tons	cubic yards	$		%	$
2	0.00	385.00	0.00	$ 1,776,995.00	0.34	0.0%	$ 1,776,995.00
3a	0.00	26.00	0.00	$ 443,707.00	0.17	0.0%	$ 443,707.00
3b	0.00	26.00	0.00	$ 325,867.00	0.16	0.0%	$ 325,867.00
4	0.00	0.00	0.00	$ 360,955.00	0.16	0.0%	$ 360,955.00
5	0.00	0.00	0.00	$ 123,867.00	0.117	0.0%	$ 123,867.00

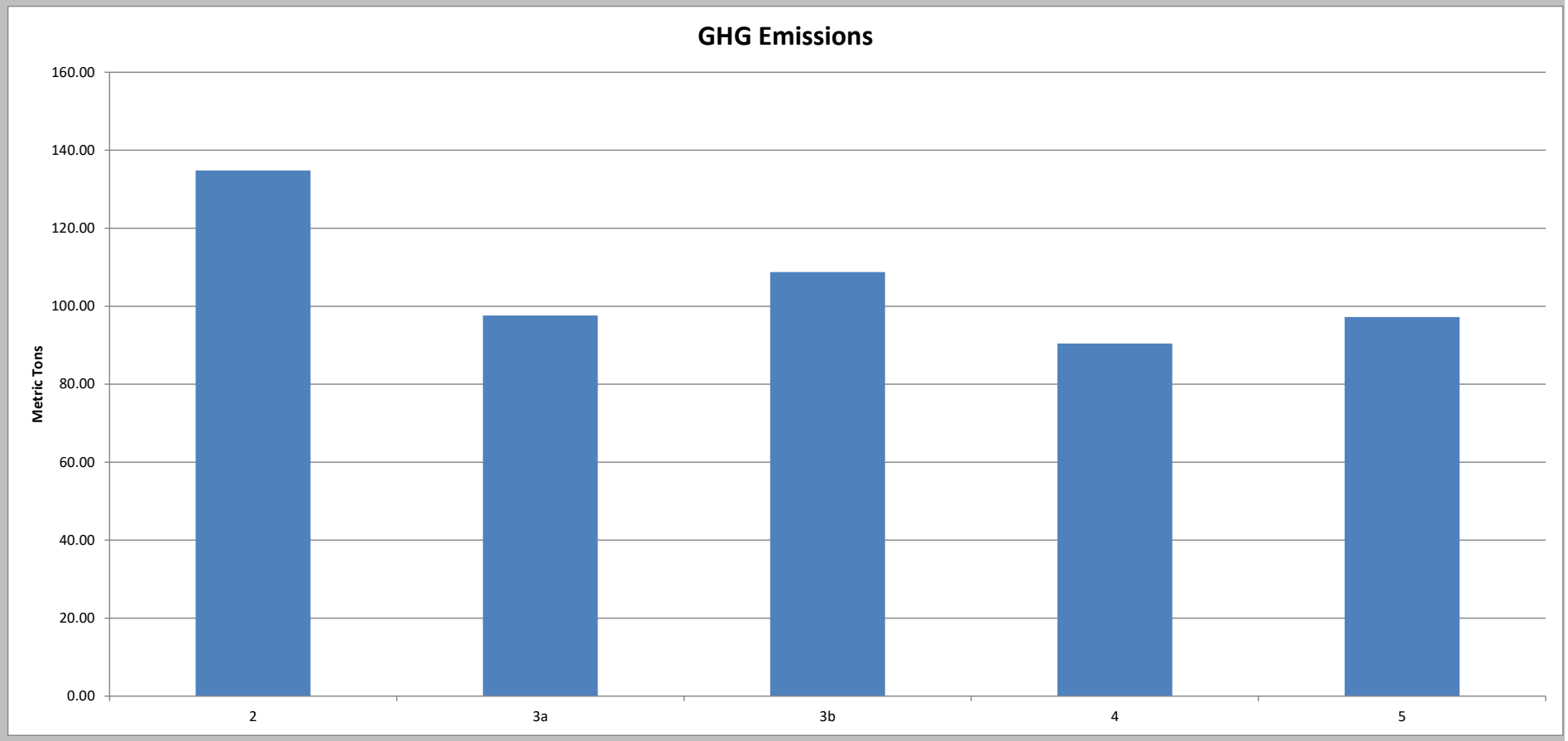
Relative Impact

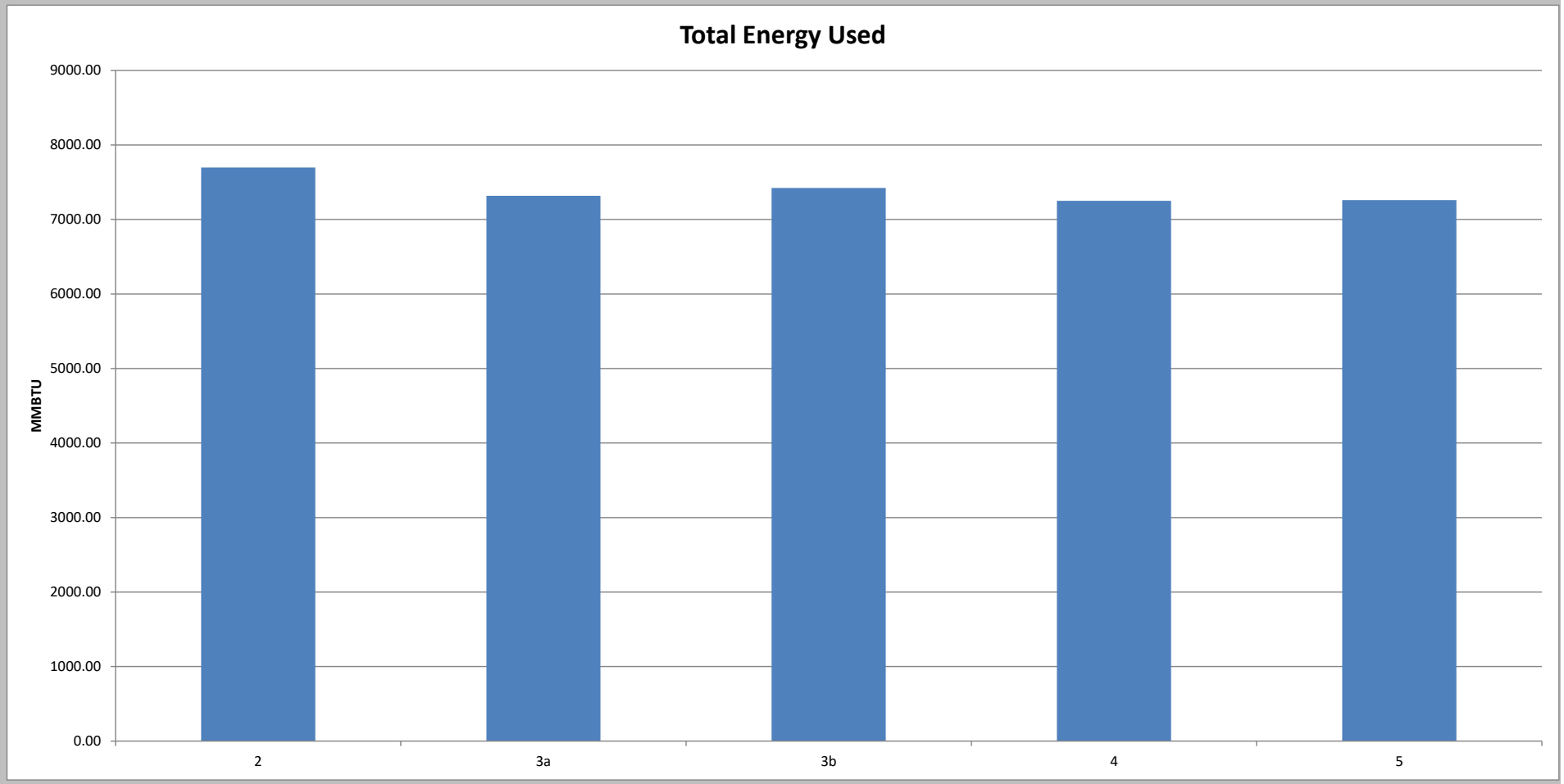
Remedial Alternatives	GHG Emissions	Energy Usage	Water Usage	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx emissions	Total SOx Emissions	Total PM10 Emissions	*Accident Risk Fatality	*Accident Risk Injury
2	High	High	High	Low	High	High	High	High	High	High	Low	Low
3a	High	High	Medium	Low	Low	Low	Low	Medium	High	Medium	Low	Low
3b	High	High	Medium	Low	Low	Low	Low	High	High	Medium	High	High
4	Medium	High	Medium	Low	Low	Low	Low	Medium	High	Low	Medium	High
5	High	High	Low	Low	Low	Low	Low	High	High	Low	High	High

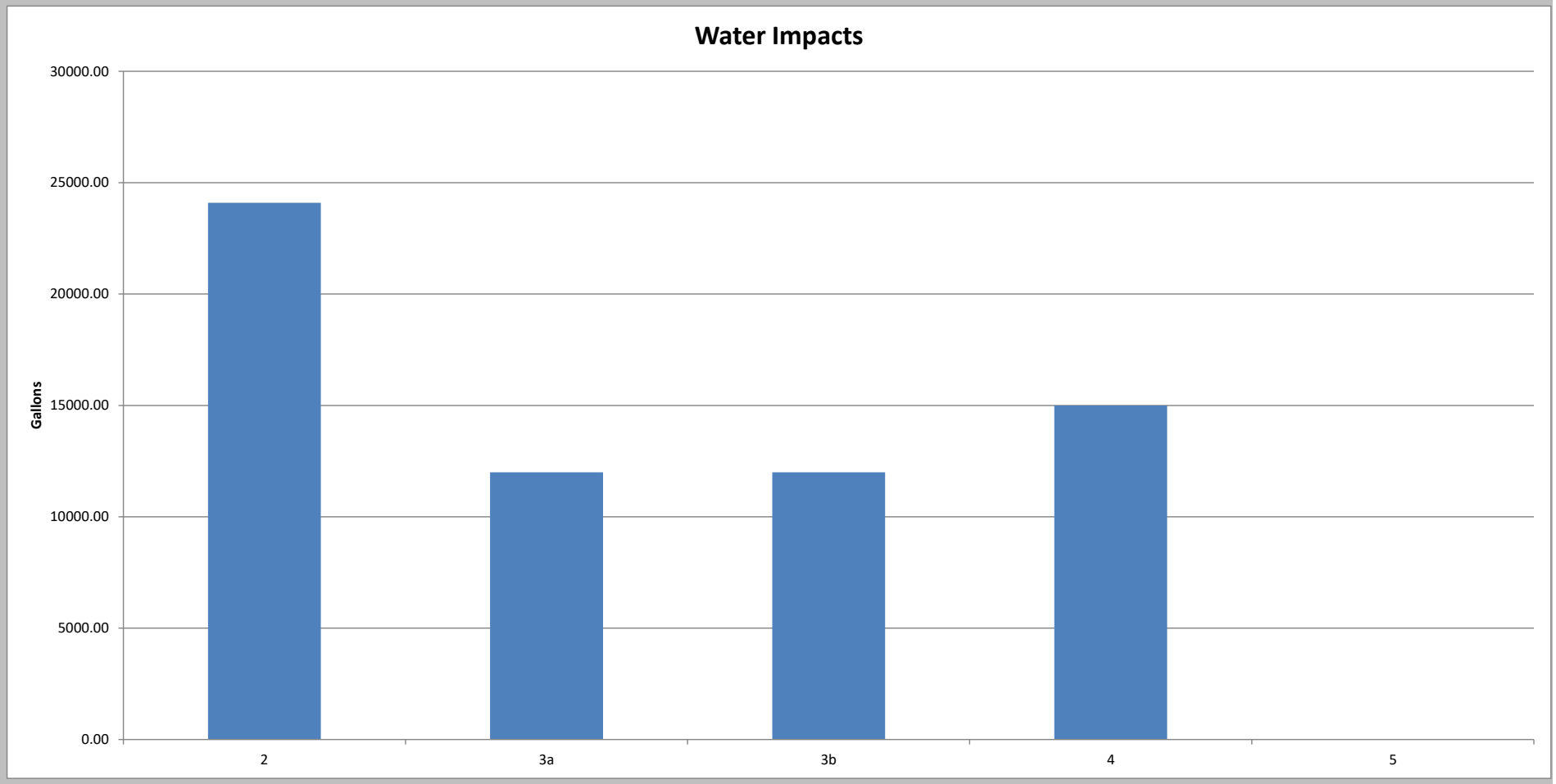
Relative Impact (User Override)

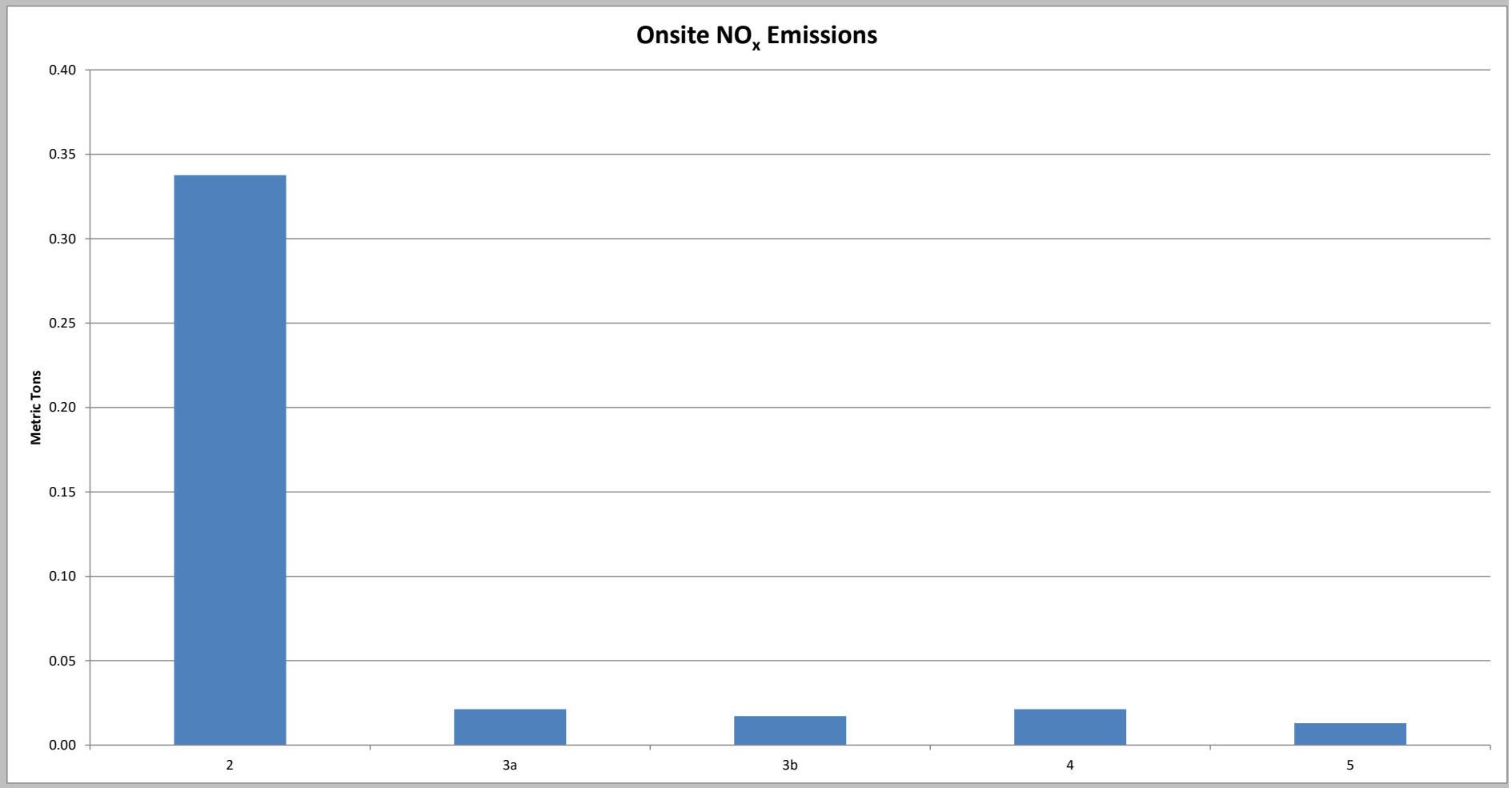
Remedial Alternatives	GHG Emissions	Energy Usage	Water Usage	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx Emissions	Total SOx Emissions	Total PM10 Emissions	*Accident Risk Fatality	*Accident Risk Injury
2	High	High	High	Low	High	High	High	High	Medium	High	Low	Low
3a	High	High	Medium	Low	Low	Low	Low	Medium	High	Medium	Low	Low
3b	High	High	Medium	Low	Low	Low	Low	High	High	Medium	High	High
4	Medium	High	Medium	Low	Low	Low	Low	Medium	High	Low	Medium	High
5	High	High	Low	Low	Low	Low	Low	High	High	Low	High	High

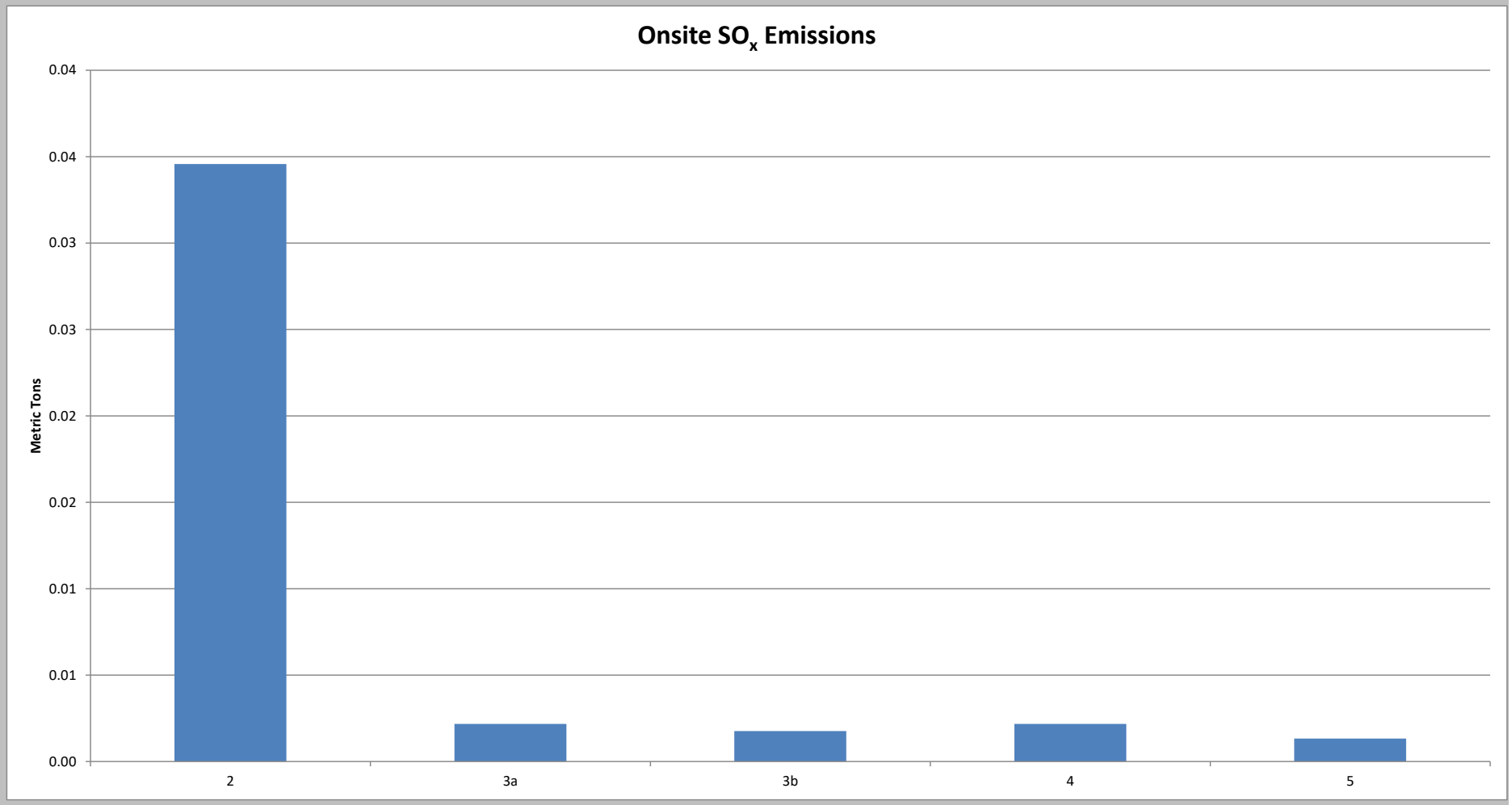
*Accident Risk is an estimate of how many accidents may occur. This risk is not the same as Cancer Risk, which is the probablity (for a single person) of getting cancer. Accident risk is not comparable to Cancer Risk due to inherent fundamental differences.

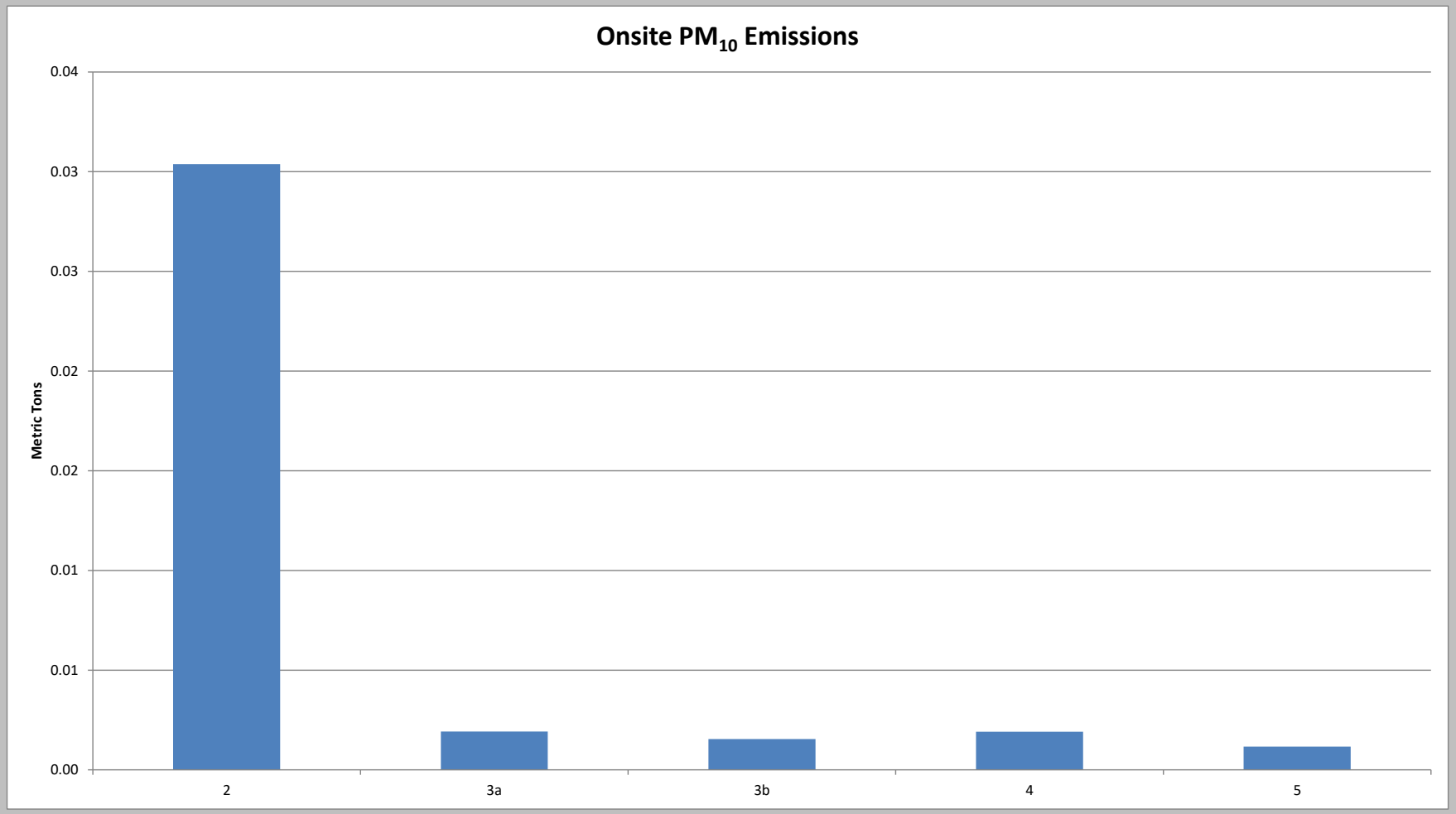

GHG Emissions
Metric Tons
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
2
3a
3b
4
5

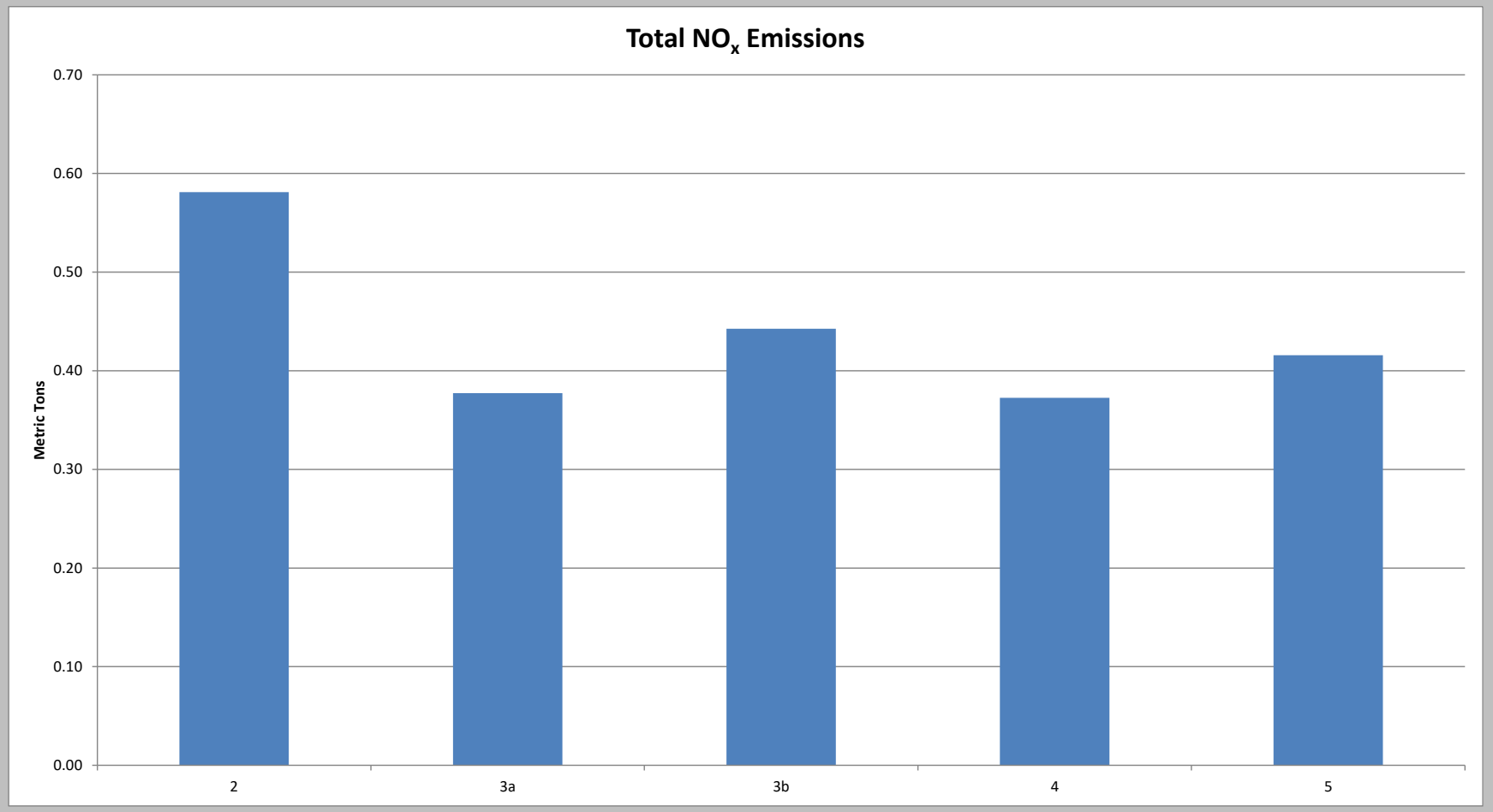

Total Energy Used
MMBTU
9000.00
8000.00
7000.00
6000.00
5000.00
4000.00
3000.00
2000.00
1000.00
0.00
2
3a
3b
4
5

