PERIODIC REVIEW REPORT
AUGUST 30, 2019 – AUGUST 30, 2022

C AND F PLATING
ALBANY, NEW YORK 12207

NYSDEC Site No. 401057
Work Assignment No. D009812-04

Prepared for:

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Division of Environmental Remediation
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APRIL 2023

TRC Project No. 386554

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LIST OF ACRONYMS AND ABBREVIATIONS

AMSL	above mean sea level
ASP-B	Analytical Services Protocol – Category B Deliverables
COCs	Contaminants of Concern
DER	Division of Environmental Remediation
DUSRs	Data Usability Summary Reports
EC	Engineering Control
EE	Environmental Easement
Feet bgs	Feet below ground surface
IC	Institutional Control
IHWDS	Inactive Hazardous Waste Disposal Site
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
Pace	Con-Test/Pace Analytical
PCB	Polychlorinated Biphenyl
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
ROD	Record of Decision
SCG	Standard Criteria and Guidance
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SMR	Site Management Report
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TRC	TRC Engineers, Inc.
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WA	Work Assignment
µg/L	micrograms per liter

Executive Summary

Category	Summary/Results
Site Classification	Class 4 Inactive Hazardous Waste Disposal Site (IHWDS)
Site Management Plan	The Site Management Plan (SMP) is dated July 2017.
Required Site Management Activities	One Site inspection and one groundwater sampling event is required per three-year period or at a frequency determined by the NYSDEC.
Engineering Controls	• Cover System • Patroon Creek Retaining Wall • Restricted Site Access via Fence and Gates • Monitoring Wells
Institutional Controls	• Environmental Easement • Site-Use and Site-Development Restrictions • Groundwater-Use Restriction • Site Management Plan
Certification/Reporting Period	The July 2017 SMP requires a periodic certification by the owner(s) that the Site use is compliant with the Institutional Controls (ICs) and Engineering Controls (ECs) at the discretion of NYSDEC. The June 2022 Property Owner Letter states August 30, 2019 to August 30, 2022 as the certification period for this PRR. The Site owner signed IC/EC forms for the August 30, 2019 to August 30, 2022 certification period are provided in **Appendix A**.
Prior PRR/SMR Recommendations	The September 2019 PRR prepared by HDR recommended resolving access limitations for HRP-MW-6. Site Management Reports (SMRs) are not required. The SMP requires certified reporting following a groundwater sampling event.
Site Management Activities	Two Site inspections and one groundwater monitoring event (including water level measurements) were performed during this reporting period (August 2019 – August 2022). Additionally, repairs were made to the Patroon Creek retaining wall between May and November 2020 for further stability along the creek bank. • May – November 2020: An additional section along the Patroon Creek bank was stabilized with a permanent geogrid retaining wall. • 11/5/2021: Severe storm Site inspection • 5/10/2022: Site inspection, groundwater level measurements, and groundwater sampling. Groundwater samples were collected from three monitoring wells and samples were submitted for laboratory analysis of Target Analyte List (TAL) total and dissolved metals.
Significant Findings or Concerns	During the May 2022 Site inspection, it was observed that a portion of the Site had recently been paved. Monitoring well HRP-MW-9 was not located and appeared to have been paved over. Monitoring well HRP-MW-7 was found open and filled with debris. The well was also covered with a municipal water manhole cover and lid, likely placed there during paving. Access was not granted to monitoring well HRP-MW-6, consistent with previous reports.
Cost Evaluation	The total cost of the TRC Site management activities during this reporting period was $87,639. This cost includes engineering and subcontractor costs (e.g., equipment, rentals, etc.). It should be noted that this total does not include any costs incurred by the NYSDEC in support of the project.

Recommendations	1. Site inspection frequency remain every three years and following severe weather events (as needed). 2. Groundwater sampling frequency to remain at one sampling event every three years (including water level measurements). 3. Contaminant trends should be evaluated once sufficient data is available. 4. Survey all monitoring wells. 5. Arrange for access to HRP-MW-6. 6. Remove HRP-MW-7 from the monitoring network. 7. Locate HRP-MW-9, and repair or replace including surface covering.

1.0 Introduction

This Periodic Review Report (PRR) has been prepared for the C and F Plating Site (referred to as "the Site") and covers the period August 30, 2019, through August 30, 2022. This report was prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) Work Assignment (WA) No. D009812-04 Notice to Proceed dated February 27, 2020, the NYSDEC-approved amended Scope of Work dated July 20, 2020 (WA No. D009812-04.30) and NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation (NYSDEC DER-10). This PRR discusses the Site management activities and results from those activities, performed by TRC Engineers, Inc. (TRC) from August 30, 2019 to August 30, 2022. Site management activities conducted from August 2019 to June 2020 were performed by others. Documents pertaining to activities completed by others are incorporated by reference where applicable.

A Site summary and applicable remedial program information are summarized below.

Site Information			
Site Name:	C and F Plating Site	**NYSDEC Site No:**	401057
Site Location:	406 North Pearl Street, Albany, Albany County, NY	**Remedial Program:**	Inactive Hazardous Waste Disposal
Site Type:	Former chrome plating facility	**Classification:**	04
Parcel Identification(s):	Tax Map No. 65.16-01-25	**Parcel Acreage / EE Acreage:**	0.34
Selected Remedy:	Excavation, in-situ chemical reduction, cover system, perimeter fence, retaining wall, and groundwater monitoring	**Site COC(s):**	• Metals (barium, cadmium, chromium, copper, lead, mercury, nickel, sodium, and zinc)
Current Remedial Program Phase:	Post Remedial Action Site Monitoring; Site Management	**Institutional Controls:**	• SMP (2017) • Environmental Easement (2020)
Post-Remediation Monitoring and Sampling Frequency:	Every 3 years – Site inspection and groundwater/hydraulic monitoring	**Engineering Controls:**	Clean fill cover, Patroon Creek retaining wall, perimeter fence, and monitoring wells
Monitoring Well Network:	6 overburden monitoring wells	**Required Reporting:**	PRR – Every 3 years

1.1 Site Location, Ownership, and Description

The Site is located at 406 North Pearl Street in the City of Albany, Albany County, New York and is approximately 0.34 acres in size. The Site is identified as Parcel No. 65.16-01-25 on the Albany County Tax Map. The Site is currently owned by Danz Holdings, LLC (Family Danz). No structures are located at the Site, which is currently used as a parking lot for Family Danz. The Site is bounded by Patroon Creek to the north, North Pearl Street to the east, the Family Danz company to the south, and a boiler tank and welding company to the west. The surrounding area is urbanized and consists of various mixed commercial

and industrial uses, locally referred to as the Warehouse District. A Site Location Map and Site Layout Map are shown on **Figure 1** and **Figure 2**, respectively.

1.2 Investigation and Remedial History

C and F Plating operated as a chrome plating facility from at least the 1920s and continued until 1985. The Site originally included a 6,600-square foot two story building. Since 1985, the facility stored miscellaneous equipment, household items, municipal waste, and debris. In 2003, the United States Environmental Protection Agency (USEPA) conducted a Removal Site Evaluation, which included a limited on-Site inventory of over 40 containers and several vats containing an estimated 2,000 gallons of hazardous wastes that were stored in an unsafe manner. Following the evaluation, the USEPA completed emergency removals of the stored hazardous waste materials in 2004 (NYSDEC, 2014).

From October 2006 to May 2007, a Limited Subsurface Investigation (LSI) was performed under the Spills Program (NYSDEC Spill Number 02-9561 PIN H0743) and included the installation of several soil borings and groundwater monitoring wells to determine the presence, if any, of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), target analyte list (TAL) metals, and polychlorinated biphenyls (PCBs). Surface soil samples from the Site and sediment samples from Patroon Creek were also collected as part of the investigation. The laboratory results from the investigation indicated elevated concentrations of inorganics (metals) in on-Site surface and subsurface soils and groundwater. Compounds identified in creek sediment samples were attributed to the commercial and industrial setting upstream of the facility. Following the limited investigation, the NYSDEC placed the Site in the Inactive Hazardous Waste Disposal Site program in 2010 (HRP, 2012).

From 2011 to 2012, a Remedial Investigation (RI) was performed at the Site to define the nature and extent of contamination identified in the LSI. Analytical data from the RI identified barium, cadmium, chromium, copper, lead, mercury, nickel, sodium, and zinc as contaminants of concern (COCs) for the Site. Soil Cleanup Objective (SCO) exceedances were reported in surface soils in the northeastern portion of the property and under the building and in subsurface soils at depths of 5 to 15 feet below ground surface (bgs) under the building. In December 2011, the northeastern portion of the building collapsed into Patroon Creek (HRP, 2012).

Following the Record of Decision (ROD) issued by the NYSDEC in 2014, several remedial activities were completed at the Site from 2014 to 2015. These remedial activities included asbestos-containing material (ACM) abatement and building demolition work, excavation of debris from the former building, removal of drums containing hazardous materials, supplemental subsurface investigations, installation of a permanent retaining wall, abandonment and disposal of an underground storage tank (UST), excavation of hazardous and non-hazardous Site soils, in-situ source area treatment with calcium polysulfide to bind metals with soil, and backfilling with clean fill and crushed stone to ground surface (MACTEC, 2017).

In July 2017, MACTEC Engineering and Consulting, P.C. (MACTEC), on behalf of the NYSDEC, prepared a SMP to address implementation procedures for the Site's Ics/Ecs. Routine Site maintenance,

Site inspections, and environmental monitoring have been conducted at a frequency prescribed by the SMP since 2018 to ensure the remedy remains effective.

In April 2020, an Environmental Easement (EE) for the Site was granted by the NYSDEC. Between May and November 2020, an additional section along the Patroon Creek bank was stabilized with a permanent geogrid retaining wall. On January 24, 2023, TRC submitted a SMP Addendum to the NYSDEC to incorporate the EE and remedial actions completed at the Site between May and November 2020.

A detailed Site history, including the dates and descriptions of significant events, and a Custodial Record detailing available Site reports, are included in **Appendix B**.

1.3 Remaining Contamination

Remedial actions at the Site have been completed and successfully removed contaminated soil from the subsurface to the extent possible, however complete excavation of all contaminated soils was not feasible. Some soil with COCs at concentrations exceeding the SCOs for commercial use may remain in the subsurface soils in areas where the remedial excavations were not able to be completed. Site COCs also remain in Site groundwater.

1.4 Regulatory Requirements/Cleanup Goals

The Site cleanup objective is to restore the impacted media to pre-disposal conditions, to the extent feasible. The Standards, Criteria, and Guidance (SCGs) currently used for the various sample media are summarized below.

- Soil – NYSDEC Environmental Conservation Law (ECL) 6 New York Code of Rules and Regulations (NYCRR) Part 375-6: Remedial Program SCOs.
- Groundwater – NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Class GA Values).

The remediation action objectives (RAOs) included in the 2014 ROD are as follows:

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contract with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination.

2.0 Institutional and Engineering Control Plan Compliance

2.1 Institutional Controls

The C and F Plating Site is managed under the New York State Superfund Program. The Site's inclusion on the Registry of IHWDS, ROD, EE, and SMP act as the ICs for the Site.

The 2020 EE defines the following for the Site:

- Requires compliance with the approved SMP;
- Limits property use and development to commercial or industrial activities;
- Restricts the use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH); and
- Requires access to the Site be provided to representatives of the NYSDEC with prior notice to the property owner.

2.2 Engineering Controls

The Engineering Controls for the Site include the following:

- Clean Fill Cover – The Site is covered with a one-foot-thick layer of clean fill to prevent direct exposure to soil contamination.
- Monitoring Wells – Groundwater contaminant monitoring is completed through a monitoring well network consisting of one upgradient (HRP-MW-6), one downgradient (HRP-MW-11), and four on-Site (HRP-MW-7, HRP-MW-8, HRP-MW-9, and HRP-MW-10) wells.
- Site Access Controls – Unauthorized access to the Site is restricted by a southeastern chain link fence and a locking gate via the North Pearl Street driveway. The northeast side of the Site is bordered by Patroon Creek.
- Patroon Creek Retaining Wall – A permanent retaining wall along 50 to 60 linear feet of the creek bank was installed in 2015 prior to excavation and backfilling activities. An additional 50 linear feet of bank was stabilized in 2020. The details of the retaining wall installation were summarized in the Construction Completion Report prepared by TRC, dated March 8, 2021.

The location of groundwater monitoring wells and the Patroon Creek retaining wall can be found on **Figure 2**.

3.0 Monitoring and Sampling Plan Compliance

The 2017 SMP was prepared to manage remaining on-Site contamination and to ensure that the remedy remains effective by restricting Site use, Site development and soil movement on the property. The table below shows the SMP-specified monitoring and sampling activities for the Site and the dates those activities were completed:

Summary of 2017 SMP Site Monitoring and Sampling Plan				
Site Management Activity	**Frequency**	**Location**	**Analytical Method**	**Completion Date(s)**
Site Inspection	Every 3 years and following severe weather	Tax map no. 65.16-1-25	Not Applicable	11/5/2021 5/10/2022
Groundwater Sampling	Every 3 years	• HRP-MW-6 • HRP-MW-7 • HRP-MW-8 • HRP-MW-9 • HRP-MW-10 • HRP-MW-11	USEPA Method 6010B for TAL Metals, total and dissolved	5/10/2022
SMR	Not required	Not Applicable	Not Applicable	Not Applicable
Site Inspection Report	Following each inspection event	Not Applicable	Not Applicable	November 2021, May 2022
PRR	Every 3 years	Not Applicable	Not Applicable	September 2019 (HDR)

3.1 Site Inspection

TRC conducted regular Site inspections for the period August 30, 2019 to August 30, 2022 in accordance with the SMP. The Site inspections included an evaluation of the overall Site conditions, the condition of the clean fill cover, vegetation, monitoring wells, retaining wall, perimeter fence, etc. In addition to the routine inspections, TRC conducted a severe storm inspection in November 2021 after an intense rain event.

A summary of the Site inspections is presented below:

Summary of Site Management Activities August 2019 and August 2022		
Site Management Activity	**Summary of Results**	**Maintenance/Corrective Measure**
Clean fill cover and Site access controls	During the November 2021 severe storm inspection and the May 2022 routine inspection, the clean fill cover and asphalt appeared intact with no cracks, subsidence, or depressions. During both inspections, the Site perimeter fence and gates were observed in good condition.	No routine maintenance or corrective measures needed at this time.
Patroon Creek Retaining Wall	During the November 2021 severe storm inspection, the creek retaining wall appeared to be good condition with no evidence of cracks, crumbling, erosion, vegetation, or animal burrowing. During the May 2022 inspection, the creek retaining wall was observed in good condition with no evidence of cracks, crumbling, erosion, or animal burrowing. Woody stemmed plans were observed protruding from the wall but did not appear to be affecting the wall's integrity.	The woody vegetation observed during the May 2022 inspection was removed by TRC in August 2022.
Monitoring Well Network	In May 2022, five of six monitoring wells were located (HRP-MW-6, HRP-MW-7, HRP-MW-8, HRP-MW-10, and HRP-MW-11). Located monitoring wells were observed in poor to good condition. Monitoring well HRP-MW-6 was not able to be inspected due to access disagreements with the Site owner. HRP-MW-7 was in poor condition with a municipal water supply manhole and was filled with debris. Standing water was observed in HRP-MW-10 due to the PVC riser being cut on an angle. HRP-MW-9 was not located and was likely paved over.	Recommendations include: • Leveling of the PVC riser in HRP-MW-10 • A replacement for HRP-MW-7 be installed • HRP-MW-9 be brought to grade
Groundwater gauging and sampling	In May 2022, monitoring wells HRP-MW-8, HRP-MW-10, and HRP-MW-11 were gauged. Groundwater samples were collected from the three wells utilizing USEPA low-flow sampling methods.	No routine maintenance or corrective measures needed at this time.

Field activity reports and photographic logs from November 2021 and May 2022 inspection activities can be found in **Appendix C**.

