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December 18, 2020

Mr. Tracy Smith
Division of Environmental Remediation
Remedial Bureau D
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7013

RE: Wastebeds 1-8 Operable Unit 1 (OU-1)
Phase 3 – Construction Completion Report
Town of Geddes, Onondaga County, New York
Index No. R7-0849-15-02 Site No. 734081

Dear Mr. Smith:

Attached please find one electronic copy of the *Revised Wastebeds 1-8 OU-1 Phase 3 – Construction Completion Report* for your review and approval. The report was revised based on comments provided by the NYSDEC on November 16, 2020. The report was prepared by Ramboll on behalf of Honeywell.

Please contact Brad Kubiak of Ramboll (315-956-6384) or me if you have any questions.

Yours sincerely,

Stephen J. Miller, PE

Stephen J. Miller, P.E.
Syracuse Remediation Program Manager

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	Thomas Conklin	Ramboll
	Bradley Kubiak	Ramboll
	Douglas M. Crawford	Ramboll
	Christopher C. Calkins	Ramboll
	Brian E. White	Ramboll

On November 16, 2020 the New York State Department of Environmental Conservation (NYSDEC) sent comments regarding the "Wastebeds 1-8 Operable Unit 1 (OU-1) Phase 3 – Construction Completion Report" dated October 2, 2020. Below are the responses to those comments.

Comment 1: Page 10, Section 3.1. In the fifth bullet replace "Contacting" with "Contracting."

Response 1: *The change to "Contracting" was made in text to address this comment.*

Comment 2: Page 11, last paragraph. Please revise the second sentence in this paragraph ("…staged in the and along the southwest end of Wetland C"). In addition, the third sentence should be revised to state "Topsoil was staged at an off-site area (i.e., the Penn-Can Property of the Wastebed B/Harbor Brook Site) and…" Figure 2 should also be revised accordingly.

Response 2: *The second sentence in the last paragraph on Page 11 was revised to be "Phase 3 construction was also staged along the southwest end of Wetland C." The third paragraph was revised to state "Topsoil was staged at an off-site area (i.e. the Penn-Can Property of the Wastebed B/Harbor Brook Site and the Spano Parcel." Figure 2 was also revised to identify the Penn-Cann Property of the Wastebed B/Harbor Brook Site as a staging area.*

Comment 3: Table 2. Quantities of mulch should also be included in this table. Please revise.

Response 3: *The quantity of mulch that was applied to the original scope of work was added to Table 2 to address this comment.*

Comment 4: Appendix C, Photographic Log. In the Photographic Log descriptions please revise as necessary to indicate that clean fill was not present (e.g., revise to state "No picture at 10' due to the absence of clean material on the surface").

Response 4: *The photo log descriptions in photos 1-16, 23-28, 37, 38, and 41 was revised to be "No picture at 10' from the bike trail due to the absence (0") of clean material on the surface. Additional material was placed to meet the 12" of clean fill requirements at 10' from the trail" to address this comment.*

Comment 5: Appendix C, Photographic Log, several photo descriptions (e.g., 17, 18) indicate that greater than 12 inches of material is present but it states that additional material was added. Please revise accordingly.

Response 5: *The following language was removed from photo locations 17, 18, and 19: "Additional material was placed to meet 12" clean fill requirements."*

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October 2, 2020

Mr. Tracy Smith
Division of Environmental Remediation
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New York State Department of Environmental Conservation
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Intended for
Honeywell, Inc.

Document type
Report

Date
October 2020
Revised December 2020

WASTEBEDS 1-8 OPERABLE UNIT 1 PHASE 3 CONSTRUCTION COMPLETION REPORT

RAMBOLL Bright ideas. Sustainable change.

WASTEBEDS 1-8 OPERABLE UNIT 1 PHASE 3 CONSTRUCTION COMPLETION REPORT

Project name	**Wastebeds 1-8**
Project no.	**1163.71536**
Recipient	**Honeywell, Inc.**
Document type	**Report**
Version	**2**
Date	**December 18, 2020**
Prepared by	**Megan Steward**
Checked by	**Brad Kubiak, P.E.**
Approved by	**Brian White, P.E.**
Description	**Construction Completion Report for Wastebeds 1-8 Operable Unit 1 Phase 3 construction. This report is preceded by the OU-1 Phase 3 RAWP (OBG, 2017).**

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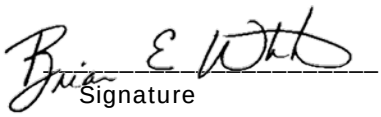
CERTIFICATION

I, Brian E. White, certify that I am currently a New York State registered professional engineer. I had primary direct responsibility for the implementation of the remedial program activities, and I certify that the Remedial Design was implemented and that construction activities were completed in substantial conformance with the Department of Environmental Remediation-approved Remedial Action Work Plan and subsequent modifications.

072730	December 18, 2020	
NYS Professional Engineer #	Date	Signature

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LIST OF ACRONYMS

Acronym	Definition
AQM	Air Quality Monitoring
BBL	Blasland, Bouck & Lee
C&S	Calocerinos & Spina
CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
CHASP	Community Health and Safety Plan
CQA/CQC	Construction Quality Assurance and Construction Quality Control
CQAPP	Construction Quality Assurance Project Plan
H_2S	Hydrogen Sulfide
HASP	Health and Safety Plan
I-690	Interstate 690
IRM	Interim Remedial Measure
ISMP	Interim Site Management Plan
MSL	Mean Sea Level
NY-695	New York Route 695
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
OBG	O'Brien and Gere
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PM_{10}	Particulate Matter less than 10 micrometers in diameter
PTI	PTI Environmental Services
RAWP	Remedial Action Work Plan
RD/RA	Remedial Design/Remedial Action
ROD	Record of Decision
SPDES	State Pollutant Discharge Elimination System
SWPPP	Storm Water Pollution Prevention Plan
TVOC	Total Volatile Organic Compounds
USEPA	United States Environmental Protection Agency
WB	Wastebed

EXECUTIVE SUMMARY

This report documents the remedial activity that occurred during Wastebeds (WB) 1-8 Operable Unit 1 (OU-1) Phase 3 construction.

The selected remedy for OU-1 includes the placement of several types of vegetated cover systems in discrete Site areas in order address Solvay waste and contaminated soil/fill materials. Phase 3 included two types of vegetated cover systems: (1) a 1-foot vegetated soil cover and (2) vegetation enhancement. Approximately 27.8 acres were remediated during Phase 3 remedial construction.

The project required sustained coordination with Onondaga County and the New York State Fair as the amphitheater was open and holding concert events and the fair occurred during project. This highly coordinated effort led to the successful completion of this phase.

Approximately 27.8 acres underwent remedial action and received vegetated cover as part of Phase 3 of OU-1 at Wastebeds 1-8

Vegetation Enhancement Cover on Wastebeds 1-8 Along the Eastern Shoreline.

1. INTRODUCTION

This Construction Completion Report (CCR) documents the remedial activities that occurring during the Wastebeds (WB) 1-8 Site (the Site) Phase 3 construction in Geddes, New York. O'Brien & Gere (OBG), a Ramboll Company, prepared this report in accordance with the requirements of the DER-10 *Technical Guidance for Site Investigation and Remediation* (NYSDEC 2010) on behalf of Honeywell International, Inc. (Honeywell).

This CCR provides a summary of the construction and remedial activities associated with Phase 3 of the OU-1 selected remedy at the Site, as set forth in the Administrative Consent Order (R7-0849-15-02) entered into by Honeywell and the New York State Department of Environmental Conservation (NYSDEC) dated May 8, 2015. In addition, this document was developed to address the Wastebeds 1-8 OU-1 selected remedy, as outlined in the U.S. Environmental Protection Agency's (USEPA) and NYSDEC's Record of Decision (ROD) dated December 2, 2014 (NYSDEC and USEPA 2014).

This report is the third OU-1 CCR submitted for WB 1-8 OU-1. As established in the *Remedial Design/Remedial Action (RD/RA) Work Plan* (OBG 2015), additional CCRs will be submitted as subsequent project phases are completed. This CCR focuses on remedial actions presented in the *Phase 3 Remedial Action Work Plan (*RAWP; OBG 2017) and within the Field Modifications (FM) #1, 2, and 3 (OBG 2018A; OBG 2018B; OBG 2018C). The Phase 3 RAWP scope initially included a cover system for approximately 22.7 acres of the Site. As discussed with NYSDEC, the scope expanded to 27.8 total acres of cover systems as collectively documented in FMs #1, 2, and 3 (OBG 2018A; OBG 2018B; OBG 2018C). The cover systems designed in the Phase 3 RAWP and subsequent FMs included a vegetation enhancement cover system and vegetated soil cover systems that are described in greater detail in **Sections 2.2 and 3.6**. An additional scope of work to be completed under the Phase 3 RAWP has been submitted to NYSDEC as FM#4 (Ramboll, 2020). This remedial construction is scheduled for 2020, and will be documented in a future CCR report.

Changes to completed components to the Site remedy, due to this work by others, will be discussed in subsequent CCR's as applicable. The CCRs will be prepared pending final as-built information provided by others, as necessary. For example, work by others includes the follow efforts:

- The New York State Department of Transportation (NYSDOT) constructed Phase 1 of the State Fairgrounds Access Improvement Project. This project was constructed to improve access between Interstate 690 and the New York State Fair's upper (Orange) parking lot, to reduce or eliminate traffic backups on the highway on high attendance days and to generally improve mobility in the area. The elements of NYSDOT Phase 1 work included paving and striping the upper lot, including handicapped accessible spaces; construction of internal access and circulation roads; new lighting and drainage systems and a new on-ramp from the upper lot to westbound Interstate 690 (I-690).
- A boat dock and access pathway were installed in early 2017 along the Eastern Shore by Onondaga County resulting in modification to existing remedial cover systems (**Figure 2**).

Operations, maintenance, and monitoring activities related to Phase 3 RAWP and subsequent FMs of the OU-1 remedy, will be included in a future update to the *Interim Site Management Plan* (ISMP) (OBG, 2018). A separate ISMP ((*Lakeview Amphitheater Interim Site Management Plan* (Calocerinos & Spina [C&S] 2016), including *Amendment #1* (Onondaga County 2018)) was developed for the portion of the Site associated with the Onondaga County Lakeview Amphitheater. The Lakeview Amphitheater ISMP is implemented by Onondaga County.

1.1 Site Background and Description

The Site is located on the southwestern shore of Onondaga Lake in Geddes, New York (**Figure 1)**. The wastebeds consist primarily of inorganic materials resulting from the production of soda ash using the Solvay process. The irregularly shaped beds total approximately 315 acres in size, and extend roughly 1.5 miles along the shore, with a maximum width of 0.5 miles. The overall Site covers approximately 404 acres; **Figure 2** depicts the approximate Site boundaries and property ownership.

Vehicle transportation features bisect the Site and include I-690 (which is situated between the lakeshore and State Fair Boulevard) and interchanges associated with New York State Route 695 (NY-695), NYS Fairgrounds parking lots, access roads for the parking lots, and foot bridges. The existing NYS Fairgrounds parking lots located on Site (approximately 96 acres) generally consist of 68 acres of paved lots and 28 acres of over two feet of gravel and fill material over Site soil/fill material. Other infrastructure and development present at the Site include the approximately 9-acre Onondaga Lake Canalways Trail (public recreation trail) and a 20-acre closed, permitted landfill operated by Crucible Specialty Metals (Crucible). An approximately 17-acre area that was a disposal site for County biosolids material (Biosolids Area) is located near the southeastern end of the Site over portions of WB 1 and 2. (**Figure 2**)

Lakeview Point, which generally comprises WB 6, forms one of the Site's more prominent features: a peninsula that extends into Onondaga Lake near the northern end of the Site. Onondaga County recently constructed an outdoor events complex on this portion of the Site, details of construction activities are provided in the *Lakeview Amphitheater Project Construction Completion Report* (Gilbane 2016). The complex occupies approximately 44 acres of the Site and includes an amphitheater, lawn seating area, vendor area, recreational trails and amenities.

The portion of the property developed as parking lots and roadways is, in general, owned by New York State. The remaining portion of the Site is owned by Onondaga County. The County-owned portion of the Site includes the public recreational trail and the Onondaga County Lakeview Amphitheater. Other areas of the Site are characterized by vegetation cover ranging from sparsely vegetated areas to stands of mature trees. Both property deeds restrict property use to park purposes.

In general, the Site consists of variable terrain with numerous topographic highs and lows that range from approximately 362 feet (ft) above mean sea level (MSL) at the shore of Onondaga Lake, to 430 ft above MSL, at the highest point. Steeply-sloped berms define the outer-most boundaries of the Wastebed cells, as well as interior boundaries (*e.g.*, between Wastebeds 5 and 6). The eastern shoreline of the Site consists of a complex of wetland and upland habitats restored under the WB 1-8 Integrated Interim Remedial Measure (IRM; OBG 2012). Approximately 9.5 acres of mitigation wetlands were constructed along the eastern shoreline, of

which 2.3 acres are connected wetlands and 7.2 acres are inland wetlands. A vegetated cover system was installed for areas of the shoreline not occupied by other elements of the WB 1-8 Integrated IRM (*e.g.,* wetlands, berms, stormwater features), minimizing contact and exposure to soil/fill material along the eastern shore.

1.2 Site History

The Wastebeds were constructed over the Geddes Marsh, which resulted from the lowering of the lake level in 1822 to the same level as the Seneca River (Blasland, Bouck & Lee [BBL] 1989). The Wastebeds are composed primarily of Solvay waste, which consists of particles of insoluble residues, hydroxides, calcium carbonate, gypsum, sodium chloride (salt), and calcium chloride. These wastes were generated at the former Main Plant during soda ash production using the Solvay process. Soda ash production began in 1884 and continued until 1986. The Solvay waste was hydraulically placed in the Wastebeds in slurry form (90 to 95% water and 5 to 10% solid material).

Chlorinated benzene was produced at the Willis Avenue plant between 1918 and 1977. During this same period, additional operations reportedly took place at the Willis Avenue plant including production of hydrochloric acid, caustic soda, caustic potash, and chlorine gas (OBG 1990). The Benzol plant operated from as early as 1903. This plant produced benzene, toluene, xylenes, and naphthalene by the fractional distillation of coke “light oil.” The Solvay Process Company operated a coke plant from 1892 through 1923[1]. A phenol production plant operated from 1942 to 1946 (PTI Environmental Services [PTI] 1992). Materials associated with these operations may have been disposed of in WB 1-8 with the Solvay waste slurry or by alternative means; although there are no records or reports to indicate this occurred.

WB 1-6 were in use before 1926, although no definitive construction date is available. WB 7 and 8 were not used until after 1939 and remained in use with WB 1-6 until 1943, when all WB were closed because of an incident involving one of them (BBL 1989). A dike along WB 7 failed on November 25, 1943, and an area along State Fair Boulevard was flooded with Solvay waste.

Subsequent uses of the Site included construction of I-690 prior to 1958, construction of the I-690 and NYS Route 695 interchange between 1973 and 1978, and the operation of a landfill on a portion of WB 5 by Crucible Specialty Metals (Crucible) from 1973 to 1988 (C&S 1986). The Crucible Landfill covers approximately 20 acres and contains an estimated volume of 225,100 cubic yards of non-hazardous and hazardous wastes (C&S 1986). The NYSDEC approved the revised Crucible Landfill closure plan in 1986, and the landfill was closed with a cap in 1988. Long-term monitoring of the Crucible Landfill is performed annually consistent with the landfill closure requirements. The City of Syracuse and Onondaga County used a portion of the wastebeds from 1925 to 1978 for sewage sludge disposal; however, the nature, volume, and exact boundaries of this activity are unknown.

[1] There is an apparent discrepancy regarding the dates of operation of the coke plant in the referenced *Site History Report* [PTI 1992]; page 54 of the report states that the coke plant was operational from 1892 to 1923, and page 47 of the report states that coke ovens were used through 1924, although the 1924 map on page 14 of the report denotes “coke ovens not present.”

2. SUMMARY OF SITE REMEDY

The following includes a summary of the OU-1 remedial action objectives and a description of the selected remedy. **Table 1** (attached) provides a summary of the chronology of events from submitting the RD/RA work plan through construction completion. **Table 2-1** (in-text) summarizes field directives that document modifications to the remedial design.

2.1 Remedial Action Objectives

The OU-1 selected remedy was developed to address the following Remedial Action objectives, as presented in the ROD:

- Prevent ingestion/direct contact with soil/fill material/Solvay waste in surface and subsurface soil above levels that would result in unacceptable human exposure.
- Prevent or minimize inhalation of or exposure to contaminants volatilizing from contaminated soil/fill material/Solvay waste that would result in unacceptable human exposure. In the event that buildings are constructed, mitigate impacts to public health resulting from soil vapor intrusion into those buildings, as may be warranted.
- Prevent or minimize adverse ecological impacts to biota from ingestion/direct contact with soil/fill material/Solvay waste causing toxicity or impacts from bioaccumulation through the terrestrial food chain.
- Prevent or minimize, the further migration of contaminants that would result in groundwater, sediment, or surface water contamination.

2.2 OU-1: Phase 3 Selected Remedy Description

As presented in the ROD, the selected remedy for OU-1 includes the placement of several types of cover systems, most of which are vegetated, in discrete areas of the Site to address Solvay waste and contaminated soil/fill materials. The specific cover type for a given area is based on remediation goals in surface soil, and the current and reasonably anticipated future land use at the given Site area. The cover systems will be applied to areas of the Site that either do not have existing covers or infrastructure located on them or which need additional cover material to meet the selected remedy requirements (*i.e.,* the upland staging areas associated with the WB 1-8 Integrated IRM, the Onondaga Lake Canalways Trail, and portion of the parking lot areas). Ultimately, cover will be applied over approximately 171 acres of the Site, 27.8 of which were included in Phase 3. A detailed description of the various cover types for the Site are provided in the ROD and the RD/RA Work Plan. It should also be noted that as stated in the ROD, structures, such as buildings, pavement, or sidewalks, as part of the future development at OU-1 could serve as acceptable substitutes for any of the vegetated cover types described below.

As stated in the RD/RA Work Plan the Site remedy will be implemented in multiple phases due to cover material availability, material placement productivity rates, planting seasons for the optimal establishment of vegetative enhancements, and site usage by the property owners.

To meet the objectives described above, the Phase 3 selected remedy, including subsequent FMs, consists of the following major components**:**

- **1-foot thick vegetated soil cover (passive recreational areas):** In areas of anticipated passive recreational use, a 1-foot thick vegetated soil cover will be installed. This type of cover will apply to approximately 0.45 acres.
- **Vegetation enhancement cover:** This cover will consist of wood fiber mulch/compost and fertilizer mixed with seed and will be applied to areas where surface soil concentrations are below applicable soil cleanup objectives (SCO). This type of cover will apply to approximately 76 acres, 25.75 of which will be implemented in Phase 3.

In addition to major components as noted above, areas included as part of FM #3 (OBG 2018C) received a stabilized vegetated soil cover of varying thicknesses, with a minimum thickness of 8-inches. This type of cover was applied to approximately 1.87 acres, with total cross-section thicknesses to be evaluated based on slope stabilization requirements.

2.3 Governing Documents

The following sections provide an overview of the governing documents developed to provide guidance during Phase 3 construction of the OU-1 selected remedy.

OBG acted as the prime contractor in the Phase 3 construction. The Phase 3 RAWP and its components were reviewed and approved by NYSDEC on September 20, 2017. The following plans were submitted as part of the Phase 3 RAWP.

Material Handling and Disposal Plan. Methods used to handle and dispose of excavated material, water generated from staged material, visibly contaminated material, trench spoils, and soil cuttings were managed in accordance with Section 5.2 Materials Management of the Phase 3 RAWP. (OBG 2017)

Storm Water Pollution Prevention Plan. Methods used to manage water in and around the perimeters of work areas were managed in substantive compliance with NYSDEC State Pollution Discharge Elimination System (SPDES) General Permit No. GP-0-15-002 per the Storm Water Pollution Prevention Plan (SWPPP; OBG 2016). The NYSDEC-approved SWPPP for the site was updated to reflect the 2017 site activities and submitted as Appendix B of the Phase 3 RAWP. (OBG 2017)

Health and Safety Plan. Remedial work performed under this Remedial Action complied with governmental requirements, including Site and worker safety requirements mandated by Federal Occupational Safety and Health Administration (OSHA). The Health and Safety Plan (HASP) was included as Appendix A of the Phase 2 RAWP. (OBG 2016)

Community Health and Safety Plan. The Community Health and Safety Plan (CHASP) was developed to address health and safety procedures that were implemented to address the protection of the community during the implantation of the Site remedy. Community air monitoring was performed by OBG throughout the project in accordance with the requirements of the Community Air Monitoring Plan (CAMP) provided in the Phase 3 RAWP as Appendix A. (OBG 2017)

Construction Quality Assurance Project Plan. The Construction Quality Assurance Project Plan (CQAPP) was included as Section 6 of the Phase 3 RAWP. (OBG, 2017) This section provided guidelines and procedures for Construction Quality Assurance and Construction Quality Control

(CQA/CQC) associated with the construction of Phase 3 (cover application rate, limits of placement, etc.).