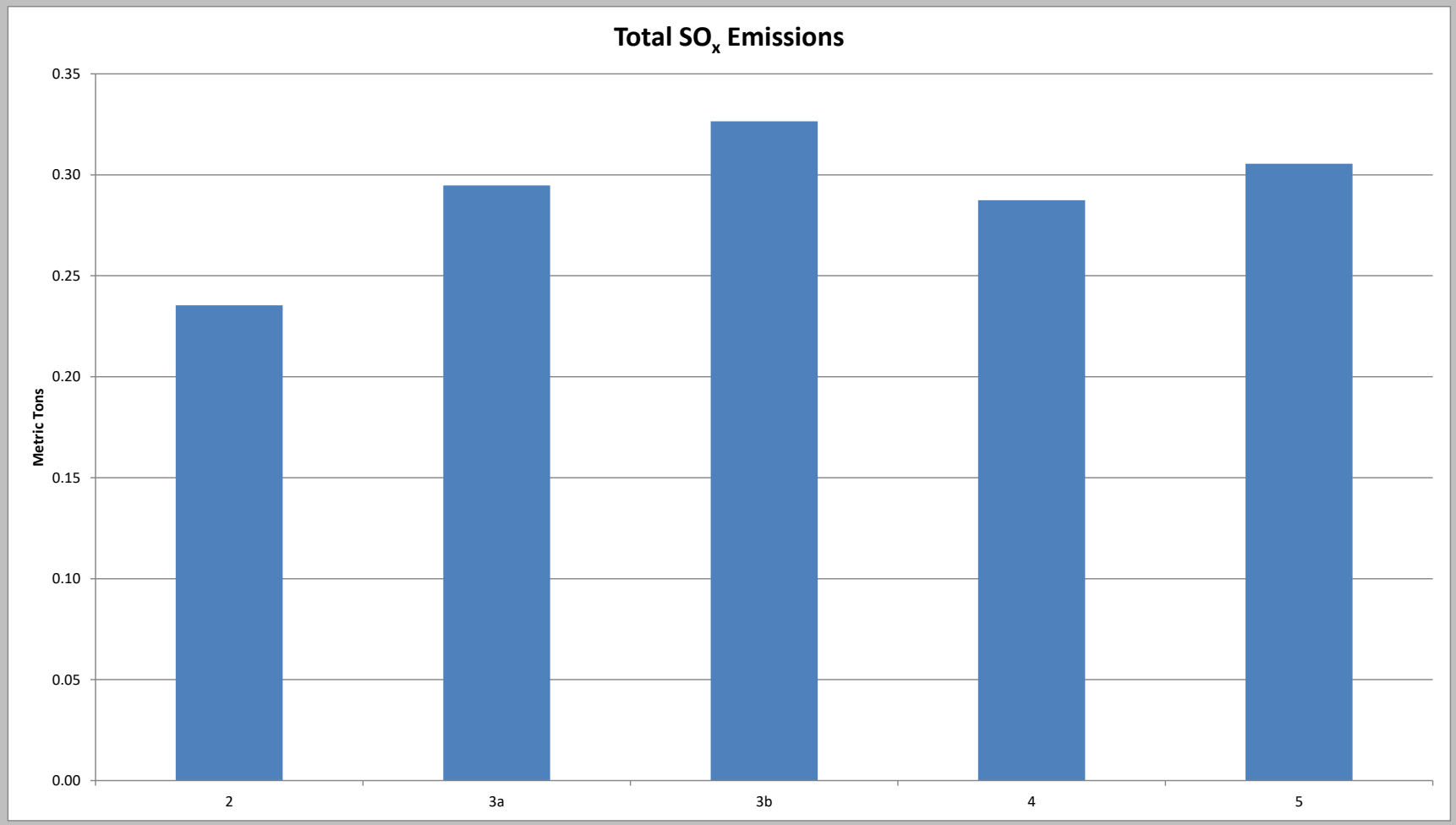

Water Impacts
Gallons
30000.00
25000.00
20000.00
15000.00
10000.00
5000.00
0.00
2
3a
3b
4
5

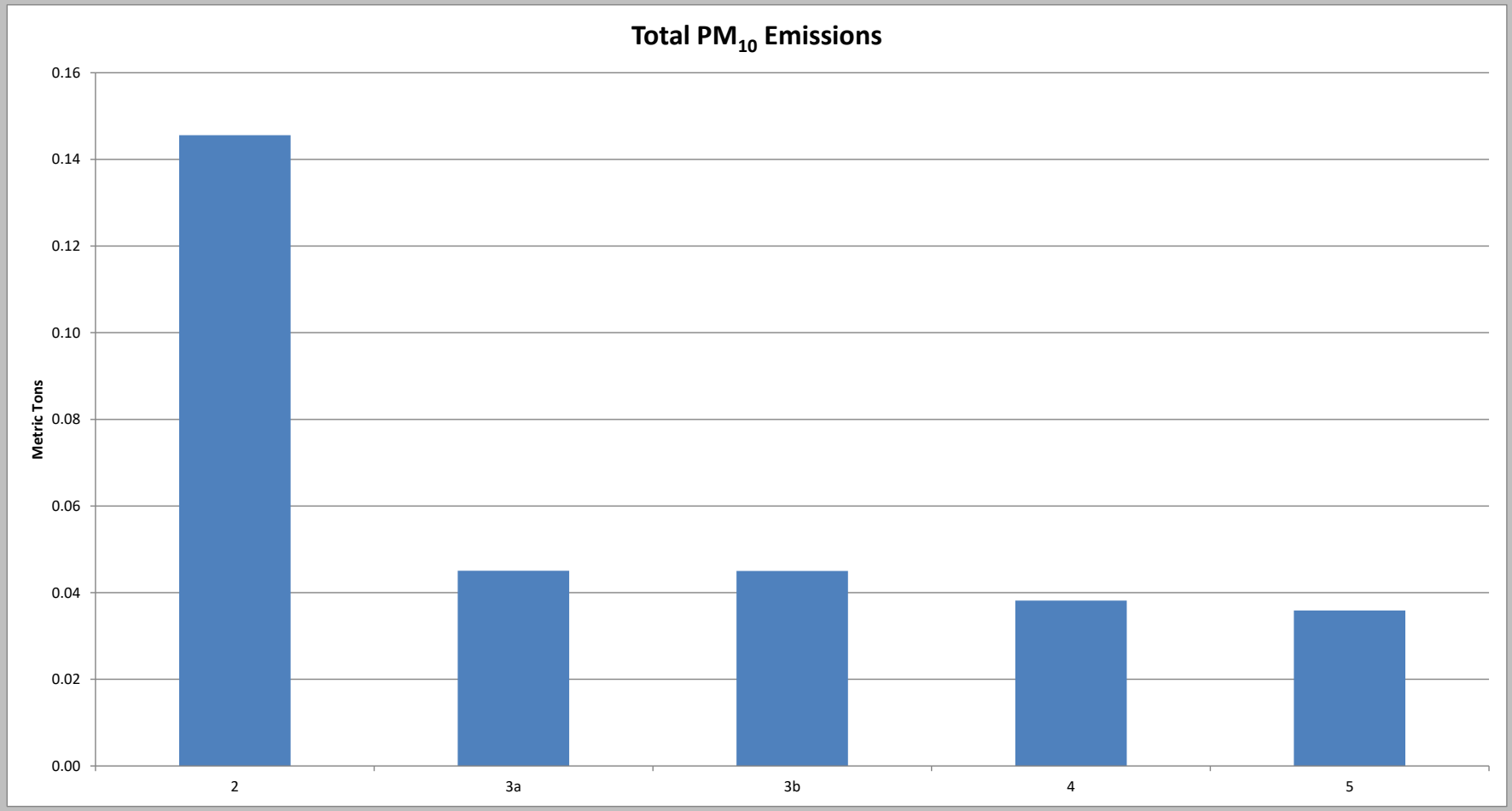

Onsite NOx Emissions
Metric Tons
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
2
3a
3b
4
5

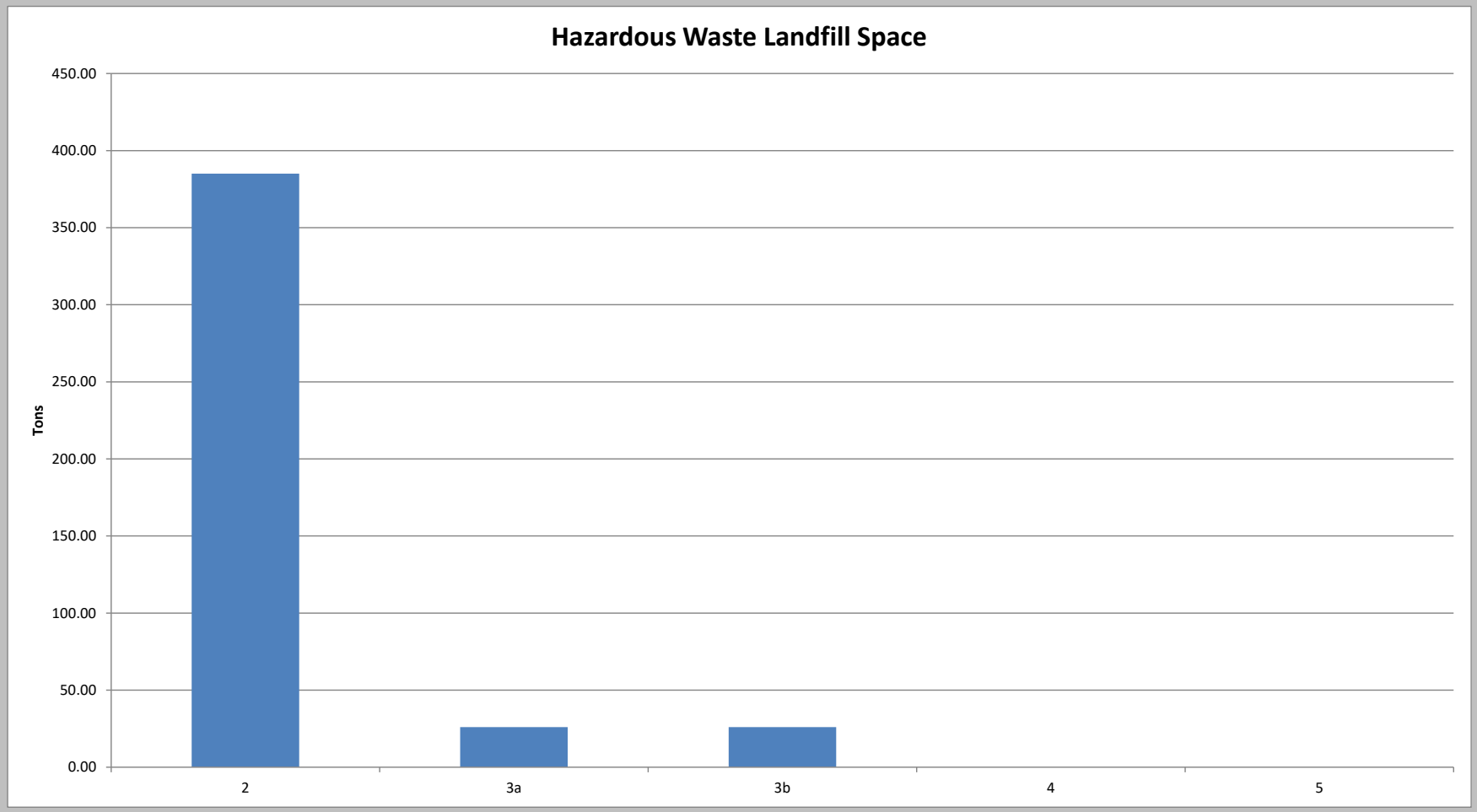

Onsite SOx Emissions
Metric Tons
0.04
0.04
0.03
0.03
0.02
0.02
0.01
0.01
0.00
2
3a
3b
4
5

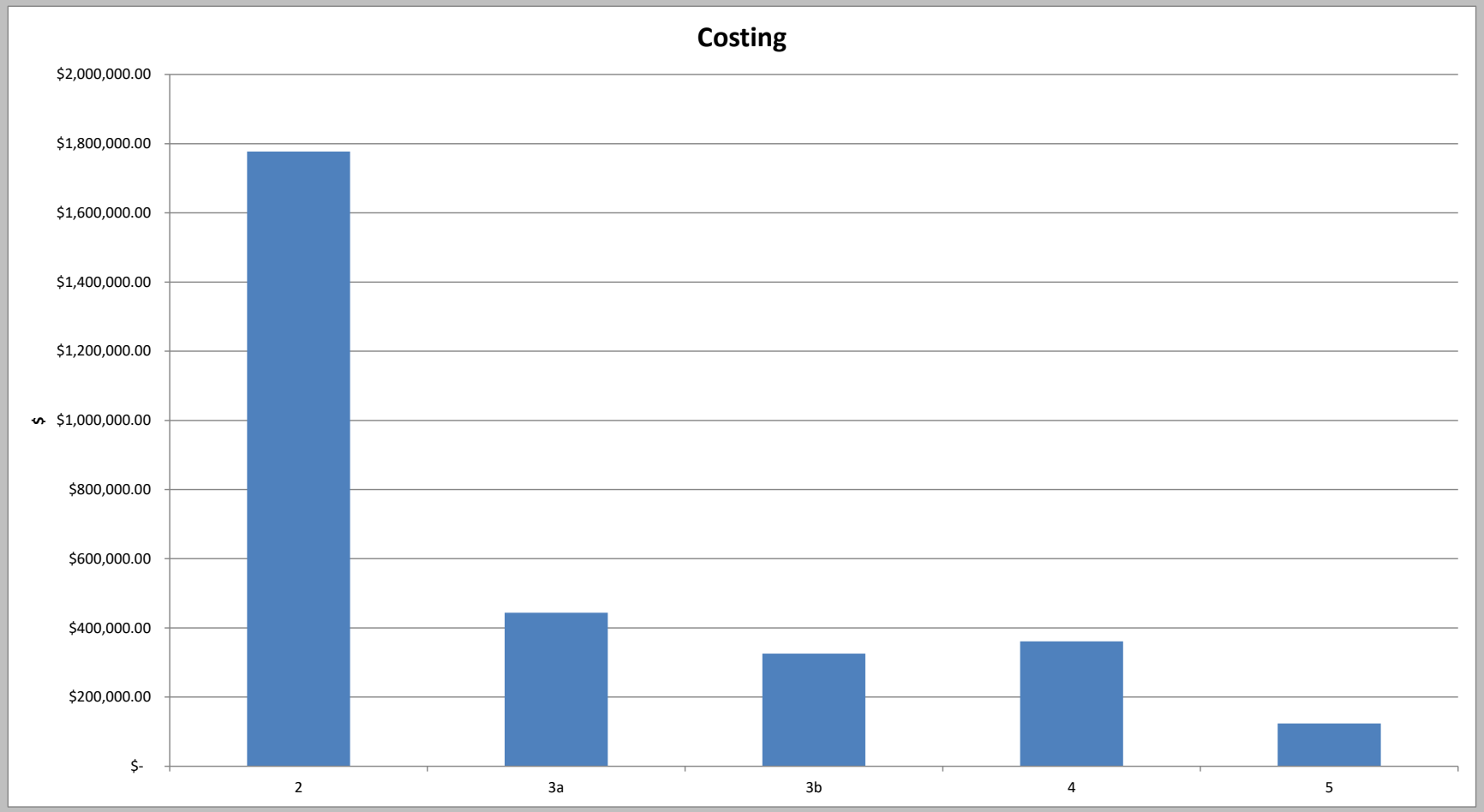

Onsite PM10 Emissions
Metric Tons
0.04
0.03
0.03
0.02
0.02
0.01
0.01
0.00
2
3a
3b
4
5

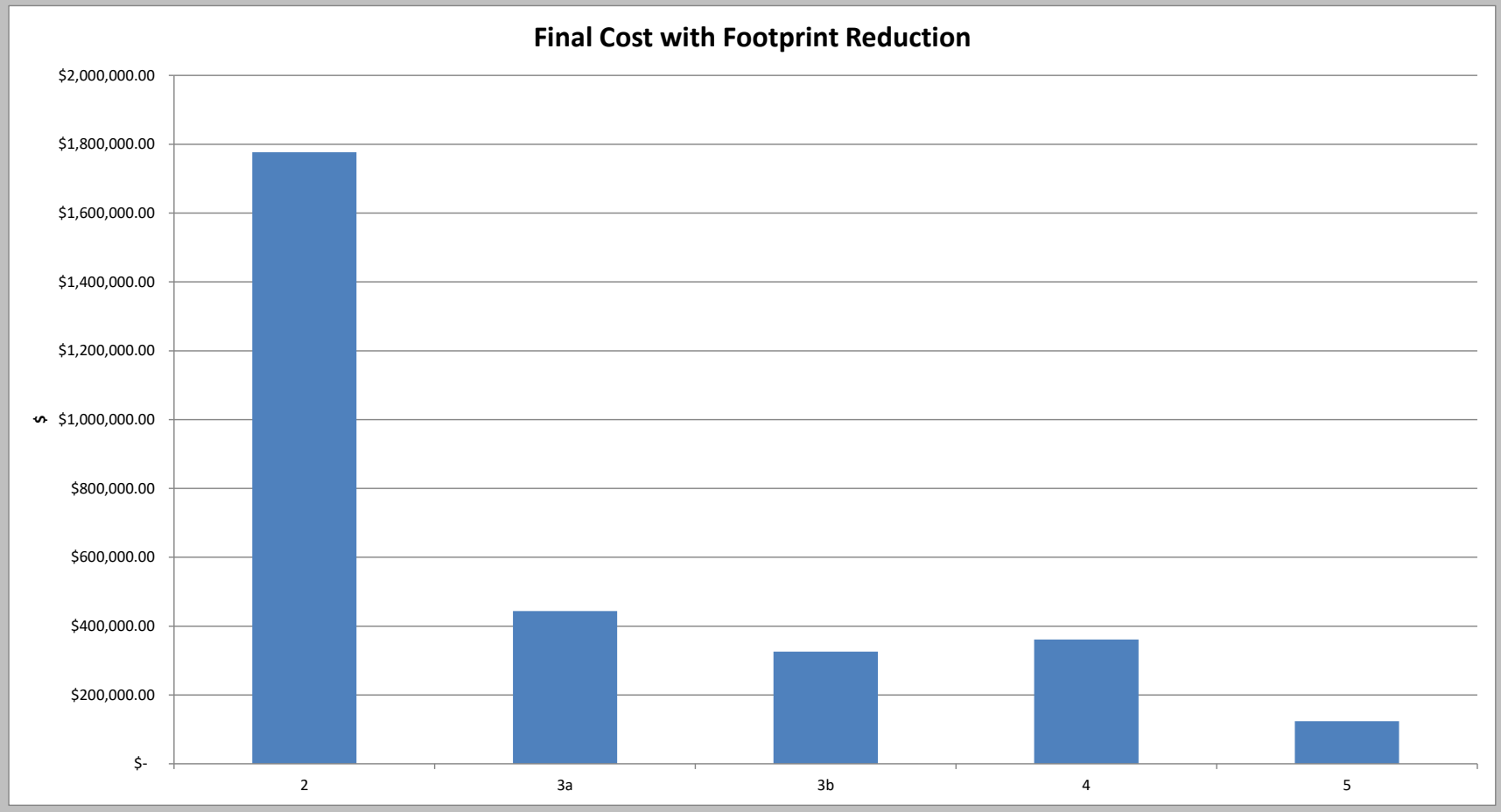

Total NOx Emissions
Metric Tons
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
2
3a
3b
4
5

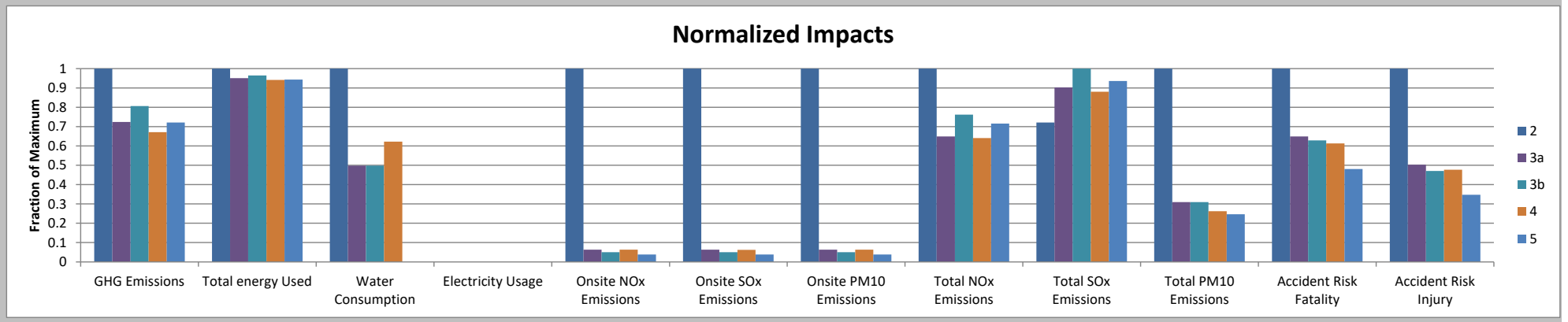

Total SOx Emissions
Metric Tons
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
2
3a
3b
4
5


Total PM10 Emissions
Metric Tons
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
2
3a
3b
4
5


Hazardous Waste Landfill Space
Tons
450.00
400.00
350.00
300.00
250.00
200.00
150.00
100.00
50.00
0.00
2
3a
3b
4
5


Costing
$2,000,000.00
$1,800,000.00
$1,600,000.00
$1,400,000.00
$1,200,000.00
$
$1,000,000.00
$800,000.00
$600,000.00
$400,000.00
$200,000.00
$-
2
3a
3b
4
5


Final Cost with Footprint Reduction
$2,000,000.00
$1,800,000.00
$1,600,000.00
$1,400,000.00
$1,200,000.00
$1,000,000.00
$800,000.00
$600,000.00
$400,000.00
$200,000.00
$-
$
2
3a
3b
4
5


Normalized Impacts
Fraction of Maximum
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
GHG Emissions
Total energy Used
Water Consumption
Electricity Usage
Onsite NOx Emissions
Onsite SOx Emissions
Onsite PM10 Emissions
Total NOx Emissions
Total SOx Emissions
Total PM10 Emissions
Accident Risk Fatality
Accident Risk Injury
2
3a
3b
4
5

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 1 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	65152

MATERIAL PRODUCTION

WELL MATERIALS	Well Installation	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells	4					
Input depth of wells (ft)	20					
Choose specific casing material schedule from drop down menu	Sch 80 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1 1/2	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)	1,000					
Input total quantity of Gravel (kg)	0					
Input total quantity of Bentonite (kg)	200					
Input total quantity of Typical Cement (kg)	1,900					
Input total quantity of General Concrete (kg)	0					
Input total quantity of Steel (kg)	360					

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Property Survey	Utility Survey	Structural Analysis	Regensis Mapping Tes	Surveyor Oversight	GW Sampling
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	Light truck	Light truck	Light truck	SUVs	SUVs
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	270	270	600	270	270	270
Input number of trips taken	1	1	4	1	3	2
Input number of travelers	1	1	1	1	1	1
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	Construction Equipmer	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	270	270				
Input weight of equipment transported per truck load (tons)	2.50	3.50				

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Well Construction	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	4					
Choose drilling method from drop down menu	Hollow Stem Auger	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	4.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (hr) (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Soil Samples	VOC GW	PFAS GW	MNA GW	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)	1,800.00	595.00	3,150.00	2,100.00		

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 2 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	1668153

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	S-MZVI	AquiFix	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points	1	1				
Choose material type from drop down menu	ZVI	Vegetable Oil	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)	2525	8640				
Input number of injections per injection point	1	1				

TREATMENT MEDIA	PlumeStop	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)	2,580					
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Clean Fill	Crushed Stone	Asphalt	Top Soil	Material 5	Material 6
Choose material from drop down menu	Soil	Gravel	Asphalt	Soil	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	cubic feet	cubic feet	cubic feet	cubic feet	pounds	pounds
Input material quantity	6,062	324	317	243		

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Subcontractor	Oversight	Oversight injection	Regenesis	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	SUVs	SUVs	Light truck	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Diesel	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300	600	600	300		
Input number of trips taken	5	3	6	7		
Input number of travelers	1	1	1	1		
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	Excavator and Drill Rig	Clean Fill	Gravel transport	Asphalt	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline
Account for an empty return trip?	No	No	Yes	Yes	Yes	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	270	270	563	50	50	
Input weight of equipment transported per truck load (tons)	2.00	2.50	15.00	15.00	15.00	

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Excavator	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Excavator	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)	257					
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Geoprobe	Rotosonic	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	66	124				
Choose drilling method from drop down menu	Direct Push	Sonic Drilling	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	4.00	4.00				
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Paver	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Paver	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)	1,266					
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Round 1: Soil samples	Round 1: GW	Post Round 1: VOCs	Post Round 1: PFAS	Round 2: Soils	Round 2: GW
Input dollars spent on laboratory analysis ($)	1,200.00	425.00	595.00	3,150.00	1,200.00	425.00

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)	15.0					
Choose fuel used from drop down menu	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips	26.0					
Input number of miles per trip	650.0					

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)	385.0					
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Injection Water	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)	24100					
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 3 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	43690

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Years 1-5	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	SUVs	Cars	Cars	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300					
Input number of trips taken	20					
Input number of travelers	1					
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).						
Input weight of equipment transported per truck load (tons)						

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations						
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)						
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	VOCs	PFAS	MNA Parameters	Analysis 4	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)	5,950.00	31,500.00	6,000.00			