3.2 Groundwater Monitoring Summary

3.2.1 Groundwater Gauging

On May 10, 2022, prior to groundwater sample collection, located wells were gauged for depth to groundwater to determine potentiometric surface flow direction. The number of gauged monitoring wells, measured groundwater elevation range, and inferred groundwater flow direction is presented in the table below:

May 2022 Hydrogeologic Summary
Overburden Aquifer
Number of Gauged Wells
3
Groundwater Elevation Range
Lowest groundwater elevation: 25.07 feet AMSL (HRP-MW-10) Highest groundwater elevation: 25.83 feet AMSL (HRP-MW-8)
Inferred Groundwater Flow Direction
East-Northeast

A table summarizing the groundwater gauging measurements for all monitoring wells is provided in **Table 1**. In May 2022, depth to groundwater measurements were collected from the three located wells (HRP-MW-8, HRP-MW-10, and HRP-MW-11). Groundwater elevations for HRP-MW-8 and HRP-MW-10 were calculated using ground surface elevations included in the 2012 RI report prepared by HRP due to a lack of top of riser elevation data. Contour maps showing the groundwater flow directions for the overburden aquifer were unable to be created due to a lack of groundwater elevation data. TRC recommends the wells be surveyed before the submittal of the next PRR. Inferred groundwater flow direction is based on information reported in the 2012 RI report prepared by HRP.

3.2.2 Groundwater Monitoring

TRC collected groundwater samples from three of the six monitoring wells utilizing USEPA low-flow sampling techniques. Groundwater sampling logs are presented in **Appendix D**.

The three groundwater samples and were submitted to Con-Test/Pace Analytical of East Longmeadow, Massachusetts (Pace) for analysis of TAL metals, total and dissolved, by USEPA Method 6010B. Results were subject to data validation. The QA/QC samples were collected at the frequencies specified in TRC's July 2020 Generic Quality Assurance Project Plan (QAPP).

A summary of the monitoring well details and applicable groundwater sampling information is presented in the table below:

Summary of Groundwater Monitoring and Sampling Activities May 2022						
	Monitoring Well Details			May 2022 Groundwater Sampling Event		
Well ID	Coordinates*	Screen Zone (ft. bgs)	Unit Screened	DTW (ft. bgs)	SMP Analytes	Notes
HRP-MW-6	42.66349536, -73.74555281	11.9 – 16.9	Overburden	NS	TAL Metals (total and dissolved)	Access to HRP-MW-6 not granted.
HRP-MW-7	42.66327515, -73.74508953	2.4 – 17.4	Overburden	NS	TAL Metals (total and dissolved)	HRP-MW-7 observed in poor condition.
HRP-MW-8	42.66344732, -73.74500505	3.8 – 18.8	Overburden	5.50	TAL Metals (total and dissolved)	
HRP-MW-9	42.66338044, -73.74492148	4.1 – 19.1	Overburden	NS	TAL Metals (total and dissolved)	HRP-MW-9 was assumed to be paved over.
HRP-MW-10	42.66331988, -73.7447730	4.7 – 24.7	Overburden	5.36	TAL Metals (total and dissolved)	
HRP-MW-11	42.66301563, -73.74435794	NA	Overburden	15.76	TAL Metals (total and dissolved)	

Notes:
NS – Not sampled
NA – Not available, a well construction log for HRP-MW-11 could not be located.
DTW – Depth to water
ft. bgs – feet below ground surface
* From the field survey completed by YEC Engineering, P.C. included in the 2012 RI Report. Horizontal coordinate values based on the North American Datum (NAD) of 1983.

Additional well construction details are provided in **Appendix B**.

3.2.3 Groundwater Analytical Results

A summary of groundwater analytical data for total and dissolved metals is presented in **Table 2**. The DUSRs (for the associated Analytical Services Protocol Category B laboratory reports) can be found in **Appendix E**. Detected compounds exceeding their respective NYSDEC Class GA Values for each monitoring well are illustrated on **Figure 3**.

A summary of the May 2022 groundwater analytical results for the Site COCs is outlined below:

Table 2. Summary of Groundwater Analytical Results – TAL Metals, Total and Dissolved May 2022				
Constituent	**Class GA Value***	**Concentration Range (µg/L)**	**Location with Highest Detection**	**Frequency Exceeding Class GA**
Metals, total				
Barium	1,000	150 – 170	HRP-MW-8	0
Cadmium	5	0.037 – 690	HRP-MW-10	1/3
Chromium	50	1.0 – 11	HRP-MW-10	0
Copper	200	2.1 – 6.7	HRP-MW-10	0
Iron	300	93 – 5,900	HRP-MW-10	2/3
Lead	25	ND – 0.86	HRP-MW-10	0
Magnesium	35,000	24,000 – 38,000	HRP-MW-8	1/3
Manganese	300	7.9 – 3,200	HRP-MW-10	2/3
Mercury	0.7	ND – 0.063	HRP-MW-8	0
Nickel	100	ND– 14	HRP-MW-10	0
Sodium	20,000	170,000 – 300,000	HRP-MW-8	3/3
Zinc	2,000	ND– 29	HRP-MW-10	0
Metals, dissolved				
Barium	1,000	140 – 200	HRP-MW-8	0
Cadmium	5	ND – 96	HRP-MW-10	1/3
Chromium	50	ND – 2.6	HRP-MW-10	0
Copper	200	2.2 – 180	HRP-MW-8	0
Iron	300	52 – 2,000	HRP-MW-8	2/3
Lead	25	ND	NA	0
Magnesium	35,000	23,000 – 37,000	HRP-MW-8	1/3
Manganese	300	1.6 - 640	HRP-MW-10	2/3
Mercury	0.7	ND	NA	0
Nickel	100	1.3 – 5.1	HRP-MW-10	0
Sodium	20,000	190,000 – 300,000	HRP-MW-8	3/3
Zinc	2,000	ND	NA	0

Notes

ND – Not detected above the specified quantitation limit.

µg/L – micrograms per liter

* - NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA water, June 1998 with the April 2000 Addendum.

Groundwater contaminant concentration trend graphs were not prepared for the Site since a sufficient number of post-remedial action groundwater sampling events has not been completed.

4.0 Cost Summary

The total estimated cost of TRC's Site management activities for the period August 30, 2019 through August 30, 2022 is approximately $87,639. Site management activities included triennial Site inspections, groundwater monitoring, and laboratory analysis of environmental samples as detailed in Section 3.0. The total includes engineering and subcontractor costs, as well as expenses associated with the project. It should be noted that the total does not include costs incurred by NYSDEC in support of the project. A summary of the Site management costs is presented below:

Summary of Site Management Costs - TRC
August 2019 through August 2022

Cost Item	Amount Expended (August 2019 through August 2022)	Percent of Total Cost
Engineering Support		
TRC	$85,644	98%
Expenses		
TRC	$1,995	2%
Total Cost	**$87,639**	----

The following is included in each cost item indicated in the table above:

- Engineering support includes labor costs associated with project management (e.g., WA Package preparation, monthly invoicing, project scheduling and coordination, etc.), Site inspections, groundwater sampling, and reporting (i.e., Site inspection report, DUSR, field observation of the retaining wall installation, electronic data deliverable preparation, and PRR).
- Expense costs include travel, equipment, and supplies in support of the Site inspection, groundwater sampling event and routine Site maintenance activities.
- Costs include oversite of the construction of a new retaining wall along Patroon Creek and the preparation of a Construction Completion Report.
- Work performed by other consultants (HDR) during this reporting period is not included in the cost.

5.0 Conclusions and Recommendations

5.1 Conclusions

- Based on the groundwater elevation measurements reported in the 2012 RI Report prepared by HRP, groundwater flow in the overburden aquifer is to the east-northeast towards Patroon Creek.
- The COCs in groundwater at the Site are barium, cadmium, chromium, copper, lead, mercury, nickel, sodium, and zinc.
- During the May 2022 sampling event, cadmium was detected at concentrations above its Class GA Value in samples collected from HRP-MW-10. Cadmium concentrations in HRP-MW-10 detected in May 2022 were approximately four times higher than those reported in the 2012 RI. HDR did not collect samples from HRP-MW-8 and HRP-MW-10 during the reporting period for the 2019 PRR.
- During the May 2022 sampling event, sodium was detected above its Class GA Value in samples collected from HRP-MW-8, HRP-MW-10, and HRP-MW-11. Sodium detections in HRP-MW-8 were approximately eight times higher than detections reported in the 2012 RI, while detections in HRP-MW-10 were approximately three times higher. However, sodium detections in HRP-MW-11 were lower than those reported in the 2012 RI. The cause of increased sodium concentrations in HRP-MW-8 and HRP-MW-10 from those reported in 2012 are unclear.
- Iron, magnesium, and manganese (not Site COCs) were detected at concentration above their Class GA values in samples collected from HRP-MW-8. Iron and manganese were also detected at concentrations above their Class GA values in samples collected from HRP-MW-10.
- Site and groundwater use are consistent with the restrictions set forth in the 2014 ROD and the 2017 SMP.
- The remedy continued to be protective of human health and the environment during this reporting period.

5.2 Recommendations

- Site inspections should continue at a frequency of once every three years and following severe weather events (as needed) to certify that the ICs/ECs are functioning as intended. A Site inspection report should be completed following each inspection event.
- Groundwater monitoring should continue at a frequency of once every three years. Water level measurements should continue to be collected from the Site monitoring wells during the groundwater monitoring events.
- A professional land survey of all monitoring wells should be completed.
- Contaminant trends should be evaluated once sufficient data is available.
- Access to HRP-MW-6 should be arranged with the current landowner.
- Monitoring well HRP-MW-7 should be removed from the monitoring network and the SMP shall be updated to reflect removal.

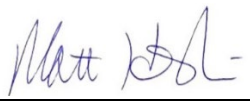
- Monitoring well HRP-MW-9 should be located and brought to grade.

6.0 Certification of Engineering and Institutional Controls

For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:

- The institutional and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by DER;
- Nothing has occurred that would impair the ability of such control to protect public health and the environment; and,
- Nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control.

TRC Engineers, Inc.

Prepared By: 

Matthew Hoskins, P.G.

Senior Project Manager

Reviewed By: 

Kevin D. Sullivan, P.E.

Senior Technical Reviewer

7.0 Future Site Activities

Based on the recommendations in Section 5, the following Site management activities will be completed during the next PRR reporting period (August 2022 to August 2025):

- Site Inspections – Every three years (next scheduled: 2025) and severe weather events (as needed)
- Groundwater Monitoring – Every three years (next scheduled: 2025)
- PRR – Every three years (next scheduled: 2025)

FIGURES

LEGEND

- SITE LOCATION

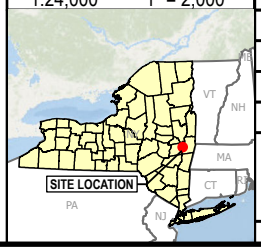
BASE MAP: ESRI TOPOGRAPHIC IMAGERY
DATA SOURCES: TRC

N

0 1,000 2,000

FEET

1:24,000 1" = 2,000'



PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER C & F PLATING - SITE NO. 401057
406 NORTH PEARL STREET
ALBANY, NEW YORK

TITLE:

SITE LOCATION MAP

DRAWN BY:	L. LILL	PROJ. NO.:	386554 PHASE 2
CHECKED BY:	T. SHANLEY		
APPROVED BY:	M. HOSKINS		**FIGURE 1**
DATE:	APRIL 2023		

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Phone: 518-348-1190

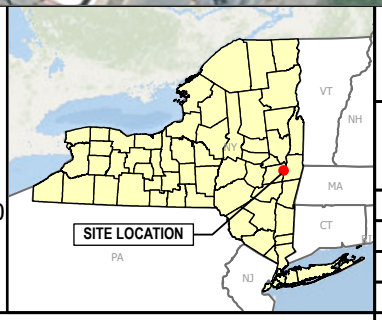
FILE: prr

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet. Map Rotation: 0
-- Saved By: <ACP>LLill <\ACP>on 10/17/2022. 13:05:06 PM. File Path: T:\1-PROJECTS\NYSDEC\386554_02_C&F_Plating\2-APRX\opr.aprx. Layout Name: Figure 1 - C & F Plating Site Location Map

LEGEND

- TAX PARCEL BOUNDARY
- MONITORING WELL
- GEOGRID RETAINING WALL (APPROX. 40 LINEAR FEET) - INSTALLED AUGUST 2015
- GEOGRID RETAINING WALL (APPROX. 50 LINEAR FEET) - INSTALLED MAY-JUNE 2020

NOTES:
ALL PROPERTY BOUNDARIES, FEATURES, AND MONITORING WELL LOCATIONS ARE APPROXIMATE.



PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER C & F PLATING - SITE NO. 401057
406 NORTH PEARL STREET
ALBANY, NEW YORK

TITLE:
SITE LAYOUT MAP

DRAWN BY:	L. LILL	PROJ. NO.:	386554 PHASE 2
CHECKED BY:	T. SHANLEY		
APPROVED BY:	M. HOSKINS		**FIGURE 2**
DATE:	APRIL 2023		

BASE MAP: ESRI WORLD IMAGERY
DATA SOURCES: TRC

0 30 60 FEET
1:725 1" = 60'

TRC
3 Corporate Dr., Suite 202
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: prr

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet: Map Rotation: 0
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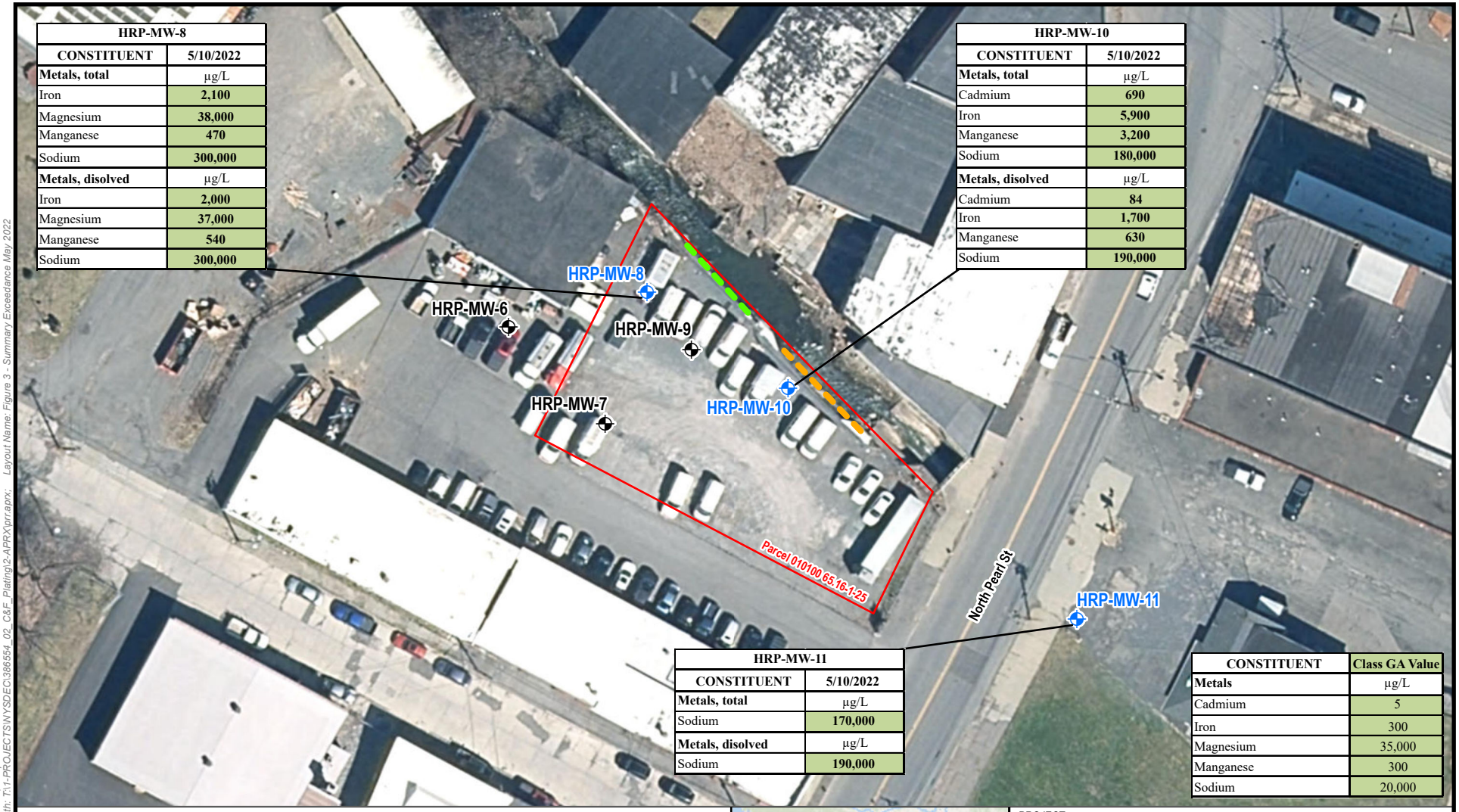