2.4 Summary of Project Modifications

Modifications to the design represented as FMs are summarized as the Remedial Action Field Modifications in **Table 2-1** in Section 2.4.1. Other modifications, in addition to those the FMs, are summarized in **Section 2.4.2**.

2.4.1 Summary of Field Modifications

The following table includes a summary of the FMs that occurred during Phase 3.

Table 2-1. Remedial Action Field Modifications

FM #	Description
1	As part of FM #1 (OBG 2018A), an additional 2.74 acres was added to receive vegetative cover as reviewed and approved by NYSDEC on June 11, 2018. That area was made up of steep slopes located between the NYS Fairgrounds Pink and Brown Lots (Ditch A). (**Appendix A**, Record Drawing Sheets C-105, C-106, and C-107)
2	As a part of FM #2 (OBG 2018B), riprap channels were prescribed to be used in sections of Ditch A to aid in the conveyance of stormwater from the Brown Parking lot as reviewed and approved by NYSDEC on June 12, 2018. (**Appendix A**, Record Drawing Sheets C-105 and C-106)
3	As a part of FM #3 (OBG 2018C), an additional 1.87 acres were added to receive vegetative cover as reviewed and approved by NYSDEC on October 18, 2018. The area was made up of sparsely vegetated steep slopes and bounded by parking lots, bike trails, and material spoils areas. The area was graded to a more gradual slope where feasible and a geocell product was installed to facilitate stable setting for vegetative cover where re-grading was not possible. (**Appendix A**, Record Drawing Sheet C-108)

2.4.2 Field Directives from the Remedial Action Design

The following table includes a summary of the Field Directives that occurred during Phase 3.

Table 2-2. Remedial Action Field Directives

FD #	Description
1	Modification to the aerial extent of the 1-foot vegetated soil cover placed in areas along the Onondaga Lake Canalways Trail. Test pitting was conducted to evaluate where 1-foot of clean fill was present (from construction of the recreational trail in 2014) within the 10-foot buffer area (as shown on Sheet C-101 to C-104 of Record Drawings included as **Appendix A**) and where additional material was required to achieve a 1-foot material thickness. In areas where additional material was required, topsoil was placed in order to achieve a total 1-foot material thickness. Placement of additional material did not occur in areas where drainage would be impacted or where steep slopes were present. Limits of soil cover placed to achieve 1-foot total soil cover are documented on the Record Drawings included as **Appendix A**.

2.4.3 Deviations from the Remedial Action Design

The following section provides a summary of minor changes that occurred during Phase 3.

- Added rip rap / stone check dam to natural swale along eastern lake shore to minimize erosive flows.
- As a part of the NYS Fairground Access Improvement Project, storm water conveyance piping and outfall was constructed, by OBG, as shown in Appendix A, Record Drawing Sheet C-101 and C-102. The area disturbed by this construction was approximately 20 ft on either side of the conveyance pipe alignment. The disturbed area was restored (as part of Phase 3) with either a vegetative enhancement cover consisting of Type C mulch/compost at a rate of 300 cubic yards per acre and seeding, or 4 to 6" topsoil with same seed mix - consistent with the vegetative enhancement cover being installed as a part of OU-1 Phase 3.
- The limits of geocell used as a part of FM #3 were reduced based on the field conditions of the slopes requiring geocell.

3. REMEDIAL ACTION

As stated above, the WB 1-8 OU-1 final remedy is being implemented in multiple phases. Remedial activities completed at the Site, as part of Phase 3, were conducted in accordance with the Phase 3 RAWP and subsequent modifications and deviations to the design noted in **Section 2.4**.

The following sections represent the completed construction components of the remedial design. Record Drawings are included in **Appendix A**, and a photo log of construction activities is included in **Appendix E**.

3.1 Subcontractors and Consultants

- OBG – Engineer and Construction Contractor
- Brush Cutters LLC – Clearing and Grubbing Subcontractor
- Landsource Organix – Blower Truck Consultant
- Coffin Excavation – Slinger Truck Subcontractors
- Chenango Contracting Inc – Liner Subcontractor
- Vari-Tech LLC – Large Diameter HDPE Pipe Fusion Subcontractor
- CT Male Associates – As-Built Survey

3.2 Pre-Construction Meeting

A Pre-Construction meeting was held by OBG on May 19, 2017.

3.3 Site Preparation and Mobilization

OBG mobilized equipment, personnel, materials, and supplies necessary to perform the proposed Site remedy. Mobilization included:

- Temporary Site Facilities including portable toilets
- Clean fill materials – topsoil and mulch/compost
- Equipment and Material storage trailer (on-site as part of WB 1-8 Integrated IRM)
- Air Monitoring Equipment
- Safety and Personal Protective Equipment

Equipment and materials were mobilized on an as needed basis.

Vegetation enhancement area post selective clearing along Eastern Shoreline

Selective Clearing. Areas to be covered were cleared of invasive species (*e.g.,* European buckthorn, honeysuckle) to facilitate cover system installation and promote the establishment of native vegetation. Brush Cutters LLC was subcontracted to perform selective land clearing along the steep slopes of the wastebed. OBG performed selective clearing using specialized mechanical equipment to clear flat areas of the wastebed. Brush removed was chipped and blown back into the general area from where it was removed prior to mulch/compost installation. In certain areas the brush cleared was thick and blowing the wood chips back into the area could have been detrimental to germination of seeds in the mulch layer into the soil. In these areas, the cleared brush was removed to Staging Area C (See **Figure 2** for approximate location).

Pre-Construction Survey. A pre-construction survey to identify limits of the 1-foot vegetated soil cover areas and limits of the vegetation enhancement cover areas was provided by CT Male Associates.

3.4 General Site Controls

Erosion and Sedimentation Controls. The project was completed in substantive compliance with NYSDEC SPDES General Permit No. GP-0-15-002 per the SWPPP included in the Phase 3 RAWP as Appendix B (OBG, 2017). The project SWPPP provides details of the erosion and sediment control measures that were implemented and maintained throughout the project.

Dust control. Dust monitoring and control was implemented according to the CAMP included in the CHASP, which is included in the Phase 3 RAWP as Appendix A (OBG, 2017)**.** Dust was suppressed along roadways, access roads, and construction right of ways when needed with water via a water truck.

Egress housekeeping. Stabilized construction entrances and transits were installed to reduce tracking mud and soil onto paved roads. Soil tracked onto a paved road was addressed by the end of the working day. Soil was sprayed off paved roadways using a water truck with front and rear mounted sprayers.

General Site Security. On site personnel were required to sign-in and sign-out at the OBG field office trailer. Vehicular and pedestrian traffic was permitted in designated parking areas within the Support Zone, but access to the Exclusion and Contamination Reduction Zones were restricted to authorized vehicles and personnel only. During nonworking hours, portable equipment was secured in an on-site storage trailer.

3.5 Site Access and Staging Areas

Areas targeted to receive cover during Phase 3 construction were generally accessed via permanent access pathways constructed as part of the WB 1-8 Integrated IRM construction and the Onondaga Lake Canalways Trail.

Targeted areas were selectively cleared as discussed in **Section 3.3**, to promote vegetation establishment and allow equipment access in support of cover placement.

Various clean fill staging areas, as shown in **Figure 2**, were used to store mulch/compost and topsoil during construction. Mulch/compost for the Phase 3 construction was also staged along the southwest end of Wetland C. Topsoil was staged at an off-site area (i.e. the Penn-Can Property of the Wastebed B/Harbor Brook Site) and the Spano Parcel. Cleared brush, as referenced in **Section 3.3,** was disposed of within Staging Area C. Staging Area C is approximately a 6-acre excavated material staging area constructed during the WB 1-8 Integrated IRM.

3.6 Vegetated Cover Systems

The areas of WB 1-8 that received vegetated cover systems during Phase 3 were generally located along the eastern lake shore, along the eastern banks of Nine-mile Creek, on the slopes south of the NYS Fair Brown Lot, and on the steep slopes between Staging Area C and the Orange Parking Lot (**Figure 2**).

Construction of the various vegetated cover systems in Phase 3, generally occurred over three distinct periods, the original scope of work, the FMs 1&2 scope of work, and the FM 3 scope of work.

The vegetated cover systems included placement of a 1-foot vegetated soil cover, placement of a vegetation enhancement cover consisting of mulch/compost, placement of a stabilized vegetated soil cover (minimum 8-inch cover) utilizing geocell when applicable, and the associated ecological restoration of these cover systems. One foot of vegetated soil cover was performed in one location on WB 1-8, totaling approximately 0.45 acres of 1-foot cover. Stabilized vegetated soil cover was performed at one area totaling approximately 1.87 acres. Vegetation Enhancement cover was placed at various locations, totaling approximately 25.47 acres. The following sections describe the implementation of these cover systems by location (**Sections 3.6.1-3.6.3**).

The vegetation enhancement cover, as shown on Sheet C-501 of the Record Drawings, included as **Appendix A**, consisted of mulch/compost installed at a rate of approximately 300 cy/acre directly over the existing material. Installation of mulch/compost was achieved using a combination of broadcast methods including the use of multiple slinger trucks and a blower truck. Mulch/compost that was installed using the slinger truck was seeded by hand broadcasting a successional old-field seed mix and cover crop during cover placement at a rate of approximately 60-lbs/acre and 20-lbs/acre, respectively. A programmable seed injection unit was equipped on the blower truck; allowing for seed mixes to be injected, at the rates noted previously, with the cover material as it was blown from the truck.

Throughout the vegetation enhancement cover implementation, the construction management team monitored and documented application rates. This was achieved by creating work zones, logging application rates for each zone in project field log books and by collecting material tickets from equipment operators. Work zones and application rates are included as **Appendix B**. The 300 cy/acre rate at which mulch/compost was generally installed resulted in approximately 2-inches of measurable cover within the targeted areas. Some areas received less than 300 cy/area of vegetation enhancement as a result of stone staging areas and rework completed to aid in the NYSDOT Stormwater Conveyance Project. Based on project photos taken after work was complete (9/12/19; **Appendix E** Photos 27-45) the areas are vegetated and meet the remedial objective to stabilize and enhance the areas.

3.6.1 Original Scope of Work

3.6.1.1 1-Foot Vegetated Soil Cover

Areas located adjacent to the Onondaga Lake Canalways Trail (Sheets C-101 through C-103 of Record Drawings, **Appendix A**) were covered with varying thicknesses of topsoil within a 10-foot buffer from either edge of the trail. On average 4- to 12-inches of topsoil was placed in designated areas, as documented on the Record Drawings included as **Appendix A**, along the

recreational trail apron to achieve a 1-foot material thickness. These areas were seeded with a successional old field seed mix and annual ryegrass cover crop at a rate of 60-lbs/acre and 20-lbs/acre, respectively. This work represented a change from the initial cover design as presented in the Phase 3 RAWP and was documented in FM #1 as shown in **Table 2-1**. For additional detail regarding this modification refer to **Section 2.4.1** of this report.

3.6.1.2 Vegetation Enhancement Cover

The vegetation enhancement cover area, as shown on Sheets C-101 through C-104, was located adjacent to the north east side of the Onondaga County Trail between the Trail and the Lake, to the east of Nine Mile Creek, and north of the Onondaga County Trail between the Trail and the outlet of Nine Mile Creek into Onondaga Lake. The cover placement limits in these areas were defined by the existing access roads and pathways and portions of the Site remedy completed as part of the WB 1-8 Integrated IRM, and Phase 1 & 2 of OU-1 construction (*i.e.* vegetated cover). As noted in **Section 2.4.3,** vegetative cover limit was modified in the field with the addition of rip rap/stone check dams to a natural swale along the eastern shore and with the installation of a stormwater conveyance piping and outfall as a part of the NYS Fairground Access Improvement Project (See **Appendix A** Record Drawings Sheets C-101 and C-102).

3.6.1.2.1 Stormwater Conveyance

As a part of the New York State Fairgrounds Access Improvement Project, a storm water conveyance piping and outfall system was installed on the Eastern Lakeshore slopes at WB 1-8, as described in Section 2.4.3 Field Deviations. Areas disturbed as a part of the conveyance system installation were restored in general conformance with the OU-1 Phase 3 remedial design specifications (*i.e.*, vegetation enhancement or topsoil and seeding). Approximately 1.54 acres was disturbed and subsequently restored as shown on **Appendix A** Record Drawings Sheet C-101 and C-102. This work included approximately 0.86 acres of a 4 to 6" vegetated soil cover and 0.67 acres of vegetation enhancement.

3.6.2 Field Modifications 1 & 2

The following section provides details on remedial cover associated with FMs #1 and 2.

3.6.2.1 Vegetation Enhancement Cover

The vegetation enhancement cover area, as shown on Sheets C-105 through C-107 (**Appendix A**), was located south of the NYS Fair Brown Lot. The cover placement limits in these areas were generally defined by the NYS Fair Brown Lot at the top of the slope and Ditch A collection system at the bottom of the slope. These areas were seeded with a successional old field seed mix and annual ryegrass cover crop at a rate of 60-lbs/acre and 20-lbs/acre respectively. This work represented a change from the initial cover design as presented in the Phase 3 RAWP and was documented in FM #1 as shown in **Table 2-1**. For additional detail regarding this modification refer to **Section 2.4.1** of this report.

3.6.2.1.1 Rip Rap Channels

As part of vegetation enhancement cover installation, as shown on Sheets C-105 and C-106 (**Appendix A**), two rip rap channels were installed to convey water across the slopes between the NYS Fair Brown Lot and Ditch A. These rip rap channels were installed using 18-inches of stone over a geotextile liner system (See **Appendix A** Record Drawing Sheet C-501).

3.6.3 Field Modification 3

The following sections provide details on the remedial cover associated with FM #3 (see **Section 2.4.1** of this report).

3.6.3.1 Stabilized Vegetated Soil Cover

Areas located adjacent to the NYS Fairground Access Improvement Project (**Appendix A** Record Drawings Sheet C-108) were re-graded and covered with varying thicknesses of topsoil, select fill, and native seed mix. In select areas unable to be stabilized by topsoil and select fill, approximately 204 linear feet of ENVIROGRID™ Cellular Confinement Systems - Geocell (Geocell) was installed, as show in Record Drawings Sheet C-108 of **Appendix A**. On average 6 to 12 inches of topsoil was placed in designated areas to achieve a minimum 8-inch cover (*i.e.* topsoil over select fill or Geocell), and then vegetated. Limits of Geocell installed vary from amount specified in FM #3 design, as field conditions allowed for reducing the length of slopes requiring Geocell stabilization. Areas restored in FM #3 were seeded with a successional old field seed mix and annual ryegrass cover crop at a rate of 60-lbs/acre and 20-lbs/acre respectively.

3.7 Material Handling and Characterization

No spoils were generated during this phase (original scope or FM #1 or #2) of construction. Minimal spoils were generated during the regrading as a portion of FM #3. The spoils were placed directly adjacent to work completed for FM #3, in Staging Area C (See **Figure 2**).

3.8 CAMP Results

Dust monitoring of particulate matter less than 10 micrometers in diameter (PM_{10}), and in some cases total volatile organic compound (TVOC) monitoring, consisted of continuous real-time measurements upwind and downwind of the work site during daily activities. There was one upwind monitoring station and one or two downwind monitoring stations based on work area locations. The continuous real-time measurements at each air monitoring station were recorded as 15-minute time-averaged concentrations. Odor observations were taken periodically throughout the work day, and hydrogen sulfide (H_2S) was to be measured and compared to work perimeter limits if rotten-egg type odors were observed. There were no (zero) exceedances of the H_2S Work Perimeter Limit.

As part of Phase 3 of OU-1 construction, air monitoring was performed during the following three remedial action activities:

- Initial Remedial Action for 25 days from 9/12/17 to 10/24/17;
- Stormwater conveyance and outfall construction for 4 days from 2/05/18 to 2/08/18; and
- FMs #1 and 2 were completed concurrent with adjacent Ditch A remedial (which was work not associated with this vegetated cover system). Air Quality Monitoring (AQM) for Ditch A work occurred 3/19/18 to 10/10/18. Summaries applicable to construction of FMs #1 and 2 has been provided in **Appendix D**.

The following sections detail any TVOC or PM_{10} exceedances during air monitoring during construction.

3.8.1 Initial Remedial Action

From September 12, 2017 to October 24, 2017, 25 days of air monitoring was performed during remedial activities. There were no (zero) exceedances of the dust Control Level and Work

Perimeter Limit. As described in **Table 4**, there was one elevated dust concentration above criteria measured at the upwind station due to non-site related sources, and not considered an exceedance. Copies of field data sheets presenting daily summaries of the measurement results and station locations are provided in electronic format in **Appendix D**.

3.8.2 Deviation from the Remedial Action Design

From February 2, 2018 to February 8, 2018, 4 days of air monitoring were performed during the storm water conveyance piping and outfall construction for the NYS Fairground Access Improvement Project. There were no (zero) exceedances of the dust and TVOC Control Levels and Work Perimeter Limits. Copies of field data sheets presenting daily summaries of the measurement results and station locations are provided in electronic format in **Appendix D**.

3.8.3 Field Modifications 1 & 2

From March 19, 2018 to October 10, 2018, 95 days of air monitoring were performed during the Ditch A construction activities. Air Monitoring for the FMs #1 & 2 were captured as part of this work. There were no (zero) exceedances of the TVOC Control Level and Work Perimeter Limit, as indicated in **Table 4**, As described in **Table 4,** there were also several elevated dust concentrations above criteria measured at upwind and downwind stations due to non-site related sources; however, work during this exceedance was unrelated to the construction activities related to OU-1 Phase 3 FMs #1 and #2. Copies of field data sheets, relevant to FMs #1 and 2, presenting daily summaries of the measurement results and station locations are provided in electronic format in **Appendix D**.

3.9 Lessons Learned

This section provides a summary of materials or methods used during Phase 3 work, and subsequent FMs, that led to increased construction quality and efficiency.

- Blower and slinger trucks were used in the application of the vegetation enhancement materials. The construction team found that using a slinger truck was more efficient than the blower truck in this application because the vegetation enhancement material would often become clogged in the blower truck.
- Due to Phase 3 work limits and schedule overlapping with Onondaga County Amphitheater parking and summer concert schedule, substantial coordination with Onondaga County was necessary to ensure efficient and safe working conditions. The construction team maintained frequent communication with Onondaga County and in doing so was able to effectively plan active work zones that complemented the venue's operating schedule while still progressing the construction work.
- Due to Phase 3 work limits and schedule overlapping with the NYS Fairground Access Improvement Project schedule, substantial coordination with NYSDOT was necessary to ensure efficient and safe working conditions. The construction team maintained frequent communication with the NYSDOT and in doing so was able to effectively plan active work zones that complemented the project's operating schedule while still progressing the construction work.
- Utilized a CBI-5800 horizontal track grinder to keep brush cuttings on site and minimize generation of spoils and trucking generated with transporting spoils to staging area.
- The use of temporary construction mats to provide access pathways were used as a part of the original scope of work and in FM #3.

4. GREEN REMEDIATION TECHNIQUES

As indicated in the RAWP, the cover system design incorporated green remediation concepts referenced in DER-31 (NYSDEC 2011) and USEPA's Superfund Green Remediation Strategy (USEPA 2010). Specifically, cover systems were designed to require minimal maintenance, enhance evapotranspiration, and be integrated with the long-term use of the Site. In addition, the following green techniques were implemented during construction:

- Local sourcing of cover materials
- Use of local labor resources – consistent with the ongoing Honeywell Onondaga Lake program, construction craft labor resources were drawn from the local unions, including subcontracted services.
- Use of biodiesel in heavy equipment
- Minimization of equipment idling, consistent with 6 NYCRR Part 217-3 – Idling Prohibition for Heavy Duty Vehicles during the implementation of the project.

5. CONSTRUCTION QUALITY ASSURANCE / QUALITY CONTROL

Materials used during the remedial action met the RAWP CQA/CQC requirements. The following provides a summary of materials reviewed during construction:

- Vegetation Enhancement Cover Material Application Summary **(Appendix B)**
- Imported Backfill **(Appendix G)**
- Seed and Vegetation Information **(Appendix H)**
- Compost Technical Data **(Appendix I)**
- Compost Analytical Results **(Table 3)**

  Samples were collected from on-site mulch pile on three occasions during the Phase 3 work. Analytical tables (**Table 3**) and discussion of results, including any exceedances, from these sampling events were provided to, and approved for use by, NYSDEC.