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

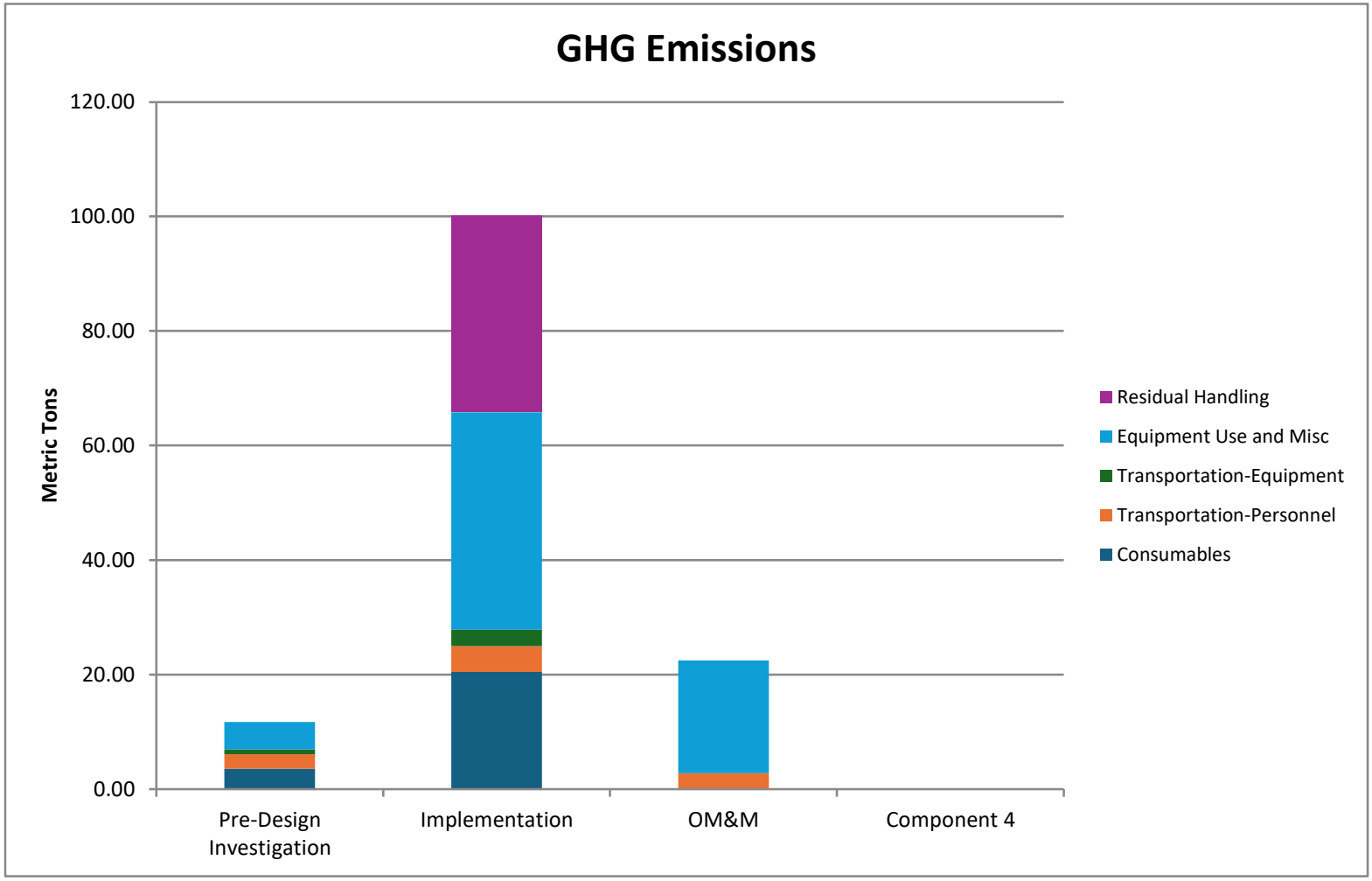
WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

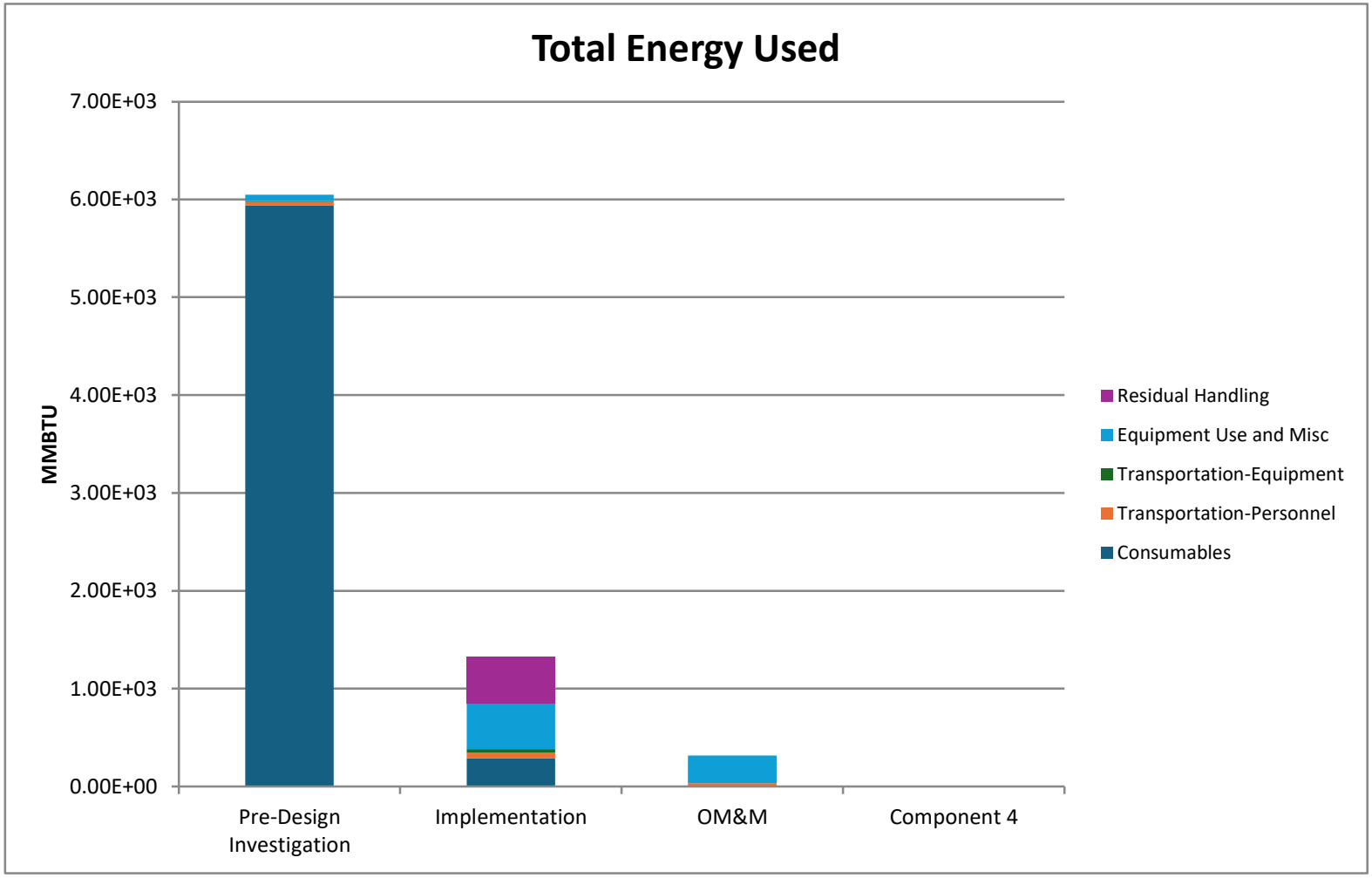
ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

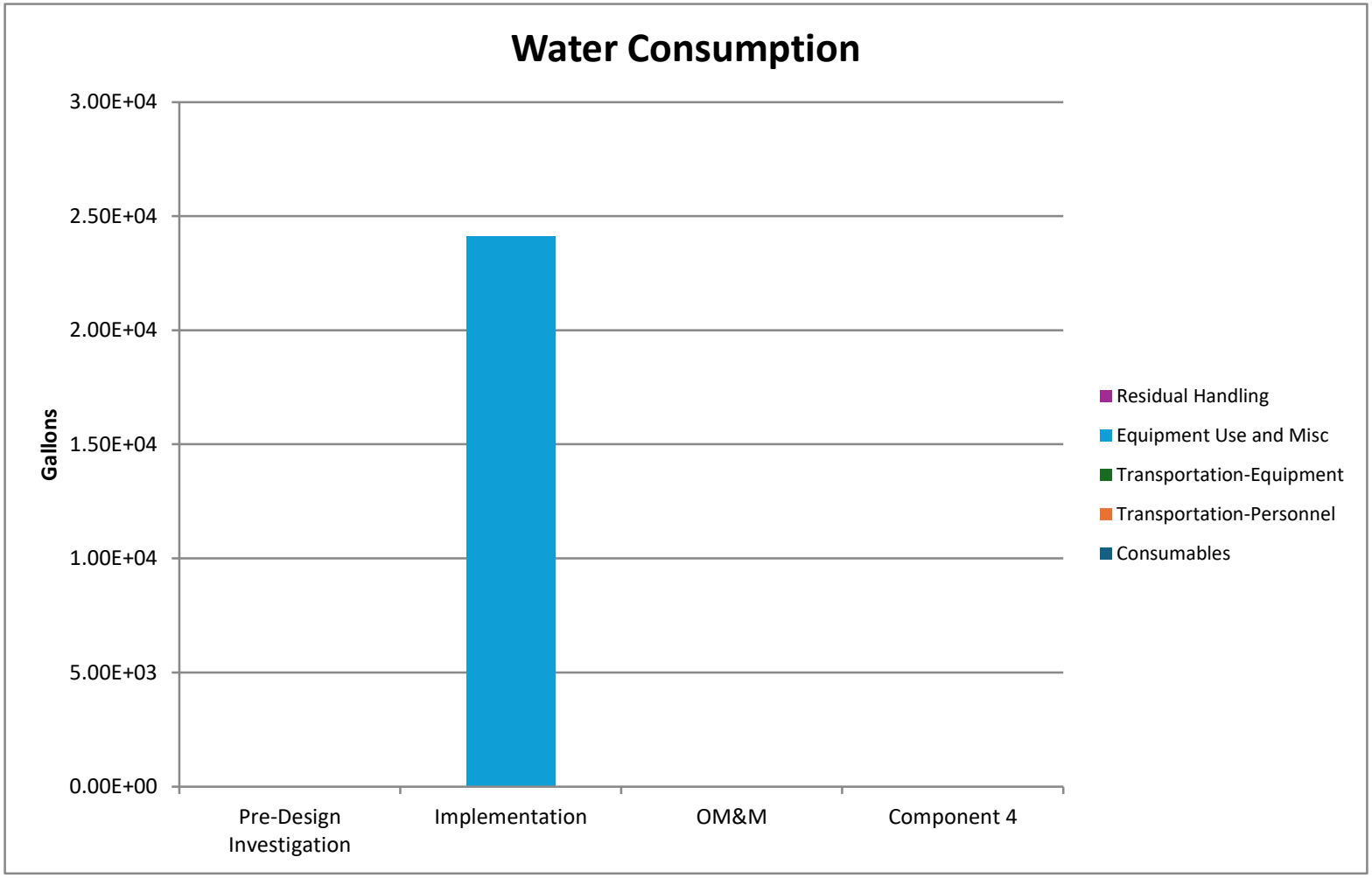
Sustainable Remediation - Environmental Footprint Summary
2

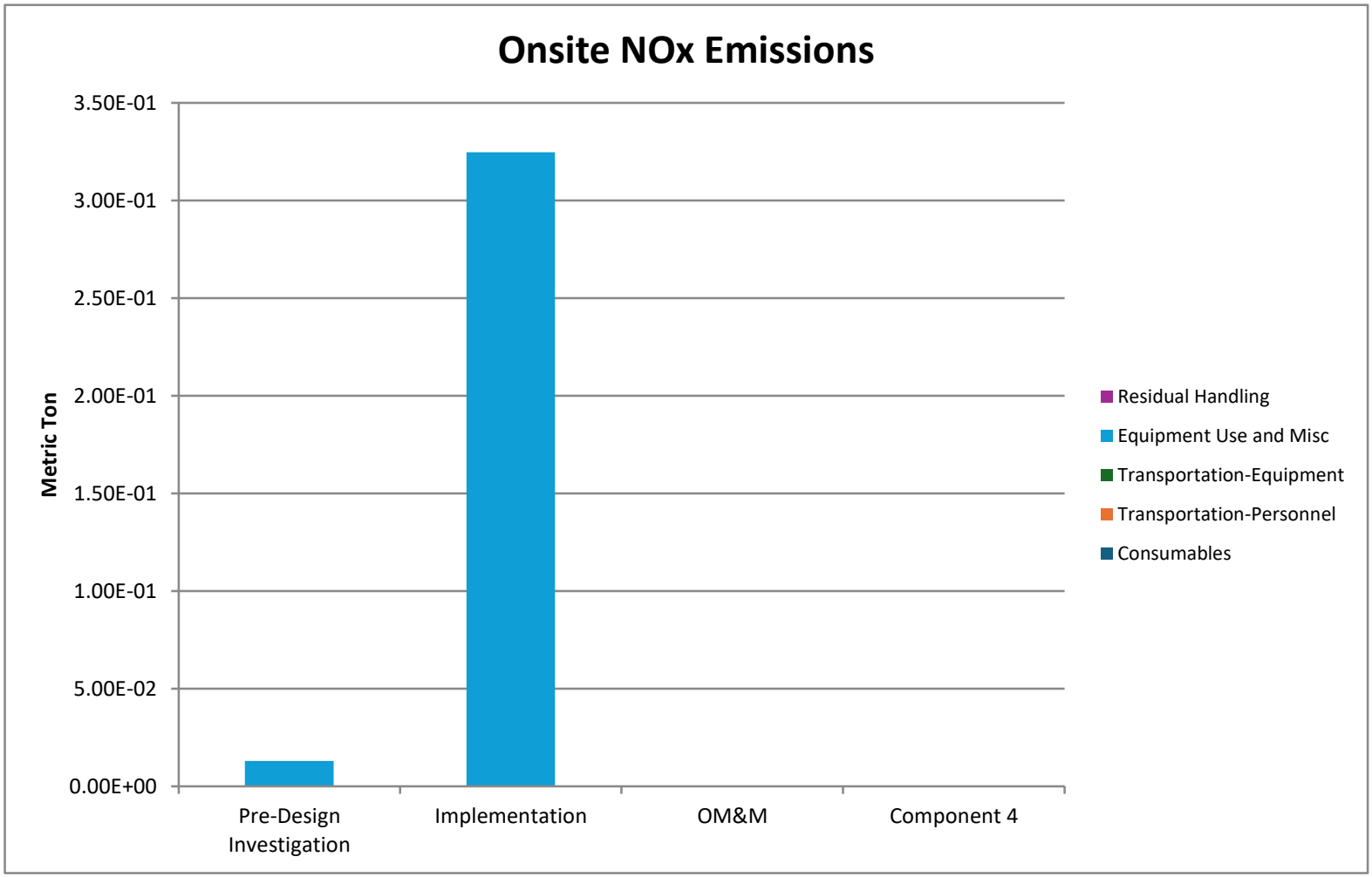
Phase	Activities	GHG Emissions	Total Energy Used	Water Consumption	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx Emissions	Total SOx Emissions	Total PM10 Emissions	Accident Risk Fatality	Accident Risk Injury
		metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton		
Pre-Design Investigation	Consumables	3.58	5.9E+03	NA	NA	NA	NA	NA	7.2E-03	1.0E-02	1.3E-03	NA	NA
	Transportation-Personnel	2.54	3.2E+01	NA	NA	NA	NA	NA	9.9E-04	3.3E-05	1.5E-04	3.8E-05	3.0E-03
	Transportation-Equipment	0.79	1.0E+01	NA	NA	NA	NA	NA	2.5E-04	4.4E-06	2.2E-05	4.2E-06	3.4E-04
	Equipment Use and Misc	4.83	6.6E+01	0.0E+00	0.0E+00	1.3E-02	1.3E-03	1.2E-03	3.0E-02	1.4E-02	2.7E-03	1.5E-06	3.7E-04
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	11.74	6.05E+03	0.00E+00	0.00E+00	1.30E-02	1.33E-03	1.17E-03	3.88E-02	2.42E-02	4.18E-03	4.34E-05	3.74E-03
Implementation	Consumables	20.46	2.9E+02	NA	NA	NA	NA	NA	4.6E-02	6.9E-02	2.2E-02	NA	NA
	Transportation-Personnel	4.51	5.6E+01	NA	NA	NA	NA	NA	1.6E-03	4.6E-05	2.8E-04	7.0E-05	5.7E-03
	Transportation-Equipment	2.89	3.8E+01	NA	NA	NA	NA	NA	9.1E-04	1.7E-05	8.0E-05	9.4E-06	7.6E-04
	Equipment Use and Misc	37.92	4.7E+02	2.4E+04	0.0E+00	3.2E-01	3.3E-02	2.9E-02	3.6E-01	5.7E-02	3.4E-02	7.0E-05	1.8E-02
	Residual Handling	34.36	4.7E+02	NA	NA	0.0E+00	0.0E+00	0.0E+00	3.4E-02	1.3E-02	7.1E-02	1.3E-04	1.1E-02
	Sub-Total	100.14	1.32E+03	2.41E+04	0.00E+00	3.25E-01	3.32E-02	2.92E-02	4.44E-01	1.39E-01	1.26E-01	2.81E-04	3.45E-02
OM&M	Consumables	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA	NA
	Transportation-Personnel	2.76	3.5E+01	NA	NA	NA	NA	NA	8.5E-04	3.6E-05	1.7E-04	4.7E-05	3.8E-03
	Transportation-Equipment	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Equipment Use and Misc	19.71	2.8E+02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	9.5E-02	7.1E-02	7.9E-03	0.0E+00	0.0E+00
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	22.47	3.17E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.54E-02	7.10E-02	8.06E-03	4.68E-05	3.77E-03
Component 4	Consumables	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA	NA
	Transportation-Personnel	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Transportation-Equipment	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Equipment Use and Misc	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		**1.3E+02**	**7.7E+03**	**2.4E+04**	**0.0E+00**	**3.4E-01**	**3.5E-02**	**3.0E-02**	**5.8E-01**	**2.3E-01**	**1.4E-01**	**3.7E-04**	**4.2E-02**

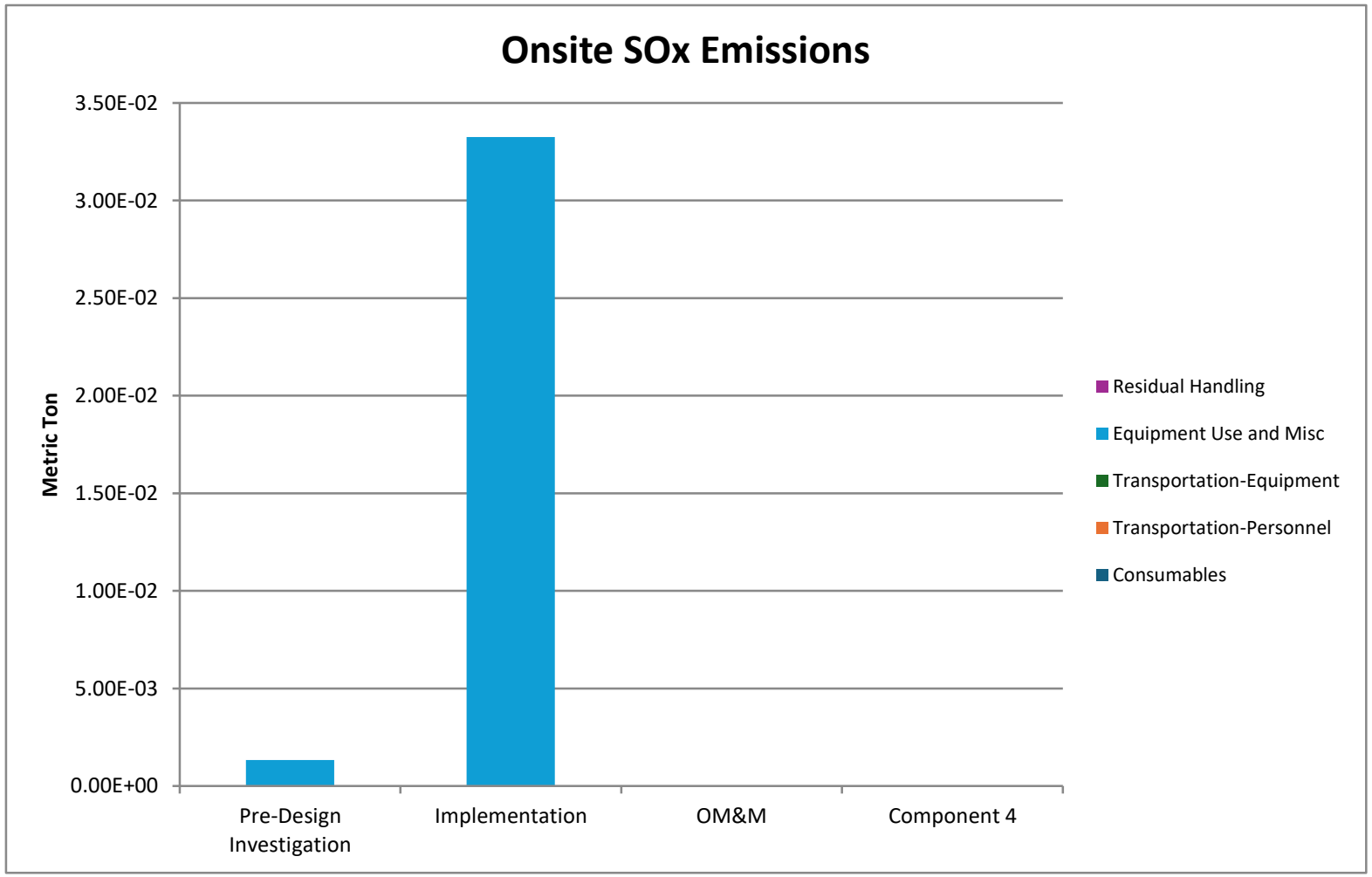
Remedial Alternative Phase	Non-Hazardous Waste Landfill Space	Hazardous Waste Landfill Space	Topsoil Consumption	Costing	Lost Hours - Injury	Percent electricity from renewable sources	Total Cost with Footprint Reduction
	tons	tons	cubic yards	$		%	
Pre-Design Investigation	0.0E+00	0.0E+00	0.0E+00	65,152	3.0E-02	0.0%	
Implementation	3.9E+02	0.0E+00	0.0E+00	1,668,153	2.8E-01	0.0%	
OM&M	0.0E+00	0.0E+00	0.0E+00	43,690	3.0E-02	0.0%	**$1,776,995**
Component 4	0.0E+00	0.0E+00	0.0E+00	0	0.0E+00	0.0%	
Total	**3.9E+02**	**0.0E+00**	**0.0E+00**	**$1,776,995**	**3.4E-01**	**0.0%**	

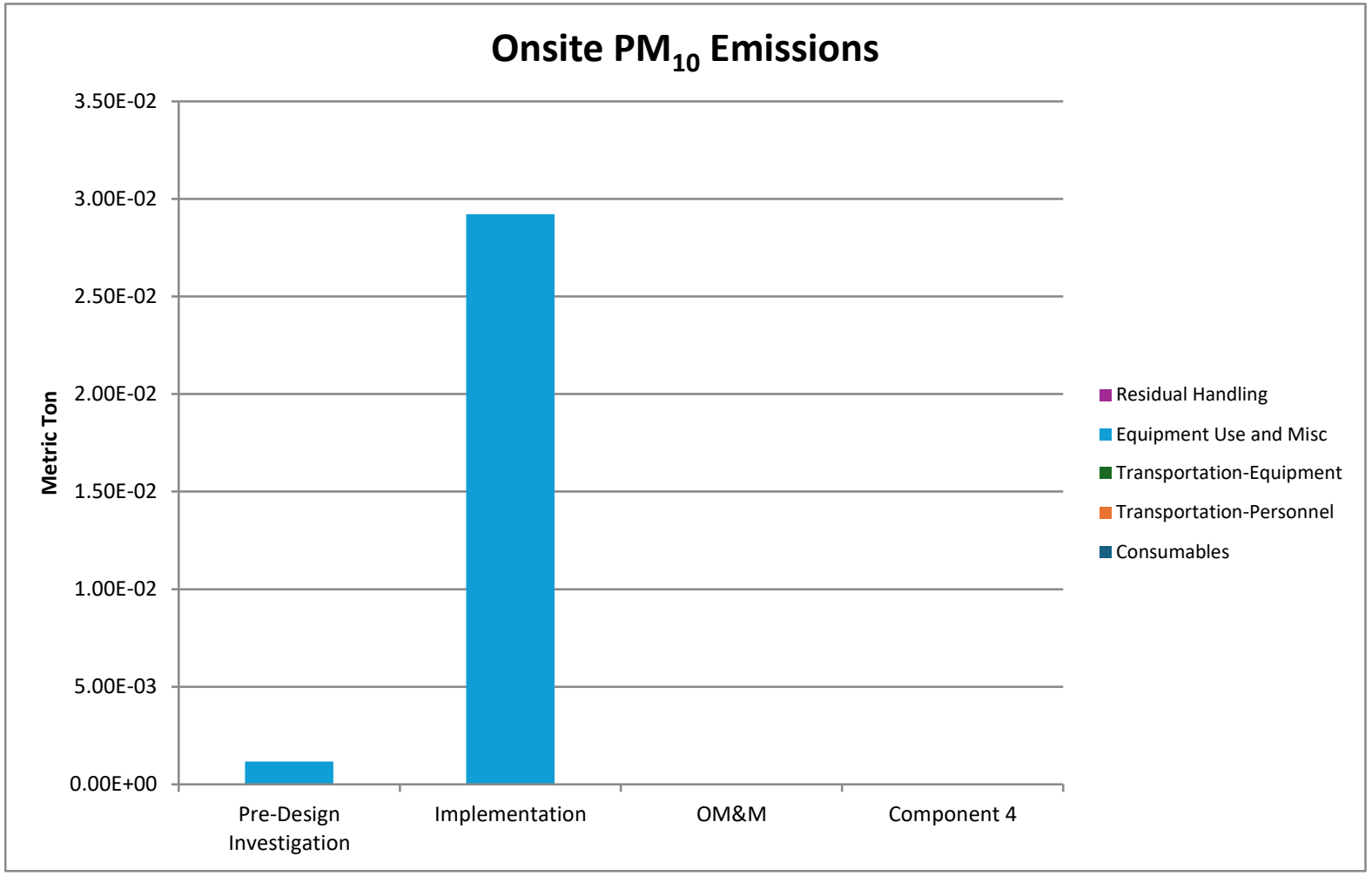

GHG Emissions
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Metric Tons
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