HRP-MW-8	
CONSTITUENT	**5/10/2022**
Metals, total	µg/L
Iron	**2,100**
Magnesium	**38,000**
Manganese	**470**
Sodium	**300,000**
Metals, disolved	µg/L
Iron	**2,000**
Magnesium	**37,000**
Manganese	**540**
Sodium	**300,000**

HRP-MW-10	
CONSTITUENT	**5/10/2022**
Metals, total	µg/L
Cadmium	**690**
Iron	**5,900**
Manganese	**3,200**
Sodium	**180,000**
Metals, disolved	µg/L
Cadmium	**84**
Iron	**1,700**
Manganese	**630**
Sodium	**190,000**

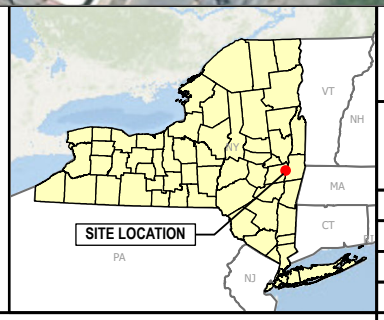
HRP-MW-11	
CONSTITUENT	**5/10/2022**
Metals, total	µg/L
Sodium	**170,000**
Metals, disolved	µg/L
Sodium	**190,000**

CONSTITUENT	Class GA Value
Metals	µg/L
Cadmium	5
Iron	300
Magnesium	35,000
Manganese	300
Sodium	20,000

LEGEND

- TAX PARCEL BOUNDARY
- MONITORING WELL SAMPLED IN MAY 2022
- MONITORING WELL NOT SAMPLED IN MAY 2022
- GEOGRID RETAINING WALL (APPROX. 40 LINEAR FEET) - INSTALLED AUGUST 2015
- GEOGRID RETAINING WALL (APPROX. 50 LINEAR FEET) - INSTALLED MAY-JUNE 2020

BASE MAP: ESRI WORLD IMAGERY
DATA SOURCES: TRC



PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORMER C & F PLATING - SITE NO. 401057
406 NORTH PEARL STREET
ALBANY, NEW YORK

TITLE: SUMMARY OF DETECTED COMPOUNDS EXCEEDING NYSDEC GROUNDWATER QUALITY STANDARDS/GUIDANCE - MAY 10, 2022

DRAWN BY:	L. LILL	PROJ. NO.:	386554 PHASE 2
CHECKED BY:	T. SHANLEY		
APPROVED BY:	M. HOSKINS		**FIGURE 3**
DATE:	APRIL 2023		

NOTES:
1. ALL COMPOUNDS SHOWN ON THIS FIGURE EXCEED NYSDEC CLASS GA VALUES.
2. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.

ACRONYMS:
UG/L - MICROGRAMS PER LITER
SHADING INDICATES RESULTS ABOVE CLASS GA VALUE.
* - NYSDEC AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES FOR CLASS GA WATER, JUNE 1998 WITH THE APRIL 2000 ADDENDUM.

N

0 30 60 FEET
1:725 1" = 60'

TRC
3 Corporate Dr., Suite 202
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: prr

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet: Map Rotation: 0
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TABLES

Table 1
New York State Department of Environmental Conservation
C and F Plating (Site No. 401507) - City of Albany, NY
Summary of Depth to Water Measurements and Groundwater Elevations

Well ID	Screened Formation	Coordinates		Ground Surface Elevation[1]	TOR Elevation[2] (feet AMSL)	Gauge Date	Depth to Water (feet below TOR)	Depth to Bottom (feet below ground surface)	Groundwater Elev.[3] (feet AMSL)
		Latitude	Longitude						
HRP-MW-6	Overburden	42.66349536	-73.74555281	38.88	NM	-	NM	NM	NA
HRP-MW-7	Overburden	42.66327515	-73.74508953	31.96	31.89	-	NM	NM	NA
HRP-MW-8	Overburden	42.66344732	-73.74500505	31.33	NM	5/10/2022	5.50	18.46	25.83
HRP-MW-9	Overburden	42.66338044	-73.74492148	31.01	NM	-	NM	NM	NA
HRP-MW-10	Overburden	42.66331988	-73.74477299	30.43	30.95	5/10/2022	5.36	17.30	25.07
HRP-MW-11	Overburden	42.66301563	-73.74435794	NA	NM	5/10/2022	15.76	19.54	NA

Notes

AMSL : Above Mean Sea Level
Elev. : Elevation
ID : Identification
NA : Not Available
NM : Not Measured
TOR : Top of Riser

[1]From the monitoring well construction logs included in the Remedial Investigation Report prepared by HRP Associates, Inc. dated August 17, 2012.

[2]From the survey map prepared by Advance Engineering and Surveying, PLLC dated November 13, 2020.

[3]Calculated using ground surface elevation and depth to water.

Table 2
New York State Department of Environmental Conservation
C and F Plating (Site No. 401507) - City of Albany, NY
Summary of Metals Results in Groundwater

		Sample Location:	HRP-MW-8		HRP-MW-10				HRP-MW-11	
		Sample Name**:	HRP-MW-8/HRP-MW-8-FF		HRP-MW-10/HRP-MW-10-FF		Duplicate/Duplicate-FF		HRP-MW-11/HRP-MW-11-FF	
		Lab Sample ID**:	22E0625-05/06		22E0625-01/02		22E0625-03/04		22E0625-07/08	
		Sample Date:	5/10/2022		5/10/2022		5/10/2022		5/10/2022	
Analyte	Unit	Class GA Values*					Field Dup			
Metals, total										
Aluminum	ug/L	NC	50	U	**340**	**J**	**790**	**J**	**16**	**J**
Antimony	ug/L	3	1	U	**0.25**	**J**	**0.24**	**J**	**0.24**	**J**
Arsenic	ug/L	25	**0.86**		**4.6**		**5.1**		**0.59**	**J**
Barium	ug/L	1,000	**170**	**J**	**160**	**J**	**150**	**J**	**160**	**J**
Beryllium	ug/L	3	0.4	U	0.4	U	0.4	U	0.4	U
Cadmium	ug/L	5	**1.1**	**J**	**690**	**J**	**460**	**J**	**0.037**	**J**
Calcium	ug/L	NC	**200,000**		**130,000**		**130,000**		**130,000**	
Chromium	ug/L	50	**1.0**	**J+**	**11**		**10**		**1.5**	**J+**
Cobalt	ug/L	NC	**0.88**	**J**	**0.70**	**J**	**0.71**	**J**	**0.48**	**J**
Copper	ug/L	200	**2.9**		**6.7**		**6.5**	**J**	**2.1**	
Iron	ug/L	300	**2,100**		**5,900**		**5,100**		**93**	
Lead	ug/L	25	0.5	U	**0.74**		**0.86**		**0.15**	**J**
Magnesium	ug/L	35,000	**38,000**		**24,000**		**24,000**		**33,000**	
Manganese	ug/L	300	**470**		**3,200**		**2,800**		**7.9**	
Mercury	ug/L	0.7	**0.043**	**J**	0.1	U	**0.063**	**J**	0.1	U
Nickel	ug/L	100	5	U	**14**	**J+**	**11**	**J+**	5	U
Potassium	ug/L	NC	**4,000**		**4,500**		**4,800**		**4,600**	
Selenium	ug/L	10	5	U	5	U	5	U	**1.3**	**J**
Silver	ug/L	50	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	ug/L	20,000	**300,000**		**180,000**		**190,000**		**170,000**	
Thallium	ug/L	0.5	0.2	U	0.2	U	0.2	U	0.2	U
Vanadium	ug/L	NC	5	U	5	U	5	U	5	U
Zinc	ug/L	2,000	10	U	**29**	**J+**	**26**	**J+**	**10**	**J+**
Metals, dissolved										
Aluminum	ug/L	NC	50	U	**64**		50	U	50	U
Antimony	ug/L	3	1	U	1	U	1	U	1	U
Arsenic	ug/L	25	**1.3**		**3.2**		**3.6**		**0.52**	**J**
Barium	ug/L	1,000	**200**		**140**		**150**		**180**	
Beryllium	ug/L	3	0.4	U	0.4	U	0.4	U	0.4	U
Cadmium	ug/L	5	**0.43**		**84**		**96**		0.2	U
Calcium	ug/L	NC	**200,000**		**130,000**		**130,000**		**130,000**	
Chromium	ug/L	50	1	U	**2.3**		**2.6**		**1.2**	
Cobalt	ug/L	NC	**0.95**	**J**	**0.45**	**J**	**0.49**	**J**	**0.50**	**J**
Copper	ug/L	200	**2.8**	**J**	**2.2**	**J**	**180**	**J**	**2.2**	**J**
Iron	ug/L	300	**2,000**		**1,700**		**1,600**		**52**	
Lead	ug/L	25	0.5	U	0.5	U	0.5	U	0.5	U
Magnesium	ug/L	35,000	**37,000**		**23,000**		**23,000**		**33,000**	
Manganese	ug/L	300	**540**		**630**		**640**		**1.6**	
Mercury	ug/L	0.7	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	ug/L	100	**2.8**	**J**	**4.2**	**J**	**5.1**		**1.3**	**J**
Potassium	ug/L	NC	**4,300**		**4,600**		**4,800**		**5,000**	
Selenium	ug/L	10	5	U	5	U	5	U	**2.1**	**J**
Silver	ug/L	50	0.2	U	0.2	U	0.2	U	0.2	U
Sodium	ug/L	20,000	**300,000**		**190,000**		**190,000**		**190,000**	
Thallium	ug/L	0.5	0.2	U	0.2	U	0.2	U	0.2	U
Vanadium	ug/L	NC	5	U	5	U	5	U	5	U
Zinc	ug/L	2,000	10	U	10	U	10	U	10	U

Notes:

ug/L - micrograms per liter.

J+ - Estimated value; biased high.

NC - No NYSDEC standard exists for this analyte.

U - Analyte was not detected at specified quantitation limit.

UJ - Estimated non-detect.

Values in **bold** indicate the analyte was detected.

Shading indicates result above the listed criteria

* - NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA water, June 1998 with the April 2000 Addendum.

** - for Metals (total)/Metals (dissolved) analysis; otherwise applies to all listed analyses.

APPENDIX A

Enclosure 1
Institutional and Engineering Controls - Property Owner Survey

Site Details **Box 1**

Site No. 401057

Site Name C and F Plating

Site Address: 406 N. Pearl St. Zip Code: 12207
City/Town: Albany
County: Albany
Site Acreage: 0.3

Reporting Period: August 30, 2019 to August 30, 2022

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2, 3 or 4, include documentation with this form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☒	☐
7. Are all Institutional Controls (ICs) in place and functioning as designed?	? ☐	☐

Signature of Property Owner

Date 4/3/23

SITE NO. 401057 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
65.16-01-25	DANZ Holdings, LLC	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan

EE has been signed by OGC and Owner.

The ICs required by the 2014 ROD and identified in the 2017 SMP are as follows:

- Implement, maintain, and monitor EC systems
- Prevent exposure to remaining contamination
- Limit the use and site development to industrial or commercial uses, subject to local zoning laws
- Adherence to additional ICs identified in the Environmental Easement

Box 4

Description of Engineering Controls

Parcel	Engineering Control
65.16-01-25	Cover System Fencing/Access Control Monitoring Wells

The site ECs, as identified in the 2017 SMP, include the following:

- Clean Fill Cover – The site is covered with a one-foot thick layer of clean fill to prevent direct exposure to soil contamination.
- Site Access Controls – Unauthorized access to the site is restricted by a southeastern chain link fence and a locking gate via the North Pearl Street driveway. The northeast side of the site is bordered by Patroon Creek.
- Patroon Creek Retaining Wall – A permanent retaining wall installed along 50 to 60 linear feet of the cree bank to facilitate the 2014 to 2015 excavation and backfilling activities.

Box 5

Periodic Review Report (PRR) Survey Statements

For each Institutional or Engineering control listed in Boxes 3 and/or 4, by checking "YES" below I believe all of the following statements to be true:

(a) the Institutional Control(s) and/or Engineering Control(s) employed at this site remain unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control; and

(d) if a Site Management Plan (SMP) exists, nothing has occurred that would constitute a violation or failure to comply with the SMP for this Control.

YES	NO
☐	☐

Signature of Property Owner

Date 4/3/23

APPENDIX B

CUSTODIAL RECORD

PERTINENT SITE DOCUMENTS

C AND F PLATING (NYSDEC SITE NO. 401507)

New York State Department of Environmental Conservation, *Order on Consent and Administrative Settlement,* C and F Plating Site, January 2011

HRP Associates, Inc., *Remedial Investigation Report,* Former C and F Plating Site, August 2012

HRP Associates, Inc., *Feasibility Study,* Former C and F Plating Site, November 2012

New York State Department of Environmental Conservation, *Proposed Remedial Action Plan,* C and F Plating Site, February 2014

New York State Department of Environmental Conservation, *Record of Decision,* C and F Plating Site, March 2014

New York State Department of Environmental Conservation, *Final Engineering Report, C and F Plating,* April 2017

MACTEC Engineering and Consulting, P.C., *Site Management Plan,* C and F Plating Site, July 2017

Henningson, Durham and Richardson Architecture and Engineering, P.C., *2019 Periodic Review Report,* Former C and F Plating Site, September 2019

New York State Department of Environmental Conservation, *Environmental Easement – Order on Consent Index: DER-401057-04-2014*, Former C and F Plating Site, executed April 2020

TRC Engineers, Inc., *Site Management Plan Addendum No. 1,* C and F Plating Site, January 24, 2023

SITE HISTORY

C AND F PLATING SITE (NYSDEC SITE NO. 401507)

Date	Description
1892	According to the 1892 Sanborn Fire Insurance Map for the City of Albany, the site was improved with the Littlefield Stove Company building.
1920s – 1985	Chrome plating operations occurred on the property from the 1920s or earlier and continued until 1985.
1985	Since 1985, the facility stored miscellaneous equipment, household items, municipal waste, and debris.
2003 – 2004	On June 27, 2003, the United States Environmental Protection Agency (USEPA) conducted a Removal Site Evaluation, which included a limited onsite inventory of over 40 containers and several vats. Labeling on these materials indicated the presence of strong acids and bases including chromic acid, sodium hydroxide, and zinc solutions. An estimated 2,000 gallons of hazardous wastes were present throughout the building, stored in an unsafe manner. The USEPA conducted an emergency removal at the Site between November 2003 and July 2004 to address the hazardous waste materials stored in drums, canisters, and vats onsite (NYSDEC, 2014).
2006 – 2007	From October 2006 to May 2007, a Limited Subsurface Investigation was completed under the Spills Program, (NYSDEC Spill No. 02-9561 PIN H0743). The investigation included the advancement of six soil borings, the installation of five groundwater monitoring wells, the collection of eleven surface soil samples, and the collection of five sediments samples from Patroon Creek. The results indicated elevated concentrations of metals in soil and groundwater on-site. PCBs were detected at concentrations less than residential soil cleanup objectives. PCBs were not detected in any groundwater samples, and no impact from the site was identified to the Patroon Creek sediments. (HRP, 2012)
2010	On December 10, 2010, the NYSDEC placed this Site in the Inactive Hazardous Waste Disposal program for further investigation. (HRP, 2012)
2011 – 2012	From September 2011 to July 2012, a Remedial Investigation (RI) was performed and showed high concentrations of metals in surface and subsurface soils. Contaminants of concern (COCs) were identified as barium, cadmium, copper, lead, mercury, nickel, and zinc. SCO exceedances were reported in surface soil samples collected on the northeast portion of the site, both behind and underneath the building. Additionally, SCO exceedances were detected in subsurface soils to a depth of primarily 2 to 4 feet below ground surface (bgs), and 10 to 15 feet bgs

	under the building. On December 16, 2011, the northeast corner of the building partially collapsed into Patroon Creek. (HRP, 2012)
2014 – 2015	In March 2014, the NYSDEC issued a ROD and identified the selected remedy. From June 2014 to November 2015, in accordance with the 2014 ROD, various remedial activities took place at the site.
2017	In July 2017, a SMP was prepared by MACTEC, on behalf of the NYSDEC, to address implementation procedures for the IC/ECs.
2019	In September 2019, a PRR was prepared by HDR for the reporting period August 9, 2018 to January 14, 2019.
2020	On April 17, 2020, an Environmental Easement was granted by the NYSDEC. Between May and November 2020, an additional section of Patroon Creek's bank was stabilized with a permanent geogrid retaining wall installed along 50 linear feet of creek bank. During installation of the retaining wall, 323.03 tons of non-hazardous soils were excavated and transported off-Site for disposal at the Colonie Landfill.