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TABLES

Table 1
Honeywell
Wastebeds 1-8 OU-1: Phase 3 | Construction Completion Report
Chronology of Events

Date	Event
7/6/2015	NYSDEC approval of RD/RA Work Plan
7/28/2017	Phase 3- 2017 Remedial Action Work Plan Wastebeds 1-8 Operable Unit 1 (OU-1) submitted to NYSDEC
8/25/2017	Comments received from NYSDEC on Phase 3 - 2017 RAWP
7/28/2017	Revised Phase 3 - 2017 Remedial Action Work Plan Wastebeds 1-8 Operable Unit (OU-1) submitted to NYSDEC
9/20/2017	NYSDEC approval of Phase 3 - 2017 Remedial Action Work Plan Wastebeds 1-8 Operable Unit 1 (OU-1) which includes SWPPP and CHASP
5/19/2017	Pre-Construction Meeting
9/5/2017	Construction begins on Site
1/29/2018	Construction of Stormwater Outfall begins
4/14/2018	Construction of Stormwater Outfall completed
5/30/2018	Field Modification #1 submitted to NYSDEC
6/11/2018	NYSDEC Approval Field Modification #1
6/11/2018	Field Modification #2 submitted to NYSDEC
6/12/2018	NYSDEC Approval Field Modification #2
10/29/2018	Construction of Field Modification #1 and #2 begins
11/8/2018	Construction of Field Modification #1 and #2 completed
9/26/2018	Field Modification #3 submitted to NYSDEC
10/16/2018	Comments received from NYSDEC on Phase 3 - Field Modification #3
10/18/2018	Revised Field Modification #3 submitted to NYSDEC
10/18/2018	NYSDEC Approval Field Modification #3
11/18/2018	Construction of Field Modification #3 begins
3/1/2019	Construction of Field Modification #3 completed
3/1/2019	Construction Completed

Table 2
Honeywell
Wastebeds 1-8 OU-1: Phase 3 | Construction Completion Report
Quantities of Fill Added

Fill Type	Estimated Quantity	Units	Fill Location
Topsoil	3,200	CY	Original Scope of Work
Type 'J'	46	CY	Field Modification #2
Type 'F'	20	CY	Field Modification #2
Type 'H'	1,800	ton	Field Modification #3
18" Stone	32	CY	Field Modification #2
Mulch	5,952	CY	Original Scope of Work

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Table 3
Honeywell
Wastebeds 1-8 OU-1: Phase 3 | Construction Completion Report
Mulch & Compost Exceedance Summary Data

			Field Sample ID	WB18-022217-01	WB18-022217-03	WB18-083117-01	WB18-083117-03	WB18-101217-01
			Location	WB18-OCRRA-Amboy	WB18-OCRRA-Jamesville	WB18-OCRRA-Amboy	WB18-OCRRA-Jamesville	WB18-OCRRA-Amboy
	NYSDEC Part 375.6	NYSDEC Part 375.6	Sample Date	2/22/2017	2/22/2017	8/31/2017	8/31/2017	10/12/2017
	Restricted Residential	Protection of ECO	Sample Purpose	Regular sample	Regular sample	Regular sample	Regular sample	Regular sample
Parameter Name	Use SCOs	Resources SCOs	Units					
Indeno(1,2,3-cd)pyrene	0.5	NS	mg/kg	0.653*	0.941*	-	-	-
4-4'-DDE	13	0.0033	mg/kg	[0.191]	[0.0143]	[0.0115]	[0.0127]	[0.0084]
Chromium, hexavalent	110	1	mg/kg	[3.3]	[4.2]	[2.7]	[4.7]	[4.8]
Benzo(b)fluoranthene	1	NS	mg/kg	-	1.62*	1.07*	1.260*	-

Notes:

U - not detected, J - estimated value, B - estimated value, NC - no criteria, NS - not specified.

* - Exceeds NYSDEC Part 375.6 Restricted Residential Use Soil Cleanup Objectives (2006).

[ ] - Exceeds NYSDEC Part 375.6 Protectionc of Ecological Resources Soil Cleanup Objectives (2006).

Table 4
Honeywell
Wastebeds 1-8 OU-1: Phase 3 | Construction Completion Report
Perimeter Air Quality Monitoring Report

Construction Week (Monday)	Maximum 15-minute Dust Average[1] (µg/m³)	Maximum Background-Corrected 15-minute Dust Average[2] (µg/m³)	Maximum 15-minute TVOC Average[a] (ppm)	Maximum Background-Corrected 15-minute TVOC Average[3] (ppm)	Action Criteria Exceedance Date and Type	Exceedance Source and Corrective Action
Initial Remedial Action						
September 18, 2017	79	-	NA	NA	None	None
September 25, 2017	116[4]	-	NA	NA	Not Site-Related	None
October 2, 2017	41	-	NA	NA	None	None
October 9, 2017	24	-	NA	NA	None	None
October 16, 2017	35	-	NA	NA	None	None
October 23, 2017	57	-	NA	NA	None	None
Stormwater Conveyance						
February 5, 2018	14	-	0.8	-	None	None
Field Modifications 1 and 2						
March 19, 2018	10	-	0.1	-	None	None
March 26, 2018	44	-	0.3	-	None	None
April 2, 2018	58	-	0.5	-	None	None
April 9, 2018	60	-	0.2	-	None	None
April 16, 2018	29	-	<0.1	-	None	None
April 23, 2018	146	142	0.1	-	April 23, Dust Control Level	Dump truck traffic; additional water applied to road surface
April 30, 2018	28	-	0.1	-	None	None
May 7, 2018	62	-	0.2	-	None	None
May 14, 2018	53	-	0.2	-	None	None
May 21, 2018	42	-	0.3	-	None	None
May 28, 2018	60	-	0.1	-	None	None
June 4, 2018	122	115[5]	0.1	-	Not Site-Related	None
June 11, 2018	63	-	0.2	-	None	None
June 18, 2018	79	-	0.3	-	None	None
June 25, 2018	150	146[6]	0.2	-	Not Site-Related	None
July 2, 2018	120[7]	-	0.2	-	Not Site-Related	None

[1] As-measured, before background-correction.

[2] When measured concentration was ≥100 µg/m3 before background-correction.

[3] When measured concentration was ≥3 ppm before background-correction.

[4] 116 µg/m3 measured at the upwind station on September 27 due to non-site related traffic, and not considered an exceedance of the Dust Control Level. The next highest 15-minute concentration during this week was 77 µg/m3 before background-correction.

[5] 115 µg/m3 (background-corrected) measured at the downwind station on June 7 due to non-site related traffic, and not considered an exceedance of the Dust Control Level. The next highest 15-minute dust concentration during this week was 57 µg/m3 before background-correction.

[6] 146, 132, 114, and 100 µg/m3 (background-corrected) were measured at the downwind station on June 25 due to non-site related traffic and construction activities and are not considered exceedances of the Dust Control Level. The next highest 15-minute dust concentration during this week was 67 µg/m3 before background-correction.

[7] 120 µg/m3 measured at the upwind station on July 5 due to non-site related traffic and construction, and not considered an exceedance of the Dust Control Level. The next highest 15-minute dust concentration during this week was 80 µg/m3 before background-correction.

Construction Week (Monday)	Maximum 15-minute Dust Average[8] (µg/m³)	Maximum Background-Corrected 15-minute Dust Average[9] (µg/m³)	Maximum 15-minute TVOC Average[a] (ppm)	Maximum Background-Corrected 15-minute TVOC Average[10] (ppm)	Action Criteria Exceedance Date and Type	Exceedance Source and Corrective Action
Field Modifications 1 and 2						
July 9, 2018	33	-	0.1	-	None	None
July 18, 2018	231	228	0.1	-	July 18, Dust Work Perimeter Limit	Material management next to monitoring station; work stopped immediately following exceedance
July 23, 2018	27	-	0.8	-	None	None
September 10, 2018	30	-	0.2	-	None	None
September 17, 2018	374[11]	-	0.3	-	Not Site-Related	None
September 24, 2018	8	-	<0.1	-	None	None
October 1, 2018	48	-	<0.1	-	None	None
October 8, 2018	257[12]	-	<0.1	-	Not Site-Related	None

[8] As-measured, before background-correction.

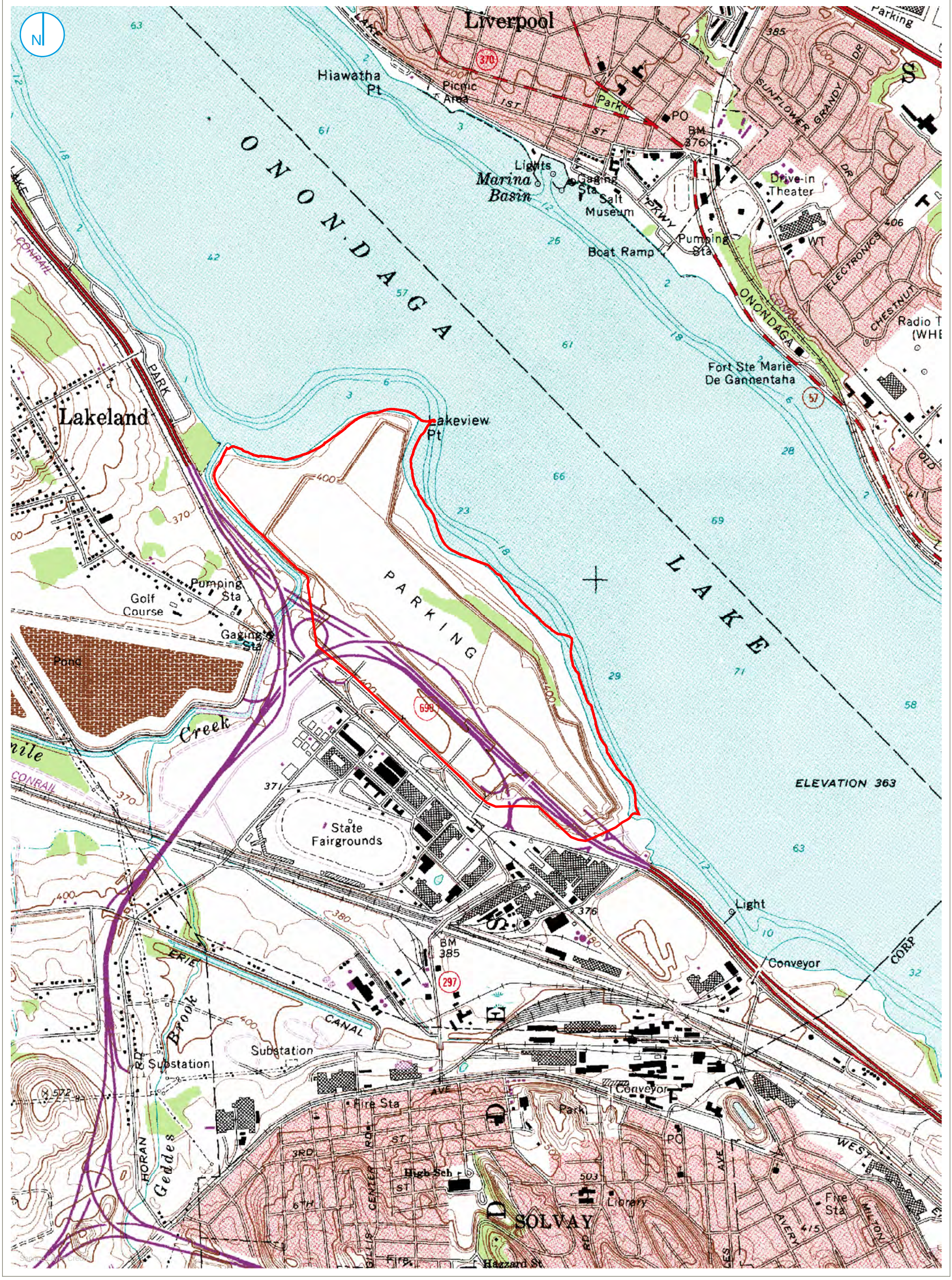
[9] When measured concentration was ≥100 µg/m3 before background-correction.

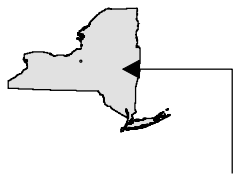
[10] When measured concentration was ≥3 ppm before background-correction.

[11] 374 and 173 µg/m3 were measured at the upwind station on September 19 due to non-site related traffic and are not considered exceedances of the Dust Work Perimeter Limit. 136 and 125 µg/m3 were measured at the upwind station on September 17 due to non-site related traffic and are not considered exceedances of the Dust Control Level. The next highest 15-minute dust concentration during this week was 51 µg/m3 before background-correction.

[12] 257, 137, and 112 µg/m3 were measured at the upwind station on October 9 due to non-site related traffic and are not considered exceedances of the Dust Work Perimeter Limit and Control Level. The next highest 15-minute dust concentration during this week was 98 µg/m3 before background-correction.

FIGURES





MAP LOCATION

0 2,000 4,000 Feet

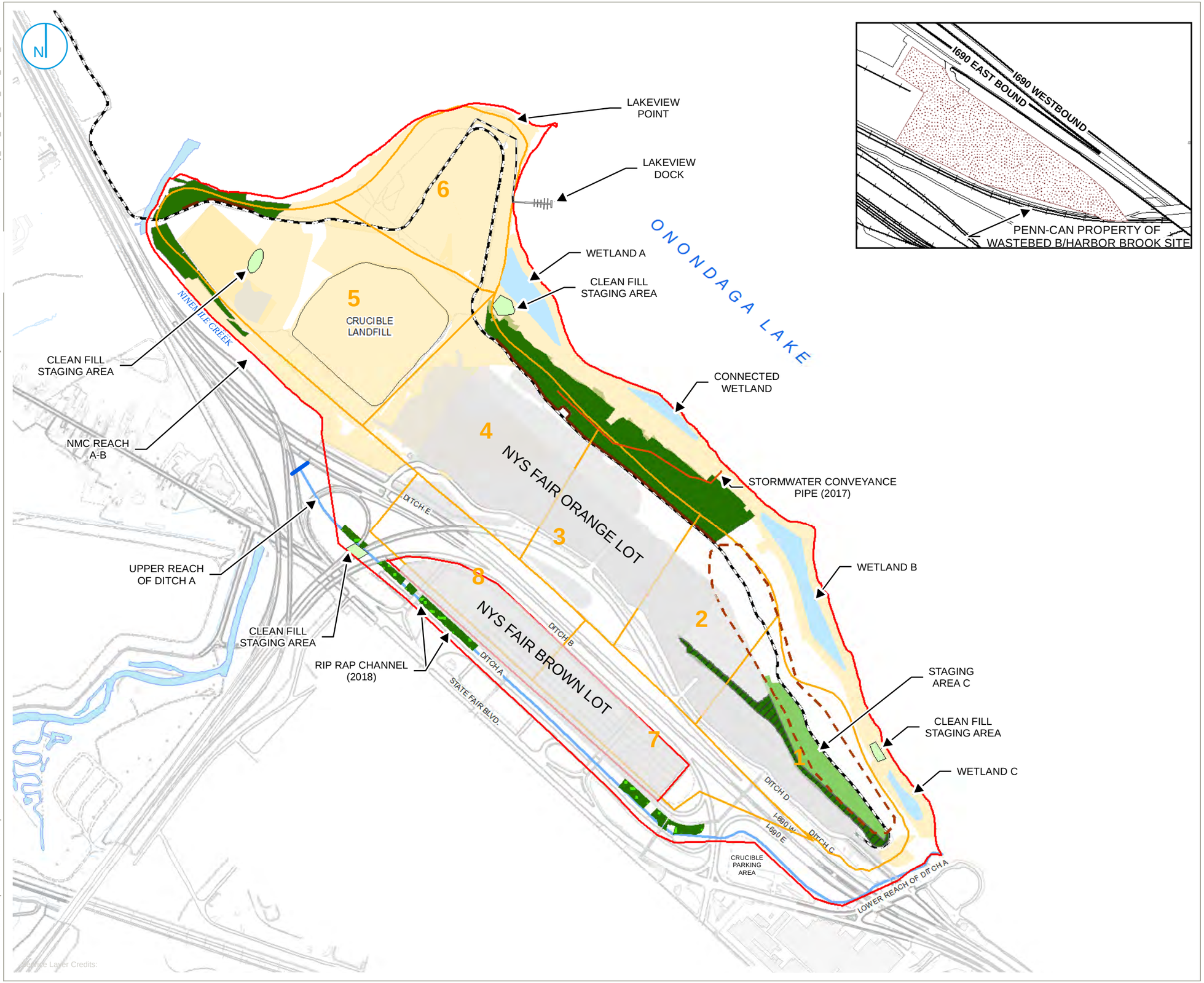
SITE LOCATION

Honeywell
OU-1 Phase 3 CCR
Wastebeds 1-8
Syracuse, New York

FIGURE 01

June 2020

RAMBOLL US CORPORATION
A RAMBOLL COMPANY



LEGEND

- ONONDAGA CANALWAYS TRAIL
- EXISTING COVER
- EXISTING WETLAND
- CLEAN FILL STAGING
- BIOSOLIDS AREA
- TEMPORARY CLEAN FILL STAGING
- STAGING AREA
- NYS FAIR PARKING LOTS AND AFFILIATED INFRASTRUCTURE
- APPROXIMATE WASTEBED BOUNDARY
- LAKEVIEW DOCK
- WASTEBEDS 1-8 SITE

COMPLETED PHASE 3 COVER

- 1-FT VEGETATED SOIL COVER (2017)
- VEGETATION ENHANCEMENT COVER (2017)
- VEGETATION ENHANCEMENT COVER (2018)
- STABILIZED VEGETATED SOIL COVER (2018)

0 1,000 2,000 Feet

OU-1 PHASE 3 SITE PLAN WITH COVER TYPES AND EXTENT

Honeywell International Inc.
OU-1 Phase 3 CCR
Wastebeds 1-8

FIGURE 2

December 2020

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RAMBOLL

PROJECT: 1163.71536 | DATED: 10/28/2020 | DESIGNER: KLABENAK
I:\Honeywell.1163\71536\GIS\DWG\DWF\Prop_Pilot_Test_Area_2019_Rev2_Ramboll.mxd

Service Layer Credits:

APPENDICES

APPENDIX A Record Drawings

APPENDIX B Vegetation Enhancement Cover Material Application Summary

APPENDIX C Pothole Investigation Summary

APPENDIX D Camp Field Data Sheets and Air Monitoring Data

APPENDIX E Photo Log

APPENDIX F As-Built Survey

APPENDIX G Off-Site Select Fill

APPENDIX H Seed and Vegetation Information

APPENDIX I Compost Nutrient Analysis

APPENDIX J Erosion Control Blanket

APPENDIX K Geocell

APPENDIX L Geo Cushion – Geotextile

APPENDIX M HDPE Geomembrane Liner

APPENDIX N HDPE Electrofusion Couplers

APPENDIX O HDPE Pipe

APPENDIX P Manhole Submittals

APPENDIX A
RECORD DRAWINGS

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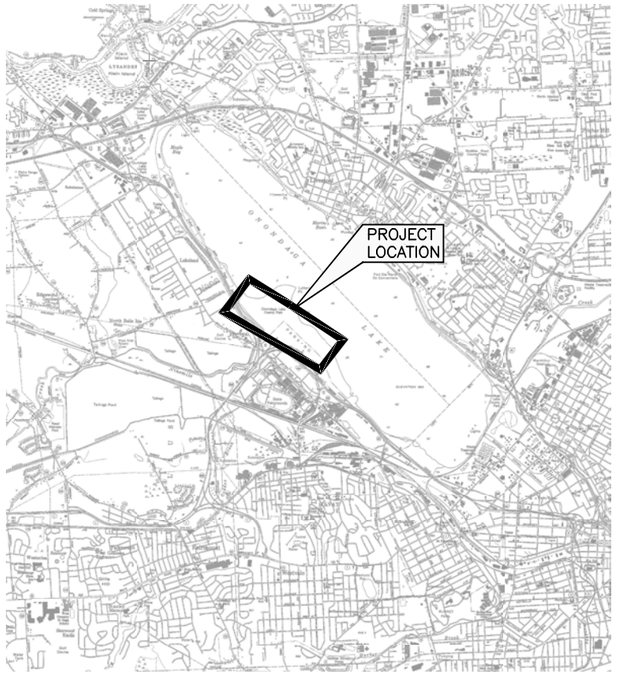
RECORD DRAWINGS



LOCATION PLAN
NOT TO SCALE
(SYRACUSE WEST, NY USGS QUAD)

WASTEBEDS 1-8
OU-1
PHASE 3 - 2017

HONEYWELL INTERNATIONAL INC.
SYRACUSE, NEW YORK

SEPTEMBER 2020

O'BRIEN & GERE ENGINEERS, INC.