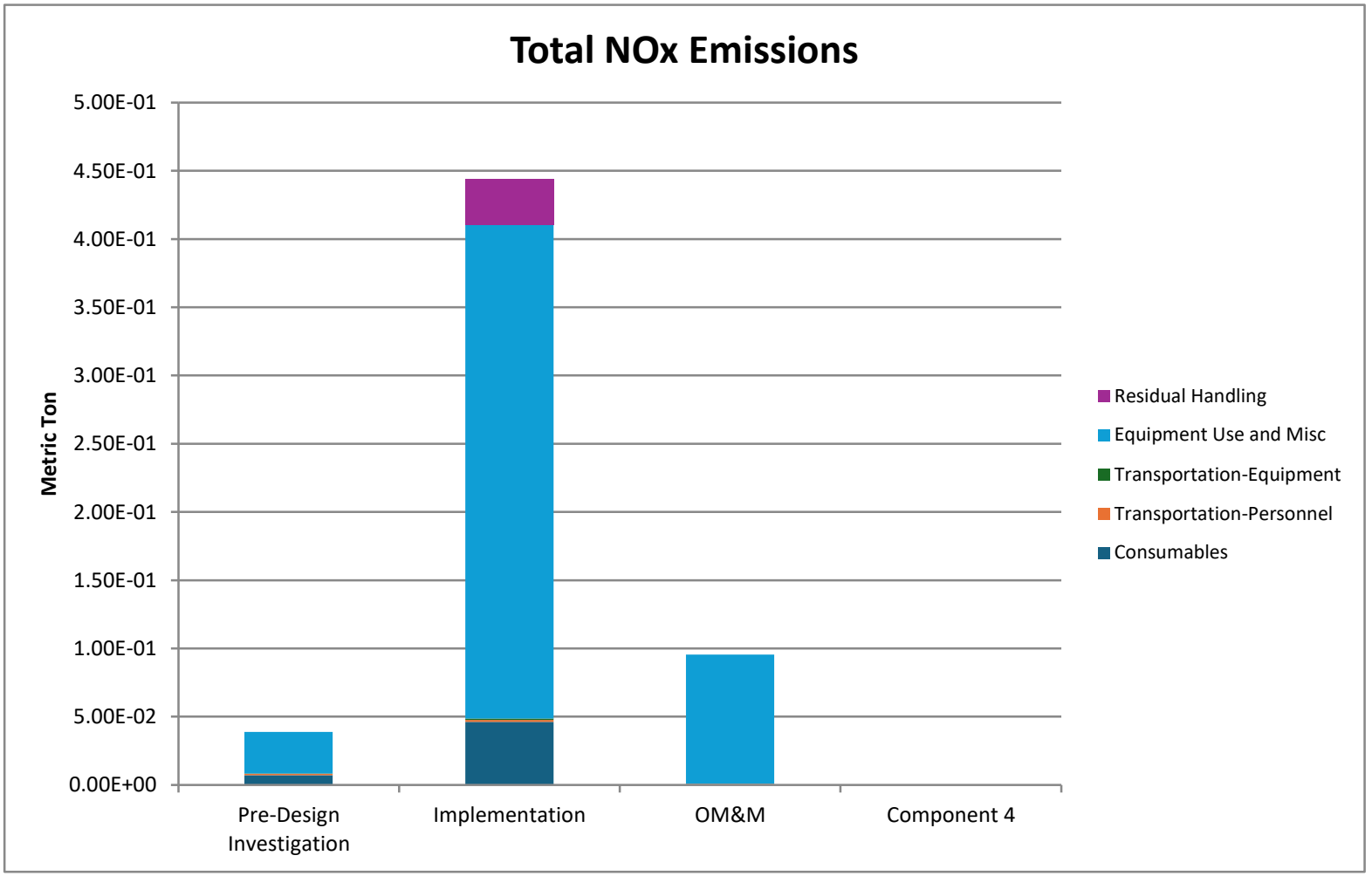

Total Energy Used
MMBTU
7.00E+03
6.00E+03
5.00E+03
4.00E+03
3.00E+03
2.00E+03
1.00E+03
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

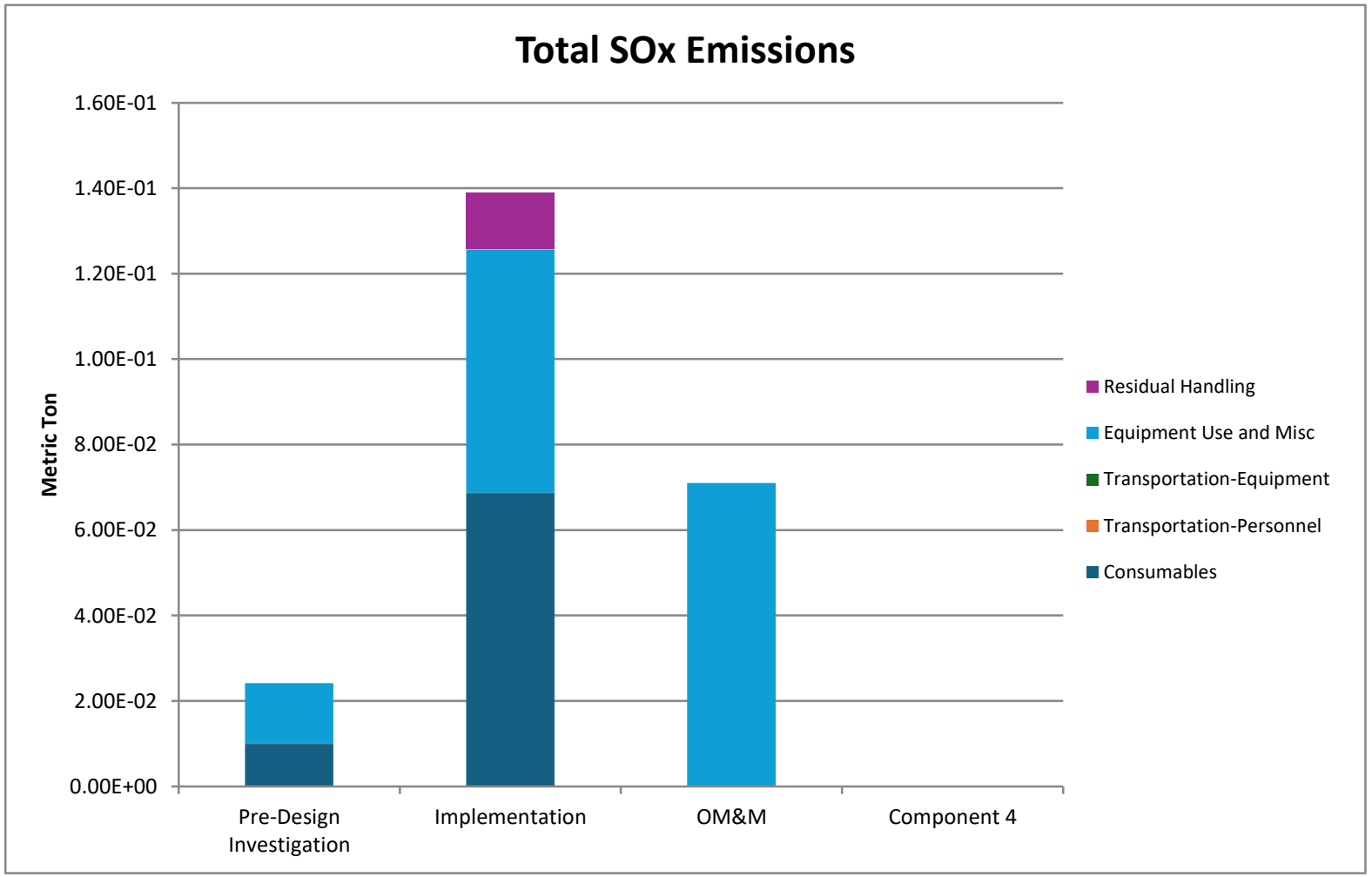

Water Consumption
Gallons
3.00E+04
2.50E+04
2.00E+04
1.50E+04
1.00E+04
5.00E+03
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

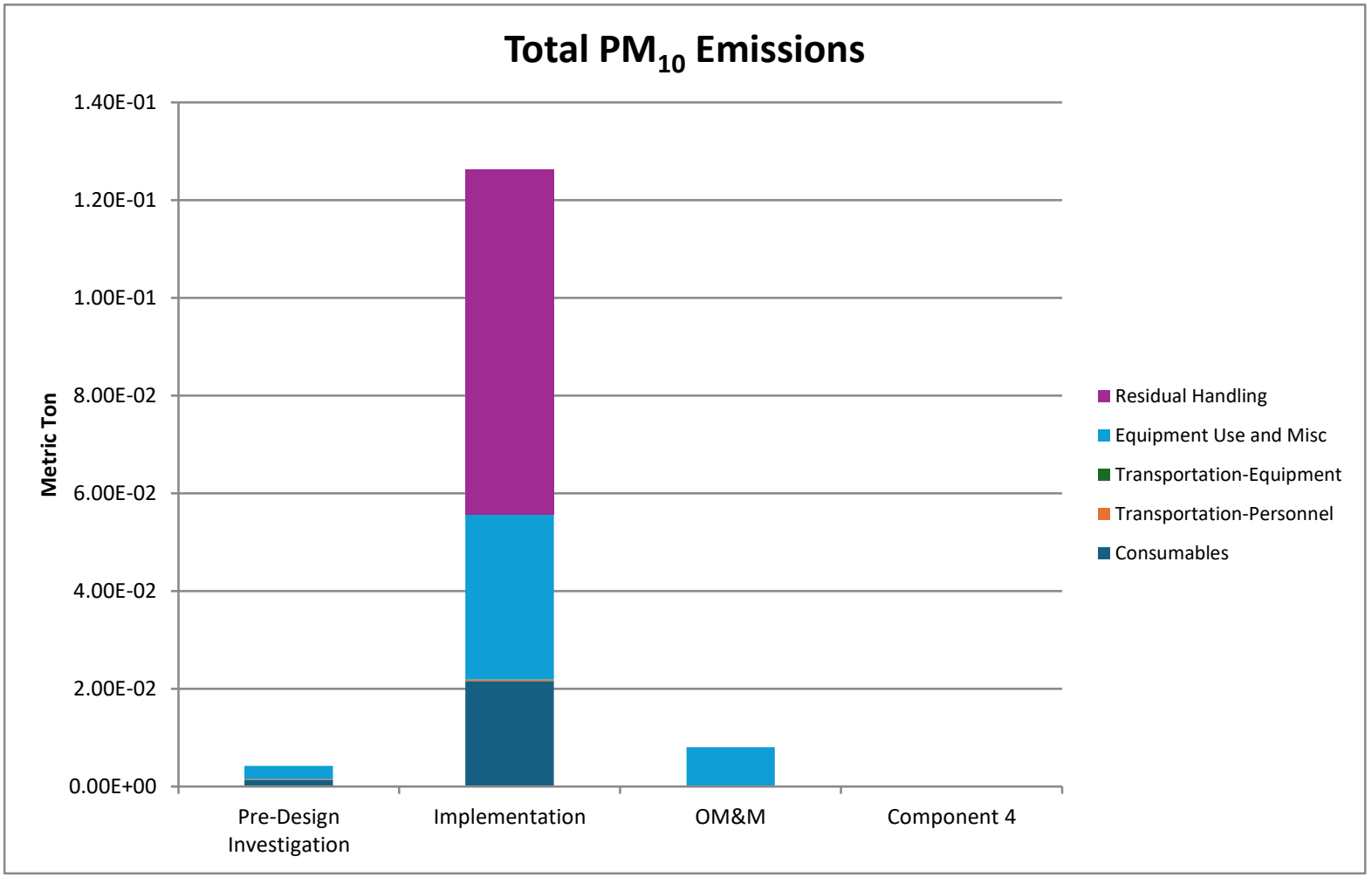

Onsite NOx Emissions
Metric Ton
3.50E-01
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

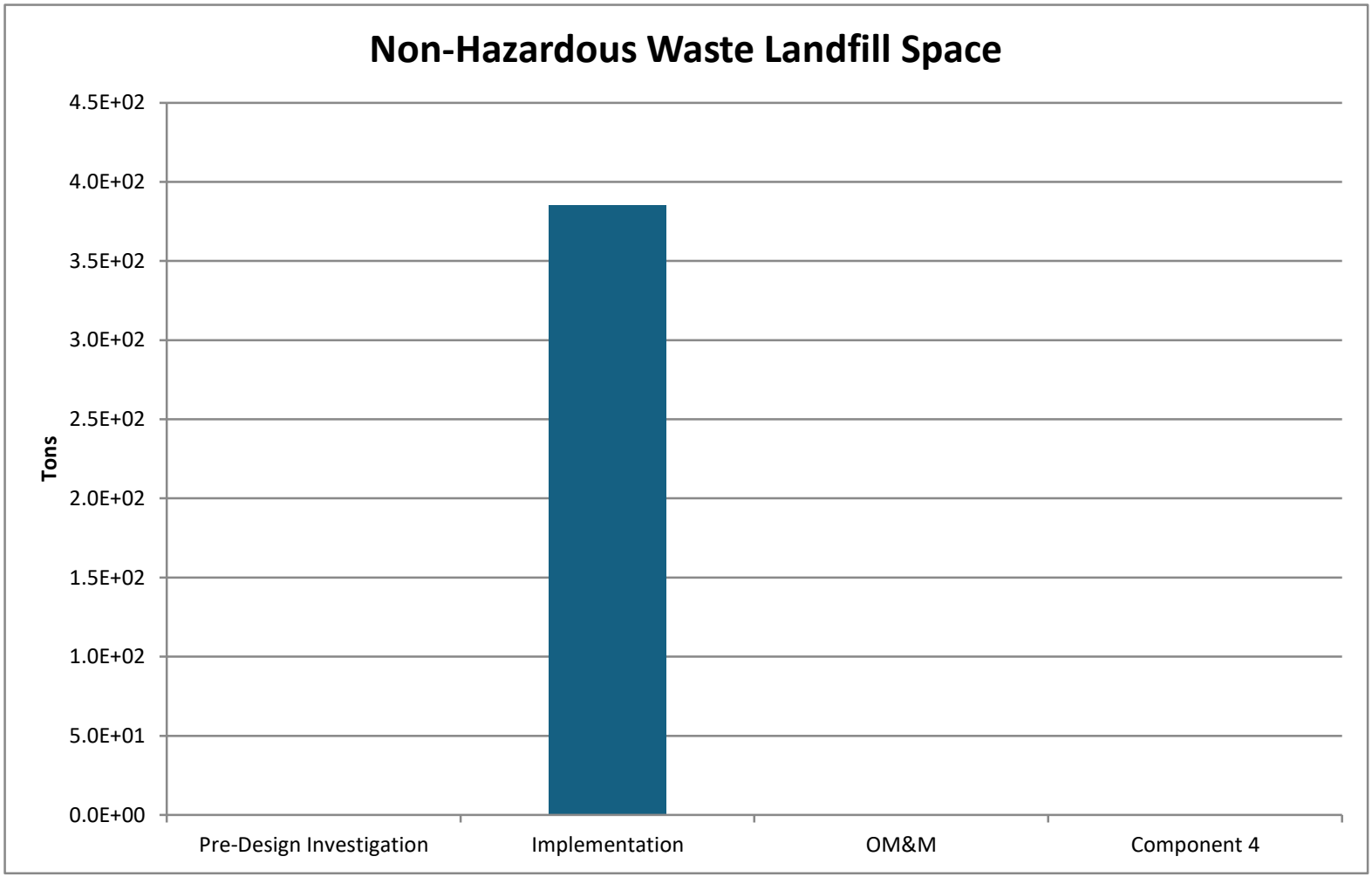

Onsite SOx Emissions
Metric Ton
3.50E-02
3.00E-02
2.50E-02
2.00E-02
1.50E-02
1.00E-02
5.00E-03
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Onsite PM10 Emissions
Metric Ton
3.50E-02
3.00E-02
2.50E-02
2.00E-02
1.50E-02
1.00E-02
5.00E-03
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Total NOx Emissions
Metric Ton
5.00E-01
4.50E-01
4.00E-01
3.50E-01
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

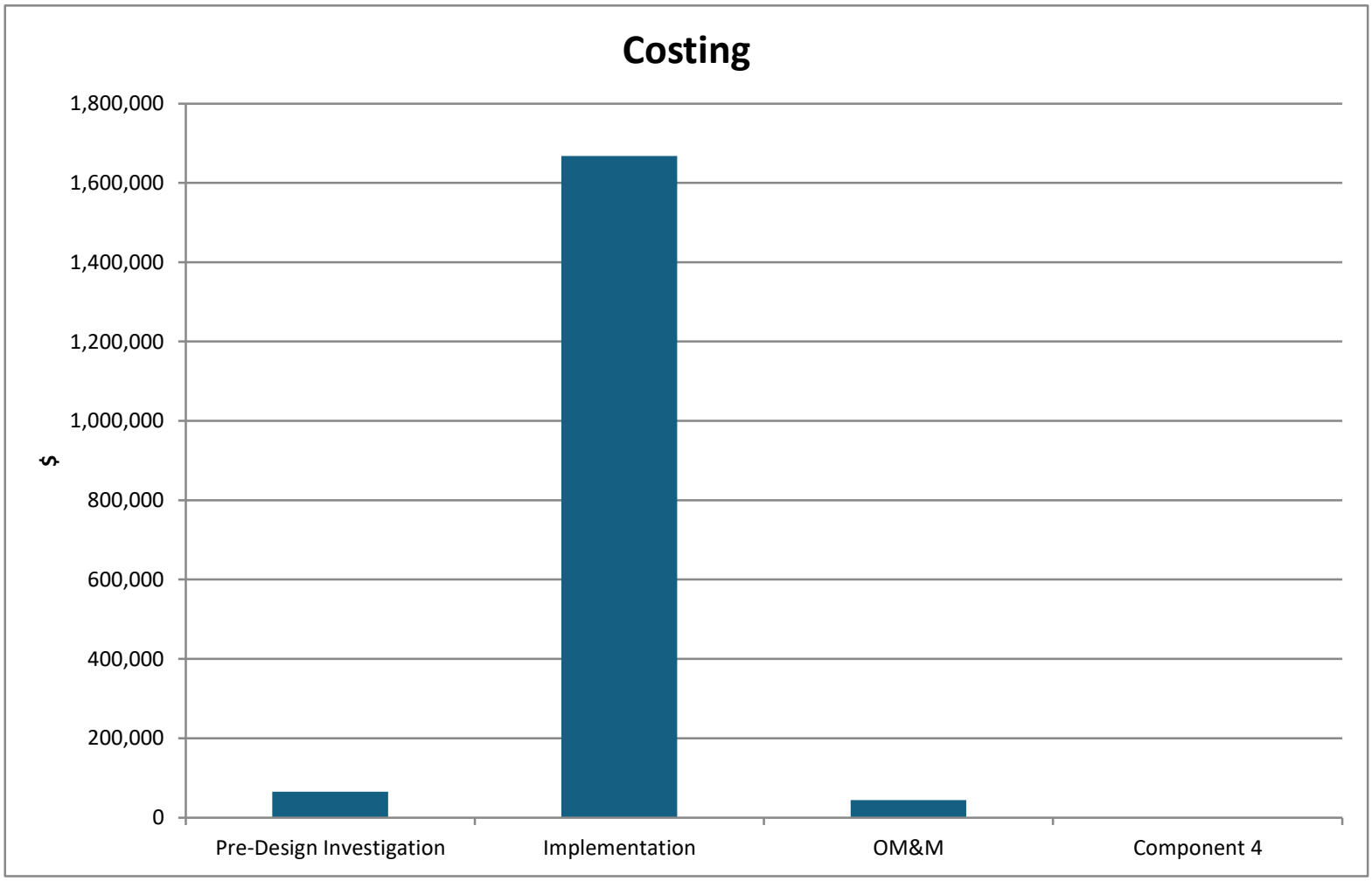

Total SOx Emissions
Metric Ton
1.60E-01
1.40E-01
1.20E-01
1.00E-01
8.00E-02
6.00E-02
4.00E-02
2.00E-02
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Total PM10 Emissions
Metric Ton
1.40E-01
1.20E-01
1.00E-01
8.00E-02
6.00E-02
4.00E-02
2.00E-02
0.00E+00
Pre-Design Investigation
Implementation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Non-Hazardous Waste Landfill Space
Tons
4.5E+02
4.0E+02
3.5E+02
3.0E+02
2.5E+02
2.0E+02
1.5E+02
1.0E+02
5.0E+01
0.0E+00
Pre-Design Investigation
Implementation
OM&M
Component 4

Summary Outputs - Alternative 2

Environmental Footprint Analysis for Irvington RI/FS



This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 1 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	32232

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells	4					
Input depth of wells (ft)	20					
Choose specific casing material schedule from drop down menu	Sch 80 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1 1/2	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)	1,000					
Input total quantity of Gravel (kg)	0					
Input total quantity of Bentonite (kg)	200					
Input total quantity of Typical Cement (kg)	1,900					
Input total quantity of General Concrete (kg)	0					
Input total quantity of Steel (kg)	360					

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Property Survey	Utility Survey	Surveyor Oversight	GW Sampling	Drilling Subcontractor	Drilling Oversight
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	Light truck	SUVs	SUVs	Light truck	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	270	270	270	270	270	600
Input number of trips taken	1	1	3	2	1	1
Input number of travelers	1	1	1	1	1	1
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	onstruction Equipme	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	270	135				
Input weight of equipment transported per truck load (tons)	2.50	3.50				

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Well Construction	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	4					
Choose drilling method from drop down menu	Hollow Stem Auger	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	4.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (hr) (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Soil Samples	VOC GW	PFAS GW	MNA GW	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)	900.00	595.00	3,150.00	2,100.00		

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 2 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	338240

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	NaOH	Klozur	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points	1	1				
Choose material type from drop down menu	dium Hydroxide (dry, bu	Medium Impact Materia	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)	4200	10580				
Input number of injections per injection point	1	1				

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Asphalt	Crushed Stone	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Asphalt	Gravel	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	cubic feet	cubic feet	pounds	pounds	pounds	pounds
Input material quantity	233	243				

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Surveyor	Oversight	njection Subcontracto	Injection Oversight	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	SUVs	Light truck	SUVs	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300	600	270	600		
Input number of trips taken	2	1	4	2		
Input number of travelers	1	1	1	1		
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	Excavator and Drill Rig	Clean Fill	Asphalt	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline
Account for an empty return trip?	No	No	Yes	Yes	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	270	270	50	25		
Input weight of equipment transported per truck load (tons)	2.00	2.50	15.00	15.00		

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Excavator	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)	17					
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Injection Points	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	12					
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	8.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Roller	Paver	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Paver	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)	466	466				
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Documentation Sampling	Round 1: Soil	Round 1: GW	Round 2: Soil	Round 2: GW	Analysis 6
Input dollars spent on laboratory analysis ($)	3,060.00	1,200.00	425.00	1,200.00	425.00	

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)	15.0					
Choose fuel used from drop down menu	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips	2.0					
Input number of miles per trip	650.0					

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)	26.0					
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Injections	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)	12000					
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 3 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	73235

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Years 1-5	Years 6-30	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	SUVs	SUVs	Cars	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300	300				
Input number of trips taken	20	50				
Input number of travelers	1	1				
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).						
Input weight of equipment transported per truck load (tons)						

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations						
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)						
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	PFAS: Years 1-5	VOCs: Years 6-30	PFAS: Yeas 6-30	VOCs: Years 6-30	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)	31,500.00	5,950.00	78,750.00	14,875.00		

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

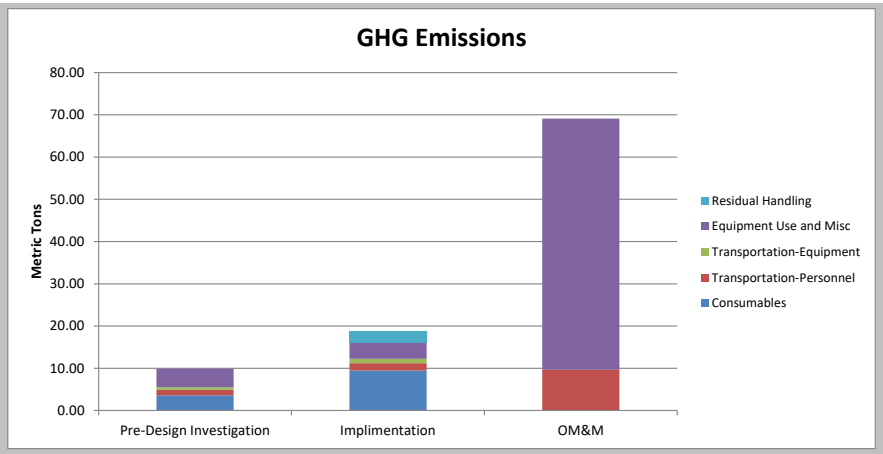
WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

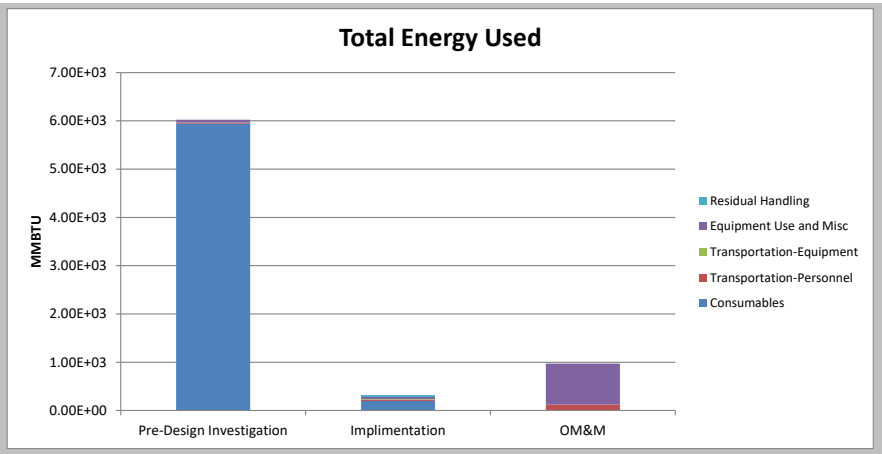
ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

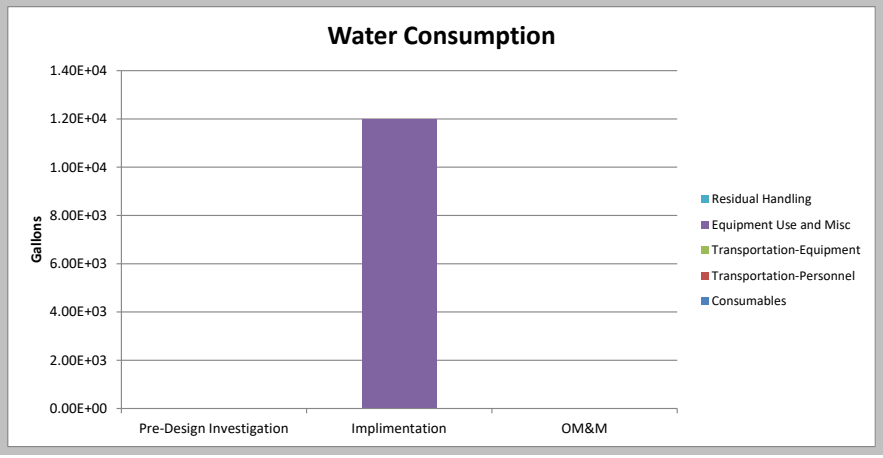
Sustainable Remediation - Environmental Footprint Summary
4a