New York State Department of Environmental Conservation
C and F Plating - Site No. 401507
City of Albany, NY
Monitoring Well Construction Summary

Well ID	Installation Date	Well Dia. (inches)	Well Material	Total Depth (feet bgs)	Screened Formation	Screen			Elevation				Coordinates[3]	
						Top (feet bgs)	Bottom (feet bgs)	Length (feet)	Top of Riser[1]	Ground Surface[2]	Screen		Latitude	Longitude
											Top	Bottom		
HRP-MW-6	12/7/2011	2	PVC	16.9	Overburden	11.9	16.9	5	NM	38.88	26.98	21.98	42.66349536	-73.74555281
HRP-MW-7	12/9/2011	1.5	PVC	17.4	Overburden	2.4	17.4	15	31.89	31.96	29.56	14.56	42.66327515	-73.74508953
HRP-MW-8	12/9/2011	1.5	PVC	18.8	Overburden	3.8	18.8	15	NM	31.33	27.53	12.53	42.66344732	-73.74500505
HRP-MW-9	12/8/2011	1.5	PVC	19.1	Overburden	4.1	19.1	15	NM	31.01	26.91	11.91	42.66338044	-73.74492148
HRP-MW-10	12/8/2011	1.5	PVC	24.7	Overburden	4.7	24.7	15	30.95	30.43	25.73	5.73	42.66331988	-73.7447730
HRP-MW-11	4/18/2012	1.5	PVC	NA	Overburden	NA	NA	NA	NM	NM	NA	NA	42.66301563	-73.74435794

Notes

bgs : Below Ground Surface
Dia. : Diameter
AMSL : Above Mean Sea Level
ID : Identification
NA : Not Available. Monitoring well construction log not provided in the 2012 RI Report.
NM : Not Measured

[1]From the survey map prepared by Advance Engineering and Surveying, PLLC dated November 13, 2020.

[2]From well construction logs completed by HRP Engineering, P.C. and included in the 2012 RI Report.

[3]From the field survey completed by YEC Engineering, P.C. included in the 2012 RI Report. Horizontal coordinate values based on the North Amercan Datum (NAD) of 1983.

APPENDIX C

DAILY INSPECTION REPORT

Report No. 20211105 **C and F Plating - NYSDEC Site No. 401057** Date: 11/05/21

NYSDEC
Division of Environmental Remediation

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYSDEC Contract No.

Superintendent:

NYSDEC PM: Brianna Scharf

Consultant PM: Justin King

Consultant Site Inspectors: Andrew Fishman

Site Location: 406 N Pearl Street, Albany, NY

Weather Conditions				
General Description	Sunny	AM	NA	PM
Temperature	50	AM	NA	PM
Wind	0-5 mph	AM	NA	PM

Health & Safety
If any box below is checked "Yes", provide explanation under "Health & Safety Comments".

Were there any changes to the Health & Safety Plan?	*Yes	No ✓	NA
Were there any exceedances of the perimeter air monitoring reported on this date?	*Yes	No ✓	NA
Were there any nuisance issues reported/observed on this date?	*Yes	No ✓	NA

Health & Safety Comments

No comments to be added.

Summary of Work Performed	Arrived at site:	09:00	Departed Site:	10:00

Andrew Fishman of TRC Companies visited the site to complete a severe weather inspection. No issues were found at the time of the site visit.

Equipment/Material Tracking
If any box below is checked "Yes", provide explanation under "Material Tracking Comments".

Were there any vehicles which did not display proper D.O.T numbers and placards?	*Yes	No	NA ✓
Were there any vehicles which were not tarped?	* Yes	No	NA ✓
Were there any vehicles which were not decontaminated prior to exiting the work site?	* Yes	No	NA ✓

Personnel and Equipment

Individual	Company	Trade	Total Hours
Andrew Fishman	TRC Engineers, Inc.	Geologist	1

Equipment Description	Contractor/Vendor	Quantity	Used

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**
		Yes	**No**

Site Representatives

Name	Representing

Project Schedule Comments

Issues Pending

Interaction with Public, Property Owners, Media, etc.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)

Photo 1: Photo of locked access gate.

Photo 2: Photo of retaining wall. Looking down stream.

Photo 3: Photo of retaining wall. Looking up stream.

Photo 4: Photo of retaining wall. Looking up steam.

Site Inspector(s): Andrew Fishman

Date: 11/5/2021

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes ☒	No ☐
Is the tail gate safety meeting held outdoors?	Yes ☒	No ☐
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes ☒	No ☐
Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
Are sanitizing wipes, wash stations or spray available?	Yes ☒	No ☐
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes ☐	No ☒
Comments:		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes ☐	No ☒
3. Has anyone at this locaton had contact with anyone known to have COVID-19 in the past 14 days?	Yes ☐	No ☒
4. Does anyone at this locaton have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☒	No ☐
If Yes to any of 1-4 above: • If it is not critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. • If it is critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry.	Yes ☐	No ☐

Comments:

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☒	N/A☐
Was turbidity checked at the outfall(s)?	AM ☐	PM ☒	N/A☐
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☒	N/A☐
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☒	N/A☐
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☒	N/A☐
If yes, has Contractor been notified?	Yes ☐	No ☒	N/A☐
Comments:			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is the site supplied with green power and is it properly installed and/or maintained?	Yes ☐	No ☐	N/A☒
Is the site employing 2007 or newer or retrofitted diesel trucks?	Yes ☐	No ☐	N/A☒
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes ☐	No ☐	N/A☒
Is equipment properly maintained and operated by trained personnel?	Yes ☐	No ☐	N/A☒
Is work being sequenced to avoid double handling?	Yes ☐	No ☐	N/A☒
Is there an onsite recycling program for CONTRACTOR generated wastes and is it complied with?	Yes ☐	No ☐	N/A☒
Are office trailer heating and cooling systems maintained at efficient set points?	AM ☐	PM ☐	N/A☒
Are products and materials appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes ☐	No ☐	N/A☒

Are resiliency features included in the design or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes ☐	No ☐	N/A☒
Are green remediation elements included in the design or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes ☐	No ☐	N/A☒
Are appropriate metrics documented for inclusion on Form A, Summary of Green Remediation Metrics, by the CONTRACTOR?	Yes ☐	No ☐	N/A☒
Has Contractor been notified of any deficiencies?	Yes ☐	No ☐	N/A☒
Comments:			

TRC		**DATE:** Tuesday, May 10, 2022
		REPORT NO.: 20220510
		PAGE NO.: 1 of 2
		PROJECT NO.: 386554.0002.0000
		LOGBOOK NO.: 550F **PAGES:** 111

DAILY FIELD ACTIVITY REPORT

PROJECT	C and F Plating
LOCATION	406 N Pearl St, Albany, New York
ATTACHMENTS	Photo Log, COC, Inspection Forms

WEATHER	TIME	TEMP.	PRECIP.	WIND (MPH)	WIND (DIR)
Clear	09:00	65°F	None	0-5	W
Clear	14:00	72°F	None	0-5	W

SITE CONDITIONS: Dry

WORK GOAL FOR DAY: Site Inspection, Groundwater Sampling

PERSONNEL ON SITE:

NAME	AFFILIATION	ARRIVAL TIME	DEPART TIME
Taylor Shanley	TRC Engineers, Inc.	09:00	14:00
Rich DePolo	TRC Engineers, Inc.	09:00	14:00

EQUIPMENT ON SITE:

TYPE	MODEL	TYPE	MODEL
PID	MiniRAE 3000		
Interface Probe	Solinst Model 101		
Peristaltic Pump	Geotech		
Water Quality Meter	Horiba U-51		

HEALTH & SAFETY:

PPE REQUIRED: ☒ LEVEL D ☐ LEVEL C ☐ LEVEL B ☐ LEVEL A **HASP?** YES

SITE SAFETY OFFICER: Taylor Shanley

H & S NOTES: Site work performed in Level D PPE.

TRC		**DATE:** Tuesday, May 10, 2022
		REPORT NO.: 20220510
		PAGE NO.: 2 of 2
		PROJECT NO.: 386554.0002.0000
		LOGBOOK NO.: 550F **PAGES:** 111

DAILY FIELD ACTIVITY REPORT

DESCRIPTION OF WORK PERFORMED AND OBSERVED

TRC Engineers, Inc. (TRC) conducted a triannual Site-wide inspection and an annual groundwater monitoring event at the C & F Plating site (Site) located at 406 North Pearl Street in Albany, New York on Tuesday, May 10th, 2022. The objective of the site inspection was to document Site conditions as outlined in the Site Management Plan.

The Site-wide inspection included the Site clean fill cover, the perimeter fence and gate, Site monitoring wells and the Patroon Creek retaining wall. The cover is intact and in good condition without any cracks, settlement, or subsidence. Vegetation appears healthy along the Site border. No evidence of animal burrowing was observed. The perimeter fence is in good condition. It should be noted that the Site gate remains open during operating hours of the adjoining business, Family Danz Heating & Cooling. During business hours, the Site remains under surveillance of Family Danz staff. At close of business each day, the gate is closed and locked to inhibit access. The retaining wall is stable and in good condition with no cracks, crumbling, or erosion. No evidence of site soil erosion into the creek was observed. Woody stemmed plants were observed protruding from the retaining wall but did not appear to affect the wall's integrity (see Photolog). TRC recommends that the woody plants be removed to prevent damage to the wall.

Groundwater monitoring wells at the Site are in fair to good condition. Each monitoring well's condition was inspected (refer to Well Inspection Form). TRC was able to locate four (HRP-MW-6, HRP-MW-8, HRP-MW-10, and HRP-MW-11) of the six monitoring wells. Monitoring well HRP-MW-9 was not located and was likely paved over. TRC recommends that this well be exposed and brought to grade for future monitoring events. A monitoring well, assumed to be HRP-MW-7, was located with a municipal water supply manhole and was filled with debris to the top of the riser (see Photolog). The monitoring well manhole was likely replaced with a municipal water manhole during paving activities. TRC recommends that this well be decommissioned and replaced. Wells HRP-MW-8, HRP-MW-10, and HRP-MW-11 were generally in good condition with locks and caps. HRP-MW-6 was not able to be inspected due to access disagreements with the Site owner. Standing water was observed in HRP-MW-10, likely because the PVC riser was cut at an angle when installed; therefore, the j-plug does not create a seal. TRC recommends that the PVC riser be leveled to create a complete seal.

Prior to sampling, each monitoring well was gauged to determine the water column. TRC collected samples from three (HRP-MW-8, HRP-MW-10, and HRP-MW-11) of six monitoring wells utilizing low flow techniques. Samples were collected in laboratory supplied bottle ware and placed in coolers on ice. The coolers with samples were shipped to Pace Analytical under standard chain-of-custody protocols for analysis of Target Analyte List total and dissolved metals by USEPA Method 6010B.

PREPARED BY (OBSERVER):	**REVIEWED BY:**
PRINT NAME: Taylor Shanley	**PRINT NAME:** Matthew Hoskins, P.G.

NYSDEC C and F Plating – Site No. 401057
Photograph Log
Date: May 10, 2022

Photo 1: Overview of newly paved area within Site boundaries, looking northeast.

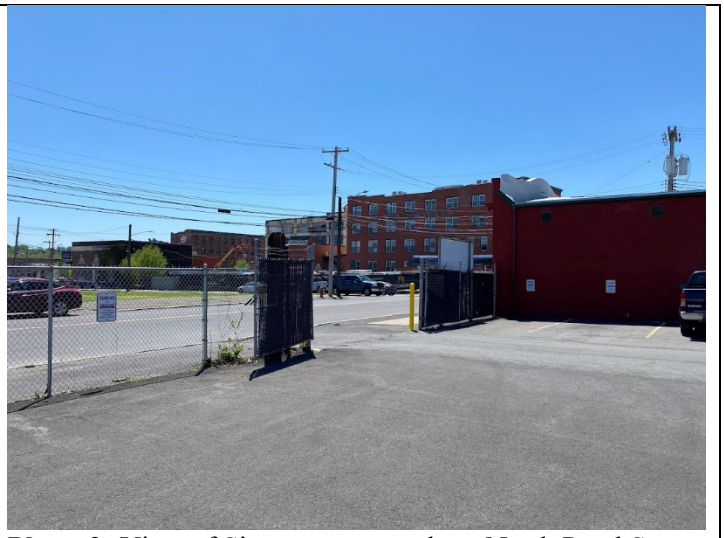

Photo 2: View of Site access gate along North Pearl Street, looking southeast.

Photo 3: View of HRP-MW-8, looking northwest.

Photo 4: View of HRP-MW-10, looking north.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
386554.0002 .0000	Taylor Shanley, Rich DePolo	1 of 3	NYSDEC	C and F Plating Albany, NY	TRC

NYSDEC C and F Plating – Site No. 401057
Photograph Log
Date: May 10, 2022

Photo 5: View of the area of HRP-MW-6, looking north.

Photo 6: View of sampling equipment at HRP-MW-8.

Photo 7: View of PVC riser of HRP-MW-10.

Photo 8: View of retaining wall, looking east.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
386554.0002 .0000	Taylor Shanley, Rich DePolo	2 of 3	NYSDEC	C and F Plating Albany, NY	TRC

NYSDEC C and F Plating – Site No. 401057
Photograph Log
Date: May 10, 2022

Photo 9: View of fence along North Pearl Street and Patroon Creek, looking west.

Photo 10: View of woody vegetation protruding from the retaining wall, looking west.

Photo 11: View of woody vegetation protruding from the retaining wall, looking east.

Photo 12: View of HRP-MW-7 with municipal water supply manhole. TRC was unable to sample due to the riser being clogged with debris,

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
386554.0002 .0000	Taylor Shanley, Rich DePolo	3 of 3	NYSDEC	C and F Plating Albany, NY	TRC

con-test ANALYTICAL LABORATORY

http://www.contestlabs.com

Doc # 380 Rev 1_03242017

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

CHAIN OF CUSTODY RECORD (New York)

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 2

Company Name: TRC Engineers Inc.
Address: 10 Maxwell Dr. Suite 200 Clifton Park, NY
Phone:
Project Name:
Project Location: Albany, NY
Project Number: 386554.02
Project Manager: Matthew Hoskins
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: T. Shanley R DePolo

Requested Turnaround Time
7-Day ☐ 10-Day ☒
Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: mhoskins@trccompanies.com
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	Total Metals	Dissolved Metals
	HRP-MW-10	5-10-22 1055	5-10-22 1055	☒	X	GW	U	X	
	HRP-MW-10-FF	5-10-22 1055	5-10-22 1055		X	GW	U		X
	Duplicate	5-10-22 1200	5-10-22 1205		X	GW	U	X	
	Duplicate-FF	5-10-22 1200	5-10-22 1205		X	GW	U		X
	MS	5-10-22 1055	5-10-22 1100		X	GW	U	X	
	MSD	5-10-22 1055	5-10-22 1100		X	GW	U	X	
	MS-FF	5-10-22 1055	5-10-22 1100		X	GW	U		X
	MSD-FF	5-10-22 1055	5-10-22 1100		X	GW	U		X
	HRP-MW-8	5-10-22 1215	5-10-22 1220		X	GW	U	X	
	HRP-MW-8-FF	5-10-22 1215	5-10-22 12220		X	GW	U		X

# of Containers	1	1
[2] Preservation Code	N	N
[3] Container Code	P	P

ANALYSIS REQUESTED

Dissolved Metals Samples
☒ Field Filtered
☐ Lab to Filter

Orthophosphate Samples
☐ Field Filtered
☐ Lab to Filter

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments: Duplicate and MS/MSD from HRP-MW-10
ASP B Data Package

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

Relinquished by: (signature) Taylor Shanley	Date/Time: 5-10-22
Received by: (signature) PAC	Date/Time: 5-10-22 1715
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Program & Regulatory Information
☐ AWQ STDS ☐ NY TOGS
☐ NYC Sewer Discharge ☐ NY CP-51
☐ Part 360 GW (Landfill)
☐ NY Restricted Use
☐ NY Unrestricted Use
☐ NY Part 375
Other:

Deliverables
☒ Enhanced Data Package
☒ NYSDEC EQuIS EDD
☐ EQuIS (Standard) EDD
☐ NY Regulatory EDD
☐ NY Regs Hits-Only EDD
Other:
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

con-test ANALYTICAL LABORATORY

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Email: info@contestlabs.com

CHAIN OF CUSTODY RECORD (New York)

39 Spruce Street
East Longmeadow, MA 01028

Page 2 of 2

Company Name: TRC Engineers, Inc.
Address:
Phone:
Project Name: SMP B C&F Plating
Project Location: Albany, NY
Project Number: 336554.02
Project Manager: Matthew Hoskins
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: T. Shanley R. DePolo

Requested Turnaround Time
7-Day ☐ 10-Day ☒
Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☑ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: mahoskins@trccompanies.com
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	# of Containers	[2] Preservation Code	[3] Container Code	Total Metals	Dissolved Metals
	HRP-MW-11	5-10-22 1350	5-10-22 1355		X	GW	U	1	N	P	X	
	HRP-MW-11-FF	5-10-22 1350	5-10-22 1355		X	GW	U	1	N	P		X

ANALYSIS REQUESTED

Dissolved Metals Samples
☒ Field Filtered
☐ Lab to Filter

Orthophosphate Samples
☒ ~~Field Filtered~~ TS
☐ Lab to Filter

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
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S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments: Duplicate and MS/MSD from HRP-MW-10
ASP B Data Package

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

Relinquished by: (signature)	Date/Time:
	5-10-22
Received by: (signature)	Date/Time:
	5-10-22/1495
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Program & Regulatory Information
☐ AWQ STDS ☐ NY TOGS
☐ NYC Sewer Discharge ☐ NY CP-51
☐ Part 360 GW (Landfill)
☐ NY Restricted Use
☐ NY Unrestricted Use
☐ NY Part 375
Other:

Deliverables
☒ Enhanced Data Package
☒ NYSDEC EQuIS EDD
☐ EQuIS (Standard) EDD
☐ NY Regulatory EDD
☐ NY Regs Hits-Only EDD
Other:
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

C and F Plating Site

Annual Site Inspection Form

A. Site Cap

The site cap will be inspected by traversing the site and examining the following items. Please place a check mark on each line accordingly:

	No	Yes
1. Are there bare, dead or damaged vegetated areas?	X	
2. Is there evidence of cracks or subsidence?	X	
3. Is there evidence of burrowing by animals?	X	
4. Is there any deep-rooted vegetation present?	X	
5. Is there any erosion damage to vegetative areas?	X	
6. Are there any low spots or settlement in cap system?	X	
7. Is there evidence of ponding?	X	
8. Was a settlement survey performed? (If so, attach data)	X	

Comments: (Please comment for each question answered "yes")

B. Patroon Creek Retaining Wall

The retaining wall will be inspected by walking the length of the creek abutting the site, from the top of bank and examining the following:

	No	Yes
1. Is there evidence of cracks or crumbling?	X	
2. Is there any erosion damage to the retaining wall?	X	
3. Is there evidence of site soil erosion into the creek?	X	
4. Is there any deep-rooted vegetation present?		X
5. Is there evidence of burrowing by animals?	X	

Comments: (Please comment for each question answered "yes")

Woody vegetation observed protruding from wall.

C. Monitoring Wells

See attached FDR

D. Fence

The fence will be inspected by walking the full length of the fence and examining for the following:

	No	Yes
Is there damage to the fence around the site?	X	
Is there damage to gate entrances?	X	

Comments: (Please comment for each question answered "yes")

E. Site Usage

Evidence of the following will be noted as the inspection takes place.

	No	Yes
Is there evidence of anyone living at the site?	X	
Is there evidence of gardening or farming on the site?	X	
Is there evidence of the installation of a drinking water well on the site?	X	

Comments: (Please comment for each question answered "yes")

Site Management Activities

Upon completion of the inspection the following will be checked for compliance with the SMP.

	No	Yes
Was sampling conducted during this inspection?		X
Was a Health and Safety Inspection Conducted?	X	
Are there any known missing site records?	X	

Comments: (Please comment for each question answered "yes")

	No	Yes
Are Engineering controls performing as designed?		X
Do EC/ICs continue to be protective to human health and the environment?		X
Compliance with the requirements of the SMP and Environmental Easement?		X

Comments: (Please comment for each question answered "no")

Notes from last inspection: (Please review and comment)

Taylor Shanley
Inspector

Taylor Shanley
Signature

5/10/2022
Date

Matthew Hoskins, P.G.
Reviewer

5/10/2022
Date

Monitoring Well Inspection Form

Inspector(s): Taylor Shanley, Rich DePolo

Date: 5/10/2022 **Reviewed by:** Matthew Hoskins, P.G.

Well ID	Ground Elevation[1] (feet msl)	Estimated Measurement Point Elevation[2] (feet msl)	Water Level (feet TOR)	Stickup on Casing (feet)	TOC to TOR (feet)	Depth to BOW (feet TOR)	Well ID Clearly Labeled (Y/N)	Well Lock (Y/N)	Cap on Well Riser (G/P/F)	Cap on Protective Casing (G/F/P)	Protective Casing (G/F/P)	Concrete Pad (G/F/P)	Comments
HRP-MW-6													Not granted access by Family Danz.
HRP-MW-7													Filled with debris.
HRP-MW-8			5.50			18.46	N	Y	G	G	G	G	PVC riser slightly bent below surface.
HRP-MW-9													Could not locate, likely paved over.
HRP-MW-10			5.36			17.30	N	Y	F	G	G	G	PVC cut on angle, j-plug not flush.
HRP-MW-11			15.76			19.54	N	Y	G	G	G	G	

Notes:

msl = mean sea level
TOC = top of casing
TOR = top of riser
BOW = bottom of well

F = Fair
G = Good
N = No
P = Poor
Y = yes

APPENDIX D

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	C and F Plating
PROJECT NUMBER	386554.0000.0000, Phase 2
SAMPLE ID	HRP-MW-8
SAMPLE TIME	12:15

LOCATION ID	HRP-MW-8
DATE	5/10/2022
START TIME	11:10
END TIME	12:20
SITE NAME/NUMBER	401057
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 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	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	5.5 FT	**FINAL DTW (BMP)**	5.56 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	18.46 FT	**SCREEN LENGTH**	15 FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	12.96 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	GAL	**PID WELL MOUTH**	0.4 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	2.13 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	4.68 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	PSI

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

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
11:10	**BEGIN PURGING**									
11:20	5.6	300	13.65	7.33	7.06	0	776	71	17	Red color
11:25	5.57	300	13.48	7.35	6.98	0	684	64	17	
11:30	5.57	300	13.33	7.4	6.95	0	611	59	17	
11:35	5.61	300	13.19	7.27	6.93	0	529	50	17	
11:40	5.54	300	13.16	6.600	6.95	0	495	39	17	
11:45	5.56	300	13.08	5.51	7.01	0	353	7	17	
11:50	5.56	300	13.06	5.03	7.03	0	322	7	17	
11:55	5.56	300	13.04	4.71	7.03	0	295	17	17	
12:00	5.56	300	13.09	4.48	7.06	0	263	24	17	
12:05	5.56	300	13.09	4.16	7.08	0	145	36	17	
12:10	5.56	300	12.97	3.96	7.1	0	77.1	42	17	
FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])			**13**	**3.96**	**7.1**	**0**	**77.1**	**42**		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
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	DECON FLUIDS USED	TUBING/PUMP/BLADDER MATERIALS		EQUIPMENT USED
[X] PERISTALTIC	[X] LIQUINOX	[X] SILICON TUBING	[ ] S. STEEL PUMP MATERIAL	[X] WL METER
[ ] SUBMERSIBLE	[X] DEIONIZED WATER	[ ] TEFLON TUBING	[ ] PVC PUMP MATERIAL	[X] PID
[ ] BLADDER	[ ] POTABLE WATER	[ ] TEFLON LINED TUBING	[ ] GEOPROBE SCREEN	[X] WQ METER
[ ]	[ ] NITRIC ACID	[X] HDPE TUBING	[ ] TEFLON BLADDER	[X] TURB. METER
[ ] WATTERA	[ ] HEXANE	[ ] LDPE TUBING	[ ] OTHER	[X] PUMP
[ ] OTHER	[ ] METHANOL	[ ] OTHER	[ ] OTHER	[ ] OTHER
[ ] OTHER	[ ] OTHER	[ ] OTHER	[ ] OTHER	[ ] FILTERS NO. TYPE

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[ ]	[X]
NO-PURGE METHOD UTILIZED	[ ]	[X]

NUMBER OF GALLONS GENERATED

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Taylor Shanley Print Name Taylor Shanley

Checked By: Matthew Hoskins Date: 5/10/2022

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	C and F Plating
PROJECT NUMBER	386554.0000.0000, Phase 2
SAMPLE ID	HRP-MW-10
SAMPLE TIME	10:55

LOCATION ID	HRP-MW-10
DATE	5/10/2022
START TIME	10:00
END TIME	11:00
SITE NAME/NUMBER	401057
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 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	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	5.36 FT	**FINAL DTW (BMP)**	5.82 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	17.3 FT	**SCREEN LENGTH**	15 FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	11.94 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	GAL	**PID WELL MOUTH**	0.4 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.96 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	3.90 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	PSI

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

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
10:00	**BEGIN PURGING**									
10:10	5.81	300	11.6	1.99	7.89	0	>1,000	111	16	Sheen, Brown
10:15	5.81	300	11.38	2.03	7.72	0	971	36	16	
10:20	5.81	300	11.26	2.21	7.44	0	314	23	16	
10:25	5.82	300	11.23	2.26	7.37	0	199	21	16	
10:30	5.82	300	11.29	2.290	7.33	0	145	35	16	
10:35	5.82	300	11.2	2.31	7.29	0	87	48	16	
10:40	5.82	300	11.27	2.31	7.27	0	76	52	16	
10:45	5.82	300	11.28	2.32	7.26	0	68.8	57	16	
10:50	5.82	300	11.34	2.33	7.26	0	55	60	16	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	11	**2.33**	**7.3**	**0**	**55**	**60**

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
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] LIQUINOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER
- [ ] OTHER

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER
- [ ] OTHER
- [ ] OTHER

EQUIPMENT USED
- [X] WL METER
- [X] PID
- [X] WQ METER
- [X] TURB. METER
- [X] PUMP
- [ ] OTHER
- [ ] FILTERS NO. ___ TYPE ___

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	See Chain of Custody							
[ ]								
[ ]								
[ ]								
[ ]								
[ ]								
[ ]								

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[ ]	[X]
NO-PURGE METHOD UTILIZED	[ ]	[X]

NUMBER OF GALLONS GENERATED

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Taylor Shanley Print Name Taylor Shanley

Checked By: Matthew Hoskins Date: 5/10/2022

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	C and F Plating
PROJECT NUMBER	386554.0000.0000, Phase 2
SAMPLE ID	HRP-MW-11
SAMPLE TIME	13:50

LOCATION ID	HRP-MW-11
DATE	5/10/2022
START TIME	13:20
END TIME	13:55
SITE NAME/NUMBER	401057
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 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	X		
CASING	X		
LOCKED	X		
COLLAR			X

INITIAL DTW (BMP)	15.76 FT	**FINAL DTW (BMP)**	15.78 FT	**PROT. CASING STICKUP (AGS)**	FT	**TOC/TOR DIFFERENCE**	FT
WELL DEPTH (BMP)	19.54 FT	**SCREEN LENGTH**	FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	SEC
WATER COLUMN	3.78 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	GAL	**PID WELL MOUTH**	0 PPM	**DISCHARGE TIMER SETTING**	SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	0.62 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	1.95 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	PSI

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

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
13:20	**BEGIN PURGING**									
13:30	15.78	300	15.69	2.19	7.57	4.57	7.5	92	18	Red color
13:35	15.78	300	14.79	2.23	7.39	4.55	5	102	18	
13:40	15.78	300	14.26	2.27	7.29	5.35	5	109	18	
13:45	15.78	300	14.12	2.27	7.23	5.37	3.2	116	18	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

14	**2.27**	**7.2**	**5.4**	**3.2**	**120**	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
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] LIQUINOX
- [X] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [X] WL METER
- [X] PID
- [X] WQ METER
- [X] TURB. METER
- [X] PUMP
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
[X]	See Chain of Custody							

PURGE OBSERVATIONS

	YES	NO
PURGE WATER CONTAINERIZED	[ ]	[X]
NO-PURGE METHOD UTILIZED	[ ]	[X]

NUMBER OF GALLONS GENERATED

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Taylor Shanley Print Name Taylor Shanley

Checked By: Matthew Hoskins Date: 5/10/2022

APPENDIX E

Data Usability Summary Report

Site: C & F Plating
Laboratory: Con-test/Pace New England – East Longmeadow, MA
SDG No.: 22E0625 (Revised 9/20/22)
Parameter: Total and Dissolved Metals
Data Reviewer: Kristen Morin/TRC
Peer Reviewer: Elizabeth Denly/TRC
Date: September 23, 2022

Samples Reviewed and Evaluation Summary

8 Groundwater Samples: HRP-MW-8, HRP-MW-8-FF, HRP-MW-10, HRP-MW-10-FF, HRP-MW-11, HRP-MW-11-FF, Duplicate[1], Duplicate-FF[2]

[1]Field duplicate of sample HRP-MW-10
[2]Field duplicate of sample HRP-MW-10-FF

The above-listed samples were collected on May 10, 2022 and were analyzed for total and dissolved metals by SW-846 Methods 6010D/6020B/7470A.

The data validation was performed in accordance with *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA-542-R-20-002),* November 2020, modified for the methodologies utilized.

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness
* • Holding Times and Sample Preservation
* • ICP-MS Tune Results (Metals 6020B only)
* • Initial and Continuing Calibrations
* • Interference Check Sample (ICS) Results
- Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
* • Laboratory Duplicate Results
- ICP Serial Dilution Results
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
* • Internal Standard Results (Metals 6020B only)
- Field Duplicate Results
- Sample Results and Reported Quantitation Limits (QLs)

* - All criteria were met.

Overall Evaluation of Data and Potential Usability Issues

All results are usable for project objectives. Qualifications applied to the data as a result of sampling error are discussed below.

- The positive results for total aluminum, total cadmium, and dissolved copper in all samples

were qualified as estimated (J) due to field duplicate variability. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive results for total and dissolved copper in sample Duplicate were qualified as estimated (J) due to excessive variability between the total and dissolved results. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

Qualifications applied to the data as a result of analytical error are discussed below.

- Potential uncertainty exists for select metals results that were detected between the method detection limit (MDL) and QL. These results were qualified as estimated (J) by the laboratory. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive results for total chromium, total nickel, and/or total zinc in select samples were qualified as estimated (J+) with a potential high bias due to preparation blank contamination. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive results for total nickel, total zinc, and/or dissolved zinc in select samples were qualified as nondetect (U) at the QL due to preparation blank contamination. These results can be used for project objectives as nondetects, which may have a minor impact on the data usability.

- The positive results for total barium in all samples were qualified as estimated (J) with due to low MS recovery with acceptable post digestion spike (PDS) recovery. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive results for total cadmium in all samples were qualified as estimated (J) due to low MS/MSD recoveries, detection < the QL, and/or field duplicate variability. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive results for total aluminum in samples HRP-MW-10, HRP-MW-11, and Duplicate were qualified as estimated (J) due to high MSD recovery, detection < the QL, and/or field duplicate variability. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

Data Completeness

The data package was a complete level IV data deliverable package with the following exceptions.

- The MS/MSD results for total calcium in the analyses performed on samples HRP-MW-10 and the MB, LCS, LCSD, MS, and duplicate results for dissolved beryllium in batch B308207 (the re-analyzed or "-2" series analyses) were not provided in the quality control (QC) summary section of the report. This information was reviewed using the information provided within the level IV data package.

- The LCS results for select dissolved metals for LCS ID B308747-BS1 were not provided on Form III within the level IV report. This information was reviewed using the information provided within the QC summary section of the report.
- The LCS raw data were missing for batch B308209 (dissolved metals). The laboratory was contacted during validation and provided a revised Level IV data package to correct this issue.
- Internal standard results were not summarized on a summary form. Internal standard results were reviewed using the raw data. The laboratory was not contacted about this issue.
- The PDS and serial dilution analyses were not summarized on a Form. The laboratory was contacted during validation and provided a revised Level IV data package to correct this issue. However, in the revised report, a discrepancy was noted with the PDS results. The PDS results were evaluated using the raw data. The laboratory was not further contacted about this issue.