STATE OF NEW YORK
DUANE E. WHITE
LICENSED PROFESSIONAL ENGINEER
052739

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RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

INDEX TO DRAWINGS

	TITLE SHEET
C-001	GENERAL NOTES, LEGEND, ABBREVIATIONS & KEY PLAN
C-101	PROPOSED PLAN
C-102	PROPOSED PLAN
C-103	PROPOSED PLAN
C-104	PROPOSED PLAN
C-105	PROPOSED PLAN
C-106	PROPOSED PLAN
C-107	PROPOSED PLAN
C-108	PROPOSED STABILIZATION / RESTORATION PLAN
C-301	PROFILES
C-302	PROFILES
C-501	MISCELLANEOUS DETAILS
C-502	MISCELLANEOUS DETAILS

1163.65768.TS

\\SYRACUSESVR\PROJECTS\HONEYWELL,1163\71538,DITCH-A-PLANS-7\DOCS\DWG\DWFOU-1 PHASE 3 RECORD DWG\TS TITLE SHEET.DWG

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GENERAL NOTES:

1. VERIFY ALL DIMENSIONS PERTINENT TO THE WORK OF THIS CONTRACT IN THE FIELD. IF DISCREPANCIES ARE FOUND BETWEEN THE PLANS AND PHYSICAL CONDITIONS OF THE SITE, NOTIFY THE ENGINEER AND HONEYWELL.
2. THESE DRAWINGS SHOW EXISTING CONTOURS AT A 1-FT INTERVAL.
3. PROPOSED WORK IS SHOWN IN BOLD TEXT AND LINES.
4. CONSTRUCTION SHALL GENERALLY PROCEED ACCORDING TO THE SEQUENCE PROVIDED IN THE REMEDIAL ACTION WORK PLAN.
5. COORDINATE ACCESS TO AND USE OF DISTURBED AREAS WITH ONONDAGA COUNTY, NYSDOT AND NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS.

TOPOGRAPHIC SURVEY AND MAPPING:

1. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THE CONTRACT DRAWINGS IS REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE) AND REFERENCED VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). HORIZONTAL COORDINATES ARE REFERENCED TO THE GRID COORDINATE SYSTEM.
2. TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THE CONTRACT DRAWINGS IS A COMPILATION OF MAPPING FROM THE FOLLOWING SOURCES:

   GROUND SURVEY PREPARED BY THEW ASSOCIATES, PLLC OF THE WASTEBEDS 1-8, 1-FT CONTOUR INTERVAL, DATED AUGUST 4, 2014. SURVEY PROVIDED BY ONONDAGA COUNTY.

   GROUND SURVEY PREPARED BY C.T. MALE ASSOCIATES FOR PORTIONS OF THE WASTEBEDS 1-8, 1-FT CONTOUR INTERVAL, DATED DECEMBER 21, 2015.

   EDGE OF PAVEMENT SURVEY PREPARED BY C.T. MALE ASSOCIATES DATED 8/23/18.

   GROUND SURVEY DATA SHOWN ON SHEET C-108 SUPERSEDED BY TOPOGRAPHIC SURVEY PREPARED BY C.T. MALE ASSOCIATES ON 28 MARCH 2019 AS REFERENCED IN APPENDIX F.

GENERAL UTILITY:

1. THE APPROXIMATE LOCATION OF KNOWN EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS. VERIFY THE TRUE LOCATION PRIOR TO COMMENCING WORK.
2. COORDINATE WORK AFFECTING EXISTING UTILITIES WITH THE RESPECTIVE UTILITY COMPANY OWNER. DETAILS OF CONSTRUCTION AND/OR RELOCATION SHALL BE APPROVED BY THE UTILITY OWNERS AND OTHER APPROVING AGENCIES, IF REQUIRED.
3. EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS AND FOREIGN MATTER AND OPERATIONAL THROUGHOUT THE DURATION OF THE PROJECT.
4. UPON COMPLETION OF THE CONTRACT WORK, EXISTING DRAINAGE SYSTEMS TO REMAIN WITHIN THE LIMITS OF THIS CONTRACT WILL BE CLEANED FOLLOWING COMPLETION OF WORK TO ATTAIN THEIR FULL FLOW CAPABILITIES.
5. ALL WORK SHALL BE PERFORMED IN SUBSTANTIVE COMPLIANCE WITH NYSDEC SPDES GP-0-15-002 AND PURSUANT TO THE SITE SWPPP.
6. EXISTING UTILITIES AND INSTRUMENTS (I.E. MONITORING WELLS) SHALL BE PROTECTED DURING CONSTRUCTION.

CONSTRUCTION NOTES:

VEGETATION APPLICATION:

1. SEED SHALL BE INSTALLED IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS SPECIFICATION SECTION 31 22 19.

EROSION AND SEDIMENT CONTROL:

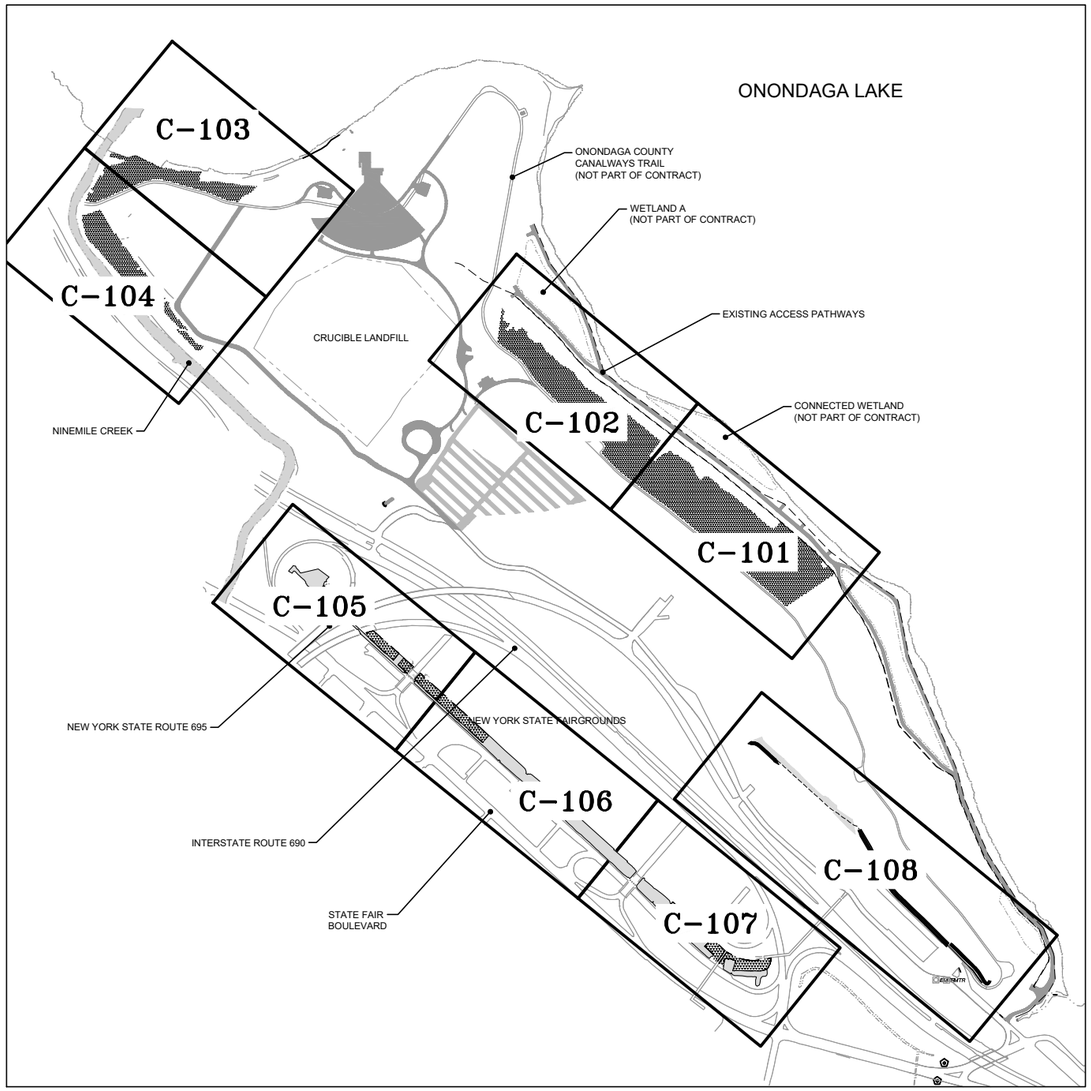
1. STABILIZED CONSTRUCTION ENTRANCES SHALL BE LOCATED AS REQUIRED PER CONSTRUCTION ACTIVITIES, SEE DETAIL 'A' SHEET C-501.

LEGEND

- MW-02S — EXISTING MONITORING WELL
- EXISTING UTILITY POLE
- EXISTING STORM DRAIN MANHOLE
- EXISTING HANDHOLE
- EXISTING CATCH BASIN
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE/SHRUB
- EXISTING VEGETATION
- OH/ELE — EXISTING APPROX. O.H. ELECTRIC
- OH/E+T — EXISTING APPROX. ELECTRIC + TELEPHONE
- OHW — EXISTING APPROX. O.H. WIRE
- UGE — EXISTING UNDERGROUND ELECTRIC
- EXISTING FENCE
- EXISTING WOODS
- EXISTING GUIDE RAIL
- EXISTING COLLECTION TRENCH PIPE
- EXISTING EDGE OF WATER
- 370 — EXISTING CONTOUR
- CO — EXISTING CLEAN OUT
- EXISTING GRAVEL DRIVE
- PROPERTY LINE
- LIMIT OF PROPOSED VEGETATION ENHANCEMENT
- LIMIT OF PROPOSED VEGETATED SOIL COVER
- LIMIT OF EXISTING RIPRAP
- 265.93' (CM) N 62° 09' 17" W — BEARING & DISTANCE
- COVER LIMIT BOUNDARY
- LIMIT OF WASTEBEDS 1-8 INTEGRATED IRM ADDENDUM #4

ABBREVIATIONS

FT	FOOT/FEET
I	INTERSTATE
O.H.	OVERHEAD
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TYP.	TYPICAL



KEY PLAN

SCALE: 1" = 500' 500' 0 500'

TRUE NORTH

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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IN CHARGE OF	D. CRAWFORD
DESIGNED BY	J. CHAGNON
CHECKED BY	DTF
DRAWN BY	MWH

NO.	DATE	REVISION	INT.
2	9/4/2020	RECORD DRAWINGS	BEW
1	9/26/18	FIELD MODIFICATION	DMC
0	06/12/2018	ISSUED FOR CONSTRUCTION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

GENERAL NOTES, LEGEND, ABBREVIATIONS & KEY PLAN

FILE NO. 1163.65768 -001
DATE JUNE 2018

C-001

\\SYRACUSESVR\PROJECTS\HONEYWELL.1163\71536.DITCH-A-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\60388-010-C001.DWG

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MATCH LINE A

ONONDAGA LAKE

EXISTING ACCESS PATHWAY
(NOT PART OF CONTRACT)

EXISTING SEEP APRON
(NOT PART OF CONTRACT)

EXISTING SEEP APRON
(NOT PART OF CONTRACT)

ES-DOT-1
STA. = 16+73
RIM ELEV = 368.6
24" INV OUT = 365.00

16+73

16+42 24"
114' @ 0.020

MH-DOT-7
STA. = 15+59
RIM ELEV = 376.0
36" INV IN = 370.10
24" INV OUT = 367.30

15+59

95' @ 0.005

MH-DOT-6
STA. = 15+04
RIM ELEV = 380.6
36" INV IN = 375.20
36" INV OUT = 370.50

15+04

116' @ 0.005

MH-DOT-5
STA. = 13+88
RIM ELEV = 384.9
36" INV IN = 381.30
36" INV OUT = 375.80

13+88

MH-DOT-4
STA. = 13+25
RIM ELEV = 392.9
36" INV IN = 387.00
36" INV OUT = 381.60

13+25

63' @ 0.005

MH-DOT-3
STA. = 9+41
RIM ELEV = 394.9
36" INV IN = 389.00
36" INV OUT = 389.00

9+41

384' @ 0.005

MH F-4
STA. = 8+34
RIM ELEV = 393.8
36" INV IN = 390.00
36" INV OUT = 390.00

8+34

204' @ 0.005

MH-DOT-2
STA. = 6+30
RIM ELEV = 401.9
36" INV IN = 396.00
36" INV OUT = 391.00

6+30

VEGETATED SOIL COVER
APPLIED OVER LIMITS OF
DISTURBANCE FOR
STORMWATER
CONVEYANCE SYSTEM,
SEE NOTE 1

CONVEYANCE SYSTEM
LIMITS OF DISTURBANCE

VEGETATION ENHANCEMENT COVER (TYP.)
SEE DETAIL 'C' SHEET C-501
APPLIED OVER LIMITS OF DISTURBANCE
FOR STORMWATER CONVEYANCE SYSTEM,
SEE NOTE 2

ONONDAGA LAKE CANALWAYS TRAIL
(NOT PART OF CONTRACT)

4-12" SOIL PLACED TO ACHIEVE
VEGETATED SOIL COVER (SEE
DETAIL 'C' SHEET C-501) PER
FIELD DIRECTIVE #1

COVER LIMIT
BOUNDARY (TYP.)

VEGETATION ENHANCEMENT
COVER SEE DETAIL 'D'
SHEET C-501

MATCH LINE A

PLAN

SCALE: 1"=50' 50' 0 50'

TRUE NORTH

NOTES:

1. IN THIS AREA, IN LIEU OF VEGETATION ENHANCEMENT MATERIAL, TOP SOIL WAS PLACED TO ACHIEVE A MINIMUM OF 6" COVER OVER LIMITS OF DISTURBANCE FOR STORMWATER CONVEYANCE SYSTEM. TOP SOIL WITHIN THIS AREA WAS RESTORED IN ACCORDANCE WITH DETAIL "D" SHEET C-501
2. IN THIS AREA, VEGETATION ENHANCEMENT COVER WAS USED TO ACHIEVE COVER OVER LIMITS OF DISTURBANCE FOR STORMWATER CONVEYANCE

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK — BLAKE W. WITTE — 82139 — LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF	D. CRAWFORD
DESIGNED BY	J. CHAGNON
CHECKED BY	J. MARSH
DRAWN BY	M. PIETRA

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	ISSUED FOR CONSTRUCTION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED PLAN

FILE NO. 1163.65768-101

DATE JUNE 2018

C-101

\\SYRACUSESVR\PROJECTS\HONEYWELL 1163\71538.DITCH-A-PLANS-7\DOCS\DWG\DWF\OU4 PHASE 3 RECORD DWG\C-101 PROPOSED PLAN.DWG

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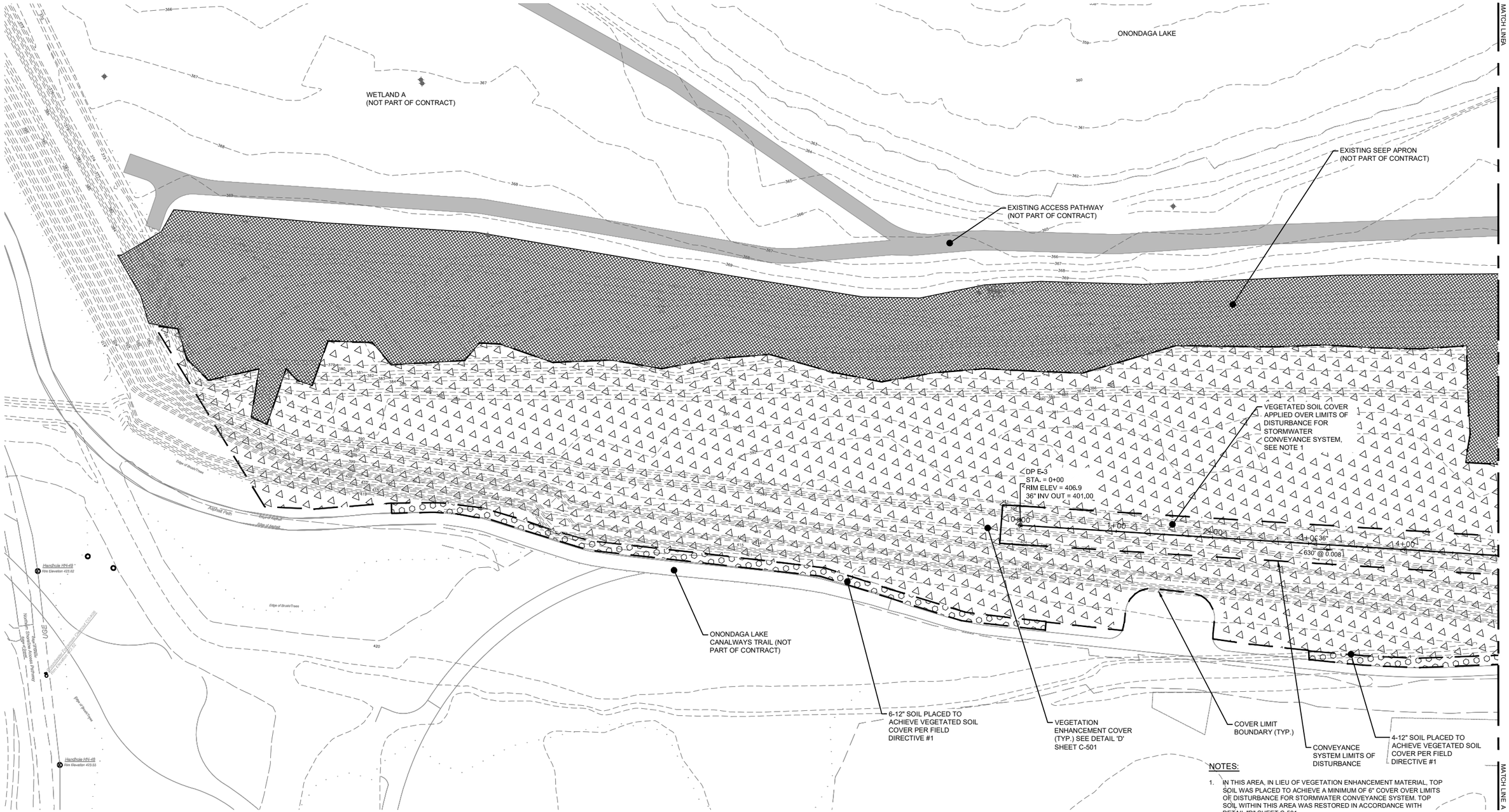

NOTES:

1. IN THIS AREA, IN LIEU OF VEGETATION ENHANCEMENT MATERIAL, TOP SOIL WAS PLACED TO ACHIEVE A MINIMUM OF 6" COVER OVER LIMITS OF DISTURBANCE FOR STORMWATER CONVEYANCE SYSTEM. TOP SOIL WITHIN THIS AREA WAS RESTORED IN ACCORDANCE WITH DETAIL "D" SHEET C-501

PLAN

SCALE: 1"=50' 50' 0 50'

TRUE NORTH

RECORD DRAWINGS
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O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK — BRIAN E. WISE — LICENSED PROFESSIONAL ENGINEER — 073179

IN CHARGE OF	D. CRAWFORD
DESIGNED BY	J. CHAGNON
CHECKED BY	J. MARSH
DRAWN BY	M. PIETRA

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	ISSUED FOR CONSTRUCTIION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED PLAN

FILE NO. 1163.65768-102

DATE JUNE 2018

C-102

\\SYRACUSESVR\PROJECTS\HONEYWELL.1183\71536.DIT\CH4xPLANS\7DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\C-102 PROPOSED PLAN.DWG

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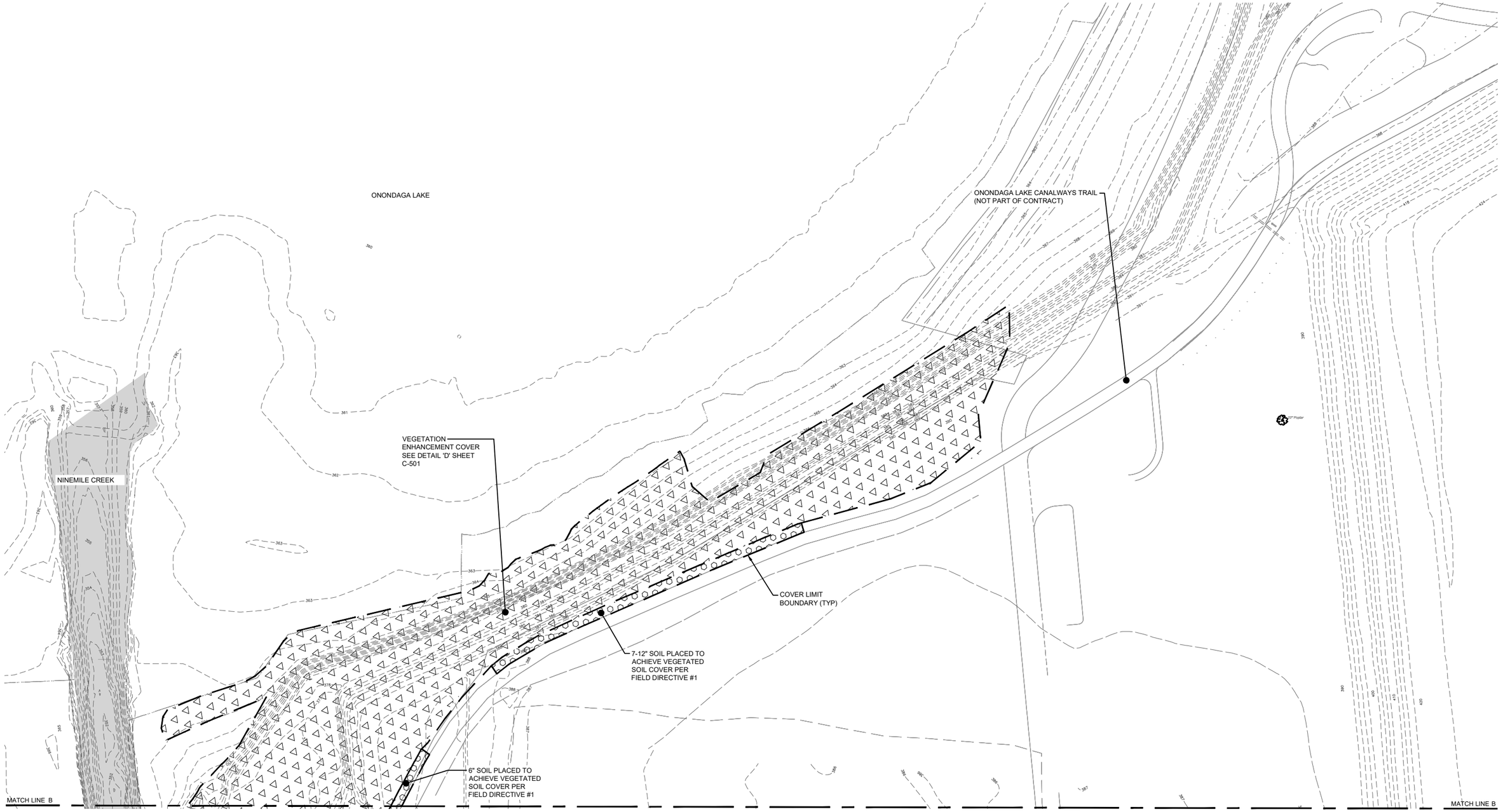

PLAN

SCALE: 1"=50' 50' 0 50'

TRUE NORTH

RECORD DRAWINGS
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O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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IN CHARGE OF	D. CRAWFORD
DESIGNED BY	J. CHAGNON
CHECKED BY	J. MARSH
DRAWN BY	M. PIETRA

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	ISSUED FOR CONSTRUCTION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED PLAN

FILE NO. 1163.65768 -103

DATE JUNE 2018

C-103

\\SYRACUSESVR\PROJECTS\HONEYWELL,1163\71536,DITCH4\PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\C-103 PROPOSED PLAN.DWG

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MATCH LINE B

MATCH LINE B

6" SOIL PLACED TO ACHIEVE VEGETATED SOIL COVER PER FIELD DIRECTIVE #1

COVER LIMIT BOUNDARY (TYP.)