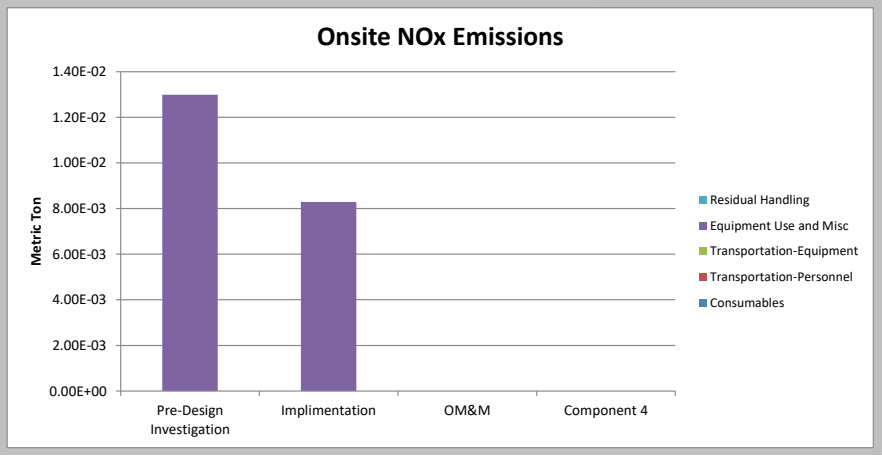
Phase	Activities	GHG Emissions	Total Energy Used	Water Consumption	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx Emissions	Total SOx Emissions	Total PM10 Emissions	Accident Risk Fatality	Accident Risk Injury
		metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton		
Pre-Design Investigation	Consumables	3.58	5.9E+03	NA	NA	NA	NA	NA	7.2E-03	1.0E-02	1.3E-03	NA	NA
	Transportation-Personnel	1.30	1.6E+01	NA	NA	NA	NA	NA	4.6E-04	1.7E-05	8.2E-05	2.2E-05	1.7E-03
	Transportation-Equipment	0.59	7.7E+00	NA	NA	NA	NA	NA	1.9E-04	3.3E-06	1.7E-05	3.2E-06	2.5E-04
	Equipment Use and Misc	4.42	6.0E+01	0.0E+00	0.0E+00	1.3E-02	1.3E-03	1.2E-03	2.8E-02	1.3E-02	2.5E-03	1.5E-06	3.7E-04
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	9.89	6.03E+03	0.00E+00	0.00E+00	1.30E-02	1.33E-03	1.17E-03	3.62E-02	2.27E-02	3.95E-03	2.62E-05	2.35E-03
Implimentation	Consumables	9.45	2.0E+02	NA	NA	NA	NA	NA	2.7E-02	4.5E-02	9.3E-03	NA	NA
	Transportation-Personnel	1.75	2.2E+01	NA	NA	NA	NA	NA	6.4E-04	2.3E-05	1.1E-04	2.7E-05	2.2E-03
	Transportation-Equipment	1.02	1.3E+01	NA	NA	NA	NA	NA	3.2E-04	5.7E-06	2.9E-05	4.8E-06	3.9E-04
	Equipment Use and Misc	3.76	5.2E+01	1.2E+04	0.0E+00	8.3E-03	8.5E-04	7.5E-04	2.3E-02	1.1E-02	2.0E-03	8.8E-06	2.2E-03
	Residual Handling	2.63	3.6E+01	NA	NA	0.0E+00	0.0E+00	0.0E+00	2.5E-03	9.9E-04	5.3E-03	1.0E-05	8.2E-04
	Sub-Total	18.62	3.21E+02	1.20E+04	0.00E+00	8.29E-03	8.53E-04	7.46E-04	5.28E-02	5.79E-02	1.67E-02	5.09E-05	5.60E-03
OM&M	Consumables	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA	NA
	Transportation-Personnel	9.65	1.2E+02	NA	NA	NA	NA	NA	3.0E-03	1.3E-04	6.0E-04	1.6E-04	1.3E-02
	Transportation-Equipment	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Equipment Use and Misc	59.45	8.5E+02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.9E-01	2.1E-01	2.4E-02	0.0E+00	0.0E+00
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	69.11	9.72E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.88E-01	2.14E-01	2.44E-02	1.64E-04	1.32E-02
Total		**9.8E+01**	**7.3E+03**	**1.2E+04**	**0.0E+00**	**2.1E-02**	**2.2E-03**	**1.9E-03**	**3.8E-01**	**2.9E-01**	**4.5E-02**	**2.4E-04**	**2.1E-02**

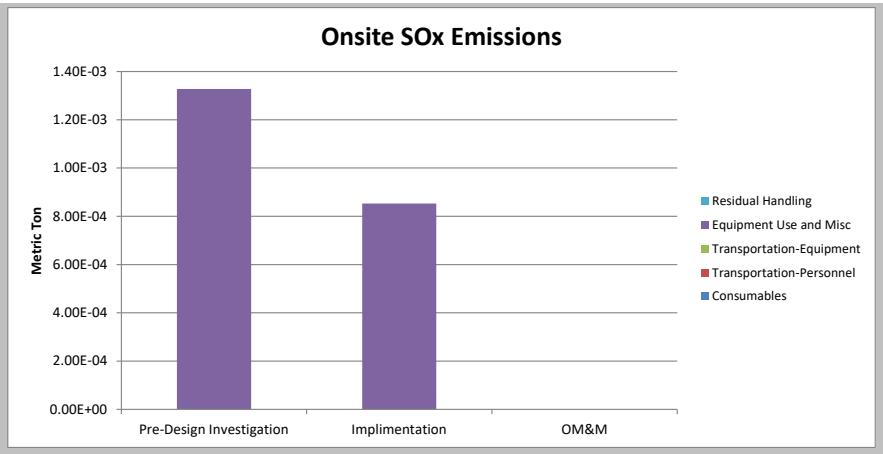
Remedial Alternative Phase	Non-Hazardous Waste Landfill Space	Hazardous Waste Landfill Space	Topsoil Consumption	Costing	Lost Hours - Injury	Percent electricity from renewable sources	Total Cost with Footprint Reduction
	tons	tons	cubic yards	$		%	
Pre-Design Investigation	0.0E+00	0.0E+00	0.0E+00	32,232	1.9E-02	0.0%	$443,707
Implimentation	0.0E+00	2.6E+01	0.0E+00	338,240	4.5E-02	0.0%	
OM&M	0.0E+00	0.0E+00	0.0E+00	73,235	1.1E-01	0.0%	
Total	**0.0E+00**	**2.6E+01**	**0.0E+00**	**$443,707**	**1.7E-01**	**0.0%**	

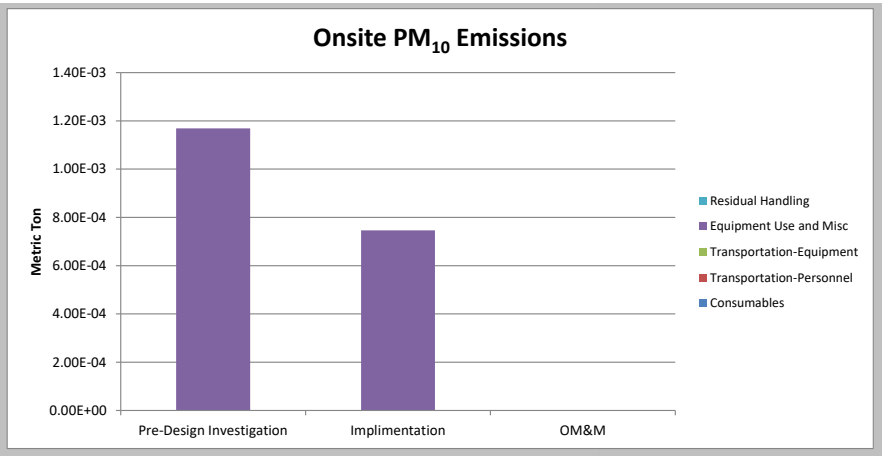

GHG Emissions
Metric Tons
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

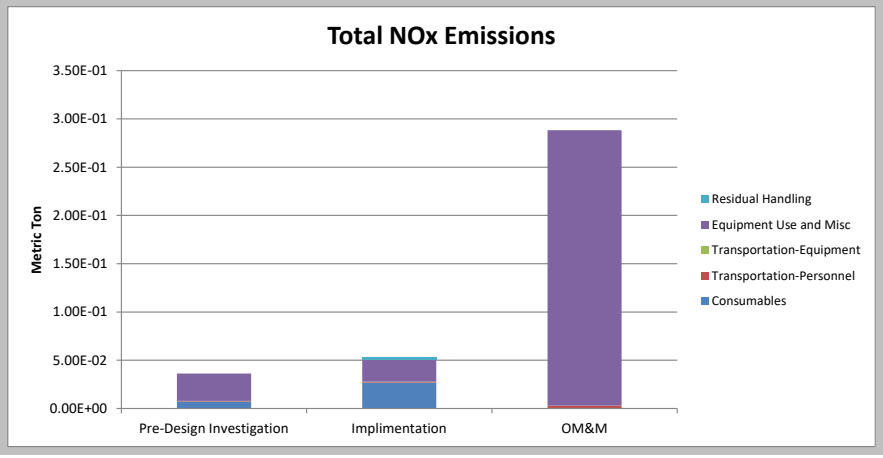

Total Energy Used
MMBTU
7.00E+03
6.00E+03
5.00E+03
4.00E+03
3.00E+03
2.00E+03
1.00E+03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

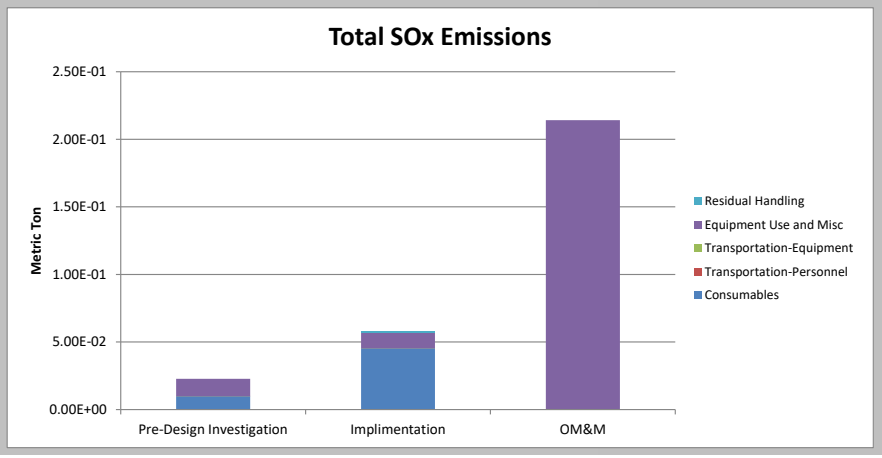

Water Consumption
Gallons
1.40E+04
1.20E+04
1.00E+04
8.00E+03
6.00E+03
4.00E+03
2.00E+03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

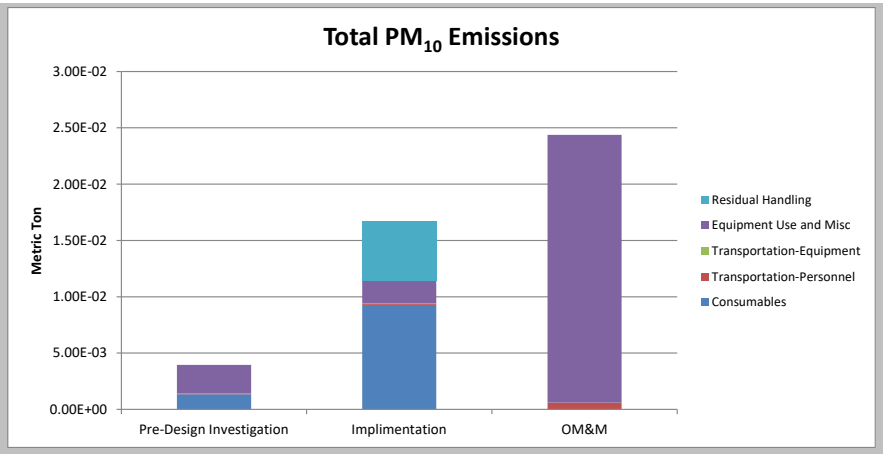

Onsite NOx Emissions
Metric Ton
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

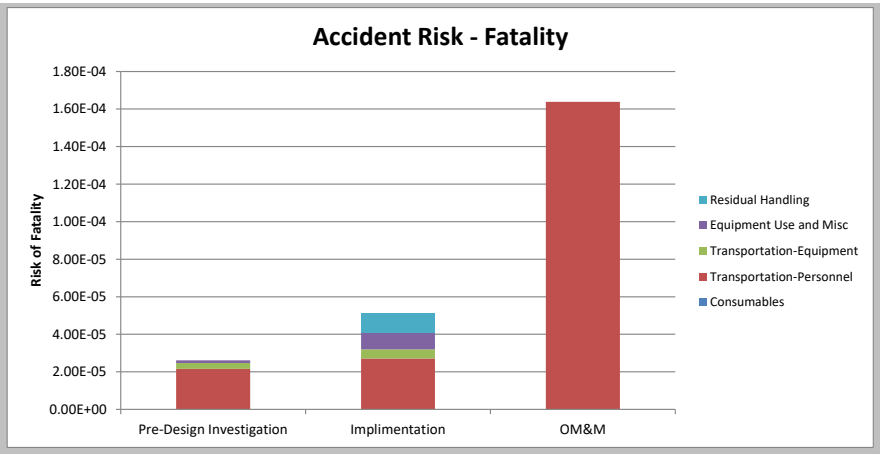

Onsite SOx Emissions
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

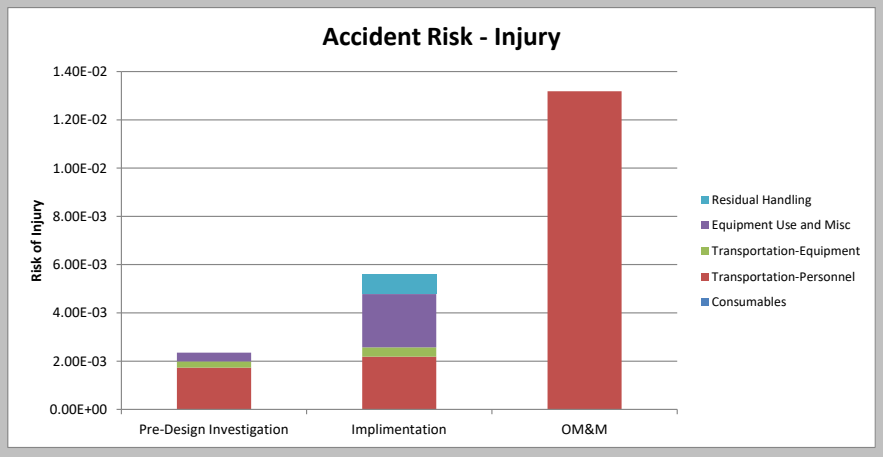

Onsite PM10 Emissions
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

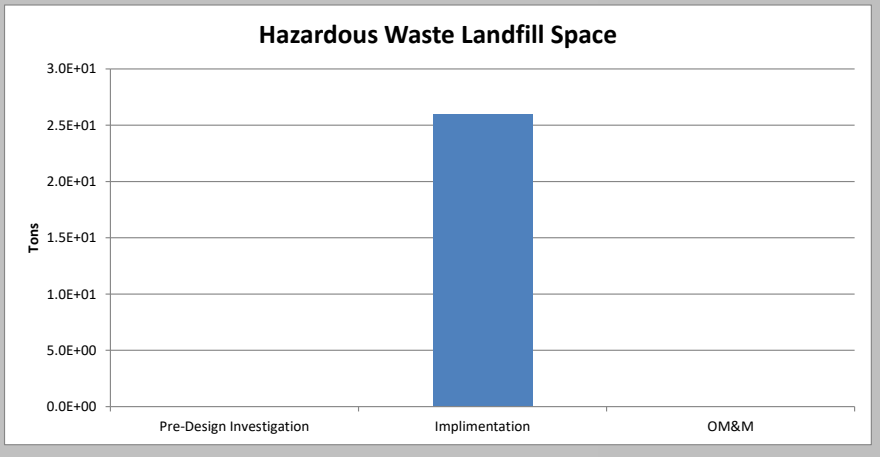

Total NOx Emissions
3.50E-01
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

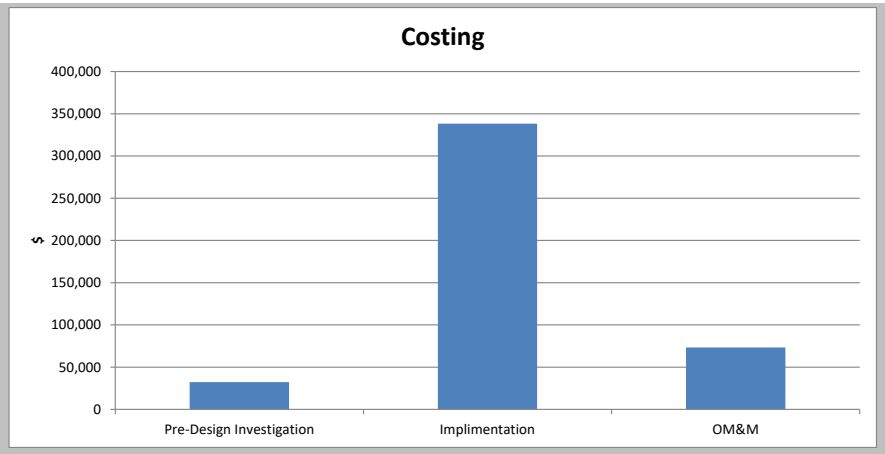

Total SOx Emissions
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

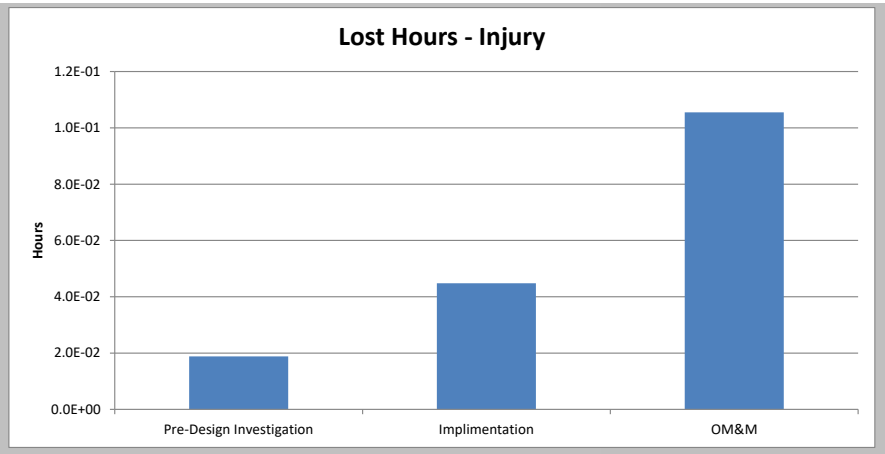

Total PM10 Emissions
Metric Ton
3.00E-02
2.50E-02
2.00E-02
1.50E-02
1.00E-02
5.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Fatality
Risk of Fatality
1.80E-04
1.60E-04
1.40E-04
1.20E-04
1.00E-04
8.00E-05
6.00E-05
4.00E-05
2.00E-05
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Injury
Risk of Injury
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Hazardous Waste Landfill Space
Tons
3.0E+01
2.5E+01
2.0E+01
1.5E+01
1.0E+01
5.0E+00
0.0E+00
Pre-Design Investigation
Implimentation
OM&M


Costing
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
$
Pre-Design Investigation
Implimentation
OM&M


Lost Hours - Injury
1.2E-01
1.0E-01
8.0E-02
6.0E-02
4.0E-02
2.0E-02
0.0E+00
Hours
Pre-Design Investigation
Implimentation
OM&M

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 1 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	32232

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells	4					
Input depth of wells (ft)	20					
Choose specific casing material schedule from drop down menu	Sch 80 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1 1/2	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)	1,000					
Input total quantity of Gravel (kg)	0					
Input total quantity of Bentonite (kg)	200					
Input total quantity of Typical Cement (kg)	1,900					
Input total quantity of General Concrete (kg)	0					
Input total quantity of Steel (kg)	360					

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Surveyor	Surveyor Oversight	GW Sampling	Drilling Subcontractor	Drilling Oversight	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	SUVs	SUVs	Light truck	SUVs	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	270	270	270	270	600	
Input number of trips taken	2	2	2	1	1	
Input number of travelers	1	1	1	1	1	
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	onsturction Equipme	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	135	135				
Input weight of equipment transported per truck load (tons)	2.50	3.50				

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Well Construction	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	4					
Choose drilling method from drop down menu	Hollow Stem Auger	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	4.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (hr) (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Soil Samples	VOC GW	PFAS GW	MNA GW	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)	900.00	595.00	3,150.00	2,100.00		

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 2 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	217600

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	ELS Microemulsion	KHCO3	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points	1	1				
Choose material type from drop down menu	Vegetable Oil	Medium Impact Materia	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)	420	50				
Input number of injections per injection point	1	1				

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Asphalt	Crushed Stone	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Asphalt	Gravel	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	cubic feet	cubic feet	pounds	pounds	pounds	pounds
Input material quantity	233	243				

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Surveyor	Oversight	njection Subcontracto	Injection Oversight	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	SUVs	Light truck	SUVs	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300	600	270	600		
Input number of trips taken	2	1	4	2		
Input number of travelers	1	1	1	1		
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	Excavator and Drill Rig	Clean Fill	Asphalt	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Diesel	Diesel	Gasoline	Gasoline
Account for an empty return trip?	No	No	Yes	Yes	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	270	270	50	25		
Input weight of equipment transported per truck load (tons)	2.00	2.50	15.00	15.00		

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Excavator	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)	17					
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Injection Points	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	12					
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	4.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Roller	Paver	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Paver	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)	466	466				
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Documentation Sampling	Round 1: Soil	Round 1: GW	Round 2: Soil	Round 2: GW	Analysis 6
Input dollars spent on laboratory analysis ($)	3,060.00	1,200.00	425.00	1,200.00	425.00	

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)	15.0					
Choose fuel used from drop down menu	Diesel	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips	2.0					
Input number of miles per trip	650.0					

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)	26.0					
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Injections	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)	12000					
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 3 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	76035

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Years 1-5	Years 6-30	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	SUVs	SUVs	Cars	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300	300				
Input number of trips taken	20	50				
Input number of travelers	1	1				
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).						
Input weight of equipment transported per truck load (tons)						

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations						
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)						
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	PFAS: Years 1-5	VOCs: Years 6-30	PFAS: Yeas 6-30	VOCs: Years 6-30	MNA: Years 1-5	MNA: Years 6-30
Input dollars spent on laboratory analysis ($)	31,500.00	5,950.00	78,750.00	14,875.00	7,000.00	35,000.00

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

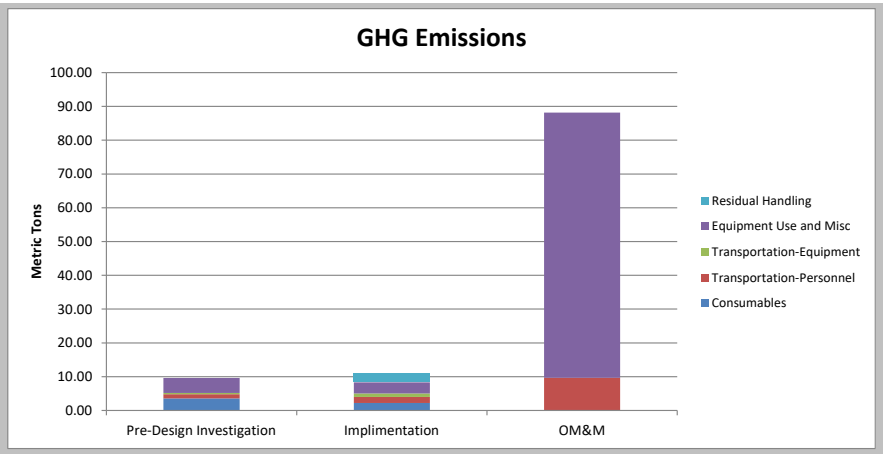
WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

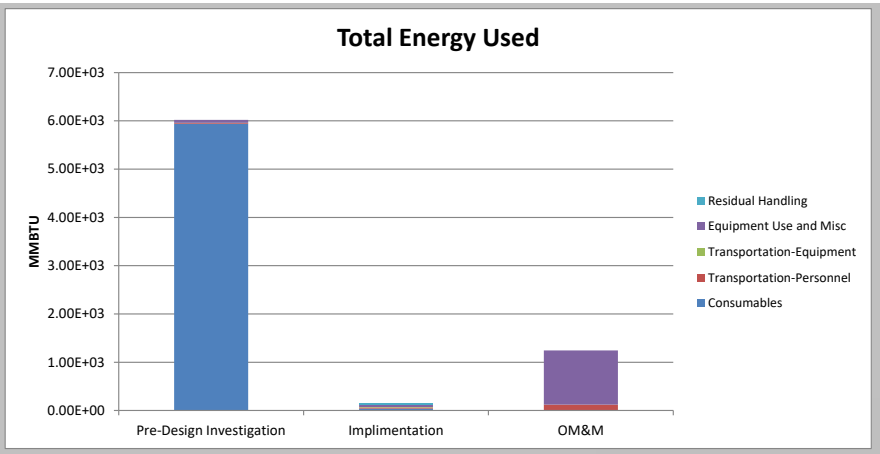
ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

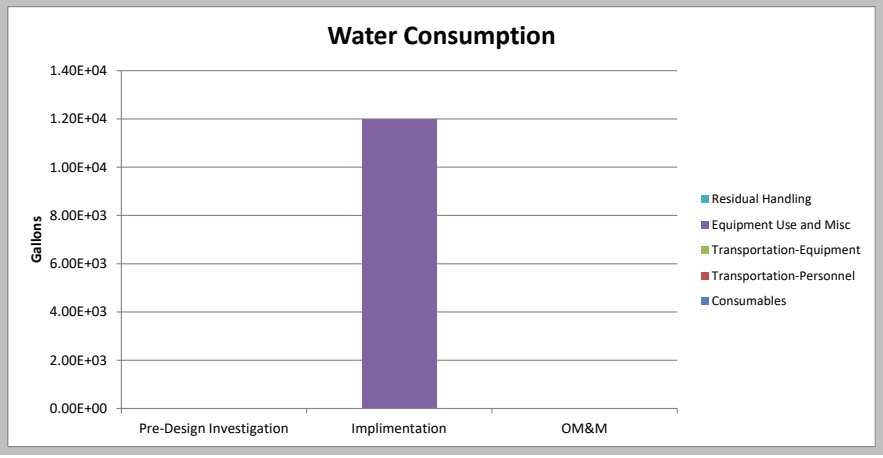
Sustainable Remediation - Environmental Footprint Summary
4b