Holding Times and Sample Preservation

All holding time and sample preservation method criteria were met.

ICP-MS Tune Results (Metals 6020B only)

The resolution of the mass calibration was within 0.1 atomic mass units (amu) over the range of 9 to 208 amu. The percent relative standard deviations for all analytes in the tuning solution met the acceptance criteria of <5%.

Initial and Continuing Calibrations

The initial calibration criteria met the acceptance limits for the metals analyses. All initial calibration coefficients were >0.995. The metals low-level check standard percent drift (%D) values met the QC acceptance limits of ±30% for method 6010D. Low-level check standards were not analyzed and/or summarized on a form for methods 7470A/6020B; however, since since the lowest calibration standard was at or below the QL for all target analytes reported by these two methods, this evaluation was not required. The continuing calibration standard percent recoveries (%Rs) for the metals analyses met criteria.

Interference Check Sample (ICS) Results

Note that ICSAs and ICSABs in this laboratory report are referred to as IFAs and IFBs, respectively. All spiked analytes in the ICSAB analyses recovered within the acceptance limits; however, antimony, barium, beryllium, lead, thallium, potassium, and sodium were not spiked into the ICSAB analyses; therefore, %Rs could not be evaluated in the ICSAB analyses for these analytes, and these were not included in the evaluation of potential interferences for the unspiked analytes.

The ICSA interferences were not evaluated for the analytes analyzed by method 6020B (all metals except mercury, potassium, sodium, aluminum, calcium, iron, and magnesium) since the interferents (aluminum, calcium, iron, and magnesium) were not reported for samples from method 6020B.

Only ICSA/ICSABs that immediately bracketed (before and after) sample analyses were

evaluated due to the number of ICSA/ICSABs reported by the laboratory. Target analytes were not detected above the MDLs in the applicable ICAS/ICSAB analyses for SW-846 method 6010D; therefore, interferences were not evaluated.

Blanks

Target analytes were not detected in the initial or continuing calibration blanks associated with this sample set.

The following table lists the metals that were detected in the preparation blanks associated with this sample set. Note that qualification is not required for sample results that are nondetect or positive results >10× the blank concentration; thus, these samples are not summarized in the table below.

Blank ID (fraction)	Analyte	Blank Result (units)	Validation Actions
B308178-BLK1 (total)	Chromium	0.63 J ug/L	The positive results for total chromium in samples HRP-MW-8 and HRP-MW-11 were qualified as estimated (J+) with a potential high bias since these results were >QL and <10× the blank concentration.
	Manganese	0.50 J ug/L	No validation actions were required on this basis since total manganese was detected >10× the blank concentration in the associated samples.
	Nickel	1.6 J ug/L	The positive results for total nickel in samples HRP-MW-10 and Duplicate were qualified as estimated (J+) with a potential high bias since these results were >QL and <10× the blank concentration. The positive results for total nickel in samples HRP-MW-8 and HRP-MW-11 were qualified as nondetect (U) at the QL since these results were <QL.
	Thallium	0.17 J ug/L	No validation actions were required on this basis since total thallium was not detected in the associated samples.
	Zinc	7.6 J ug/L	The positive results for total zinc in samples HRP-MW-10, HRP-MW-11, and Duplicate were qualified as estimated (J+) with a potential high bias since these results were >QL and <10× the blank concentration. The positive result for total zinc in sample HRP-MW-8 was qualified as nondetect (U) at the QL since the result was <QL.
Associated samples: HRP-MW-8, HRP-MW-10, HRP-MW-11, Duplicate			
B308207-BLK1 (dissolved)	Zinc	2.3 J ug/L	The positive results for dissolved zinc in all associated samples were qualified as nondetect (U) at the QL since these results were <QL.
Associated samples: HRP-MW-8-FF, HRP-MW-10-FF, HRP-MW-11-FF, Duplicate-FF			
B309251-BLK1 (dissolved)	Mercury	0.000080 J mg/L	No validation actions were required on this basis since dissolved mercury was not detected in the associated samples.
Associated samples: HRP-MW-8-FF, HRP-MW-11-FF, Duplicate-FF			

MS/MSD Results

MS/MSD analyses were performed on samples HRP-MW-10 for all total metals (including mercury) and MS and/or MSD analyses were performed on sample HRP-MW-10-FF for dissolved metals (including mercury) and sample Duplicate-FF for dissolved mercury. A post-digestion spike (PDS) was performed on sample HRP-MW-10 for select total metals.

The following table summarizes the MS, MSD, and/or PDS %Rs that did not meet criteria in the metals analyses; all relative percent differences (RPDs) met criteria. All criteria were met in samples HRP-MW-10-FF and Duplicate-FF.

MS/MSD Parent Sample ID (fraction)	Analyte	MS %R	MSD %R	PDS %R	%R QC Limits	Validation Action
HRP-MW-10 (total)	Barium	72.6	–	–	75-125	The positive results for total barium in all associated samples were qualified as estimated (J).
	Cadmium	71.0	69.3	N/A		The positive results for total cadmium in all associated samples were qualified as estimated (J-) with a potential low bias. However, the results for total cadmium were also qualified as estimated (J) due to detection < the QL and/or field duplicate variability; thus, the overall qualification was J.
	Aluminum	–	128	N/A		The positive results for total aluminum in samples HRP-MW-10, HRP-MW-11, and Duplicate were qualified as estimated (J+) with a potential high bias. However, the results for total aluminum were also qualified as estimated (J) due to detection < the QL and/or field duplicate variability; thus, the overall qualification was J. Qualification was not required for nondetects.
	Calcium	259	212	N/A		No validation action was required on this basis since the results for these metals in the parent sample were >4x the MS/MSD spike concentration and were, therefore, not used in the evaluation.
	Manganese	-464	-459	-2510		
	Magnesium	126	–	N/A		
	Sodium	322	265	N/A		
Associated samples: HRP-MW-8, HRP-MW-10, HRP-MW-11, Duplicate						
–: Met criteria N/A: Not applicable, a PDS was not performed.						

Laboratory Duplicate Results

Laboratory duplicate analyses were performed on samples HRP-MW-10-FF for dissolved metals and Duplicate-FF for dissolved mercury. All criteria were met.

ICP Serial Dilution Results

An ICP serial dilution analysis was performed on sample HRP-MW-10 for select total metals. The percent difference for total copper (20.5%) was outside of the acceptance limit (20%). However, the results for total copper were < 50x the MDL and therefore did not provide useful information. No validation actions were required on this basis.

LCS/LCSD Results

The LCS and LCSD %Rs and the LCS/LCSD RPDs (where applicable) met the laboratory acceptance criteria with one exception. The following table summarizes the LCS/LCSD %Rs that did not meet criteria, the associated sample, and the validation action.

Fraction	LCS/LCSD ID	Analyte	LCS %R	LCS D %R	%R QC Limits	Validation Action
Dissolved	B308715-BS1 / B308715-BSD1	Mercury	133	129	80-120	No validation actions were required on this basis since dissolved mercury was not detected in the associated sample.
Associated sample: HRP-MW-10-FF						

Internal Standard Results (Metals 6020B only)

All criteria were met.

Field Duplicate Results

Samples HRP-MW-10/Duplicate and HRP-MW-10-FF/Duplicate-FF were submitted as the field duplicate pairs with this sample set. The RPD for field duplicates is applicable only for comparison of results ≥5× the QL. If either result is <5× the QL, the comparison is based on the absolute difference (AbsD) between the results. The acceptance criteria in aqueous media are as follows: ≤30% for the RPD; <QL for the AbsD. In cases where one result is nondetect and the other is a positive result, the QL is used to represent the nondetect result in calculating the AbsD.

The following table summarizes the detected results for the field duplicate pairs, the comparison criteria values (RPD or AbsD, as appropriate), and the resulting validation actions. Criteria were met for all detected target analytes with the exception of total aluminum, total cadmium, and dissolved copper.

Analyte - Total	QL* (units)	HRP-MW-10 (units)	Duplicate (units)	RPD (%) or AbsD (units)	Validation Actions
Aluminum	0.05 mg/L	0.34 mg/L	0.79 mg/L	**RPD: 80****	The positive results for total aluminum and total cadmium in all samples in this data set were qualified as estimated (J). However, select positive results for total aluminum were also qualified as estimated (J+) with a potential high bias due to high MSD recovery and select positive results for total cadmium were also qualified as estimated (J-) with a potential low bias due to low MS/MSD recoveries; thus, the overall qualification was J. Qualification was not required for nondetects.
Cadmium	2.0/0.2 ug/L	690 ug/L	460 ug/L	**RPD: 40****	
Mercury	0.10 ug/L	0.10 U ug/L	0.063 J ug/L	AbsD: 0.037 ug/L	None; all criteria were met.
Calcium	0.5 mg/L	130 mg/L	130 mg/L	RPD: 0	
Iron	0.05 mg/L	5.9 mg/L	5.1 mg/L	RPD: 15	
Magnesium	0.05 mg/L	24 mg/L	24 mg/L	RPD: 0	
Potassium	2.0 mg/L	4.5 mg/L	4.8 mg/L	AbsD: 0.3 mg/L	
Sodium	2.0 mg/L	180 mg/L	190 mg/L	RPD: 5.4	
Antimony	1.0 ug/L	0.25 J ug/L	0.24 J ug/L	AbsD: 0.01 ug/L	
Arsenic	0.8 ug/L	4.6 ug/L	5.1 ug/L	RPD: 10	
Barium	10 ug/L	160 ug/L	150 ug/L	RPD: 6.5	

Analyte - Total	QL* (units)	HRP-MW-10 (units)	Duplicate (units)	RPD (%) or AbsD (units)	Validation Actions
Chromium	1.0 ug/L	11 ug/L	10 ug/L	RPD: 9.5	None; all criteria were met.
Cobalt	1.0 ug/L	0.70 J ug/L	0.71 J ug/L	AbsD: 0.01 ug/L	
Copper	1.0 ug/L	6.7 ug/L	6.5 ug/L	RPD: 3.0	
Lead	0.5 ug/L	0.74 ug/L	0.86 ug/L	AbsD: 0.12 ug/L	
Manganese	10 ug/L	3,200 ug/L	2,800 ug/L	RPD: 13	
Nickel	5.0 ug/L	14 ug/L	11 ug/L	AbsD: 3 ug/L	
Zinc	10 ug/L	29 ug/L	26 ug/L	AbsD: 3 ug/L	
Analyte-Dissolved	**QL (units)**	**HRP-MW-10-FF (units)**	**Duplicate-FF (units)**	**RPD (%) or AbsD (units)**	**Validation Actions**
Copper	1.0 ug/L	2.2 ug/L	180 ug/L	**AbsD: 177.8** ug/L**	The positive results for dissolved copper in all samples in this data set were qualified as estimated (J).
Aluminum	0.05 mg/L	0.064 mg/L	0.05 U mg/L	AbsD: 0.014 mg/L	None; all criteria were met.
Calcium	0.5 mg/L	130 mg/L	130 mg/L	RPD: 0	
Iron	0.05 mg/L	1.7 mg/L	1.6 mg/L	RPD: 0.1	
Magnesium	0.05 mg/L	23 mg/L	23 mg/L	RPD: 0	
Potassium	2.0 mg/L	4.6 mg/L	4.8 mg/L	AbsD: 0.2 mg/L	
Sodium	2.0 mg/L	190 mg/L	190 mg/L	RPD: 0	
Arsenic	0.8 ug/L	3.2 ug/L	3.6 ug/L	AbsD: 0.4 ug/L	
Barium	10 ug/L	140 ug/L	150 ug/L	RPD: 6.9	
Cadmium	0.2 ug/L	84 ug/L	96 ug/L	RPD: 13	
Chromium	1.0 ug/L	2.3 ug/L	2.6 ug/L	AbsD: 0.3 ug/L	
Cobalt	1.0 ug/L	0.45 J ug/L	0.49 J ug/L	AbsD: 0.04 ug/L	
Manganese	1.0 ug/L	630 ug/L	640 ug/L	RPD: 1.6	
Nickel	5.0 ug/L	4.2 J ug/L	5.1 ug/L	AbsD: 0.9 ug/L	
Criteria: RPD ≤30%; AbsD <QL;				**** Comparison result exceeds criteria.**	
* QL for the parent / duplicate samples; one value if they are the same					

Sample Results and Reported Quantitation Limits

Select metal results were reported between the MDL and QL. These results were qualified as estimated (J) in the associated samples by the laboratory.

Sample calculations were spot-checked; there were no errors noted.

The following table summarizes the dilutions performed on samples in this data set; the QLs were elevated accordingly. Nondetects were not associated with the noted dilutions.

Fraction	Analyte	Sample ID	Dilution	Reason for Dilution
Total	Cadmium, Manganese	HRP-MW-10	10-fold	Dilutions were performed due to the concentrations of target analytes that exceeded the linear range in the undiluted analyses.
	Manganese	Duplicate		

The total and dissolved metal results were evaluated during data validation to identify any "dissolved" concentrations that were significantly higher than the associated "total" concentration. The evaluation was based on the following criteria to determine significance: %D should be ≤

20% when dissolved results are greater than total results and the dissolved result is ≥ 5x the QL. These criteria were met for all results with one exception. The result for dissolved copper (180 ug/L) was above the result for total copper (6.5 ug/L) in sample Duplicate and the %D exceeded 20% (2,669%). Therefore, the positive results for total and dissolved copper in sample Duplicate were qualified as estimated (J).

QUALIFIED FORM 1s

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Albany, NY
Sample Description:
Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: HRP-MW-10

Sample ID: 22E0625-01
Start Date/Time: 5/10/2022 10:55:00AM

Sample Matrix: Ground Water
Stop Date/Time: 5/10/2022 11:00:00AM

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	0.34 J	0.050	0.015	mg/L	1		SW-846 6010D	6/3/22	6/4/22 23:05	MJH
Antimony	0.25	1.0	0.24	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Arsenic	4.6	0.80	0.31	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Barium	160 J	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Cadmium	690 J	2.0	0.30	µg/L	10	~~MS-07A~~	SW-846 6020B	5/19/22	5/25/22 11:44	QNW
Calcium	130	0.50	0.11	mg/L	1	~~MS-19~~	SW-846 6010D	6/3/22	6/4/22 2:40	ATP
Chromium	11	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Cobalt	0.70	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Copper	6.7	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Iron	5.9	0.050	0.019	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:40	ATP
Lead	0.74	0.50	0.13	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Magnesium	24	0.050	0.0095	mg/L	1	~~MS-19~~	SW-846 6010D	6/3/22	6/4/22 2:40	ATP
Manganese	3200	10	2.0	µg/L	10		SW-846 6020B	5/11/22	5/17/22 14:57	QNW
Mercury	ND	0.00010	0.000040	mg/L	1		SW-846 7470A	5/21/22	5/23/22 19:21	TDK
Nickel	14 J+	5.0	0.63	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Potassium	4.5	2.0	0.30	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:40	ATP
Selenium	ND	5.0	0.95	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Sodium	180	2.0	0.53	mg/L	1	~~MS-19~~	SW-846 6010D	6/3/22	6/4/22 2:40	ATP
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW
Zinc	29 J+	10	1.5	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:20	QNW

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Project Location: Albany, NY | Sample Description: | Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: HRP-MW-10-FF

Sample ID: 22E0625-02 | Start Date/Time: 5/10/2022 10:55:00AM

Sample Matrix: Ground Water | Stop Date/Time: 5/10/2022 11:00:00AM

Metals Analyses (Dissolved)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	0.064	0.050	0.015	mg/L	1		SW-846 6010D	5/18/22	5/24/22 22:18	MJH
Antimony	ND	1.0	0.24	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Arsenic	3.2	0.80	0.31	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Barium	140	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/17/22 12:52	QNW
Cadmium	84	0.20	0.030	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Calcium	130	0.50	0.11	mg/L	1		SW-846 6010D	5/18/22	5/24/22 22:18	MJH
Chromium	2.3	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Cobalt	0.45	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Copper	2.2 J	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Iron	1.7	0.050	0.019	mg/L	1		SW-846 6010D	5/18/22	5/24/22 22:18	MJH
Lead	ND	0.50	0.13	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Magnesium	23	0.050	0.0095	mg/L	1		SW-846 6010D	5/18/22	5/24/22 22:18	MJH
Manganese	630	1.0	0.20	µg/L	1		SW-846 6020B	5/11/22	5/17/22 12:52	QNW
Mercury	ND	0.00010	0.000040	mg/L	1		SW-846 7470A	5/18/22	5/18/22 15:43	MJH
Nickel	4.2	5.0	0.63	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Potassium	4.6	2.0	0.30	mg/L	1		SW-846 6010D	5/18/22	5/24/22 22:18	MJH
Selenium	ND	5.0	0.95	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Sodium	190	2.0	0.53	mg/L	1		SW-846 6010D	5/18/22	5/24/22 22:18	MJH
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 1:24	QNW
Zinc	ND ~~6.4~~	10	1.5	µg/L	1	~~J~~	SW-846 6020B	5/11/22	5/13/22 1:24	QNW