VEGETATION ENHANCEMENT COVER SEE DETAIL 'D' SHEET C-501

VEGETATION ENHANCEMENT COVER SEE DETAIL 'D' SHEET C-501

NINEMILE CREEK

COVER LIMIT BOUNDARY (TYP.)

ONONDAGA LAKE CANALWAYS TRAIL (NOT PART OF CONTRACT)

PLAN

SCALE: 1"=50' 50' 0 50'

TRUE NORTH

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK BRIAN E. WHITE 072130 LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF	D. CRAWFORD
DESIGNED BY	J. CHAGNON
CHECKED BY	J. MARSH
DRAWN BY	M. PIETRA

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	ISSUED FOR CONTSRUCTION	BEW

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED PLAN

FILE NO. 1163.65768-104

DATE JUNE 2018

C-104

\\SYRACUSESVR\PROJECTS\HONEYWELL.1163\71536.DIT\CH4\4-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\C-104 PROPOSED PLAN.DWG

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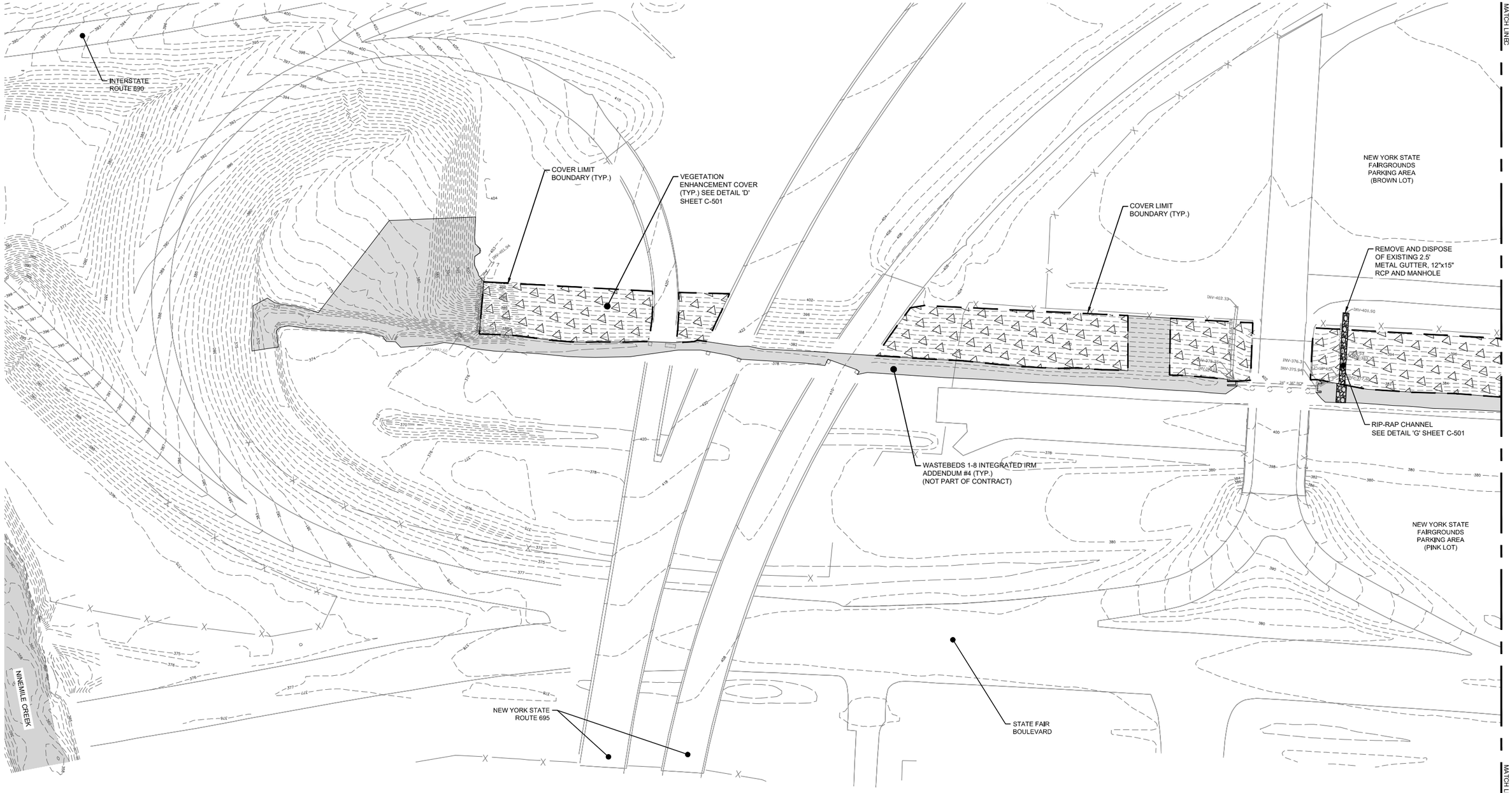

SITE PLAN

SCALE: 1"=50' 50' 0 50'

TRUE NORTH

RECORD DRAWINGS
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O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK — DUANE W. HITE — 112739 — LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF	D. CRAWFORD
DESIGNED BY	J. CHAGNON
CHECKED BY	J. MARSH
DRAWN BY	D. KENT

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	ISSUED FOR CONSTRUCTION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED PLAN

FILE NO. 1163.65768-105

DATE JUNE 2018

C-105

\\SYRACUSESVR\PROJECTS\HONEYWELL 1163\71536.DITCH-A-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\C-105 SITE PLAN.DWG

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MATCH LINE C

MATCH LINE D

NEW YORK STATE
FAIRGROUNDS
PARKING AREA
(BROWN LOT)

NEW YORK STATE
FAIRGROUNDS
PARKING AREA
(PINK LOT)

COVER LIMIT
BOUNDARY (TYP.)

REMOVE AND DISPOSE
OF EXISTING CATCH
BASIN, 15" RCP GUTTER
AND END SECTION

VEGETATION
ENHANCEMENT COVER
(TYP.) SEE DETAIL 'D'
SHEET C-501

RIP-RAP CHANNEL
SEE DETAIL 'G' SHEET C-501

WASTEBEDS 1-8
ADDENDUM #4 (TYP.)
(NOT PART OF CONTRACT)

STATE FAIR
BOULEVARD

SITE PLAN

SCALE: 1"=50' 50' 0 50'

TRUE
NORTH

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE
ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK · BRIAN E. WHITE · 092150 · LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF D. CRAWFORD
DESIGNED BY J. CHAGNON
CHECKED BY J. MARSH
DRAWN BY D. KENT

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	ISSUED FOR CONSTRUCTION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED PLAN

FILE NO. 1163.65768-106

DATE JUNE 2018

C-106

\\SYRACUSESVR\PROJECTS\HONEYWELL_1163\71536.DITCH4\4-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\C-106 SITE PLAN.DWG

SAVED: 5/29/20 1:26 PM

MATCH LINE D

NEW YORK STATE FAIRGROUNDS PARKING AREA (BROWN LOT)

INTERSTATE ROUTE 690 RAMP

INTERSTATE ROUTE 690

INTERSTATE ROUTE 690 RAMP

COVER LIMIT BOUNDARY (TYP.)

VEGETATION ENHANCEMENT COVER (TYP.) SEE DETAIL 'D' SHEET C-501

VEGETATION ENHANCEMENT COVER (TYP.) SEE DETAIL 'D' SHEET C-501

COVER LIMIT BOUNDARY (TYP.)

WASTEBEDS 1-8 ADDENDUM #4 (TYP.) (NOT PART OF CONTRACT)

NEW YORK STATE FAIRGROUNDS PARKING AREA (PINK LOT)

STATE FAIR BOULEVARD

MATCH LINE D

SITE PLAN

SCALE: 1"=50' 50' 0 50'

TRUE NORTH

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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IN CHARGE OF	D. CRAWFORD
DESIGNED BY	J. CHAGNON
CHECKED BY	J. MARSH
DRAWN BY	D. KENT

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	FIELD MODIFICATION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED PLAN

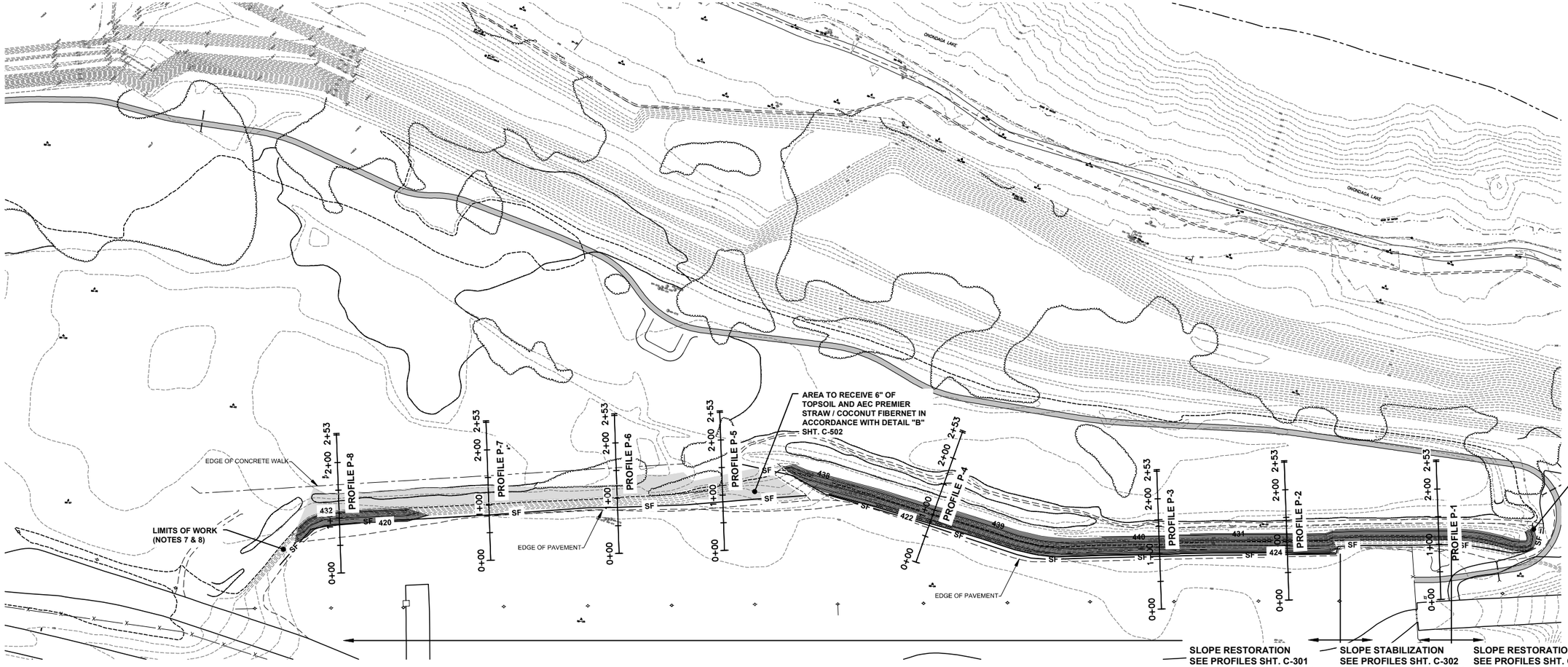
FILE NO. 1163.65768 -107

DATE JUNE 2018

C-107

\\SYRACUSESVR\PROJECTS\HONEYWELL 1163\71536.DIT\CHA-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\C-107 SITE PLAN.DWG

SAVED: 5/29/20 1:51 PM



PROPOSED STABILIZATION / RESTORATION PLAN

1"=100' 100' 0 100'

NORTH

PROFILE NOTES:

1. EXACT DIMENSIONS AND LOCATIONS OF ALL EXISTING STRUCTURES AND UTILITIES ARE CONSIDERED APPROXIMATE ONLY AND SHALL BE VERIFIED IN THE FIELD AS REQUIRED TO PERFORM THE WORK.
2. EXISTING GRADE ELEVATION CONTOURS ARE TO BE CONSIDERED APPROXIMATE ONLY. ALL ELEVATIONS SHALL BE VERIFIED IN THE FIELD AS REQUIRED TO PERFORM THE WORK.
3. ALL EROSION AND SEDIMENT CONTROL LOCATIONS SHOWN HERE ARE APPROXIMATE ONLY AND SHALL BE PROVIDED AT A MINIMUM.
4. THE CONTRACTOR SHALL MAINTAIN OR PROVIDE BYPASS OF FLOW FROM EXISTING DRAINAGE CHANNELS AT ALL TIMES. PROPER EROSION CONTROL TECHNIQUES SHALL BE IMPLEMENTED AS REQUIRED PRIOR TO DISTURBING EXISTING SITE SOILS AND VEGETATION.
5. REFER TO SHT. C-501 FOR EROSION AND SEDIMENT CONTROL DETAILS.
6. LIMITS OF WORK AT THE NORTHWEST END SHALL BE VERIFIED IN THE FIELD AND SHOULD GENERALLY MATCH THE LIMITS OF WORK PREVIOUSLY COMPLETED BY OTHERS.
7. LIMITS OF RESTORATION WORK SHALL TYPICALLY EXTEND 3 FT BEYOND PROPOSED STABILIZATION WORK, BUT MAY BE MODIFIED TO ACCOMMODATE FIELD CONDITIONS.
8. LIMITS OF RESTORATION WORK, EXCLUDING EXTENTS OF GEOCEL, AND GRADES SHOWN ABOVE ARE SUPERSEDED BY C.T. MALE SURVEY DATED 28 MARCH 2019 AS REFERENCED IN APPENDIX F.

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK — BRIAN E. WHITE — 072175 — LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF D. CRAWFORD
DESIGNED BY MWH
CHECKED BY DTF
DRAWN BY MWH

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	9/24/18	FIELD MODIFICATION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL, INC.
WASTEBEDS 1-8 IRM OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROPOSED STABILIZATION / RESTORATION PLAN

FILE NO. 1163.65768 -108
DATE SEPTEMBER 2018

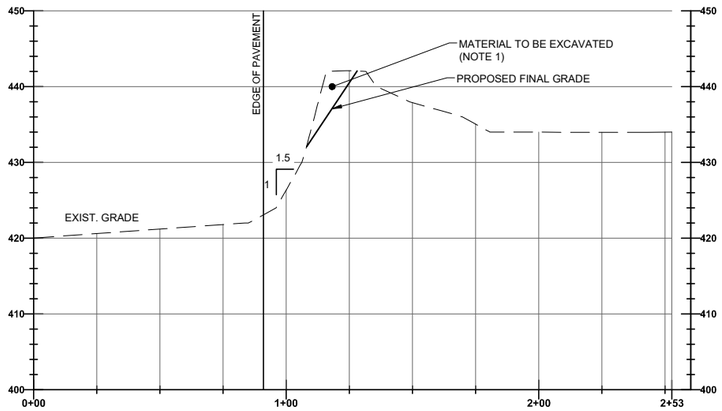
C-108

I:\SYRACUSES\WP\PROJECTS\HONEYWELL 1163\71536.DIT\CIVIL\PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\65768 C-108-301-302-502_REV1.DWG

SAVED: 5/29/20 1:51 PM

PROFILES SHOWN HERE FOR DESIGN PURPOSES

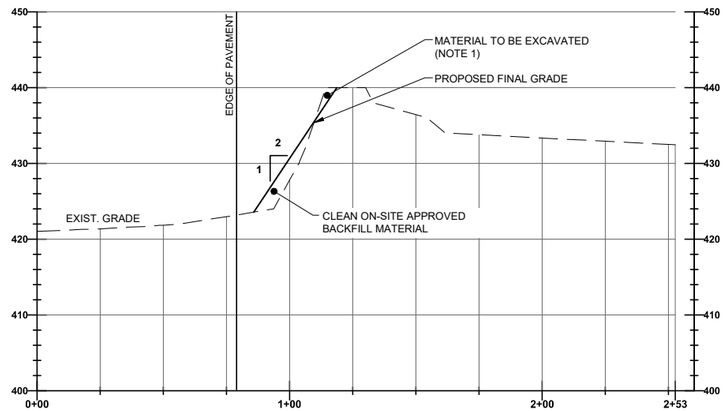
SEE NOTE 4



PROFILE P-1

HORIZ. SCALE: 1" = 30' 30' 0 30'

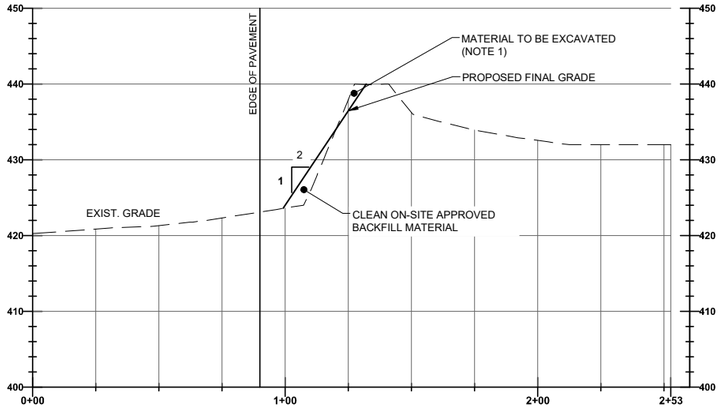
VERT. SCALE: 1" = 10' 10' 0 10'



PROFILE P-2

HORIZ. SCALE: 1" = 30' 30' 0 30'

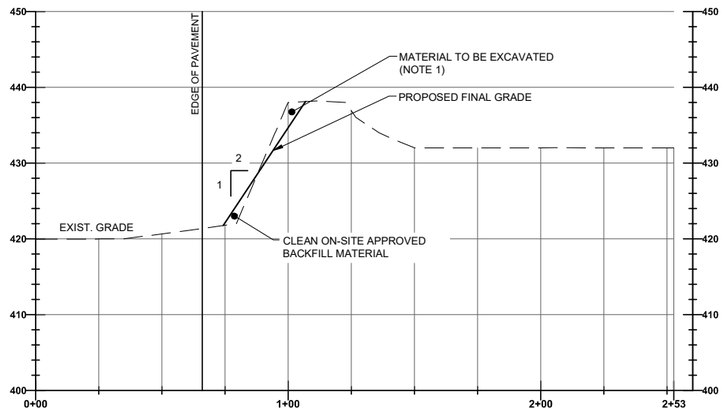
VERT. SCALE: 1" = 10' 10' 0 10'



PROFILE P-3

HORIZ. SCALE: 1" = 30' 30' 0 30'

VERT. SCALE: 1" = 10' 10' 0 10'



PROFILE P-4

HORIZ. SCALE: 1" = 30' 30' 0 30'

VERT. SCALE: 1" = 10' 10' 0 10'

PROFILE NOTES:

1. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF ON-SITE AS DIRECTED BY THE ENGINEER.
2. PROFILE SHOWN HERE WITH 1:1.5 SLOPE SHALL BE STABILIZED IN ACCORDANCE WITH DETAIL "A" SLOPE STABILIZATION DETAIL SHT. C-502.
3. PROFILES SHOWN HERE WITH 1:2 SLOPES SHALL BE RESTORED IN ACCORDANCE WITH DETAIL "B" SLOPE RESTORATION DETAIL SHT. C-502.
4. PROFILES SHOWN HERE FOR DESIGN PURPOSES - FINAL GRADES REFLECTED IN AS-BUILT SURVEY DATED 28 MARCH 2019 AND STABILIZED LIMITS AS SHOWN ON SHEET C-108

RECORD DRAWINGS

To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK · BRIAN E. WHITE · 072139 · LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF D.CRAWFORD
DESIGNED BY MWH
CHECKED BY DTF
DRAWN BY MWH

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	09/24/18	FIELD MODIFICATION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL, INC.
WASTEBEDS 1-8 IRM OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROFILES

FILE NO. 1163.65768. -301

DATE SEPTEMBER 2018

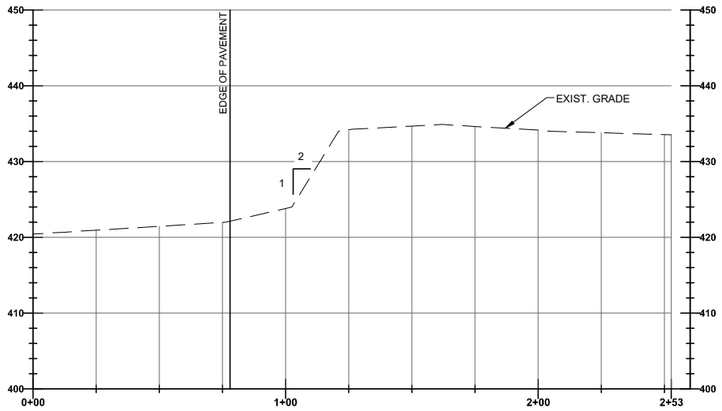
C-301

\\SYRACUSESVR\PROJECTS\HONEYWELL,1163715\8.0\TC\HA-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\65768 C-108-301-302-502_REV1.DWG

SAVED: 5/29/20 1:56 PM

PROFILES SHOWN HERE FOR DESIGN PURPOSES

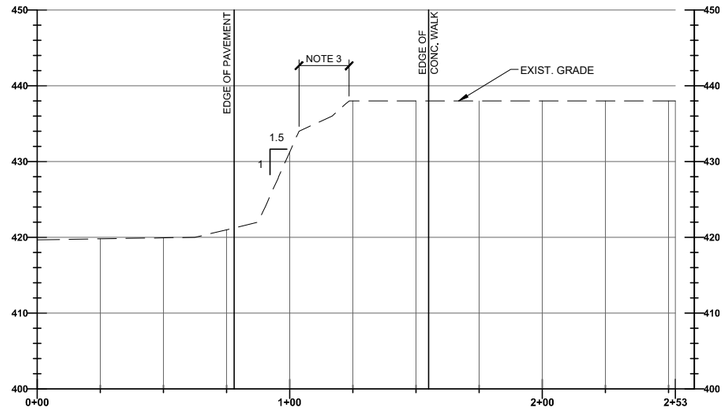
SEE NOTE 4



PROFILE P-5

HORIZ. SCALE: 1" = 30' 30' 0 30'

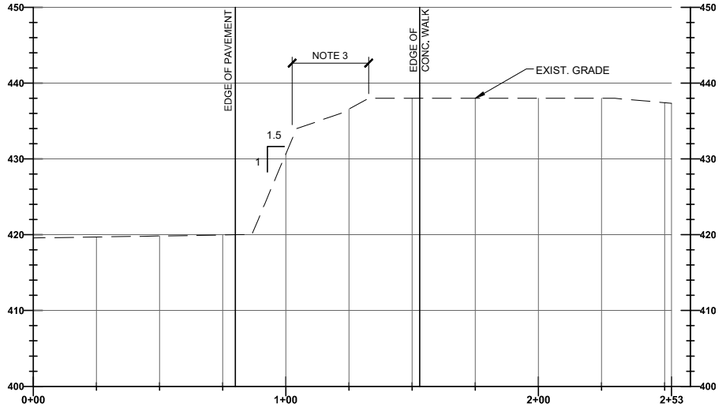
VERT. SCALE: 1" = 10' 10' 0 10'



PROFILE P-6

HORIZ. SCALE: 1" = 30' 30' 0 30'

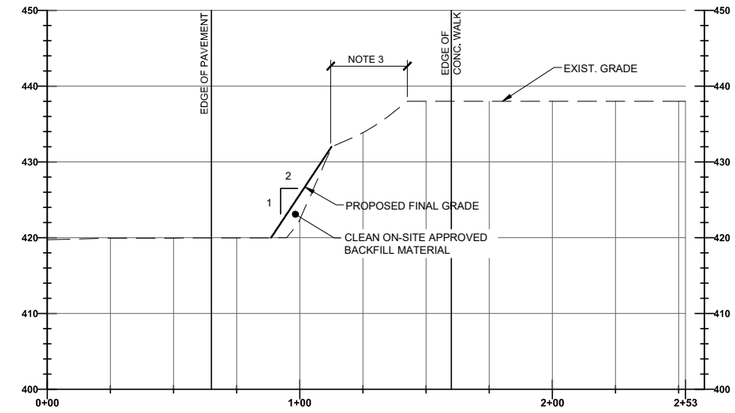
VERT. SCALE: 1" = 10' 10' 0 10'



PROFILE P-7

HORIZ. SCALE: 1" = 30' 30' 0 30'

VERT. SCALE: 1" = 10' 10' 0 10'



PROFILE P-8

HORIZ. SCALE: 1" = 30' 30' 0 30'

VERT. SCALE: 1" = 10' 10' 0 10'

PROFILE NOTES:

1. PROFILE SHOWN HERE WITH 1:1.5 SLOPE SHALL BE STABILIZED IN ACCORDANCE WITH DETAIL "A" SLOPE STABILIZATION DETAIL SHT. C-502.
2. PROFILES SHOWN HERE WITH 1:2 SLOPES SHALL BE RESTORED IN ACCORDANCE WITH DETAIL "B" SLOPE RESTORATION DETAIL SHT. C-502.
3. AREA SHOWN TO BE STABILIZED IN ACCORDANCE WITH DETAIL "B" SLOPE RESTORATION DETAIL SHT. C-502.
4. PROFILES SHOWN HERE FOR DESIGN PURPOSES - FINAL GRADES REFLECTED IN AS-BUILT SURVEY DATED 28 MARCH 2019 AND STABILIZED LIMITS AS SHOWN ON SHEET C-108

RECORD DRAWINGS

To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

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STATE OF NEW YORK — BRIAN E. WHITE — LICENSED PROFESSIONAL ENGINEER — 092135

IN CHARGE OF D. CRAWFORD
DESIGNED BY MWH
CHECKED BY DTF
DRAWN BY MWH

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	9/24/18	FIELD MODIFICATION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL, INC.
WASTEBEDS 1-8 IRM OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

PROFILES

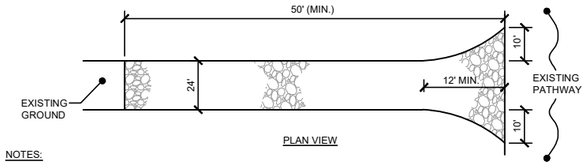
FILE NO. 1163.65768. -302

DATE SEPTEMBER 2018

C-302

I:\SYRACUSES\YR\PROJECTS\HONEYWELL\1163\71536.DIT\CH4A-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\65768 C-108-301-302-502.DWG

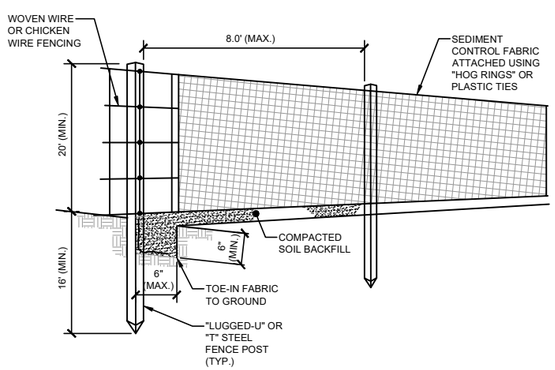
SAVED: 5/29/20 1:21 PM



NOTES:

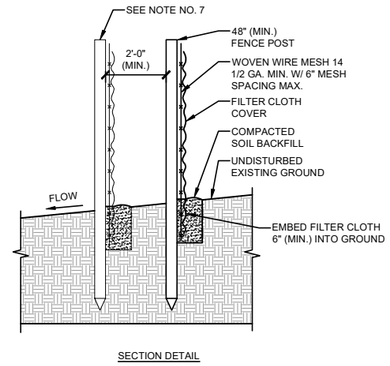
1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET
3. THICKNESS - NOT LESS THAN 6".
4. WIDTH 24' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE EGRESS OCCURS.
5. FILTER FABRIC (MIRAFI 600X OR EQUAL) - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - SURFACE WATER FLOWING OR DIVERTED TOWARDS CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS NOT POSSIBLE, A MOUNTABLE BERM 3' WIDE (MIN.) WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC OP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE PERFORMED ON AN AREA STABILIZED WITH 2" TYPE 'J' SELECT FILL.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED IN ACCORDANCE WITH THE SITE STORM WATER POLLUTION PREVENTION PLAN.
10. STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AS NEEDED TO MINIMIZE SEDIMENTATION AND OFF SITE TRACKING. LOCATIONS SHALL BE AS REVIEWED BY THE ENGINEER.

A STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



NOTES:

1. SILT FENCE SHALL BE PLACED AROUND STOCKPILE AREAS AND AREAS OF SEDIMENT TRANSPORT AS REVIEWED BY THE ENGINEER.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
4. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
6. FILTER FABRIC FENCE MUST BE INSTALLED AT LEVEL GRADE. BOTH ENDS OF EACH FENCE SECTION MUST BE TURNED UP SLOPE TO AN ELEVATION CHANGE OF 18".
7. SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
8. FENCE SHALL BE DOUBLED AT THE TOW OF ALL SLOPES GREATER THAN 15 PERCENT, AND ADJACENT TO WATER BODIES, WETLANDS AND ALL ENVIRONMENTAL SENSITIVE AREAS.



SECTION DETAIL

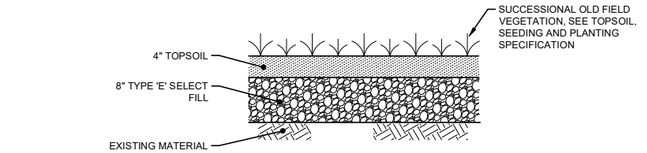
POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE 14.5 GAUGE 6" MAX. MESH OPENING

FILTER CLOTH: MINIMUM TENSILE STRENGTH OF 120LBS. (ASTM D-16826)

PREFABRICATED UNIT: MIRAFI ENVIROFENCE, OR EQUAL

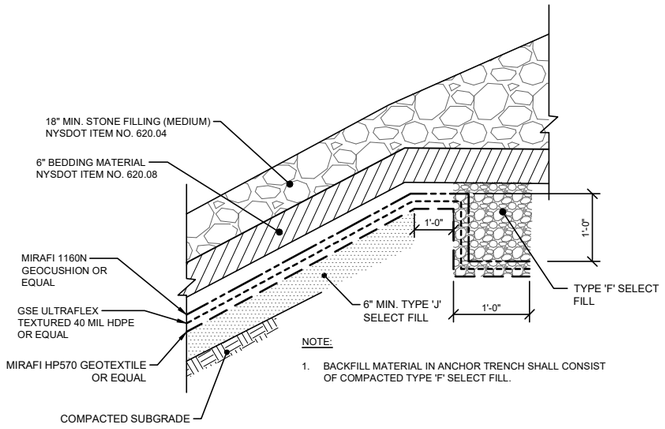
B SILT FENCE DETAIL
NOT TO SCALE



C VEGETATED SOIL COVER
NOT TO SCALE

NOTE:

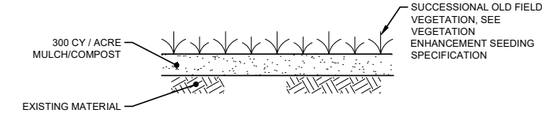
1. DEPTH OF TOPSOIL VARIES IN AREAS AS DESIGNATED BY FIELD DIRECTIVE #4



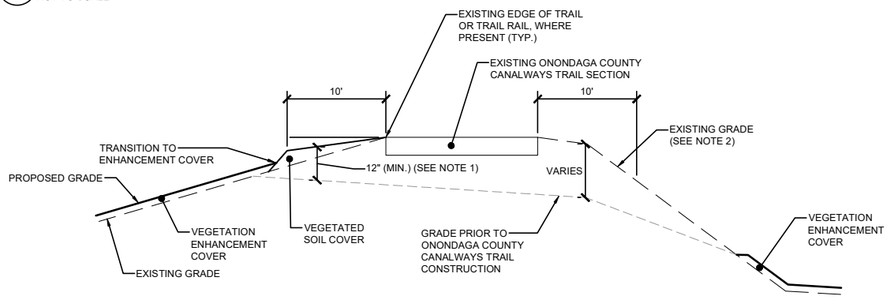
NOTE:

1. BACKFILL MATERIAL IN ANCHOR TRENCH SHALL CONSIST OF COMPACTED TYPE 'F' SELECT FILL.

TYPICAL APRON LINER ANCHOR TRENCH DETAIL
NOT TO SCALE



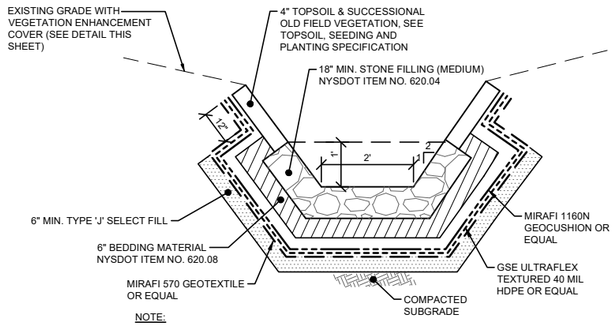
D VEGETATION ENHANCEMENT COVER
NOT TO SCALE



NOTES:

1. AT LOCATIONS WHERE FILL HAS BEEN PLACED TO CONSTRUCT THE ONONDAGA COUNTY CANALWAYS TRAIL, THE THICKNESS OF VEGETATED SOIL COVER SHALL BE TAPERED SUCH THAT RUNOFF FROM THE TRAIL IS NOT IMPEDED.
2. AT CERTAIN LOCATIONS OF THE ONONDAGA COUNTY CANALWAYS TRAIL, 12-INCHES OF FILL (OR GREATER) HAS BEEN PLACED. A VEGETATED SOIL COVER SHALL NOT BE PLACED AT THESE LOCATIONS. THESE LOCATIONS ARE IDENTIFIED ON THE PROPOSED COVER PLAN SHEETS.
3. THIS DETAIL IS INTENDED TO PROVIDE GENERAL GUIDANCE FOR COVER SYSTEM INSTALLATION ADJACENT TO THE ONONDAGA COUNTY CANALWAYS TRAIL. DUE TO THE VARYING TOPOGRAPHY OF THE ONONDAGA COUNTY CANALWAYS TRAIL WITH RESPECT TO EXISTING GRADE, FIELD EVALUATION OF COVER SYSTEM LIMITS AND THICKNESS WILL BE REQUIRED DURING CONSTRUCTION. COORDINATE THE SPECIFIC COVER SYSTEM INSTALLATION LIMITS AND THICKNESS WITH THE NYSDEC.

E GENERAL CROSS SECTION AT ONONDAGA COUNTY CANALWAYS TRAIL
NOT TO SCALE



NOTE:

1. INSTALL ANCHOR ON TOP OF SLOPE AND SIDES OF DITCH, BOTTOM WILL BE WELDED TO EXISTING DITCH LINER. LINER SHALL ANCHOR AT TOP OF THE SLOPE AS DETAILED IN TYPICAL APRON LINER ANCHOR TRENCH DETAIL, THIS SHEET.
2. THE CONTRACTOR SHALL PLACE MEDIUM NYSDOT ITEM NO. 620.04 TO THE LIMITS SHOWN ON SHEET C-105 AND C-106.

G RIP RAP CHANNEL
NOT TO SCALE

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STATE OF NEW YORK — BRIAN F. WHITE — 072139 — LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF D. CRAWFORD
DESIGNED BY J. CHAGNON
CHECKED BY J. MARSH
DRAWN BY M. PIETRA

NO.	DATE	REVISION	INT.
1	9/4/2020	RECORD DRAWINGS	BEW
0	6/12/18	FIELD MODIFICATION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL INC.
WASTEBEDS 1-8 OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

MISCELLANEOUS DETAILS

FILE NO. 1163.65768 -501

DATE JUNE 2018

C-501

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

I:\SYRACUSES\YR\PROJECTS\HONEYWELL_1163\71536.DITCH+A-PLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\C-501 MISCELLANEOUS DETAILS.DWG

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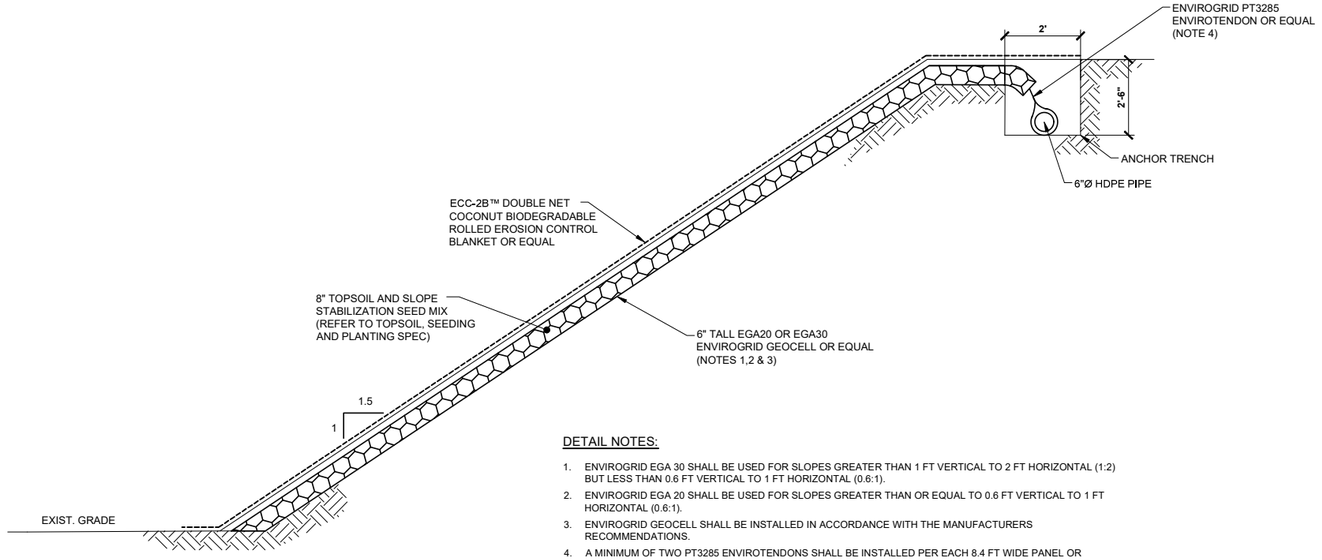
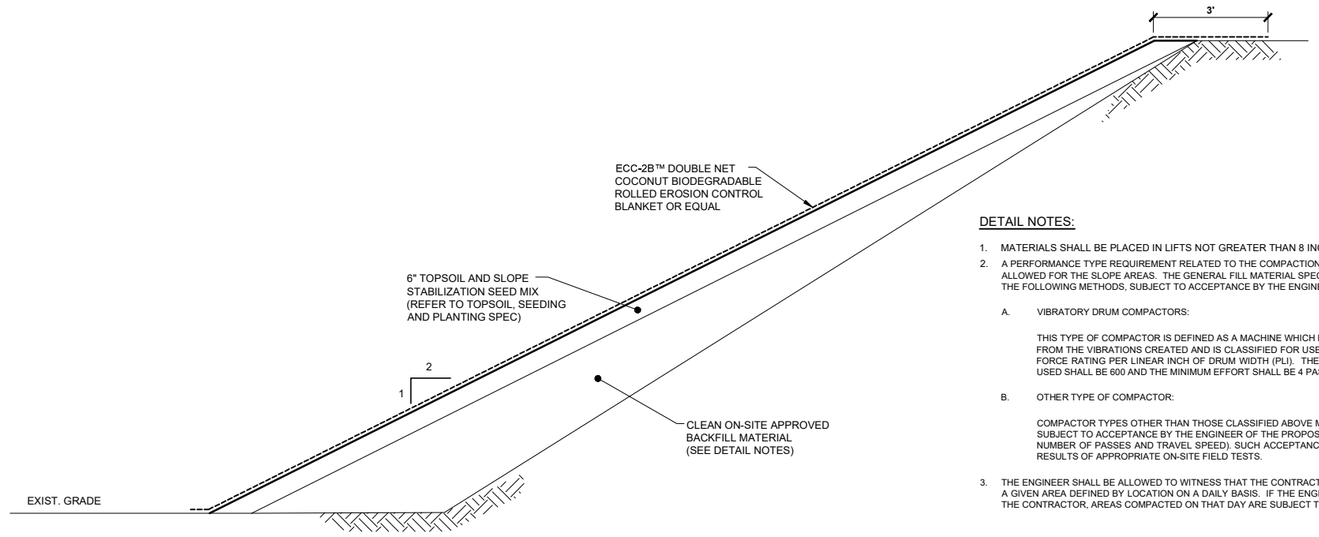


DETAIL NOTES:

1. ENVIROGRID EGA 30 SHALL BE USED FOR SLOPES GREATER THAN 1 FT VERTICAL TO 2 FT HORIZONTAL (1:2) BUT LESS THAN 0.6 FT VERTICAL TO 1 FT HORIZONTAL (0.6:1).
2. ENVIROGRID EGA 20 SHALL BE USED FOR SLOPES GREATER THAN OR EQUAL TO 0.6 FT VERTICAL TO 1 FT HORIZONTAL (0.6:1).
3. ENVIROGRID GEOCELL SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
4. A MINIMUM OF TWO PT3285 ENVIROTENDONS SHALL BE INSTALLED PER EACH 8.4 FT WIDE PANEL OR EQUAL OF GEOCELL. ENVIROTENDONS SHALL BE INSTALLED AT 4.2 FEET ON CENTER IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

A SLOPE STABILZATION DETAIL

NOT TO SCALE



DETAIL NOTES:

1. MATERIALS SHALL BE PLACED IN LIFTS NOT GREATER THAN 8 INCHES OF THICKNESS.
2. A PERFORMANCE TYPE REQUIREMENT RELATED TO THE COMPACTION OF THE GENERAL FILL MATERIAL WILL BE ALLOWED FOR THE SLOPE AREAS. THE GENERAL FILL MATERIAL SPECIFIED TO BE PLACED SHALL BE COMPACTED BY THE FOLLOWING METHODS, SUBJECT TO ACCEPTANCE BY THE ENGINEER.