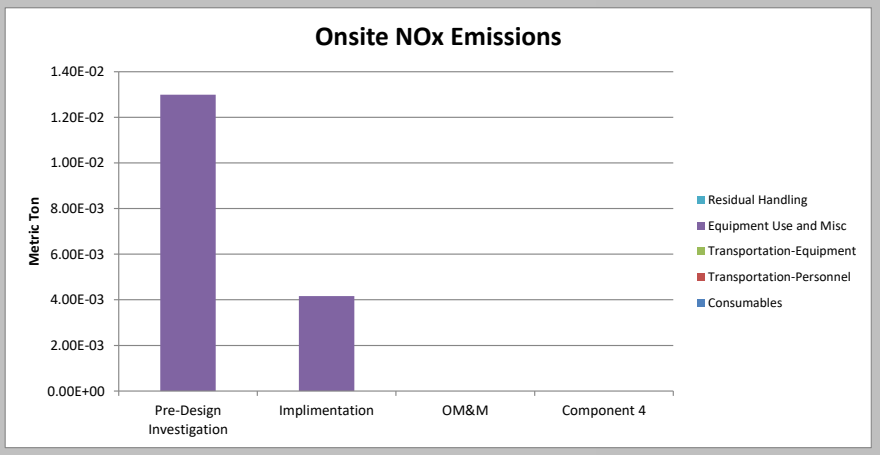
Phase	Activities	GHG Emissions	Total Energy Used	Water Consumption	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx Emissions	Total SOx Emissions	Total PM10 Emissions	Accident Risk Fatality	Accident Risk Injury
		metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton		
Pre-Design Investigation	Consumables	3.58	5.9E+03	NA	NA	NA	NA	NA	7.2E-03	1.0E-02	1.3E-03	NA	NA
	Transportation-Personnel	1.22	1.5E+01	NA	NA	NA	NA	NA	4.2E-04	1.6E-05	7.5E-05	1.9E-05	1.6E-03
	Transportation-Equipment	0.40	5.2E+00	NA	NA	NA	NA	NA	1.2E-04	2.2E-06	1.1E-05	2.1E-06	1.7E-04
	Equipment Use and Misc	4.42	6.0E+01	0.0E+00	0.0E+00	1.3E-02	1.3E-03	1.2E-03	2.8E-02	1.3E-02	2.5E-03	1.5E-06	3.7E-04
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	9.62	6.02E+03	0.00E+00	0.00E+00	1.30E-02	1.33E-03	1.17E-03	3.61E-02	2.27E-02	3.93E-03	2.30E-05	2.10E-03
Implimentation	Consumables	2.23	3.7E+01	NA	NA	NA	NA	NA	4.9E-03	9.1E-03	2.0E-03	NA	NA
	Transportation-Personnel	1.75	2.2E+01	NA	NA	NA	NA	NA	6.4E-04	2.3E-05	1.1E-04	2.7E-05	2.2E-03
	Transportation-Equipment	1.02	1.3E+01	NA	NA	NA	NA	NA	3.2E-04	5.7E-06	2.9E-05	4.8E-06	3.9E-04
	Equipment Use and Misc	3.33	4.6E+01	1.2E+04	0.0E+00	4.2E-03	4.3E-04	3.7E-04	1.8E-02	1.1E-02	1.6E-03	4.4E-06	1.1E-03
	Residual Handling	2.63	3.6E+01	NA	NA	0.0E+00	0.0E+00	0.0E+00	2.5E-03	9.9E-04	5.3E-03	1.0E-05	8.2E-04
	Sub-Total	10.97	1.55E+02	1.20E+04	0.00E+00	4.16E-03	4.31E-04	3.75E-04	2.66E-02	2.11E-02	9.06E-03	4.65E-05	4.49E-03
OM&M	Consumables	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA	NA
	Transportation-Personnel	9.65	1.2E+02	NA	NA	NA	NA	NA	3.0E-03	1.3E-04	6.0E-04	1.6E-04	1.3E-02
	Transportation-Equipment	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Equipment Use and Misc	78.51	1.1E+03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.8E-01	2.8E-01	3.1E-02	0.0E+00	0.0E+00
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	88.16	1.24E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.80E-01	2.83E-01	3.20E-02	1.64E-04	1.32E-02
Total		**1.1E+02**	**7.4E+03**	**1.2E+04**	**0.0E+00**	**1.7E-02**	**1.8E-03**	**1.5E-03**	**4.4E-01**	**3.3E-01**	**4.5E-02**	**2.3E-04**	**2.0E-02**

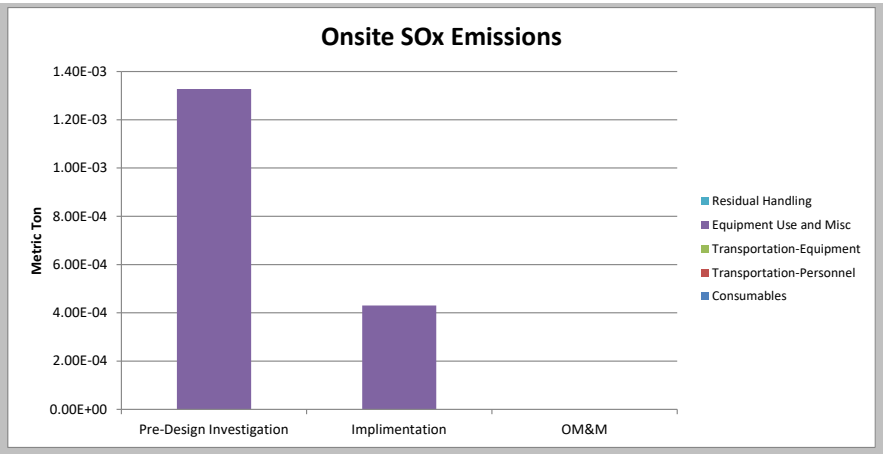
Remedial Alternative Phase	Non-Hazardous Waste Landfill Space	Hazardous Waste Landfill Space	Topsoil Consumption	Costing	Lost Hours - Injury	Percent electricity from renewable sources	Total Cost with Footprint Reduction
	tons	tons	cubic yards	$		%	
Pre-Design Investigation	0.0E+00	0.0E+00	0.0E+00	32,232	1.7E-02	0.0%	$325,867
Implimentation	0.0E+00	2.6E+01	0.0E+00	217,600	3.6E-02	0.0%	
OM&M	0.0E+00	0.0E+00	0.0E+00	76,035	1.1E-01	0.0%	
Total	**0.0E+00**	**2.6E+01**	**0.0E+00**	**$325,867**	**1.6E-01**	**0.0%**	

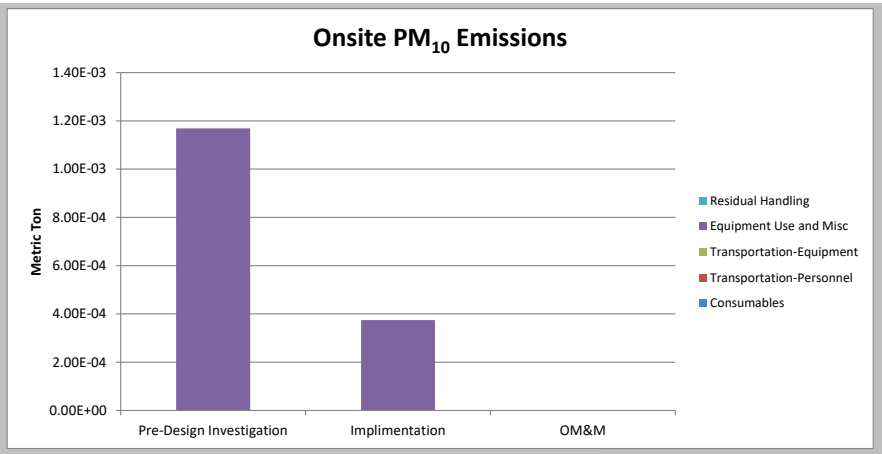

GHG Emissions
Metric Tons
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

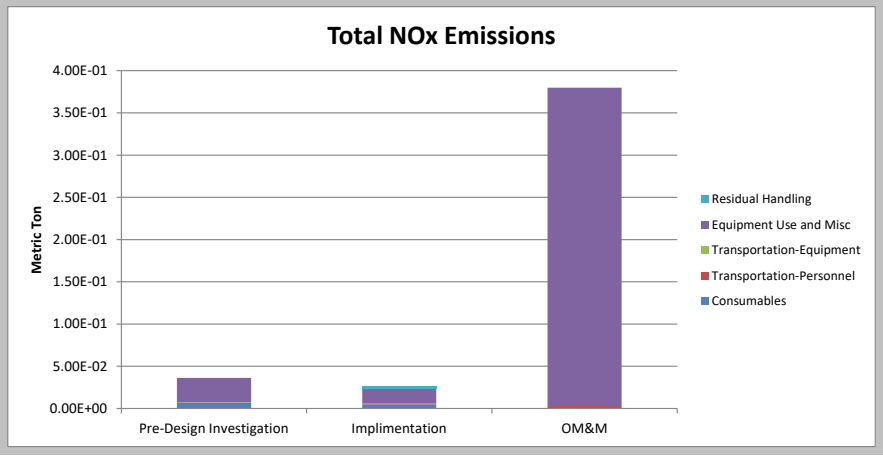

Total Energy Used
MMBTU
7.00E+03
6.00E+03
5.00E+03
4.00E+03
3.00E+03
2.00E+03
1.00E+03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

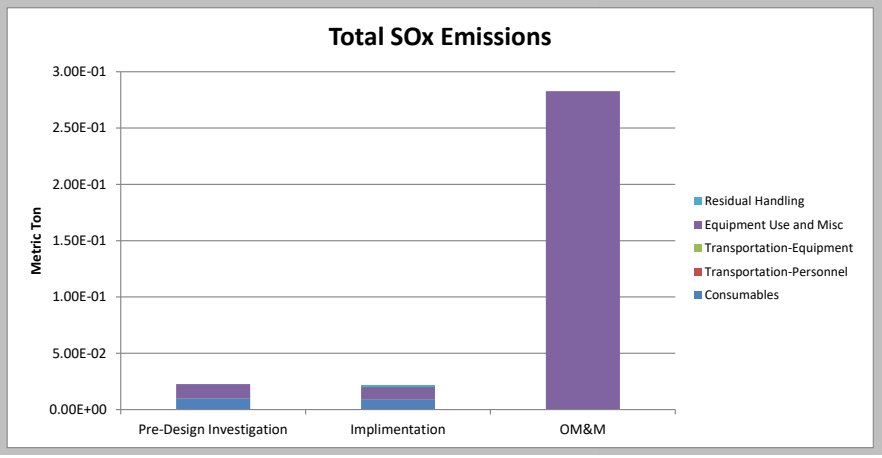

Water Consumption
Gallons
1.40E+04
1.20E+04
1.00E+04
8.00E+03
6.00E+03
4.00E+03
2.00E+03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

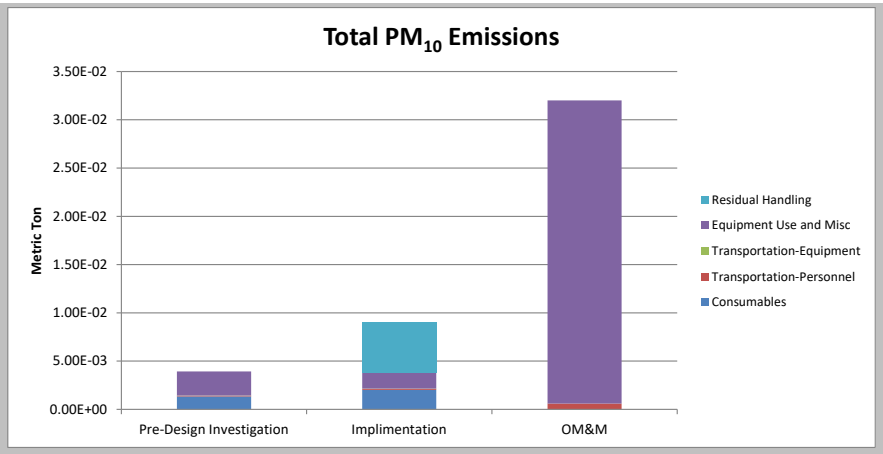

Onsite NOx Emissions
Metric Ton
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

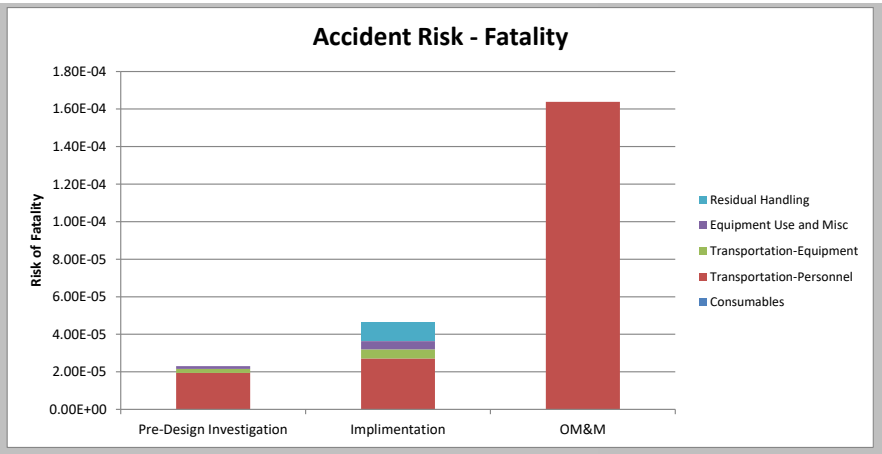

Onsite SOx Emissions
Metric Ton
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

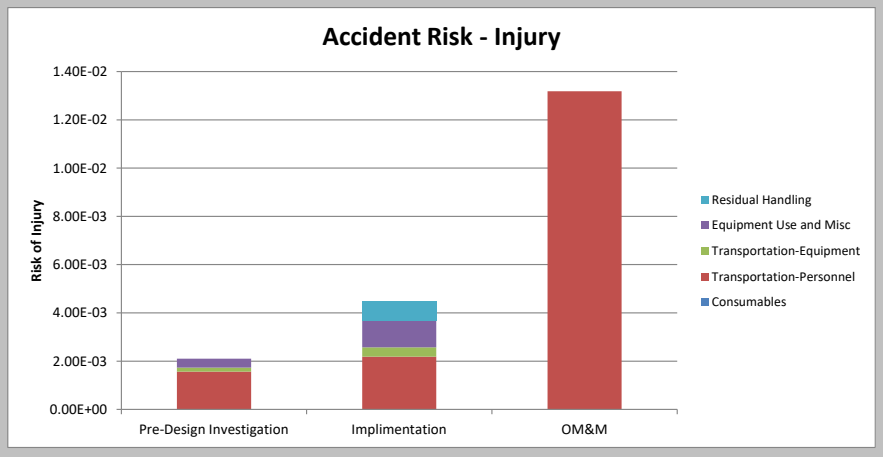

Onsite PM10 Emissions
Metric Ton
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

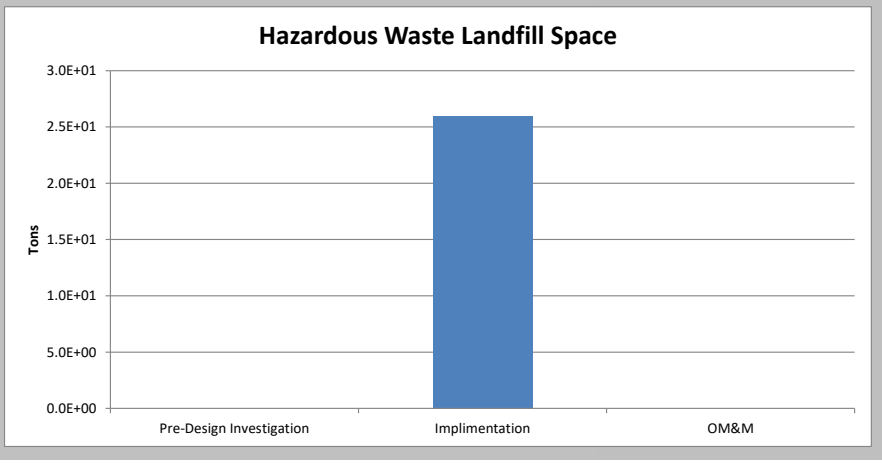

Total NOx Emissions
Metric Ton
4.00E-01
3.50E-01
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

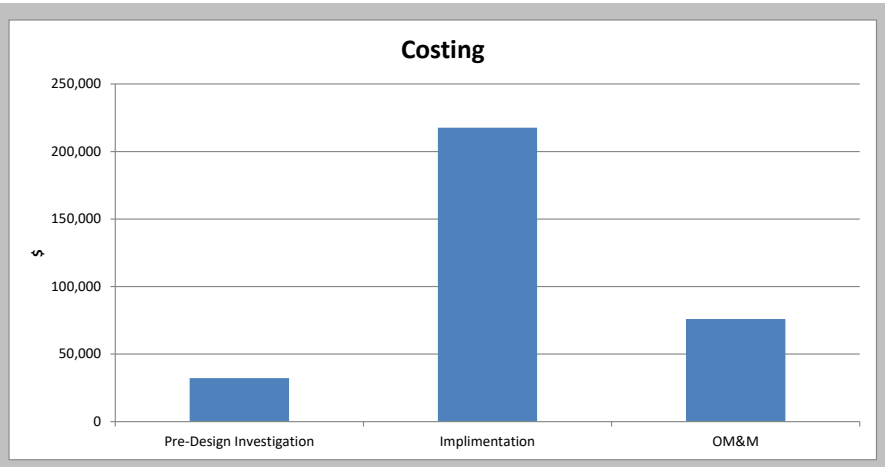

Total SOx Emissions
Metric Ton
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

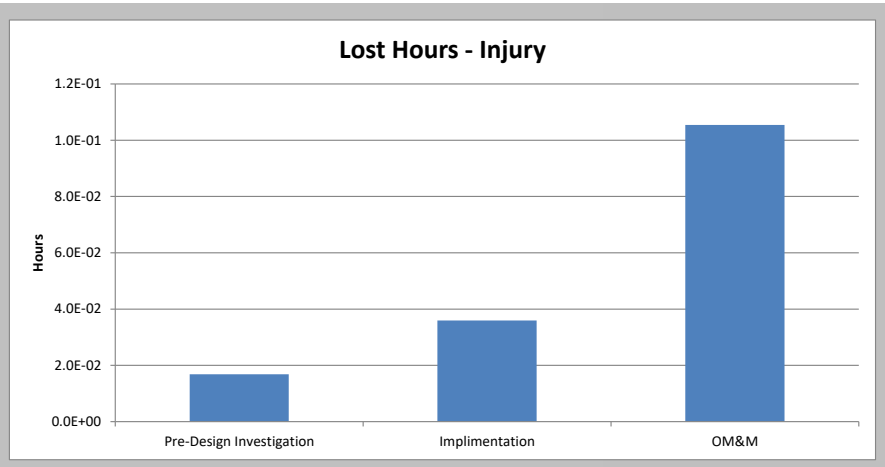

Total PM10 Emissions
Metric Ton
3.50E-02
3.00E-02
2.50E-02
2.00E-02
1.50E-02
1.00E-02
5.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Fatality
Risk of Fatality
1.80E-04
1.60E-04
1.40E-04
1.20E-04
1.00E-04
8.00E-05
6.00E-05
4.00E-05
2.00E-05
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Injury
Risk of Injury
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Hazardous Waste Landfill Space
Tons
3.0E+01
2.5E+01
2.0E+01
1.5E+01
1.0E+01
5.0E+00
0.0E+00
Pre-Design Investigation
Implimentation
OM&M


Costing
250,000
200,000
150,000
100,000
50,000
0
$
Pre-Design Investigation
Implimentation
OM&M


Lost Hours - Injury
1.2E-01
1.0E-01
8.0E-02
6.0E-02
4.0E-02
2.0E-02
0.0E+00
Hours
Pre-Design Investigation
Implimentation
OM&M

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 1 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	26332

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells	4					
Input depth of wells (ft)	20					
Choose specific casing material schedule from drop down menu	Sch 80 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1 1/2	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)	1,000					
Input total quantity of Gravel (kg)	0					
Input total quantity of Bentonite (kg)	200					
Input total quantity of Typical Cement (kg)	1,900					
Input total quantity of General Concrete (kg)	0					
Input total quantity of Steel (kg)	360					

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Property Survey	Surveyor Oversight	GW Sampling	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	SUVs	SUVs	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	270	600	270			
Input number of trips taken	2	3	2			
Input number of travelers	1	1	1			
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	Consturction Equipmer	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	135	135				
Input weight of equipment transported per truck load (tons)	2.50	3.50				

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Well Construction	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	4					
Choose drilling method from drop down menu	Hollow Stem Auger	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	4.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (hr) (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0

Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Soil Samples	VOC GW	PFAS GW	MNA GW	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)	1,800.00	595.00	3,150.00	2,100.00		

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	

Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 2 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	258588

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	NaOH	Klozur	ELS	pH Buffer	Treatment 5	Treatment 6
Input number of injection points	1	1	1	1		
Choose material type from drop down menu	dium Hydroxide (dry, bu	Medium Impact Materia	Vegetable Oil	Medium Impact Materia	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)	4200	10580	140	20		
Input number of injections per injection point	1	1	1	1		

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD			Injection Subcontracto	Injection Oversight	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Light truck	SUVs	Light truck	SUVs	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)			270	600		
Input number of trips taken			5	3		
Input number of travelers			1	1		
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						
*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.						

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	Drill Rig	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	270	270				
Input weight of equipment transported per truck load (tons)	2.00	1.50				

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Injection points	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	16					
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	8.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0

Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Documentation Sampling	Round 1: Soil	Round 1: GW	Round 2: Soil	Round 2: GW	Analysis 6
Input dollars spent on laboratory analysis ($)	3,060.00	1,200.00	510.00	1,200.00	510.00	

OTHER KNOWN ONSITE ACTIVITIES	Entire Site

Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)	15000					
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 3 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	76035

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Years 1-5	Years 6-30	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	SUVs	SUVs	Cars	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300	300				
Input number of trips taken	20	50				
Input number of travelers	1	1				
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).						
Input weight of equipment transported per truck load (tons)						

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations						
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)						
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C	awler Crane, 25 ton, 1 C
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0

Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	PFAS: Years 1-5	VOCs: Years 6-30	PFAS: Yeas 6-30	VOCs: Years 6-30		
Input dollars spent on laboratory analysis ($)	31,500.00	5,950.00	78,750.00	14,875.00		

OTHER KNOWN ONSITE ACTIVITIES	Entire Site

Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

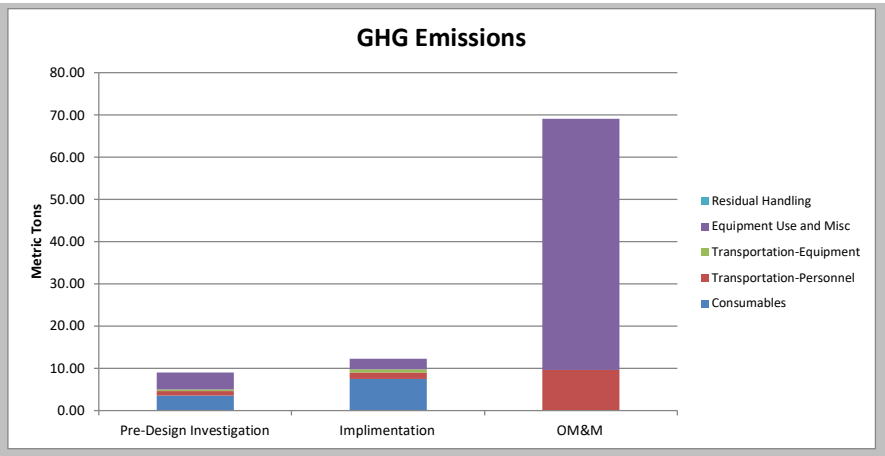
WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

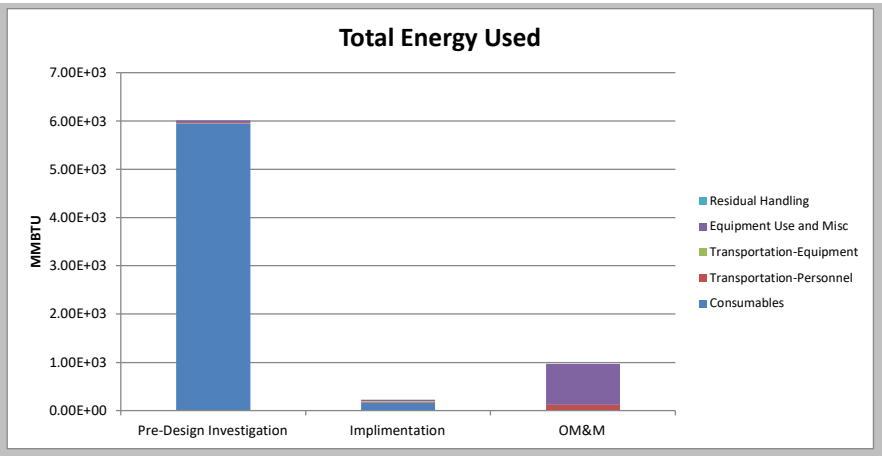
ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

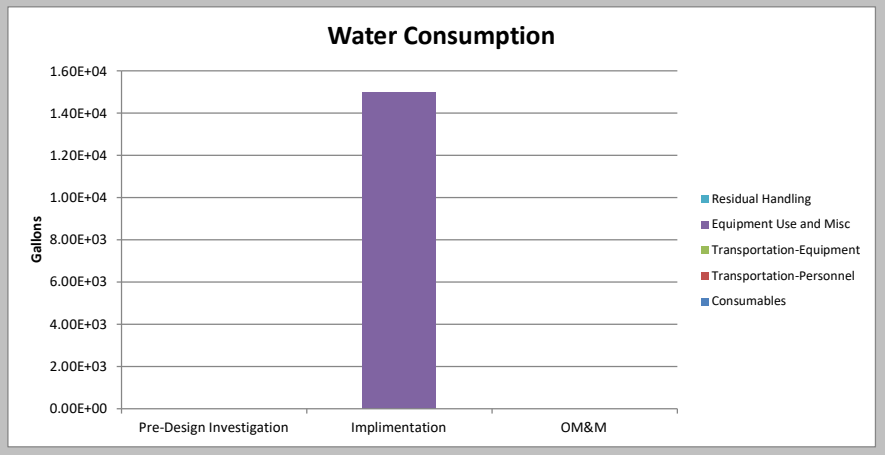
Sustainable Remediation - Environmental Footprint Summary
5