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Project Location: Albany, NY
Sample Description:
Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: Duplicate

Sample ID: 22E0625-03
Start Date/Time: 5/10/2022 12:00:00PM

Sample Matrix: Ground Water
Stop Date/Time: 5/10/2022 12:05:00PM

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	0.79 J	0.050	0.015	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:47	ATP
Antimony	0.24	1.0	0.24	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Arsenic	5.1	0.80	0.31	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Barium	150 J	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Cadmium	460 J	0.20	0.030	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Calcium	130	0.50	0.11	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:47	ATP
Chromium	10	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Cobalt	0.71	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Copper	6.5 J	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Iron	5.1	0.050	0.019	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:47	ATP
Lead	0.86	0.50	0.13	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Magnesium	24	0.050	0.0095	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:47	ATP
Manganese	2800	10	2.0	µg/L	10		SW-846 6020B	5/11/22	5/17/22 15:00	QNW
Mercury	0.000063	0.00010	0.000040	mg/L	1	J	SW-846 7470A	5/21/22	5/24/22 11:36	TDK
Nickel	11 J+	5.0	0.63	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Potassium	4.8	2.0	0.30	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:47	ATP
Selenium	ND	5.0	0.95	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Sodium	190	2.0	0.53	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:47	ATP
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW
Zinc	26 J+	10	1.5	µg/L	1		SW-846 6020B	5/11/22	5/13/22 12:23	QNW

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Project Location: Albany, NY
Sample Description:
Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: Duplicate-FF

Sample ID: 22E0625-04
Start Date/Time: 5/10/2022 12:00:00PM

Sample Matrix: Ground Water
Stop Date/Time: 5/10/2022 12:05:00PM

Metals Analyses (Dissolved)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	ND	0.050	0.015	mg/L	1		SW-846 6010D	5/18/22	5/23/22 23:03	QNW
Antimony	ND	1.0	0.24	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Arsenic	3.6	0.80	0.31	µg/L	1		SW-846 6020B	5/11/22	5/19/22 11:16	QNW
Barium	150	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Cadmium	96	0.20	0.030	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Calcium	130	0.50	0.11	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:04	MJH
Chromium	2.6	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Cobalt	0.49	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Copper	180 J	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Iron	1.6	0.050	0.019	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:04	MJH
Lead	ND	0.50	0.13	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Magnesium	23	0.050	0.0095	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:04	MJH
Manganese	640	1.0	0.20	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Mercury	ND	0.00010	0.000040	mg/L	1		SW-846 7470A	5/25/22	5/25/22 18:20	TDK
Nickel	5.1	5.0	0.63	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Potassium	4.8	2.0	0.30	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:04	MJH
Selenium	ND	5.0	0.95	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Sodium	190	2.0	0.53	mg/L	1		SW-846 6010D	5/13/22	5/15/22 18:55	MJH
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:02	QNW
Zinc	ND 6.1	10	1.5	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:02	QNW

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Project Location: Albany, NY
Sample Description:
Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: HRP-MW-8

Sample ID: 22E0625-05
Start Date/Time: 5/10/2022 12:15:00PM

Sample Matrix: Ground Water
Stop Date/Time: 5/10/2022 12:20:00PM

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	ND	0.050	0.015	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:54	ATP
Antimony	ND	1.0	0.24	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Arsenic	0.86	0.80	0.31	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Barium	170 J	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Cadmium	1.1 J	0.20	0.030	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Calcium	200	0.50	0.11	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:54	ATP
Chromium	1.0 J+	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Cobalt	0.88	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Copper	2.9	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Iron	2.1	0.050	0.019	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:54	ATP
Lead	ND	0.50	0.13	µg/L	1		SW-846 6020B	5/11/22	5/19/22 11:25	QNW
Magnesium	38	0.050	0.0095	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:54	ATP
Manganese	470	1.0	0.20	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Mercury	0.000043	0.00010	0.000040	mg/L	1	J	SW-846 7470A	5/21/22	5/24/22 11:38	TDK
Nickel	ND 2.8--	5.0	0.63	µg/L	1	---J-----	SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Potassium	4.0	2.0	0.30	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:54	ATP
Selenium	ND	5.0	0.95	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Sodium	300	2.0	0.53	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:54	ATP
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/19/22 11:25	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:21	QNW
Zinc	ND 7.4--	10	1.5	µg/L	1	---J---	SW-846 6020B	5/11/22	5/13/22 13:21	QNW

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Project Location: Albany, NY
Sample Description:
Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: HRP-MW-8-FF

Sample ID: 22E0625-06
Start Date/Time: 5/10/2022 12:15:00PM

Sample Matrix: Ground Water
Stop Date/Time: 5/10/2022 12:20:00PM

Metals Analyses (Dissolved)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	ND	0.050	0.015	mg/L	1		SW-846 6010D	5/18/22	5/23/22 23:08	QNW
Antimony	ND	1.0	0.24	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Arsenic	1.3	0.80	0.31	µg/L	1		SW-846 6020B	5/11/22	5/19/22 11:19	QNW
Barium	200	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Cadmium	0.43	0.20	0.030	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Calcium	200	0.50	0.11	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:09	MJH
Chromium	ND	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Cobalt	0.95	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Copper	2.8 J	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Iron	2.0	0.050	0.019	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:09	MJH
Lead	ND	0.50	0.13	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Magnesium	37	0.050	0.0095	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:09	MJH
Manganese	540	1.0	0.20	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Mercury	ND	0.00010	0.000040	mg/L	1		SW-846 7470A	5/25/22	5/25/22 18:22	TDK
Nickel	2.8	5.0	0.63	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Potassium	4.3	2.0	0.30	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:09	MJH
Selenium	ND	5.0	0.95	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Sodium	300	2.0	0.53	mg/L	1		SW-846 6010D	5/13/22	5/15/22 19:02	MJH
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:05	QNW
Zinc	ND 7.9	10	1.5	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:05	QNW

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Project Location: Albany, NY | Sample Description: | Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: HRP-MW-11

Sample ID: 22E0625-07 | Start Date/Time: 5/10/2022 1:50:00PM

Sample Matrix: Ground Water | Stop Date/Time: 5/10/2022 1:55:00PM

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	0.016	0.050	0.015	mg/L	1	J	SW-846 6010D	6/3/22	6/4/22 2:59	ATP
Antimony	0.24	1.0	0.24	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Arsenic	0.59	0.80	0.31	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Barium	160 J	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Cadmium	0.037	0.20	0.030	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Calcium	130	0.50	0.11	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:59	ATP
Chromium	1.5 J+	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Cobalt	0.48	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Copper	2.1	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Iron	0.093	0.050	0.019	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:59	ATP
Lead	0.15	0.50	0.13	µg/L	1	J	SW-846 6020B	5/11/22	5/19/22 11:28	QNW
Magnesium	33	0.050	0.0095	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:59	ATP
Manganese	7.9	1.0	0.20	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Mercury	ND	0.00010	0.000040	mg/L	1		SW-846 7470A	5/21/22	5/24/22 11:39	TDK
Nickel	ND 1.3	5.0	0.63	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Potassium	4.6	2.0	0.30	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:59	ATP
Selenium	1.3	5.0	0.95	µg/L	1	J	SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Sodium	170	2.0	0.53	mg/L	1		SW-846 6010D	6/3/22	6/4/22 2:59	ATP
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/19/22 11:28	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW
Zinc	10 J+	10	1.5	µg/L	1		SW-846 6020B	5/11/22	5/13/22 13:24	QNW

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Project Location: Albany, NY | Sample Description: | Work Order: 22E0625

Date Received: 5/10/2022

Field Sample #: HRP-MW-11-FF

Sample ID: 22E0625-08 | Start Date/Time: 5/10/2022 1:50:00PM

Sample Matrix: Ground Water | Stop Date/Time: 5/10/2022 1:55:00PM

Metals Analyses (Dissolved)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aluminum	ND	0.050	0.015	mg/L	1		SW-846 6010D	5/18/22	5/23/22 23:13	QNW
Antimony	ND	1.0	0.24	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Arsenic	0.52	0.80	0.31	µg/L	1	J	SW-846 6020B	5/11/22	5/19/22 11:22	QNW
Barium	180	10	1.2	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Beryllium	ND	0.40	0.076	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Cadmium	ND	0.20	0.030	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Calcium	130	0.50	0.11	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:14	MJH
Chromium	1.2	1.0	0.61	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Cobalt	0.50	1.0	0.12	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Copper	2.2 J	1.0	0.25	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Iron	0.052	0.050	0.019	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:14	MJH
Lead	ND	0.50	0.13	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Magnesium	33	0.050	0.0095	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:14	MJH
Manganese	1.6	1.0	0.20	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Mercury	ND	0.00010	0.000040	mg/L	1		SW-846 7470A	5/25/22	5/25/22 18:24	TDK
Nickel	1.3	5.0	0.63	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Potassium	5.0	2.0	0.30	mg/L	1		SW-846 6010D	5/13/22	5/14/22 15:14	MJH
Selenium	2.1	5.0	0.95	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Silver	ND	0.20	0.027	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Sodium	190	2.0	0.53	mg/L	1		SW-846 6010D	5/13/22	5/15/22 19:07	MJH
Thallium	ND	0.20	0.057	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Vanadium	ND	5.0	2.2	µg/L	1		SW-846 6020B	5/11/22	5/17/22 16:32	QNW
Zinc	ND 4.5	10	1.5	µg/L	1	J	SW-846 6020B	5/11/22	5/17/22 16:32	QNW

QC NONCONFORMANCE DOCUMENTATION

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - SW-846 3005A										
Blank (B308178-BLK1)				Prepared: 05/11/22 Analyzed: 05/12/22						
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Barium	ND	10	µg/L							
Beryllium	ND	0.40	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	0.63	1.0	µg/L							J
Cobalt	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Manganese	0.50	1.0	µg/L							J
Nickel	1.6	5.0	µg/L							J
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Thallium	0.17	0.20	µg/L							J
Vanadium	ND	5.0	µg/L							
Zinc	7.6	10	µg/L							J
Blank (B308178-BLK2)				Prepared: 05/11/22 Analyzed: 05/13/22						
Beryllium	ND	0.40	µg/L							
LCS (B308178-BS1)				Prepared: 05/11/22 Analyzed: 05/12/22						
Antimony	511	10	µg/L	500		102	80-120			
Arsenic	480	8.0	µg/L	500		96.0	80-120			
Barium	481	100	µg/L	500		96.2	80-120			
Beryllium	471	4.0	µg/L	500		94.2	80-120			
Cadmium	480	2.0	µg/L	500		96.1	80-120			
Chromium	488	10	µg/L	500		97.7	80-120			
Cobalt	487	10	µg/L	500		97.5	80-120			
Copper	943	10	µg/L	1000		94.3	80-120			
Lead	486	5.0	µg/L	500		97.2	80-120			
Manganese	505	10	µg/L	500		101	80-120			
Nickel	479	50	µg/L	500		95.7	80-120			
Selenium	485	50	µg/L	500		97.1	80-120			
Silver	476	2.0	µg/L	500		95.1	80-120			
Thallium	472	2.0	µg/L	500		94.4	80-120			
Vanadium	499	50	µg/L	500		99.7	80-120			
Zinc	976	100	µg/L	1000		97.6	80-120			
LCS (B308178-BS2)				Prepared: 05/11/22 Analyzed: 05/13/22						
Beryllium	471	4.0	µg/L	500		94.2	80-120			
LCS Dup (B308178-BSD1)				Prepared: 05/11/22 Analyzed: 05/12/22						
Antimony	512	10	µg/L	500		102	80-120	0.0823	20	
Arsenic	474	8.0	µg/L	500		94.8	80-120	1.20	20	
Barium	482	100	µg/L	500		96.4	80-120	0.239	20	
Beryllium	485	4.0	µg/L	500		97.0	80-120	3.01	20	
Cadmium	482	2.0	µg/L	500		96.4	80-120	0.385	20	
Chromium	482	10	µg/L	500		96.4	80-120	1.25	20	
Cobalt	486	10	µg/L	500		97.1	80-120	0.341	20	
Copper	941	10	µg/L	1000		94.1	80-120	0.201	20	
Lead	479	5.0	µg/L	500		95.9	80-120	1.33	20	
Manganese	502	10	µg/L	500		100	80-120	0.639	20	
Nickel	471	50	µg/L	500		94.3	80-120	1.53	20	

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308207 - SW-846 3005A Dissolved										
Blank (B308207-BLK1)				Prepared: 05/11/22 Analyzed: 05/12/22						
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Barium	ND	10	µg/L							
Beryllium	ND	0.40	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	1.0	µg/L							
Cobalt	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Manganese	ND	1.0	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Thallium	ND	0.20	µg/L							
Vanadium	ND	5.0	µg/L							
Zinc	2.3	10	µg/L							J
LCS (B308207-BS1)				Prepared: 05/11/22 Analyzed: 05/12/22						
Antimony	494	10	µg/L	500		98.9	80-120			
Arsenic	452	8.0	µg/L	500		90.5	80-120			
Barium	461	100	µg/L	500		92.1	80-120			
Beryllium	523	4.0	µg/L	500		105	80-120			
Cadmium	463	2.0	µg/L	500		92.7	80-120			
Chromium	472	10	µg/L	500		94.3	80-120			
Cobalt	472	10	µg/L	500		94.4	80-120			
Copper	917	10	µg/L	1000		91.7	80-120			
Lead	468	5.0	µg/L	500		93.6	80-120			
Manganese	476	10	µg/L	500		95.2	80-120			
Nickel	456	50	µg/L	500		91.3	80-120			
Selenium	456	50	µg/L	500		91.3	80-120			
Silver	456	2.0	µg/L	500		91.2	80-120			
Thallium	464	2.0	µg/L	500		92.9	80-120			
Vanadium	498	50	µg/L	500		99.6	80-120			
Zinc	911	100	µg/L	1000		91.1	80-120			
LCS Dup (B308207-BSD1)				Prepared: 05/11/22 Analyzed: 05/12/22						
Antimony	503	10	µg/L	500		101	80-120	1.69	20	
Arsenic	464	8.0	µg/L	500		92.8	80-120	2.52	20	
Barium	470	100	µg/L	500		94.0	80-120	2.04	20	
Beryllium	541	4.0	µg/L	500		108	80-120	3.36	20	
Cadmium	471	2.0	µg/L	500		94.3	80-120	1.70	20	
Chromium	477	10	µg/L	500		95.5	80-120	1.21	20	
Cobalt	482	10	µg/L	500		96.4	80-120	2.03	20	
Copper	925	10	µg/L	1000		92.5	80-120	0.947	20	
Lead	477	5.0	µg/L	500		95.4	80-120	1.91	20	
Manganese	497	10	µg/L	500		99.3	80-120	4.26	20	
Nickel	471	50	µg/L	500		94.3	80-120	3.23	20	
Selenium	470	50	µg/L	500		94.1	80-120	3.06	20	
Silver	463	2.0	µg/L	500		92.6	80-120	1.57	20	
Thallium	477	2.0	µg/L	500		95.5	80-120	2.75	20	
Vanadium	508	50	µg/L	500		102	80-120	2.03	20	
Zinc	940	100	µg/L	1000		94.0	80-120	3.19	20	