   A. VIBRATORY DRUM COMPACTORS:

   THIS TYPE OF COMPACTOR IS DEFINED AS A MACHINE WHICH PRIMARILY DEVELOPS ITS COMPACTIVE EFFORT FROM THE VIBRATIONS CREATED AND IS CLASSIFIED FOR USE ACCORDING TO THE DEVELOPED COMPACTIVE FORCE RATING PER LINEAR INCH OF DRUM WIDTH (PLI). THE MINIMUM EFFECTIVE COMPACTIVE FORCE, PLI, USED SHALL BE 600 AND THE MINIMUM EFFORT SHALL BE 4 PASSES OF 4.5 FPS.

   B. OTHER TYPE OF COMPACTOR:

   COMPACTOR TYPES OTHER THAN THOSE CLASSIFIED ABOVE MAY BE EMPLOYED BY THE CONTRACTOR, SUBJECT TO ACCEPTANCE BY THE ENGINEER OF THE PROPOSED MINIMUM APPLIED EFFORT (MINIMUM NUMBER OF PASSES AND TRAVEL SPEED). SUCH ACCEPTANCE BY THE ENGINEER WILL BE BASED UPON THE RESULTS OF APPROPRIATE ON-SITE FIELD TESTS.

3. THE ENGINEER SHALL BE ALLOWED TO WITNESS THAT THE CONTRACTOR HAS ACHIEVED ADEQUATE COMPACTION OF A GIVEN AREA DEFINED BY LOCATION ON A DAILY BASIS. IF THE ENGINEER IS NOT PROVIDED THIS OPPORTUNITY BY THE CONTRACTOR, AREAS COMPACTED ON THAT DAY ARE SUBJECT TO REJECTION.

B SLOPE RESTORATION DETAIL

NOT TO SCALE

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: CJK

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SCALE. DRAWING IS NOT SCALABLE IF NO SCALE BAR IS PRESENT.

IN CHARGE OF D. CRAWFORD
DESIGNED BY MWH
CHECKED BY DTF
DRAWN BY MWH

NO.	DATE	REVISION	INT.
2	9/4/2020	RECORD DRAWINGS	BEW
1	10/1/18	FIELD MODIFICATION	DMC
0	9/24/18	FIELD MODIFICATION	DMC

O'BRIEN & GERE ENGINEERS, INC

HONEYWELL INTERNATIONAL, INC.
WASTEBEDS 1-8 IRM OU-1 PHASE 3

GEDDES, NEW YORK

CIVIL

MISCELLANEOUS DETAILS

FILE NO. 1163.65768 -502
DATE SEPTEMBER 2018

C-502

\\SYRACUSES\VRPROJECTS\HONEYWELL\1163\71536.DITCH\ACPLANS-7\DOCS\DWG\DWF\OU-1 PHASE 3 RECORD DWG\65768 C-108-301-302-502.DWG

APPENDIX B
VEGETATION ENHANCEMENT COVER MATERIAL APPLICATION SUMMARY

Appendix B
Honeywell
Wastebeds 1-8 OU-1: Phase 3 | Construction Completion Report
Vegetation Enhancement Placement Summary

Vegetation Cover Zone[1]	Material Quantity Placed (c.y)		Area (AC)	Rate cy/ac
	Slinger Truck	Blower Truck	Area (AC)	Rate cy/ac
P3-1[2]	120	127	1.00	247.00
P3-2	168	150	1.00	318.00
P3-3[2]	152	135	1.00	287.00
P3-4[2]	96	165	1.00	261.00
P3-5[3]	48	165	1.00	213.00
P3-6[3]	64	140	1.00	204.00
P3-7[3]	89	140	1.00	229.00
P3-8[3]	88	155	1.00	243.00
P3-9[3]	104	190	1.00	294.00
P3-10[3]	136	140	1.00	276.00
P3-11	160	200	1.00	360.00
P3-12	104	200	1.00	304.00
P3-13[3]	120	150	1.00	270.00
P3-14[3]	112	155	1.00	267.00
P3-15[4]	128	120	1.00	248.00
P3-16[4]	208	145	1.00	353.00
P3-17[5]	176	115	1.00	291.00
P3-18[5]	128	90	0.38	577.55
P3-19[6]	0	150	1.00	150.00
P3-20[6]	0	0	1.00	0.00
P3-21[6]	0	10	1.00	10.00
P3-22[6]	0	0	0.02	0.00
P3-23[6]	160	0	1.00	160.00
P3-24[6]	300	15	0.98	320.24
P3-25[6]	16	0	0.19	82.50
P3-26[6]	0	30	0.15	201.76
P3-27	900	0	2.50	360.00

Notes:

[1] See Figure 1 – this appendix – Vegetation Enhancement Cover Area Key Map for location of each zone within project limits.

[2] Within each zone the extent of the Vegetation Enhancement Cover application was adjusted in the field to coincide with limits of the Onondaga County Amphitheater, the County Lake Canalways Trail, the Orange Parking Lot, and the Integrated IRM.

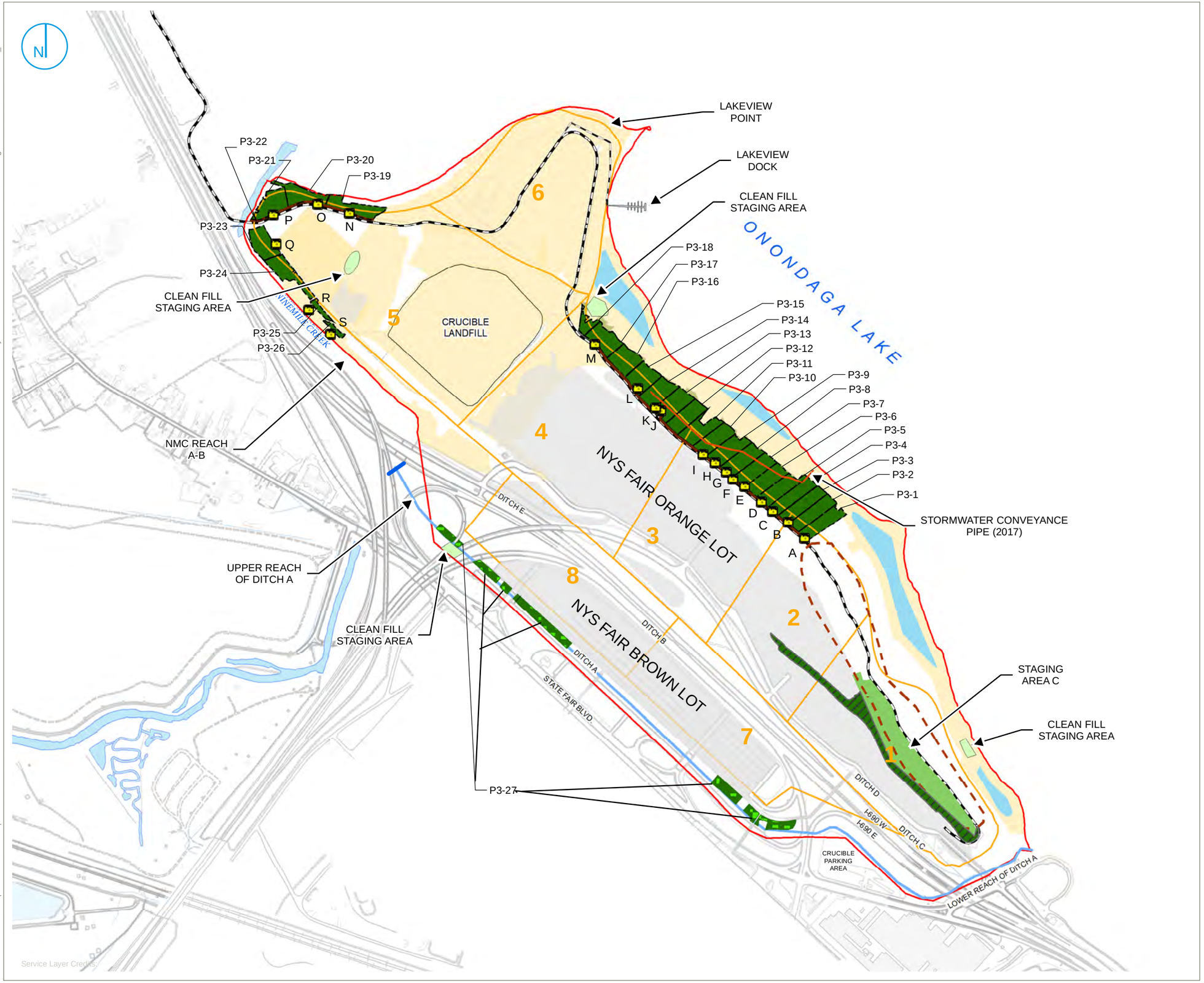
[3] Area reduced due to overlap with the Stormwater Conveyance pipe construction work limits to aid in NYSDOT Parking lot runoff. Work limits disturbed either restored via vegetation enhancement or top soil enhancement (See Appendix A Record Drawings Sheets C-101 and C-102).

[4] The average application rate over these two adjacent areas meets the desired application rate of material.

[5] The average application rate over these two adjacent areas meets the desired application rate of material.

[6] These areas were not aggressively cleared due to presence of established desirable species. These areas also contained steep slopes leading down to NMC or Onondaga Lake and we worked to restored limits established by parson's restoration work - in some instances there were stone or riprap abutments adjacent to the bridge. There was also some stoned (crusher run) areas that were used by Parsons and the Lake Team as laydown and construction access.

I:\Honeywell.1163\71536.Ditch-A-Plans-7\Docs\DWG\MXD\VegetationEnhancement 092319_Ramboll.mxd



Service Layer Credits:

LEGEND

- EXISTING COVER
- WETLAND
- BIOSOLIDS AREA
- STAGING AREA
- TEMPORARY CLEAN FILL STAGING AREA
- NYS FAIR PARKING LOTS AND AFFILIATED INFRASTRUCTURE
- LAKEVIEW DOCK
- APPROXIMATE WASTEBED BOUNDARY
- WASTEBEDS 1-8 SITE

COMPLETED PHASE 3 COVER

- 1-FT VEGETATED SOIL COVER
- VEGETATION ENHANCEMENT COVER (2017)
- STABILIZED VEGETATED SOIL COVER (2018)
- VEGETATION ENHANCEMENT COVER (2018)
- Vegetation Enhancement Verification Photos

0 1,000 2,000 Feet

OU-1 PHASE 3 VEGETATION ENHANCEMENT AREAS

Honeywell International Inc.
OU-1 Phase 3 CCR
Wastebeds 1-8
Geddes, New York

FIGURE 1

SEPTEMBER 2020

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RAMBOLL

PROJECT: 1163.71536 | DATED: 5/28/2020 | DESIGNER: KLABENAK

APPENDIX C
POTHOLE INVESTIGATION SUMMARY

Appendix C
Honeywell
Wastebeds 1-8 OU-1: Phase 3 | Construction Completion Report
Pothole Investigation Summary

Pot Hole ID[1,2]	Existing Depth of Clean Fill (inches)		Clean Fill Placed by OBG (inches)	
	@10 ft from trail	@5 ft from trail	@10 ft from trail	@5 ft from trail
TH-1	0	6	12	6
TH-2	0	4	12	8
TH-3	0	4	12	8
TH-4	0	5	12	7
TH-5	0	6	12	6
TH-6	0	8	12	4
TH-7	0	4	12	8
TH-8	0	5	12	7
TH-9	0	7	12	5
TH-10	0	12	12	0
TH-11	0	12	12	0
TH-12	0	12	12	0
TH-13	0	12	12	0
TH-14	0	8	12	4
TH-15	0	12	12	0
TH-16	0	>12	12	0
TH-17	>12	>12	0	0
TH-18	8	>12	4	0
TH-19	7	>12	5	0
TH-20	0	>12	12	0
TH-21	0	12	12	0
TH-22	0	6	12	6
TH-23	0	6	12	6
TH-24	0	12	12	0
TH-25	0	12	12	0
NM TH-1	>12	>12	0	0
NM TH-2	>12	>12	0	0
NM TH-3	6	>12	6	0
NM TH-4	>12	>12	0	0
NM TH-5	0	>12	12	0
NM TH-6	0	>12	12	0
NM TH-7	5	>12	7	0
NM TH-8	0	>12	12	0
NM TH-9	>12	>12	0	0
NM TH-10	>12	>12	0	0

Notes:

[1] TH-## are test holes along the Eastern Shorelines as seen in Figure 1.1.

[2] NM TH-## are test holes along Nine Mile Creek as seen in Figure 1.2.

[3] Results from the Pothole Investigation can be seen in the attached Photolog – this appendix.

Appendix C – Photographic Log

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
1	10/25/17

DESCRIPTION

There was 6” of clean fill observed 5’ (pictured right) from the bike trail at Test Hole-1 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
2	10/25/17

DESCRIPTION

There was 4” of gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-2 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
3	10/25/17

DESCRIPTION

There was 4” of gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-3 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
4	10/25/17

DESCRIPTION

There was 5” of gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-4 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
5	10/25/17

DESCRIPTION

There was 6” of gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-5 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
6	10/25/17

DESCRIPTION

There was 8” of crushed stone and geotextile fabric observed 5’ (pictured right) from the bike trail at Test Hole-6 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
7	10/25/17

DESCRIPTION

There was 4” of gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-7 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

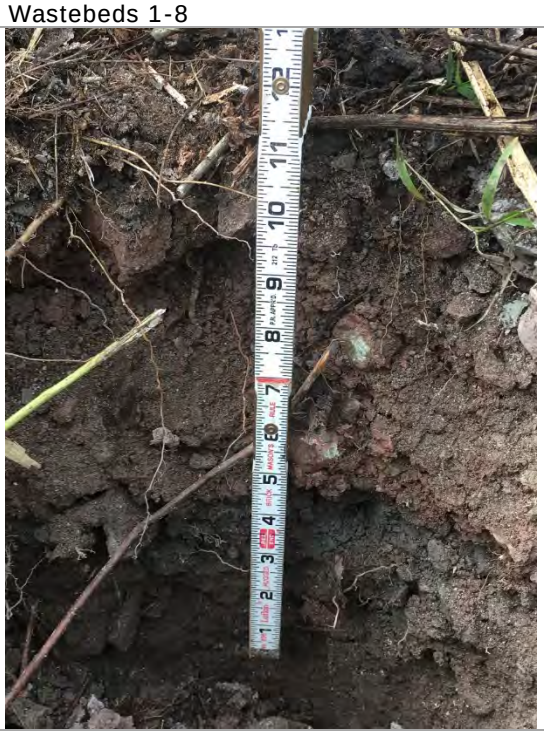
CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
8	10/25/17

DESCRIPTION

There was 5” gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-8 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.



CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
9	10/25/17

DESCRIPTION

There was 7” of gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-9 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
10	10/25/17

DESCRIPTION

There was 12” of crushed gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-10 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
11	10/25/17

DESCRIPTION

There was 12” of crushed gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-11 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
12	10/25/17

DESCRIPTION

There was 12” of crushed stone and geotextile fabric observed 5’ (pictured right) from the bike trail at Test Hole-12 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to. the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
13	10/25/17

DESCRIPTION

There was 12” of crushed gravel/brickyard shale observed 5’ (pictured right) from the bike trail at Test Hole-6 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
14	10/25/17

DESCRIPTION

There was 8” of clean fill observed 5’ (pictured right) from the bike trail at Test Hole-14 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
15	10/25/17

DESCRIPTION

There was 12” of clean fill observed 5’ (pictured right) from the bike trail at Test Hole-15 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
16	10/25/17

DESCRIPTION

There was >12” of clean fill observed 5’ (pictured right) from the bike trail at Test Hole-16 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ from the bike trail due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
17	10/25/17

DESCRIPTION
There was >12" of clean fill observed 5' (pictured right) from the bike trail at Test Hole-17 (see Figure 1.1).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
18	10/25/17

DESCRIPTION
There was >12" of clean fill observed 10' (pictured right) from the bike trail at Test Hole-17 (see Figure 1.1).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
19	10/25/17

DESCRIPTION
There was >12" of clean fill observed 5' (pictured right) from the bike trail at Test Hole-18 (see Figure 1.1).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
20	10/25/17

DESCRIPTION
There was 8" of clean fill observed 10' (pictured right) from the bike trail at Test Hole-18 (see Figure 1.1). Additional material was placed to meet 12" clean fill requirements.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
21	10/25/17

DESCRIPTION
There was >12” of clean fill observed 5’ (pictured right) from the bike trail at Test Hole-19 (see Figure 1.1).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
22	10/25/17

DESCRIPTION
There was 7” of clean fill observed 10’ (pictured right) from the bike trail at Test Hole-19 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
23	10/25/17

DESCRIPTION

There was >12" of clean fill observed 5' (pictured right) from the bike trail at Test Hole-20 (see Figure 1.1). Test Hole-20. Additional material was placed to meet 12" clean fill requirements.

No picture at 10' due to the absence (0") of clean material on the surface. Additional material was placed to meet 12" clean fill requirements at 10' from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
24	10/25/17

DESCRIPTION

There was 12" of clean fill observed 5' (pictured right) from the bike trail at Test Hole-21 (see Figure 1.1). at Test Hole-21. Additional material was placed to meet 12" clean fill requirements.

No picture at 10' due to the absence (0") of clean material on the surface. Additional material was placed to meet 12" clean fill requirements at 10' from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
25	10/25/17

DESCRIPTION

There was 6” of clean fill observed 5’ from the bike trail at Test Hole-22 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
26	10/25/17

DESCRIPTION

There was 6” of clean fill observed 5’ (pictured right) from the bike trail at Test Hole-23 (see Figure 1.1). Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
27	10/25/17

DESCRIPTION

There was 12” of clean fill observed 5’ from the bike trail at Test Hole-24 (see Figure 1.1).

No picture at 10’ from the bike trail due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
28	10/25/17

DESCRIPTION

There was 12” of clean fill observed 5’ from the bike trail at Test Hole-25 (see Figure 1.1). at Test Hole-25. Additional material was placed to meet 12” clean fill requirements.

No picture at 10’ from the bike trail due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
29	10/25/17

DESCRIPTION
There was 12” of clean fill observed 5’ (pictured right) from the bike trail at NMC Test Hole-01 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
30	10/25/17

DESCRIPTION
There was >12” of clean fill observed 10’ (pictured right) from the bike trail at NMC Test Hole-01 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
31	10/25/17

DESCRIPTION
There was >12” of clean fill observed 5’ (pictured right) from the bike trail at NMC Test Hole-02 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
32	10/25/17

DESCRIPTION
There was 12” of clean fill observed 10’ (pictured right) from the bike trail at NMC Test Hole-02 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
33	10/25/17

DESCRIPTION
There was 12” of clean fill observed 5’ (pictured right) from the bike trail at NMC Test Hole-03 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
34	10/25/17

DESCRIPTION
There was 6” of clean fill observed 10’ (pictured right) from the bike trail at NMC Test Hole-03 (see Figure 1.2). Additional material was placed to meet 12” clean fill requirements.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
35	10/25/17

DESCRIPTION
There was >12" of clean fill observed 5' (pictured right) from the bike trail at NMC Test Hole-04 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
36	10/25/17

DESCRIPTION
There was >12" of clean fill observed 10' (pictured right) from the bike trail at NMC Test Hole-04 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
37	10/25/17

DESCRIPTION

There was >12" of clean fill observed 5' (pictured right) from the bike trail at NMC Test Hole-05 (see Figure 1.2).