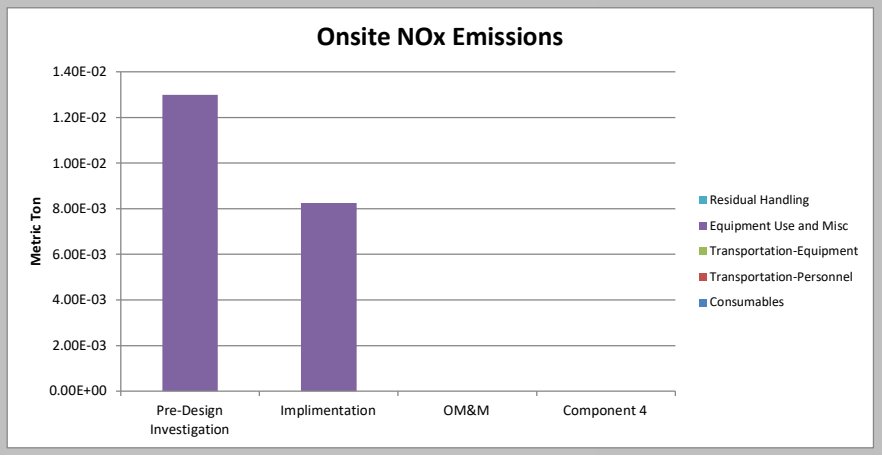
Phase	Activities	GHG Emissions	Total Energy Used	Water Consumption	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx Emissions	Total SOx Emissions	Total PM10 Emissions	Accident Risk Fatality	Accident Risk Injury
		metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton		
Pre-Design Investigation	Consumables	3.58	5.9E+03	NA	NA	NA	NA	NA	7.2E-03	1.0E-02	1.3E-03	NA	NA
	Transportation-Personnel	1.05	1.3E+01	NA	NA	NA	NA	NA	3.5E-04	1.4E-05	6.6E-05	1.8E-05	1.4E-03
	Transportation-Equipment	0.40	5.2E+00	NA	NA	NA	NA	NA	1.2E-04	2.2E-06	1.1E-05	2.1E-06	1.7E-04
	Equipment Use and Misc	4.01	5.4E+01	0.0E+00	0.0E+00	1.3E-02	1.3E-03	1.2E-03	2.6E-02	1.1E-02	2.3E-03	1.5E-06	3.7E-04
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	9.04	6.01E+03	0.00E+00	0.00E+00	1.30E-02	1.33E-03	1.17E-03	3.41E-02	2.12E-02	3.76E-03	2.14E-05	1.97E-03
Implimentation	Consumables	7.47	1.7E+02	NA	NA	NA	NA	NA	2.2E-02	3.7E-02	7.5E-03	NA	NA
	Transportation-Personnel	1.57	2.0E+01	NA	NA	NA	NA	NA	5.6E-04	2.1E-05	9.6E-05	2.5E-05	2.0E-03
	Transportation-Equipment	0.78	1.0E+01	NA	NA	NA	NA	NA	2.4E-04	4.3E-06	2.2E-05	4.2E-06	3.4E-04
	Equipment Use and Misc	2.45	3.3E+01	1.5E+04	0.0E+00	8.3E-03	8.4E-04	7.4E-04	1.6E-02	6.7E-03	1.5E-03	8.8E-06	2.2E-03
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	12.27	2.28E+02	1.50E+04	0.00E+00	8.26E-03	8.44E-04	7.43E-04	3.94E-02	4.40E-02	9.12E-03	3.76E-05	4.52E-03
OM&M	Consumables	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA	NA
	Transportation-Personnel	9.65	1.2E+02	NA	NA	NA	NA	NA	3.0E-03	1.3E-04	6.0E-04	1.6E-04	1.3E-02
	Transportation-Equipment	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Equipment Use and Misc	59.45	8.5E+02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.9E-01	2.1E-01	2.4E-02	0.0E+00	0.0E+00
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	69.11	9.72E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.88E-01	2.14E-01	2.44E-02	1.64E-04	1.32E-02
Total		**9.0E+01**	**7.2E+03**	**1.5E+04**	**0.0E+00**	**2.1E-02**	**2.2E-03**	**1.9E-03**	**3.6E-01**	**2.8E-01**	**3.7E-02**	**2.2E-04**	**2.0E-02**

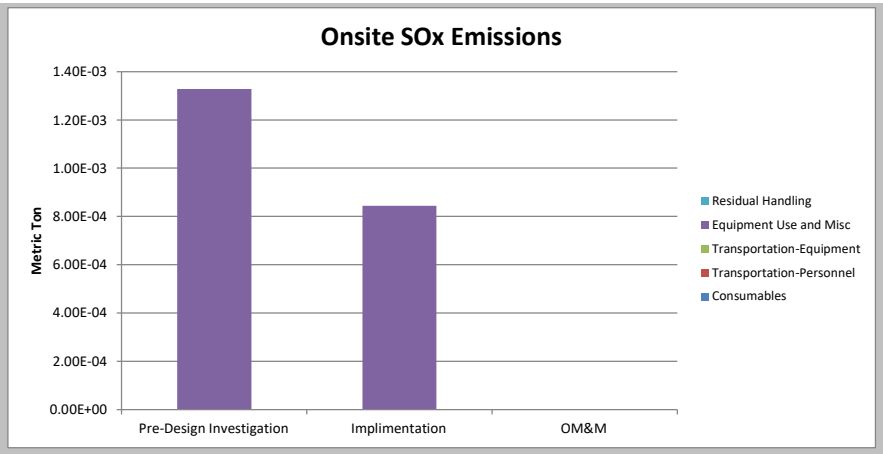
Remedial Alternative Phase	Non-Hazardous Waste Landfill Space	Hazardous Waste Landfill Space	Topsoil Consumption	Costing	Lost Hours - Injury	Percent electricity from renewable sources	Total Cost with Footprint Reduction
	tons	tons	cubic yards	$		%	
Pre-Design Investigation	0.0E+00	0.0E+00	0.0E+00	26,332	1.6E-02	0.0%	$360,955
Implimentation	0.0E+00	0.0E+00	0.0E+00	258,588	3.6E-02	0.0%	
OM&M	0.0E+00	0.0E+00	0.0E+00	76,035	1.1E-01	0.0%	
Total	0.0E+00	0.0E+00	0.0E+00	$360,955	1.6E-01	0.0%	

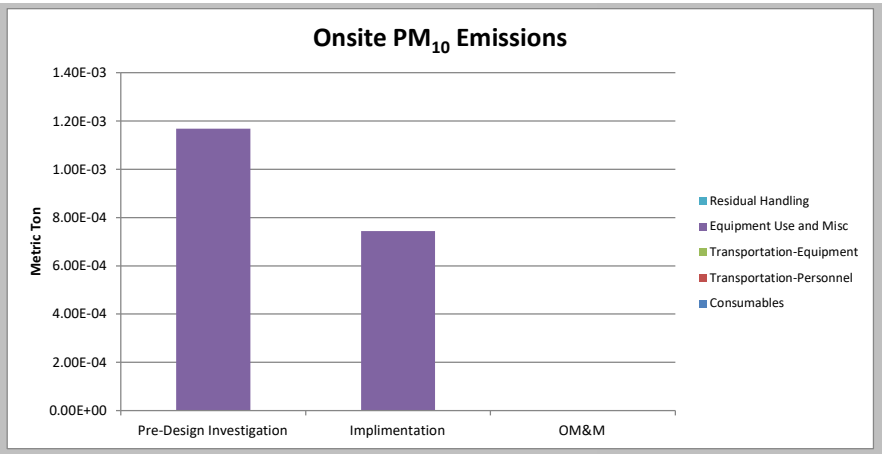

GHG Emissions
Metric Tons
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

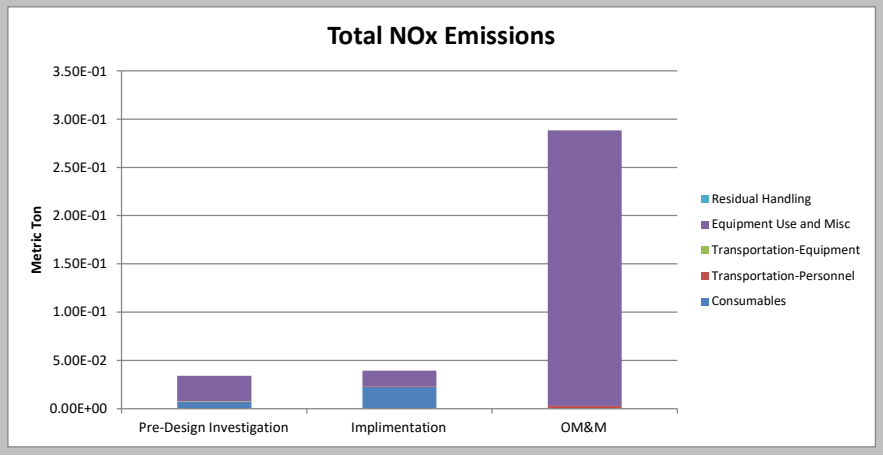

Total Energy Used
MMBTU
7.00E+03
6.00E+03
5.00E+03
4.00E+03
3.00E+03
2.00E+03
1.00E+03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

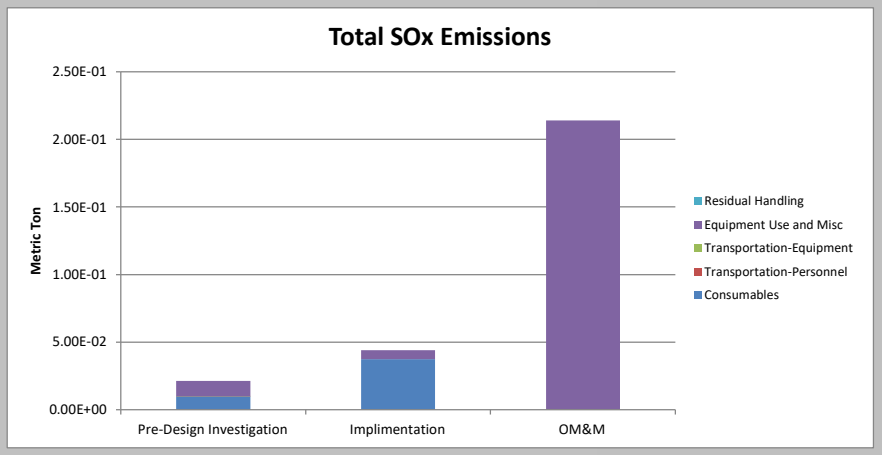

Water Consumption
Gallons
1.60E+04
1.40E+04
1.20E+04
1.00E+04
8.00E+03
6.00E+03
4.00E+03
2.00E+03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

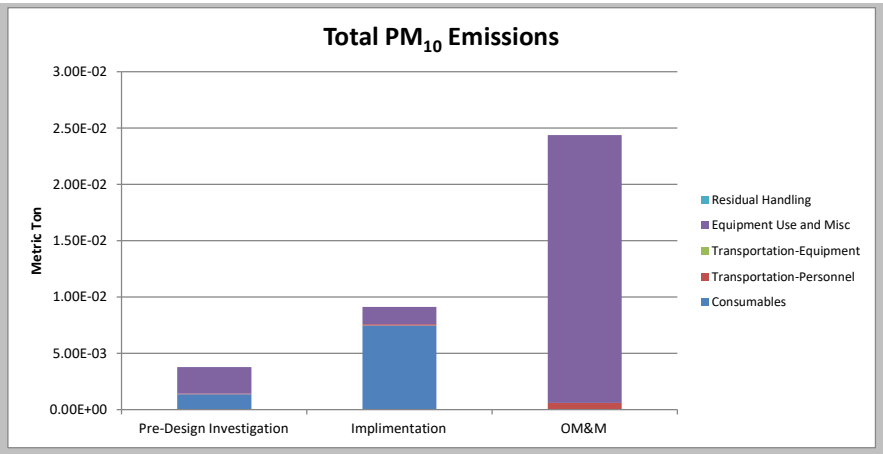

Onsite NOx Emissions
Metric Ton
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

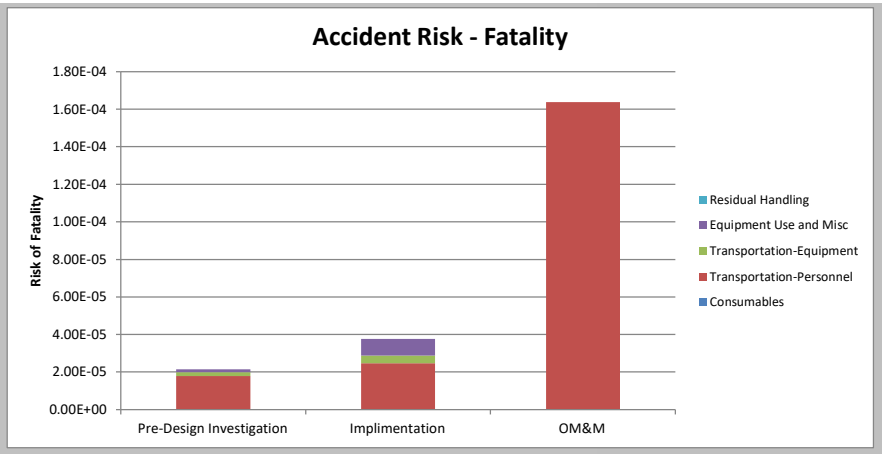

Onsite SOx Emissions
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

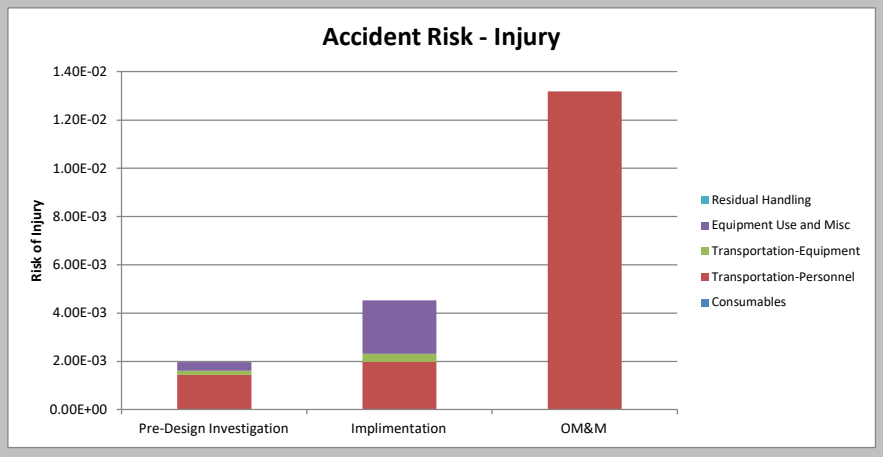

Onsite PM10 Emissions
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

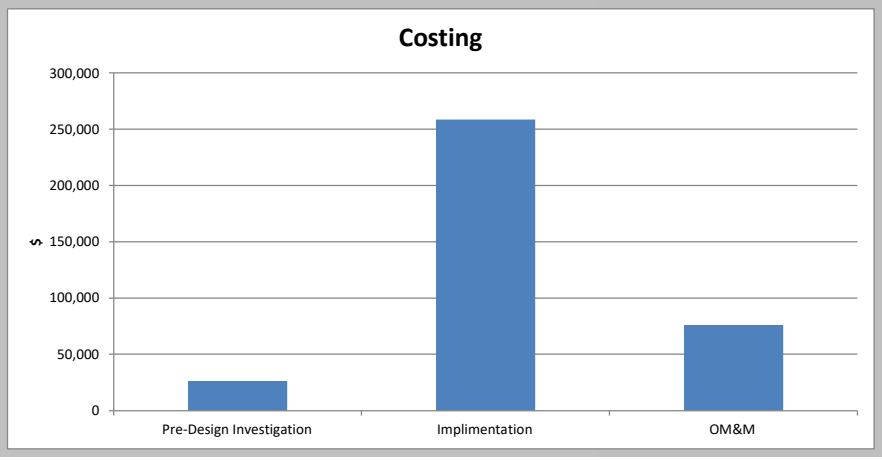

Total NOx Emissions
3.50E-01
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

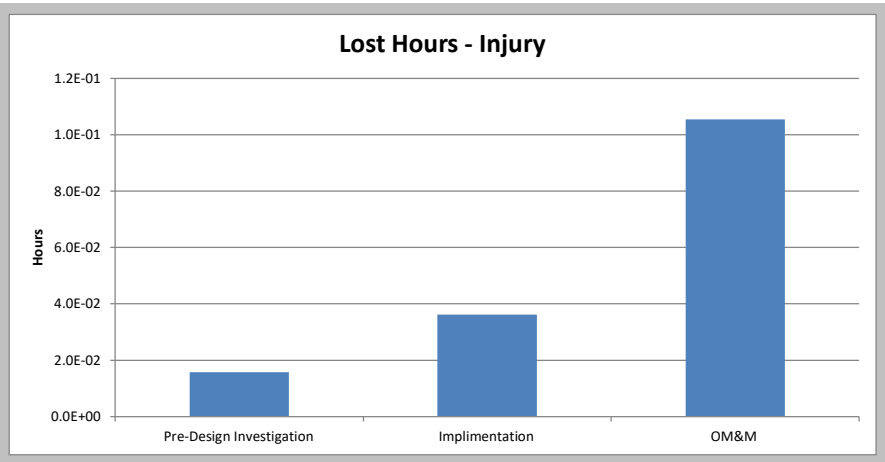

Total SOx Emissions
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Total PM10 Emissions
3.00E-02
2.50E-02
2.00E-02
1.50E-02
1.00E-02
5.00E-03
0.00E+00
Metric Ton
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Fatality
1.80E-04
1.60E-04
1.40E-04
1.20E-04
1.00E-04
8.00E-05
6.00E-05
4.00E-05
2.00E-05
0.00E+00
Risk of Fatality
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Injury
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Risk of Injury
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Costing
300,000
250,000
200,000
150,000
100,000
50,000
0
$
Pre-Design Investigation
Implimentation
OM&M


Lost Hours - Injury
1.2E-01
1.0E-01
8.0E-02
6.0E-02
4.0E-02
2.0E-02
0.0E+00
Hours
Pre-Design Investigation
Implimentation
OM&M

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 1 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	22832

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells	4					
Input depth of wells (ft)	20					
Choose specific casing material schedule from drop down menu	Sch 80 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1 1/2	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)	1,000					
Input total quantity of Gravel (kg)	0					
Input total quantity of Bentonite (kg)	200					
Input total quantity of Typical Cement (kg)	1,900					
Input total quantity of General Concrete (kg)	0					
Input total quantity of Steel (kg)	360					

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	GW Sampling	Drilling Subcontractor	Drilling Oversight	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	SUVs	Light truck	SUVs	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	270	270	600			
Input number of trips taken	2	1	1			
Input number of travelers	1	1	1			
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Storage Trailer	Consturction Equipmer	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Diesel	Diesel	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).	135	135				
Input weight of equipment transported per truck load (tons)	2.50	3.50				

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Well Construction	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations	4					
Choose drilling method from drop down menu	Hollow Stem Auger	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)	4.00					
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (hr) (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possibl	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Soil Samples	VOC GW	PFAS GW	MNA GW	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)	900.00	595.00	3,150.00	2,100.00		

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 2 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	25000

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	Cars	Cars	Cars	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)						
Input number of trips taken						
Input number of travelers						
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).						
Input weight of equipment transported per truck load (tons)						

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations						
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)						
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	Analysis 1	Analysis 2	Analysis 3	Analysis 4	Analysis 5	Analysis 6
Input dollars spent on laboratory analysis ($)						

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

This worksheet allows the user to define material production, transportation, equipment use, and residual handling variables for the remedial alternative
Yellow cells require the user to choose an input from a drop down menu
White cells require the user to type in a value

BASELINE INFORMATION

COMPONENT 3 DURATION AND COST	Entire Site
Input duration of the component (unit time)	1
Input component cost per unit time ($)	76035

MATERIAL PRODUCTION

WELL MATERIALS	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Choose specific casing material schedule from drop down menu	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC
Choose well diameter (in) from drop down menu	1/8	1/8	1/8	1/8	1/8	1/8
Input total quantity of Sand (kg)						
Input total quantity of Gravel (kg)						
Input total quantity of Bentonite (kg)						
Input total quantity of Typical Cement (kg)						
Input total quantity of General Concrete (kg)						
Input total quantity of Steel (kg)						

TREATMENT CHEMICALS & MATERIALS	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input number of injection points						
Choose material type from drop down menu	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide	Hydrogen Peroxide
Input amount of material injected at each point (pounds dry mass)						
Input number of injections per injection point						

TREATMENT MEDIA	Treatment 1	Treatment 2	Treatment 3	Treatment 4	Treatment 5	Treatment 6
Input weight of media used (lbs)						
Choose media type from drop down menu	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC	Virgin GAC

CONSTRUCTION MATERIALS	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material type from drop down menu	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner	HDPE Liner
Input area of material (ft2)						
Input depth of material (ft)						

WELL DECOMMISSIONING	Well Type 1	Well Type 2	Well Type 3	Well Type 4	Well Type 5	Well Type 6
Input number of wells						
Input depth of wells (ft)						
Input well diameter (in)						
Choose material from drop down menu	Soil	Soil	Soil	Soil	Soil	Soil

SILT CURTAIN MATERIALS	Curtain 1	Curtain 2	Curtain 3	Curtain 4	Curtain 5	Curtain 6
Input length or perimeter of silt curtain (ft)						
Input depth of silt curtain (ft)						

BULK MATERIAL QUANTITIES	Material 1	Material 2	Material 3	Material 4	Material 5	Material 6
Choose material from drop down menu	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid	Acetic Acid
Choose units of material quantity from drop down menu	pounds	pounds	pounds	pounds	pounds	pounds
Input material quantity						

TRANSPORTATION

PERSONNEL TRANSPORTATION - ROAD	Years 1-5	Years 6-30	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose vehicle type from drop down menu*	SUVs	SUVs	Cars	Cars	Cars	Cars
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input distance traveled per trip (miles)	300	300				
Input number of trips taken	20	50				
Input number of travelers	1	1				
Input estimated vehicular fuel economy (mi/gal) (Input only if known for the vehicle selected, otherwise a default will be used by the tool)						

*For vehicle type 'Other' please enter values in Table 2b in the Look Up Table tab.

PERSONNEL TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input number of travelers						
Input number of flights taken						

PERSONNEL TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Choose vehicle type from drop down menu	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail	Intercity rail
Input distance traveled (miles)						
Input number of trips taken						
Input number of travelers						

EQUIPMENT TRANSPORTATION - DEDICATED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Account for an empty return trip?	No	No	No	No	No	No
Input one-way distance traveled (miles) with a given load. If applicable, impact for an empty return trip will be accounted for (no additional input is needed).						
Input weight of equipment transported per truck load (tons)						

EQUIPMENT TRANSPORTATION - SHARED LOAD ROAD	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - AIR	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of equipment transported (tons)						

EQUIPMENT TRANSPORTATION - RAIL	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (miles)						
Input weight of load (tons)						

EQUIPMENT TRANSPORTATION - WATER	Trip 1	Trip 2	Trip 3	Trip 4	Trip 5	Trip 6
Input distance traveled (mile)						
Input weight of load (tons)						

EQUIPMENT USE

EARTHWORK	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

DRILLING	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6
Input number of drilling locations						
Choose drilling method from drop down menu	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push	Direct Push
Input time spent drilling at each location (hr)						
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel

TRENCHING	Trencher 1	Trencher 2	Trencher 3	Trencher 4	Trencher 5	Trencher 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input operating hours (hr)						

SEDIMENT DREDGING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose dredge equipment type from drop down menu	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical	Mechanical
Choose dredge fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be dredged (yd3)						
Choose dredge equipment size	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Suggested dredge equipment size	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1	wler Crane, 25 ton, 1
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose dredge tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	2	2	2	2	2	2
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT MANAGEMENT (STAGING AND DRYING)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose earthwork equipment type from drop down menu	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane	Crawler Crane
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of material to be removed (yd3)						
Is volume input that of saturated sediment?	Yes	Yes	Yes	Yes	Yes	Yes
Will the sediment be dry when this work is performed?	No	No	No	No	No	No
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

SEDIMENT CAPPING	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose capping method from drop down menu	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release	Surface Release
Choose capping equipment fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input volume of capping material to be placed (yd3)						
Choose capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Suggested capping equipment size/type	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge	Hopper Barge
Input number of dredge tenders (default already present, user override possible)	1	1	1	1	1	1
Choose tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for dredge tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Input number of scow tenders (default already present, user override possible)	0	0	0	0	0	0
Choose scow tender fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating time for scow tenders (hr) (default calculated value, user override possible)	0	0	0	0	0	0
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of research vessels (default already present, user override possible)	1	1	1	1	1	1
Input operating time for research vessels (hr) (default calculated value, user override possible	0	0	0	0	0	0
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

WATERCRAFT OPERATION	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose size of research vessel from drop down menu	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large	Research Vessel (large
Choose research vessel fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input number of vessels						
Input operating time (hours)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

For each pump, select only one of the three methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused pump columns or unused methods

PUMP OPERATION	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - ELECTRICAL USAGE IS KNOWN						
Input pump electrical usage (KWh)	0	0	0	0	0	0
Method 2 - PUMP HEAD IS KNOWN						
Input flow rate (gpm)	0	0	0	0	0	0
Input total head (ft)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Pump efficiency (default already present, user override possible)	0.6	0.6	0.6	0.6	0.6	0.6
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Input specific gravity (default already present, user override possible)	1	1	1	1	1	1
Method 3 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input pump horsepower (hp)	0	0	0	0	0	0
Input number of pumps operating	0	0	0	0	0	0
Input operating time for each pump (hrs)	0	0	0	0	0	0
Percent of max speed for pump motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Pump load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input pump load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Pump motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

DIESEL AND GASOLINE PUMPS	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1	2-Stroke: 0 to 1
Equipment operating hours (hrs)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the pump selected, otherwise a default will be used by the tool)						

For each type of equipment, select only one of the methods to calculate energy and GHG emissions
Enter "0" for all user input values for unused equipment columns or unused methods

BLOWER, COMPRESSOR, MIXER, AND OTHER EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose type of equipment from drop down	Blower	Blower	Blower	Blower	Blower	Blower
Choose method from drop down	Method 1	Method 1	Method 1	Method 1	Method 1	Method 1
Method 1 - NAME PLATE SPECIFICATIONS ARE KNOWN						
Input equipment horsepower (hp)	0	0	0	0	0	0
Input number of equipments operating	0	0	0	0	0	0
Input operating time for each equipment (hrs)	0	0	0	0	0	0
Percent of max speed for motor (Optional input for variable speed motor)	100%	100%	100%	100%	100%	100%
Equipment load if max motor speed draws full nameplate horsepower	1	1	1	1	1	1
Input equipment load (default already present, user override possible, consider above value)	0.85	0.85	0.85	0.85	0.85	0.85
Equipment motor efficiency (default already present, user override possible)	0.85	0.85	0.85	0.85	0.85	0.85
Method 2 - ELECTRICAL USAGE IS KNOWN						
Input equipment electrical usage, if known (kWh)	0	0	0	0	0	0
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

GENERATORS	Generator 1	Generator 2	Generator 3	Generator 4	Generator 5	Generator 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
Input operating hours (hr)						

AGRICULTURAL EQUIPMENT	Tillage Tractor 1	Tillage Tractor 2	Tillage Tractor 3	Tillage Tractor 4	Tillage Tractor 5	Tillage Tractor 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area to till (acre)						
Choose soil condition from drop down menu	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil	Firm untilled soil
Choose soil type from drop down menu	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil	Clay Soil
Input time available (work days)						
Input depth of tillage (in)						

CAPPING EQUIPMENT	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose stabilization equipment type from drop down menu	Roller	Roller	Roller	Roller	Roller	Roller
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input area (ft2)						
Input time available (work days)						