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B308747 - SW-846 3005A Dissolved										
LCS (B308747-BS1)				Prepared: 05/18/22 Analyzed: 05/23/22						
Aluminum	1.90	0.050	mg/L	2.00		95.2	80-120			
Calcium	2.01	0.50	mg/L	2.00		101	80-120			
Iron	2.01	0.050	mg/L	2.00		101	80-120			
Magnesium	1.99	0.050	mg/L	2.00		99.4	80-120			
Potassium	1.99	2.0	mg/L	2.00		99.4	80-120			J
Sodium	1.98	2.0	mg/L	2.00		99.0	80-120			J
LCS (B308747-BS2)				Prepared: 05/18/22 Analyzed: 05/24/22						
Aluminum	1.91	0.050	mg/L	2.00		95.4	80-120			
Calcium	2.02	0.50	mg/L	2.00		101	80-120			
Iron	2.05	0.050	mg/L	2.00		103	80-120			
Magnesium	1.97	0.050	mg/L	2.00		98.5	80-120			
Potassium	1.97	2.0	mg/L	2.00		98.3	80-120			J
Sodium	1.95	2.0	mg/L	2.00		97.7	80-120			J
Matrix Spike (B308747-MS1)		**Source: 22E0625-02RE1**		Prepared: 05/18/22 Analyzed: 05/24/22						
Aluminum	2.10	0.051	mg/L	2.04	0.0640	99.9	75-125			
Calcium	142	0.51	mg/L	16.3	127	92.2	75-125			
Iron	17.3	0.051	mg/L	16.3	1.69	95.7	75-125			
Magnesium	38.7	0.051	mg/L	16.3	23.1	95.5	75-125			
Potassium	21.7	2.0	mg/L	16.3	4.63	105	75-125			
Sodium	205	2.0	mg/L	16.3	189	97.0	75-125			
Matrix Spike Dup (B308747-MSD1)		**Source: 22E0625-02RE1**		Prepared: 05/18/22 Analyzed: 05/24/22						
Aluminum	2.07	0.051	mg/L	2.04	0.0640	98.5	75-125	1.43	20	
Calcium	142	0.51	mg/L	16.3	127	90.6	75-125	0.189	20	
Iron	17.1	0.051	mg/L	16.3	1.69	94.7	75-125	0.911	20	
Magnesium	38.8	0.051	mg/L	16.3	23.1	96.3	75-125	0.335	20	
Potassium	21.4	2.0	mg/L	16.3	4.63	103	75-125	1.70	20	
Sodium	204	2.0	mg/L	16.3	189	93.5	75-125	0.278	20	
Batch B309251 - SW-846 7470A Dissolved										
Blank (B309251-BLK1)				Prepared & Analyzed: 05/25/22						
Mercury	0.000080	0.00010	mg/L							J
LCS (B309251-BS1)				Prepared & Analyzed: 05/25/22						
Mercury	0.00468	0.00010	mg/L	0.00402		116	80-120			
LCS Dup (B309251-BSD1)				Prepared & Analyzed: 05/25/22						
Mercury	0.00470	0.00010	mg/L	0.00402		117	80-120	0.406	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - SW-846 3005A											
LCS Dup (B308178-BSD1)				Prepared: 05/11/22 Analyzed: 05/12/22							
Selenium	484	50	µg/L	500		96.8		80-120	0.330	20	
Silver	476	2.0	µg/L	500		95.1		80-120	0.0298	20	
Thallium	479	2.0	µg/L	500		95.8		80-120	1.44	20	
Vanadium	499	50	µg/L	500		99.7		80-120	0.0198	20	
Zinc	959	100	µg/L	1000		95.9		80-120	1.75	20	
LCS Dup (B308178-BSD2)				Prepared: 05/11/22 Analyzed: 05/13/22							
Beryllium	485	4.0	µg/L	500		97.0		80-120	3.01	20	
Matrix Spike (B308178-MS1) HRP-MW-10		**Source: 22E0625-01**		Prepared: 05/11/22 Analyzed: 05/12/22							
Antimony	494	10	µg/L	500	ND	98.9		75-125			
Arsenic	480	8.0	µg/L	500	4.55	95.2		75-125			
Barium	522	100	µg/L	500	159	**72.6**	*	75-125			MS-22
Beryllium	478	4.0	µg/L	500	ND	95.7		75-125			
Chromium	484	10	µg/L	500	11.0	94.7		75-125			
Cobalt	478	10	µg/L	500	ND	95.7		75-125			
Copper	934	10	µg/L	1000	6.67	92.7		75-125			
Lead	492	5.0	µg/L	500	ND	98.3		75-125			
Manganese	885	10	µg/L	500	3200	**-464**	*	75-125			MS-19
Nickel	479	50	µg/L	500	13.7	93.1		75-125			
Selenium	474	50	µg/L	500	ND	94.9		75-125			
Silver	467	2.0	µg/L	500	ND	93.4		75-125			
Thallium	474	2.0	µg/L	500	ND	94.7		75-125			
Vanadium	511	50	µg/L	500	ND	102		75-125			
Zinc	1100	100	µg/L	1000	29.5	107		75-125			
Matrix Spike (B308178-MS2)		**Source: 22E0625-01**		Prepared: 05/11/22 Analyzed: 05/13/22							
Beryllium	478	4.0	µg/L	500	ND	95.7		75-125			
Matrix Spike Dup (B308178-MSD1)		**Source: 22E0625-01**		Prepared: 05/11/22 Analyzed: 05/12/22							
Antimony	517	10	µg/L	500	ND	103		75-125	4.50	20	
Arsenic	494	8.0	µg/L	500	4.55	97.8		75-125	2.76	20	
Barium	542	100	µg/L	500	159	76.6		75-125	3.80	20	
Beryllium	481	4.0	µg/L	500	ND	96.3		75-125	0.641	20	
Chromium	500	10	µg/L	500	11.0	97.8		75-125	3.17	20	
Cobalt	493	10	µg/L	500	ND	98.6		75-125	2.97	20	
Copper	956	10	µg/L	1000	6.67	94.9		75-125	2.35	20	
Lead	506	5.0	µg/L	500	ND	101		75-125	2.89	20	
Manganese	910	10	µg/L	500	3200	**-459**	*	75-125	2.73	20	MS-19
Nickel	489	50	µg/L	500	13.7	95.1		75-125	2.02	20	
Selenium	493	50	µg/L	500	ND	98.5		75-125	3.75	20	
Silver	490	2.0	µg/L	500	ND	97.9		75-125	4.74	20	
Thallium	492	2.0	µg/L	500	ND	98.4		75-125	3.81	20	
Vanadium	523	50	µg/L	500	ND	105		75-125	2.35	20	
Zinc	1130	100	µg/L	1000	29.5	111		75-125	3.14	20	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

HRP-MW-10

Laboratory:	Pace New England	Work Order:	22E0625
Client:	NYDEC_TRC Environmental Corporation- Clifton Par	Project:	C and F Plating - CO SMPB0001
Matrix:	Water	Analysis:	SW-846 6010D
Batch:	B308365	Preparation:	SW-846 3005A
% Solids:		Laboratory ID:	B308365-MS2
Column:		Sample Lab ID:	22E0625-01

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	QC LIMITS REC.
Aluminum	0.500	0.337	0.964	125	75 - 125
Calcium	4.00	131	142 MS-19	259	75 - 125
Iron	4.00	5.92	10.4	111	75 - 125
Magnesium	4.00	23.6	28.7 MS-19	126	75 - 125
Potassium	4.00	4.53	8.71	105	75 - 125
Sodium	4.00	178	191 MS-19	322	75 - 125

ANALYTE	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC. #		% RPD		QC LIMITS RPD	QC LIMITS REC.
Aluminum	0.500	0.978 MS-22	128	N	1.42	N	20	75 - 125
Calcium	4.00	140 MS-19	212		1.32		20	75 - 125
Iron	4.00	10.2	108		1.38		20	75 - 125
Magnesium	4.00	28.3	118		1.17		20	75 - 125
Potassium	4.00	8.61	102		1.25		20	75 - 125
Sodium	4.00	188 MS-19	265		1.21		20	75 - 125

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B308798 - SW-846 3005A											
Blank (B308798-BLK1)				Prepared: 05/19/22 Analyzed: 05/23/22							
Cadmium	ND	0.20	µg/L								
LCS (B308798-BS1)				Prepared: 05/19/22 Analyzed: 05/23/22							
Cadmium	443	2.0	µg/L	500		88.5		80-120			
LCS Dup (B308798-BSD1)				Prepared: 05/19/22 Analyzed: 05/23/22							
Cadmium	454	2.0	µg/L	500		90.8		80-120	2.57	20	
Matrix Spike (B308798-MS1) HRP-MW-10		**Source: 22E0625-01RE1**		Prepared: 05/19/22 Analyzed: 05/23/22							
Cadmium	1050	2.0	µg/L	500	692	**71.0**	*	75-125			MS-07A
Matrix Spike Dup (B308798-MSD1)		**Source: 22E0625-01RE1**		Prepared: 05/19/22 Analyzed: 05/23/22							
Cadmium	1040	2.0	µg/L	500	692	**69.3**	*	75-125	0.823	20	MS-07A
Batch B308991 - SW-846 7470A Prep											
Blank (B308991-BLK1)				Prepared: 05/21/22 Analyzed: 05/23/22							
Mercury	ND	0.00010	mg/L								
LCS (B308991-BS1)				Prepared: 05/21/22 Analyzed: 05/23/22							
Mercury	0.00385	0.00010	mg/L	0.00402		95.8		80-120			
LCS Dup (B308991-BSD1)				Prepared: 05/21/22 Analyzed: 05/23/22							
Mercury	0.00373	0.00010	mg/L	0.00402		92.9		80-120	3.10	20	
Matrix Spike (B308991-MS1)		**Source: 22E0625-01**		Prepared: 05/21/22 Analyzed: 05/23/22							
Mercury	0.00367	0.00010	mg/L	0.00402	ND	91.2		75-125			
Matrix Spike Dup (B308991-MSD1)		**Source: 22E0625-01**		Prepared: 05/21/22 Analyzed: 05/23/22							
Mercury	0.00364	0.00010	mg/L	0.00402	ND	90.4		75-125	0.863	20	
Batch B308993 - SW-846 7470A Prep											
Blank (B308993-BLK1)				Prepared: 05/21/22 Analyzed: 05/24/22							
Mercury	ND	0.00010	mg/L								
LCS (B308993-BS1)				Prepared: 05/21/22 Analyzed: 05/24/22							
Mercury	0.00391	0.00010	mg/L	0.00402		97.4		80-120			
LCS Dup (B308993-BSD1)				Prepared: 05/21/22 Analyzed: 05/24/22							
Mercury	0.00388	0.00010	mg/L	0.00402		96.5		80-120	0.858	20	

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B308209 - SW-846 3005A Dissolved											
LCS (B308209-BS1)				Prepared: 05/13/22 Analyzed: 05/14/22							
Calcium	3.96	0.50	mg/L	4.00		98.9		80-120			
Iron	3.92	0.050	mg/L	4.00		98.0		80-120			
Magnesium	3.88	0.050	mg/L	4.00		97.0		80-120			
Potassium	4.06	2.0	mg/L	4.00		102		80-120			
Sodium	3.94	2.0	mg/L	4.00		98.5		80-120			
LCS Dup (B308209-BSD1)				Prepared: 05/13/22 Analyzed: 05/14/22							
Calcium	3.99	0.50	mg/L	4.00		99.9		80-120	0.990	20	
Iron	3.96	0.050	mg/L	4.00		99.1		80-120	1.06	20	
Magnesium	3.93	0.050	mg/L	4.00		98.1		80-120	1.22	20	
Potassium	4.09	2.0	mg/L	4.00		102		80-120	0.781	20	
Sodium	4.00	2.0	mg/L	4.00		100		80-120	1.47	20	
Batch B308715 - SW-846 7470A Dissolved											
Blank (B308715-BLK1)				Prepared & Analyzed: 05/18/22							
Mercury	ND	0.00010	mg/L								
LCS (B308715-BS1)				Prepared & Analyzed: 05/18/22							
Mercury	0.00535	0.00010	mg/L	0.00402		**133**	*	80-120			MS-14
LCS Dup (B308715-BSD1)				Prepared & Analyzed: 05/18/22							
Mercury	0.00520	0.00010	mg/L	0.00402		**129**	*	80-120	2.77	20	MS-14
Matrix Spike (B308715-MS1)		**Source: 22E0625-02**		Prepared & Analyzed: 05/18/22							
Mercury	0.00392	0.00010	mg/L	0.00402	ND	97.6		75-125			
Matrix Spike Dup (B308715-MSD1)		**Source: 22E0625-02**		Prepared & Analyzed: 05/18/22							
Mercury	0.00434	0.00010	mg/L	0.00402	ND	108		75-125	10.1	20	
Batch B308747 - SW-846 3005A Dissolved											
Blank (B308747-BLK1)				Prepared: 05/18/22 Analyzed: 05/23/22							
Aluminum	ND	0.050	mg/L								
Calcium	ND	0.50	mg/L								
Iron	ND	0.050	mg/L								
Magnesium	ND	0.050	mg/L								
Potassium	ND	2.0	mg/L								
Sodium	ND	2.0	mg/L								
Blank (B308747-BLK2)				Prepared: 05/18/22 Analyzed: 05/24/22							
Aluminum	ND	0.050	mg/L								
Calcium	ND	0.50	mg/L								
Iron	ND	0.050	mg/L								
Magnesium	ND	0.050	mg/L								
Potassium	ND	2.0	mg/L								
Sodium	ND	2.0	mg/L								

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B308178 - SW-846 3005A											
Matrix Spike Dup (B308178-MSD1)		**Source: 22E0625-01**		Prepared: 05/11/22 Analyzed: 05/12/22							
Thallium	492	2.0	µg/L	500	ND	98.4		75-125	3.81	20	
Vanadium	523	50	µg/L	500	ND	105		75-125	2.35	20	
Zinc	1130	100	µg/L	1000	29.5	111		75-125	3.14	20	
Matrix Spike Dup (B308178-MSD2)		**Source: 22E0625-01**		Prepared: 05/11/22 Analyzed: 05/13/22							
Beryllium	481	4.0	µg/L	500	ND	96.3		75-125	0.641	20	
Post Spike (B308178-PS1) HRP-MW-10		**Source: 22E0625-01**		Prepared: 05/11/22 Analyzed: 05/13/22							
Antimony	4.25		µg/L	4.00	0.199	101		75-125			
Arsenic	22.4		µg/L	20.0	3.64	93.7		75-125			
Barium	201		µg/L	80.0	127	92.8		75-125			
Beryllium	18.8		µg/L	20.0	-0.00611	94.2		75-125			
Chromium	28.1		µg/L	20.0	8.79	96.4		75-125			
Cobalt	19.4		µg/L	20.0	0.562	94.2		75-125			
Copper	41.5		µg/L	40.0	5.33	90.4		75-125			
Lead	19.8		µg/L	20.0	0.590	96.1		75-125			
Manganese	2060		µg/L	20.0	2560	**-2510**	*	75-125			MS-19
Nickel	28.3		µg/L	20.0	11.0	86.8		75-125			
Selenium	7.18		µg/L	8.00	-0.425	89.8		75-125			
Silver	3.90		µg/L	4.00	0.0105	97.2		75-125			
Thallium	20.0		µg/L	20.0	-0.0138	99.9		75-125			
Vanadium	20.5		µg/L	20.0	0.618	99.2		75-125			
Zinc	60.4		µg/L	40.0	23.6	92.2		75-125			
Dilution Check (B308178-SRL1) HRP-MW-10		**Source: 22E0625-01**		Prepared: 05/11/22 Analyzed: 05/13/22							
Antimony	ND	5.0	µg/L		ND					20	
Arsenic	4.85	4.0	µg/L		4.55				6.26	20	
Barium	158	50	µg/L		159				0.557	20	
Beryllium	ND	2.0	µg/L		ND					20	
Chromium	11.9	5.0	µg/L		11.0				8.36	20	
Cobalt	0.725	5.0	µg/L		0.702				3.14	20	J
Copper	5.43	5.0	µg/L		6.67	<50x MDL; N/A			**20.5**	* 20	Z-01
Lead	0.676	2.5	µg/L		0.737				8.62	20	J
Manganese	2710	5.0	µg/L		3200				16.6	20	
Nickel	14.0	25	µg/L		13.7				2.10	20	J
Selenium	ND	25	µg/L		ND					20	
Silver	ND	1.0	µg/L		ND					20	
Thallium	ND	1.0	µg/L		ND					20	
Vanadium	ND	25	µg/L		ND					20	
Zinc	28.6	50	µg/L		29.5				2.85	20	J
Batch B308365 - SW-846 3005A											
Blank (B308365-BLK1)				Prepared: 06/03/22 Analyzed: 06/04/22							
Aluminum	ND	0.050	mg/L								
Calcium	ND	0.50	mg/L								
Iron	ND	0.050	mg/L								
Magnesium	ND	0.050	mg/L								
Potassium	ND	2.0	mg/L								
Sodium	ND	2.0	mg/L								