MIXING EQUIPMENT	Mixer 1	Mixer 2	Mixer 3	Mixer 4	Mixer 5	Mixer 6
Choose fuel type from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Choose horsepower range from drop down menu	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3	1 to 3
Input volume (yd3)						
Input production rate (yd3/hr)						
Input estimated fuel consumption rate (gal/hr) (Input only if known for the mixer selected, otherwise a default will be used by the tool)						

INTERNAL COMBUSTION ENGINES	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5	Engine 6
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input fuel consumption rate (gal/hr or scf/hr)						
Input operating hours (hr)						

OTHER FUELED EQUIPMENT	Fuel 1	Fuel 2	Fuel 3	Fuel 4	Fuel 5	Fuel 6
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input volume (scf for Natural gas, gallons for all others)						

DIESEL EQUIPMENT OPERATION (PER HOUR BASIS)	Equipment 1	Equipment 2	Equipment 3	Equipment 4	Equipment 5	Equipment 6
Choose equipment type from drop down menu	Dozer	Dozer	Dozer	Dozer	Dozer	Dozer
Choose equipment size for Dozer (HP)	65	65	65	65	65	65
Choose equipment size for Loader (HP)	65	65	65	65	65	65
Choose equipment size for Excavator (HP)	150	150	150	150	150	150
Choose equipment size for Scraper (HP)	330	330	330	330	330	330
Choose equipment size for Crawler Crane	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1	awler Crane, 25 ton, 1
Choose equipment size for Tillage Tractor (HP)	16	16	16	16	16	16
Choose equipment size for Paver (HP)	25	25	25	25	25	25
Choose equipment size for Roller (HP)	6	6	6	6	6	6
Choose equipment size for Trencher (HP range)	6 to 11	7 to 11	8 to 11	9 to 11	10 to 11	11 to 11
Choose fuel type from drop down menu	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Input operating hours (hr)						
Will DIESEL-run equipment be retrofitted with a particulate reduction technology?	No	No	No	No	No	No

OPERATOR LABOR	Occupation 1	Occupation 2	Occupation 3	Occupation 4	Occupation 5	Occupation 6
Choose occupation from drop-down menu	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers	Construction laborers
Input total time worked onsite (hours)						

LABORATORY ANALYSIS	PFAS: Years 1-5	VOCs: Years 6-30	PFAS: Yeas 6-30	VOCs: Years 6-30	MNA: Years 1-5	MNA: Years 6-30
Input dollars spent on laboratory analysis ($)	31,500.00	5,950.00	78,750.00	14,875.00	7,000.00	35,000.00

OTHER KNOWN ONSITE ACTIVITIES	Entire Site
Input energy usage (MMBTU)	
Water consumption (gallon)	
Input CO2 emission (metric ton)	
Input N2O emission (metric ton CO2 e)	
Input CH4 emission (metric ton CO2 e)	
Input NOx emission (metric ton)	
Input SOx emission (metric ton)	
Input PM10 emission (metric ton)	
Input fatality risk	
Input injury risk	

RESIDUAL HANDLING

RESIDUE DISPOSAL/RECYCLING	Soil Residue	Residual Water	Material Residue	Other Residuals	Other Residuals	Other Residuals
Will DIESEL-run vehicles be retrofitted with a particulate reduction technology?	No	No	No	No	No	No
Input weight of the waste transported to landfill or recycling per trip (tons)						
Choose fuel used from drop down menu	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
Input total number of trips						
Input number of miles per trip						

LANDFILL OPERATIONS	Operation 1	Operation 2	Operation 3	Operation 4	Operation 5	Operation 6
Choose landfill type for waste disposal	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous	Non-Hazardous
Input amount of waste disposed in landfill (tons)						
Input landfill methane emissions (metric tons CH4)						
Region						
Electricity Region	NY	NY	NY	NY	NY	NY

THERMAL/CATALYTIC OXIDIZERS*	Oxidizer 1	Oxidizer 2	Oxidizer 3	Oxidizer 4	Oxidizer 5	Oxidizer 6
Choose oxidizer type from drop down menu	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer	Simple Thermal Oxidizer
Choose fuel type from drop down menu	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas	Natural gas
Input waste gas flow rate (scfm)						
Input time running (hours)						
Input waste gas inlet temperature (F)						
Input contaminant concentration (ppmV)						

*(Electric blowers are included in the analysis)

RESOURCE CONSUMPTION

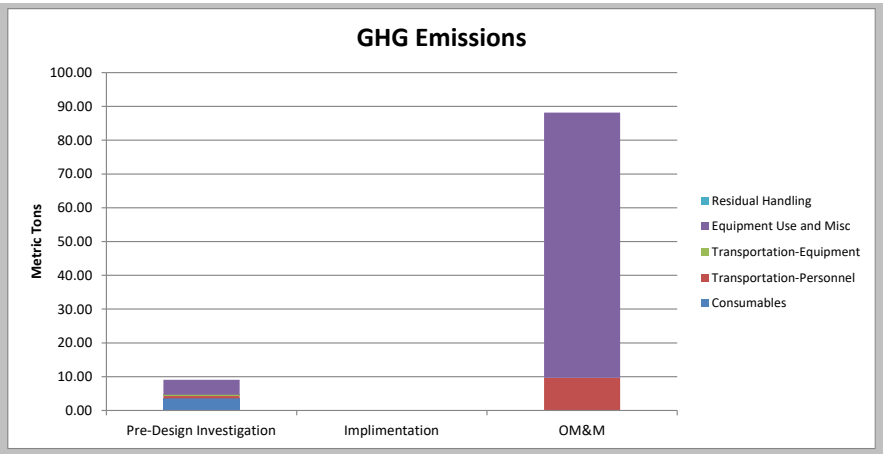
WATER CONSUMPTION	Treatment System 1	Treatment System 2	Treatment System 3	Treatment System 4	Treatment System 5	Treatment System 6
Input total water consumed from potable water treatment facility (gal)						
Input total water disposed to wastewater treatment facility (gal)						

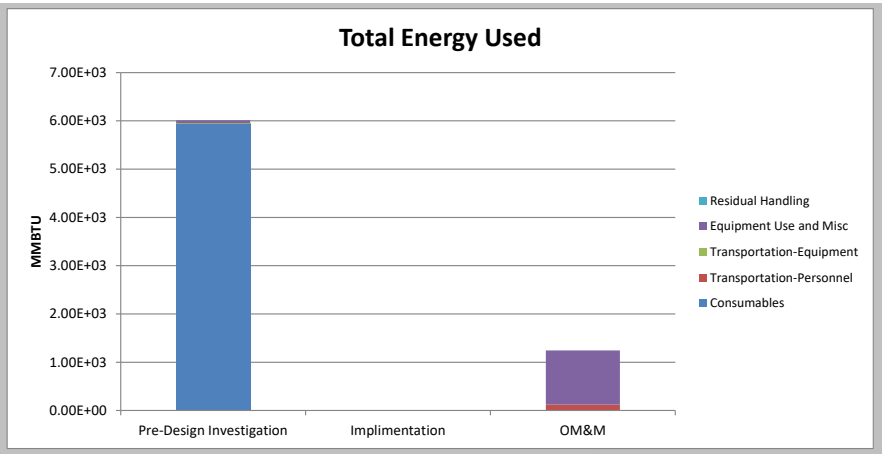
ONSITE LAND AND WATER RESOURCE CONSUMPTION	Entire Site 1	Entire Site 2	Entire Site 3	Entire Site 4	Entire Site 5	Entire Site 6
Input volume of topsoil brought to site (cubic yards)						
Input volume of groundwater or surface water lost (gal)						

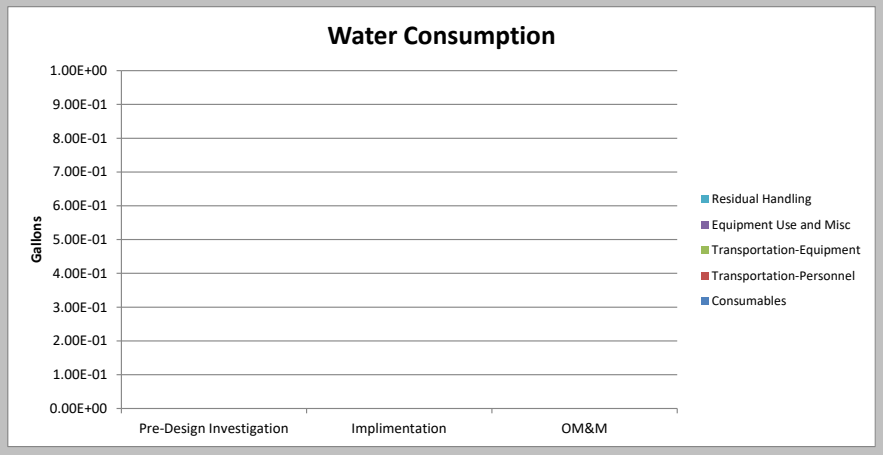
Sustainable Remediation - Environmental Footprint Summary
6

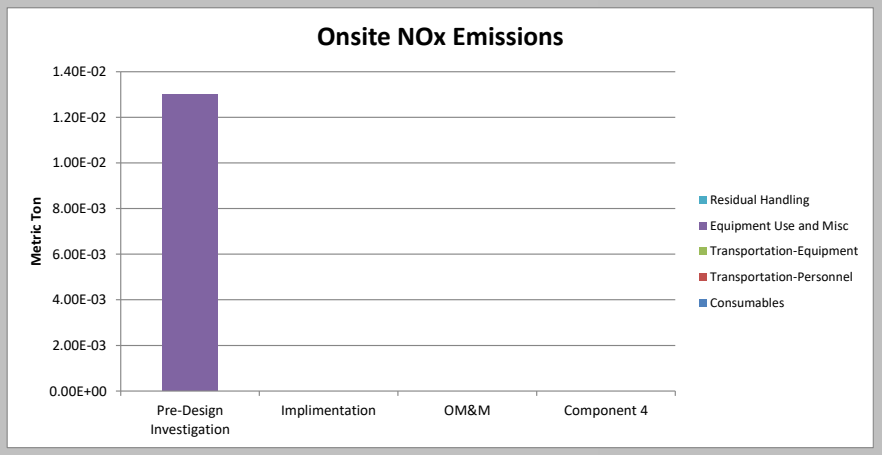
Phase	Activities	GHG Emissions	Total Energy Used	Water Consumption	Electricity Usage	Onsite NOx Emissions	Onsite SOx Emissions	Onsite PM10 Emissions	Total NOx Emissions	Total SOx Emissions	Total PM10 Emissions	Accident Risk Fatality	Accident Risk Injury
		metric ton	MMBTU	gallons	MWH	metric ton	metric ton	metric ton	metric ton	metric ton	metric ton		
Pre-Design Investigation	Consumables	3.58	5.9E+03	NA	NA	NA	NA	NA	7.2E-03	1.0E-02	1.3E-03	NA	NA
	Transportation-Personnel	0.67	8.5E+00	NA	NA	NA	NA	NA	2.2E-04	8.8E-06	4.1E-05	1.1E-05	8.9E-04
	Transportation-Equipment	0.40	5.2E+00	NA	NA	NA	NA	NA	1.2E-04	2.2E-06	1.1E-05	2.1E-06	1.7E-04
	Equipment Use and Misc	4.42	6.0E+01	0.0E+00	0.0E+00	1.3E-02	1.3E-03	1.2E-03	2.8E-02	1.3E-02	2.5E-03	1.5E-06	3.7E-04
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	9.07	6.01E+03	0.00E+00	0.00E+00	1.30E-02	1.33E-03	1.17E-03	3.59E-02	2.27E-02	3.90E-03	1.46E-05	1.42E-03
Implimentation	Consumables	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA	NA
	Transportation-Personnel	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Transportation-Equipment	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Equipment Use and Misc	0.00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OM&M	Consumables	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	NA	NA
	Transportation-Personnel	9.65	1.2E+02	NA	NA	NA	NA	NA	3.0E-03	1.3E-04	6.0E-04	1.6E-04	1.3E-02
	Transportation-Equipment	0.00	0.0E+00	NA	NA	NA	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Equipment Use and Misc	78.51	1.1E+03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.8E-01	2.8E-01	3.1E-02	0.0E+00	0.0E+00
	Residual Handling	0.00	0.0E+00	NA	NA	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
	Sub-Total	88.16	1.24E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.80E-01	2.83E-01	3.20E-02	1.64E-04	1.32E-02
Total		**9.7E+01**	**7.3E+03**	**0.0E+00**	**0.0E+00**	**1.3E-02**	**1.3E-03**	**1.2E-03**	**4.2E-01**	**3.1E-01**	**3.6E-02**	**1.8E-04**	**1.5E-02**

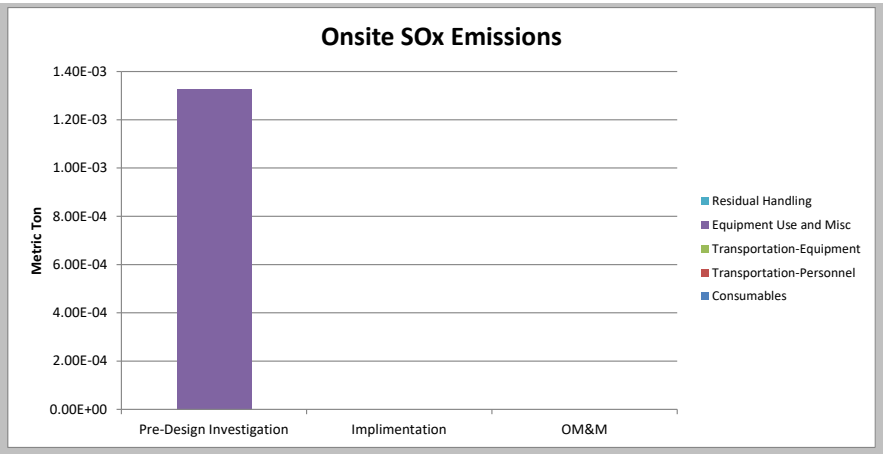
Remedial Alternative Phase	Non-Hazardous Waste Landfill Space	Hazardous Waste Landfill Space	Topsoil Consumption	Costing	Lost Hours - Injury	Percent electricity from renewable sources	Total Cost with Footprint Reduction
	tons	tons	cubic yards	$		%	
Pre-Design Investigation	0.0E+00	0.0E+00	0.0E+00	22,832	1.1E-02	0.0%	$123,867
Implimentation	0.0E+00	0.0E+00	0.0E+00	25,000	0.0E+00	0.0%	
OM&M	0.0E+00	0.0E+00	0.0E+00	76,035	1.1E-01	0.0%	
Total	**0.0E+00**	**0.0E+00**	**0.0E+00**	**$123,867**	**1.2E-01**	**0.0%**	

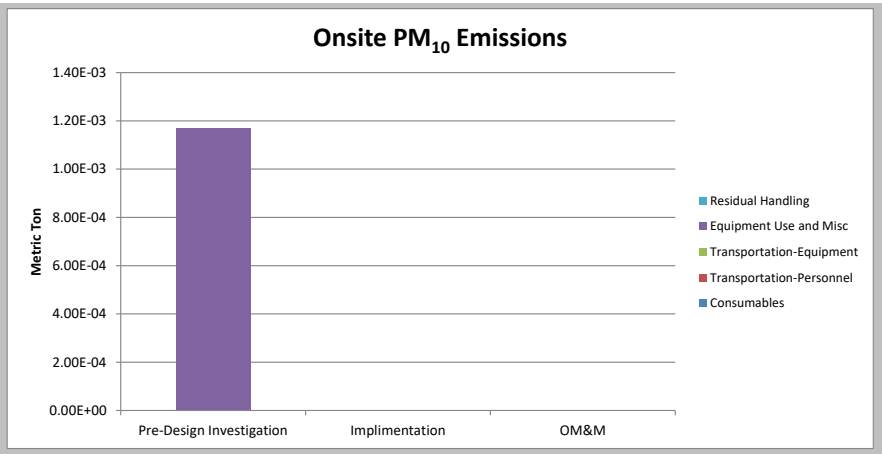

GHG Emissions
Metric Tons
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

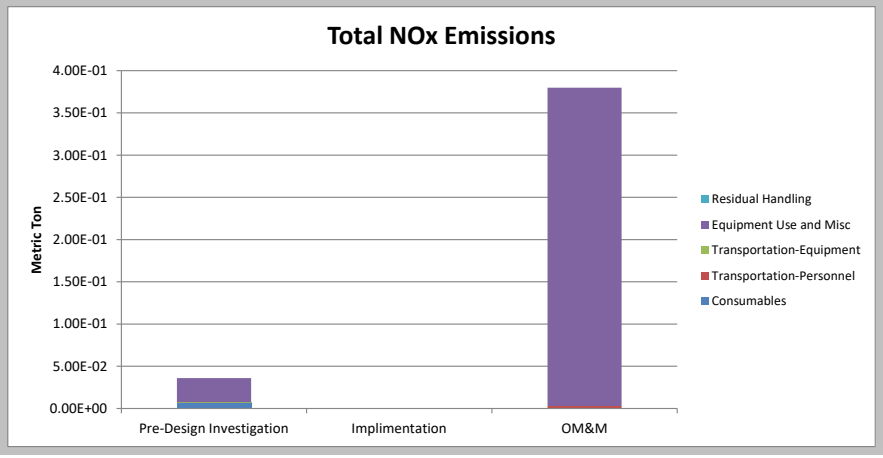

Total Energy Used
MMBTU
7.00E+03
6.00E+03
5.00E+03
4.00E+03
3.00E+03
2.00E+03
1.00E+03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

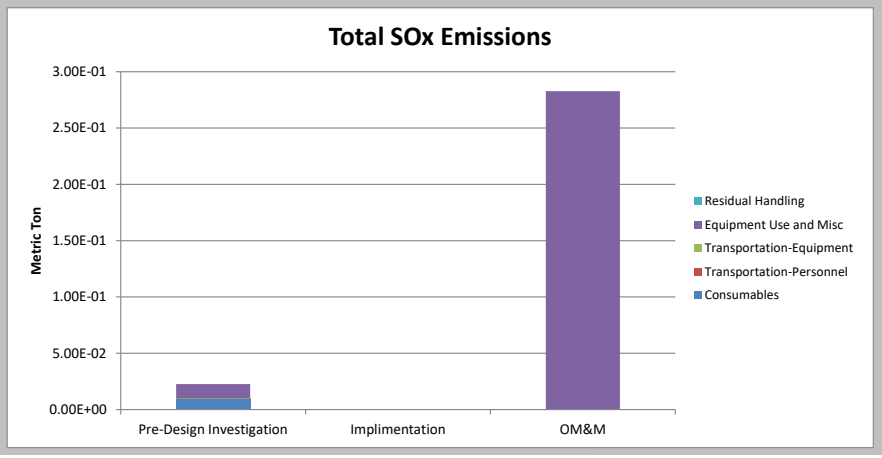

Water Consumption
Gallons
1.00E+00
9.00E-01
8.00E-01
7.00E-01
6.00E-01
5.00E-01
4.00E-01
3.00E-01
2.00E-01
1.00E-01
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

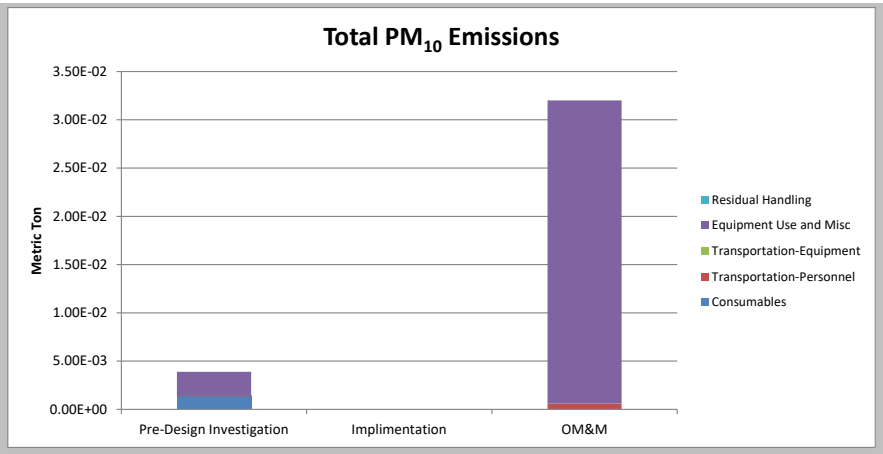

Onsite NOx Emissions
Metric Ton
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Component 4
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

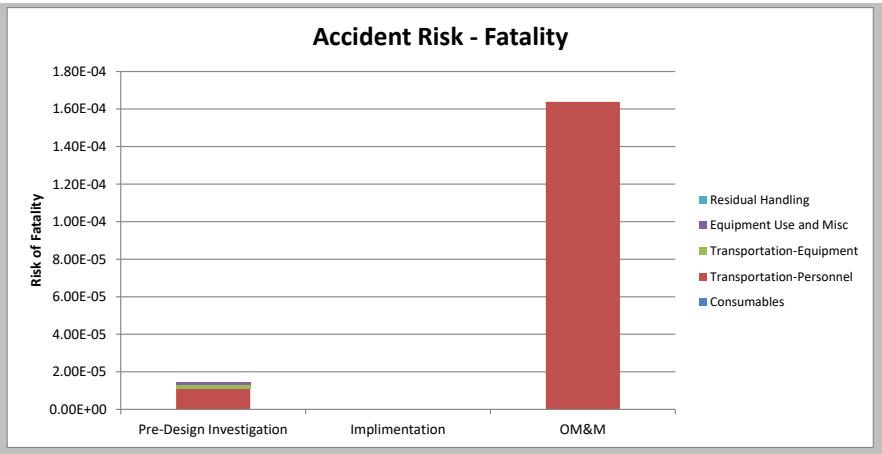

Onsite SOx Emissions
Metric Ton
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

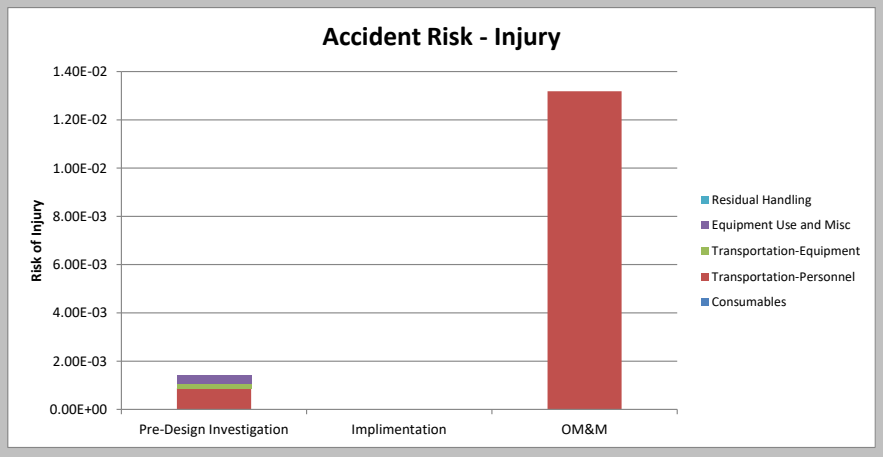

Onsite PM10 Emissions
Metric Ton
1.40E-03
1.20E-03
1.00E-03
8.00E-04
6.00E-04
4.00E-04
2.00E-04
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

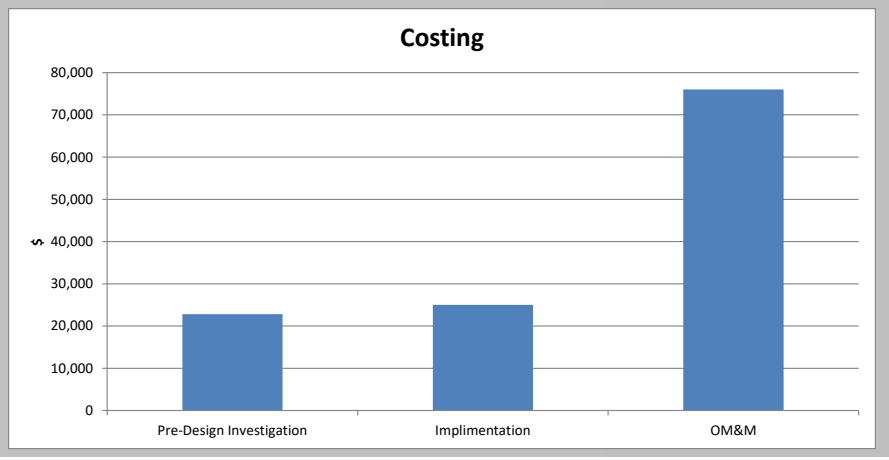

Total NOx Emissions
Metric Ton
4.00E-01
3.50E-01
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables

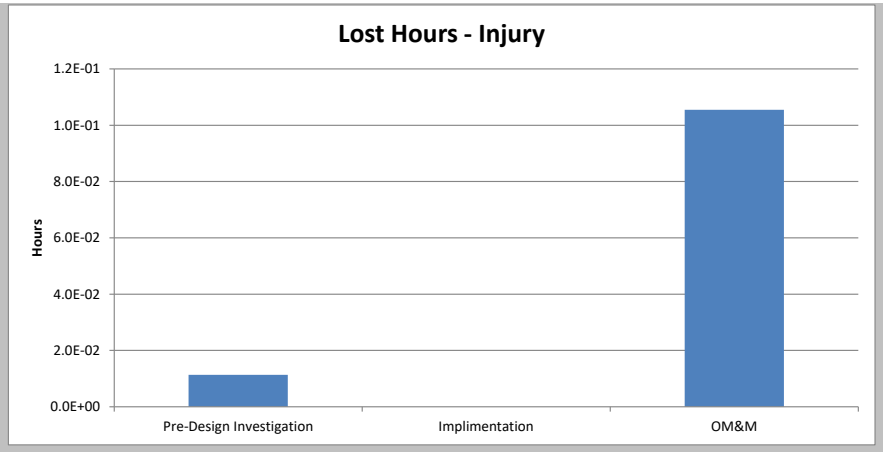

Total SOx Emissions
Metric Ton
3.00E-01
2.50E-01
2.00E-01
1.50E-01
1.00E-01
5.00E-02
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Total PM10 Emissions
Metric Ton
3.50E-02
3.00E-02
2.50E-02
2.00E-02
1.50E-02
1.00E-02
5.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Fatality
Risk of Fatality
1.80E-04
1.60E-04
1.40E-04
1.20E-04
1.00E-04
8.00E-05
6.00E-05
4.00E-05
2.00E-05
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Accident Risk - Injury
Risk of Injury
1.40E-02
1.20E-02
1.00E-02
8.00E-03
6.00E-03
4.00E-03
2.00E-03
0.00E+00
Pre-Design Investigation
Implimentation
OM&M
Residual Handling
Equipment Use and Misc
Transportation-Equipment
Transportation-Personnel
Consumables


Costing
$
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Pre-Design Investigation
Implimentation
OM&M


Lost Hours - Injury
1.2E-01
1.0E-01
8.0E-02
6.0E-02
4.0E-02
2.0E-02
0.0E+00
Hours
Pre-Design Investigation
Implimentation
OM&M