No picture at 10' from the bike trail due to the absence (0") of clean material on the surface. Additional material was placed to meet 12" clean fill requirements at 10' from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
38	10/25/17

DESCRIPTION

There was >12" of clean fill observed 5' (pictured right) from the bike trail at NMC Test Hole-06 (see Figure 1.2).

No picture at 10' from the bike trail due to the absence (0") of clean material on the surface. Additional material was placed to meet 12" clean fill requirements at 10' from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
39	10/25/17

DESCRIPTION
There was >12” of clean fill observed 5’ (pictured right) from the bike trail at NMC Test Hole-07 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
40	10/25/17

DESCRIPTION
There was 5” of clean fill observed 10’ (pictured right) from the bike trail at NMC Test Hole-07 (see Figure 1.2). Additional material was placed to meet 12” clean fill requirements.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
41	10/25/17

DESCRIPTION

There was >12” of clean fill observed 5’ (pictured right) from the bike trail at NMC Test Hole-08 (see Figure 1.2).

No picture at 10’ from the bike trail due to the absence (0”) of clean material on the surface. Additional material was placed to meet 12” clean fill requirements at 10’ from the trail.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
42	10/25/17

DESCRIPTION

There was >12” of clean fill observed 5’ (pictured right) from the bike trail at NMC Test Hole-09 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
43	10/25/17

DESCRIPTION
There was >12" of clean fill observed 10' (pictured right) from the bike trail at NMC Test Hole-09 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
44	10/25/17

DESCRIPTION
There was 12" of clean fill observed 5' (pictured right) from the bike trail at NMC Test Hole-10 (see Figure 1.2).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163|71536

PHOTO NO.	DATE:
45	10/25/17

DESCRIPTION

There was >12" of clean fill observed 10' (pictured right) from the bike trail at NMC Test Hole-10 (see Figure 1.2).

I:\Honeywell.1163\71536.Ditch-A-Plans-7\Docs\DWG\MXD\Test_Pit_Location_REV_Ramboll.mxd

Legend

- ONONDAGA CANALWAYS TRAIL
- EXISTING WETLAND
- TEMPORARY CLEAN FILL STAGING AREA
- NYS FAIR ORANGE PARKING LOT
- APPROXIMATE WASTEBED BOUNDARY
- WASTEBEDS 1-8 SITE
- TEST HOLE

COMPLETED PHASE 3 COVER

- VEGETATION ENHANCEMENT COVER (2017)
- 1FT VEGETATED SOIL COVER (2017)

0 250 500 Feet

OU-1 PHASE 3 SITE PLAN POTHOLES INVESTIGATION

LOCATIONS NEAR ORANGE PARKING LOT

Honeywell International Inc.
OU-1 Phase 3 CCR
Wastebeds 1-8
Geddes, New York

FIGURE 1.1

SEPTEMBER 2020

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RAMBOLL

PROJECT: 1163.71536 | DATED: 5/28/2020 | DESIGNER: KLABENAK

I:\Honeywell.1163\71536.Ditch-A-Plans-7\Docs\DWG\MXD\Test_Pit_Location_NearNineMile_REV_Ramboll.mxd

PROJECT: 1163.71536 | DATED: 5/28/2020 | DESIGNER: KLABENAK

LEGEND

- ONONDAGA CANALWAYS TRAIL
- EXISTING COVER
- TEMPORARY CLEAN FILL STAGING AREA
- NYS FAIR ORANGE PARKING LOT
- APPROXIMATE WASTEBED BOUNDARY
- WASTEBEDS 1-8 SITE
- TEST HOLE

COMPLETED PHASE 3 COVER

- VEGETATION ENHANCEMENT COVER (2017)
- 1 FT VEGETATED SOIL COVER (2017)

0 150 300 Feet

OU-1 PHASE 3 SITE PLAN
POTHOLES INVESTIGATION
LOCATIONS NEAR NINE MILE CREEK

Honeywell International Inc.
OU-1 Phase 3 CCR
Wastebeds 1-8
Geddes, New York

FIGURE 1.2

SEPTEMBER 2020

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

APPENDIX D
CAMP FIELD DATA SHEETS AND AIR MONITORING DATA

Air Quality Monitoring Daily Summary

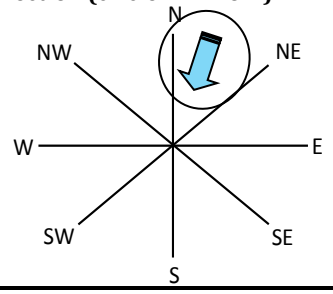
Project: Honeywell WB 1-8 **Date:** 09/12/17

Project Number: 66677 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulch spreading on southeast side of C-101 from bike path	0715	1630
Perimeter air quality monitoring performed	0715	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	2 to 15	1 to 11	1 to 15	**100**	**150**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 2.1 to 5.4
	Temperature Range (degrees F): 58 to 77
	Relative Humidity Range (%): 43 to 100
	Barometric Pressure Average (inches of Hg): 29.59
	Precipitation (total inches): 0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations. Monitoring locations were based on observed local wind directions by the AQM operator.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/12/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JJF		

Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

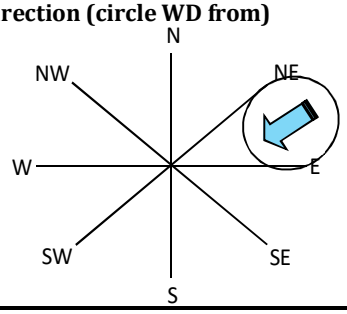
Project: Honeywell WB 1-8 **Date:** 09/13/17

Project Number: 66677 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulch spreading on southeast side of C-101 from bike path	0715	1630
Perimeter air quality monitoring performed	0715	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	12 to 18	3 to 18	2 to 10	**100**	**150**	**No**

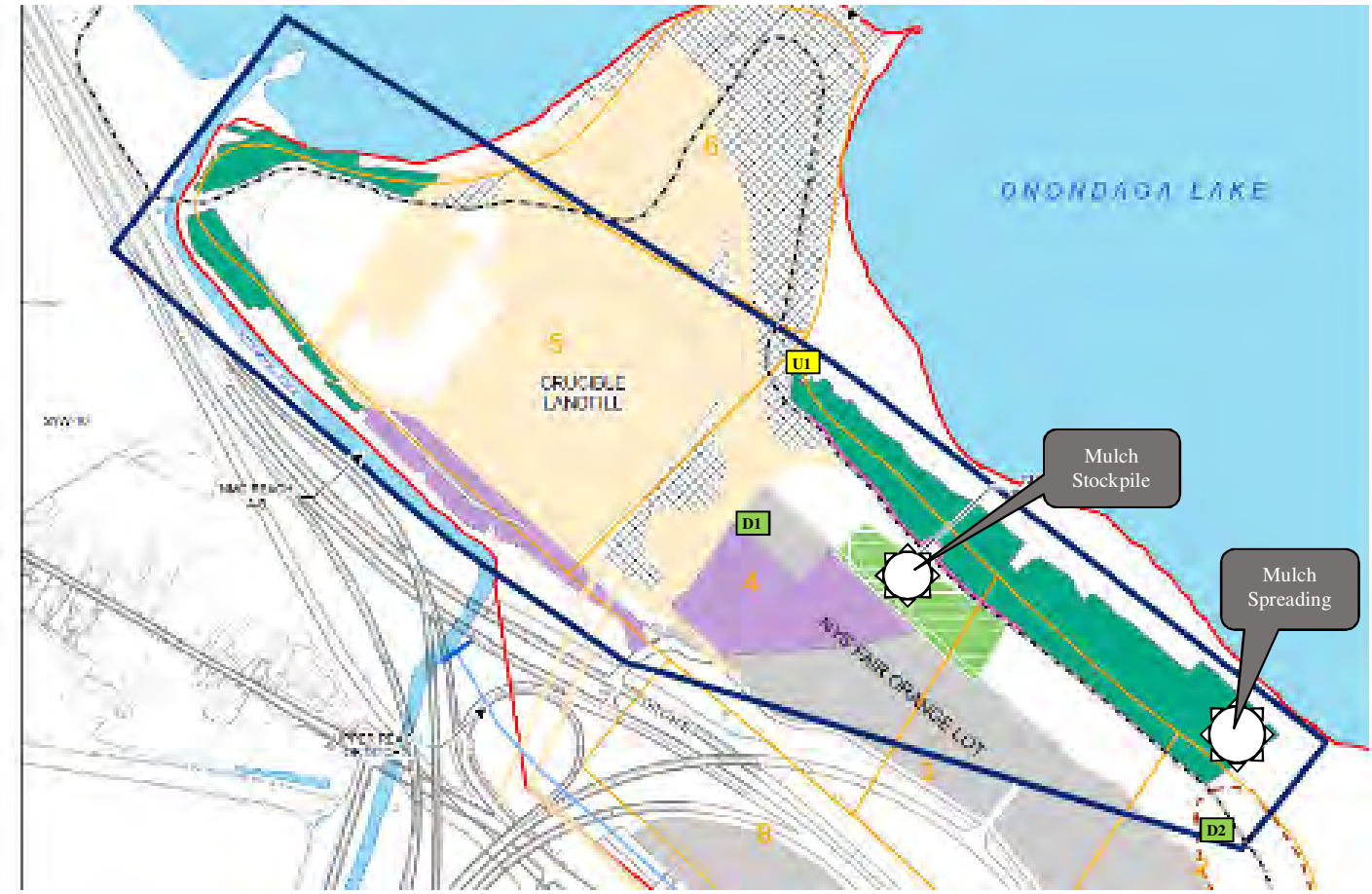
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	2.4 to 5.7
	Temperature Range (degrees F):	57 to 80
	Relative Humidity Range (%):	55 to 100
	Barometric Pressure Average (inches of Hg):	29.41
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/13/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JJF		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

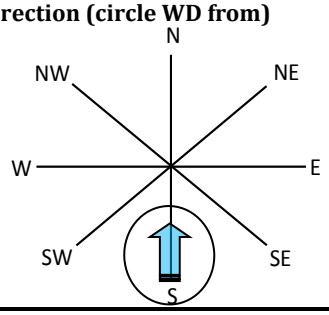
Project: Honeywell WB 1-8 **Date:** 09/14/17

Project Number: 66677 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulch spreading on southeast side of C-101 from bike path	0730	1630
Perimeter air quality monitoring performed	0730	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	7 to 17	<1 to 13	2 to 12	**100**	**150**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	2 to 5.4
	Temperature Range (degrees F):	67 to 72
	Relative Humidity Range (%):	83 to 94
	Barometric Pressure Average (inches of Hg):	29.40
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations. Monitor locations were selected using observed wind conditions on-site.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/14/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JJF		

Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

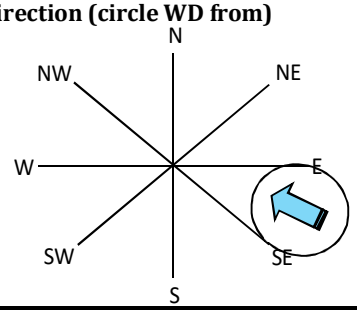
Project: Honeywell WB 1-8 **Date:** 09/18/17

Project Number: 66677 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulch spreading on southeast side of C-101 below bike path.	0730	1630
Perimeter air quality monitoring performed	0730	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	12 to 19	4 to 19	6 to 17	**100**	**150**	**No**

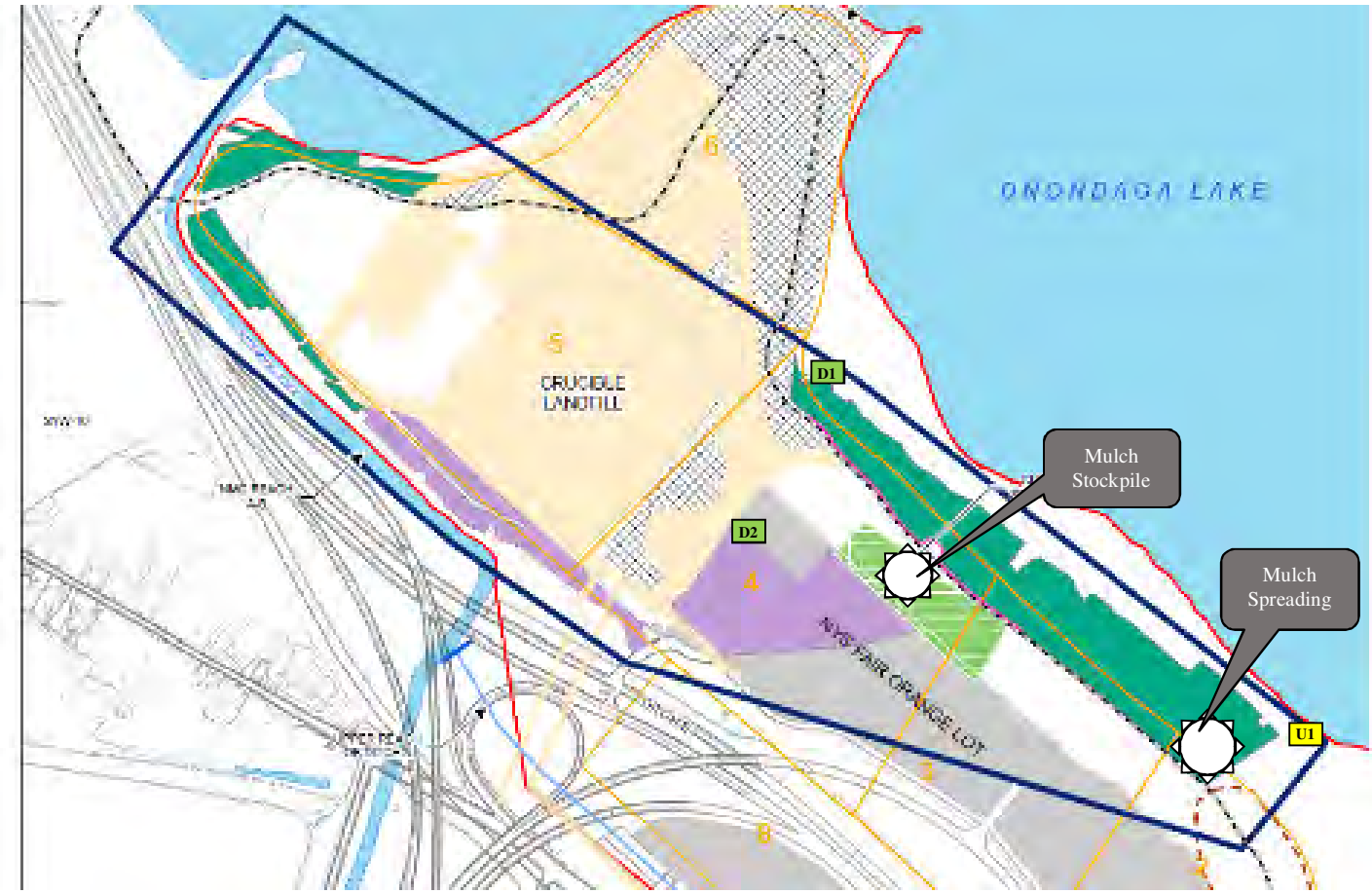
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.3 to 5.8
	Temperature Range (degrees F):	67 to 85
	Relative Humidity Range (%):	40 to 100
	Barometric Pressure Average (inches of Hg):	29.64
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/18/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JJF		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

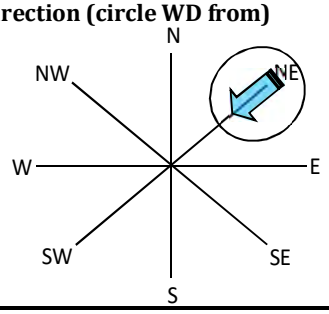
Project: Honeywell WB 1-8 **Date:** 09/19/17

Project Number: 66677 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulch spreading on southeast side of C-101 below bike path.	0730	1630
Perimeter air quality monitoring performed	0730	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	16 to 19	9 to 14	11 to 16	**100**	**150**	**No**

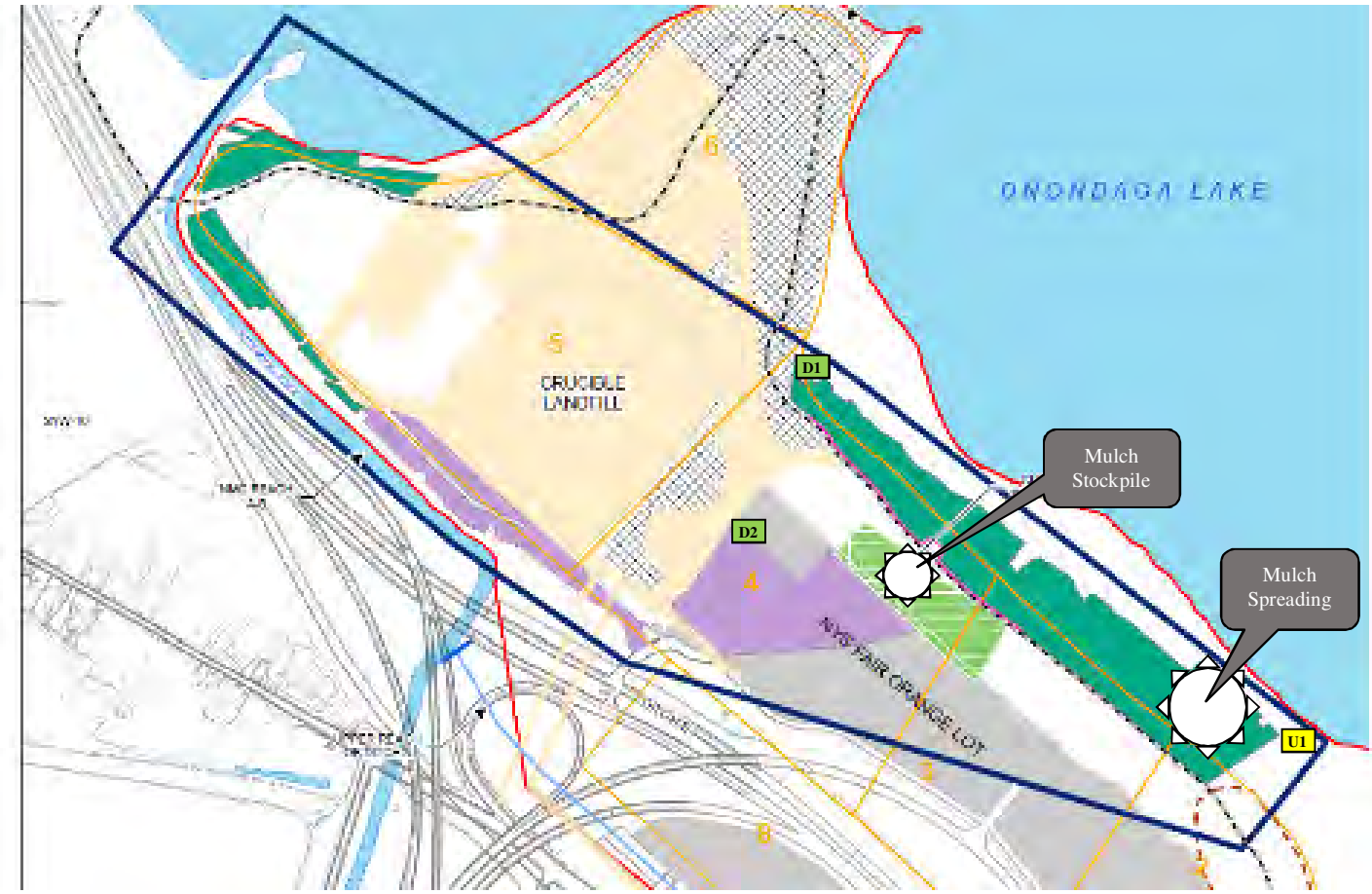
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	4.7 to 7
	Temperature Range (degrees F):	65 to 79
	Relative Humidity Range (%):	57 to 94
	Barometric Pressure Average (inches of Hg):	29.60
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/19/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JJF		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

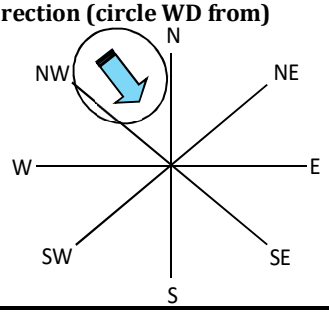
Project: Honeywell WB 1-8 **Date:** 09/20/17

Project Number: 66677 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulching of southern end of C – 101 from bike path.	0730	1630
Perimeter air quality monitoring performed	0730	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	13 to 22	7 to 79	8 to 22	**100**	**150**	**No**

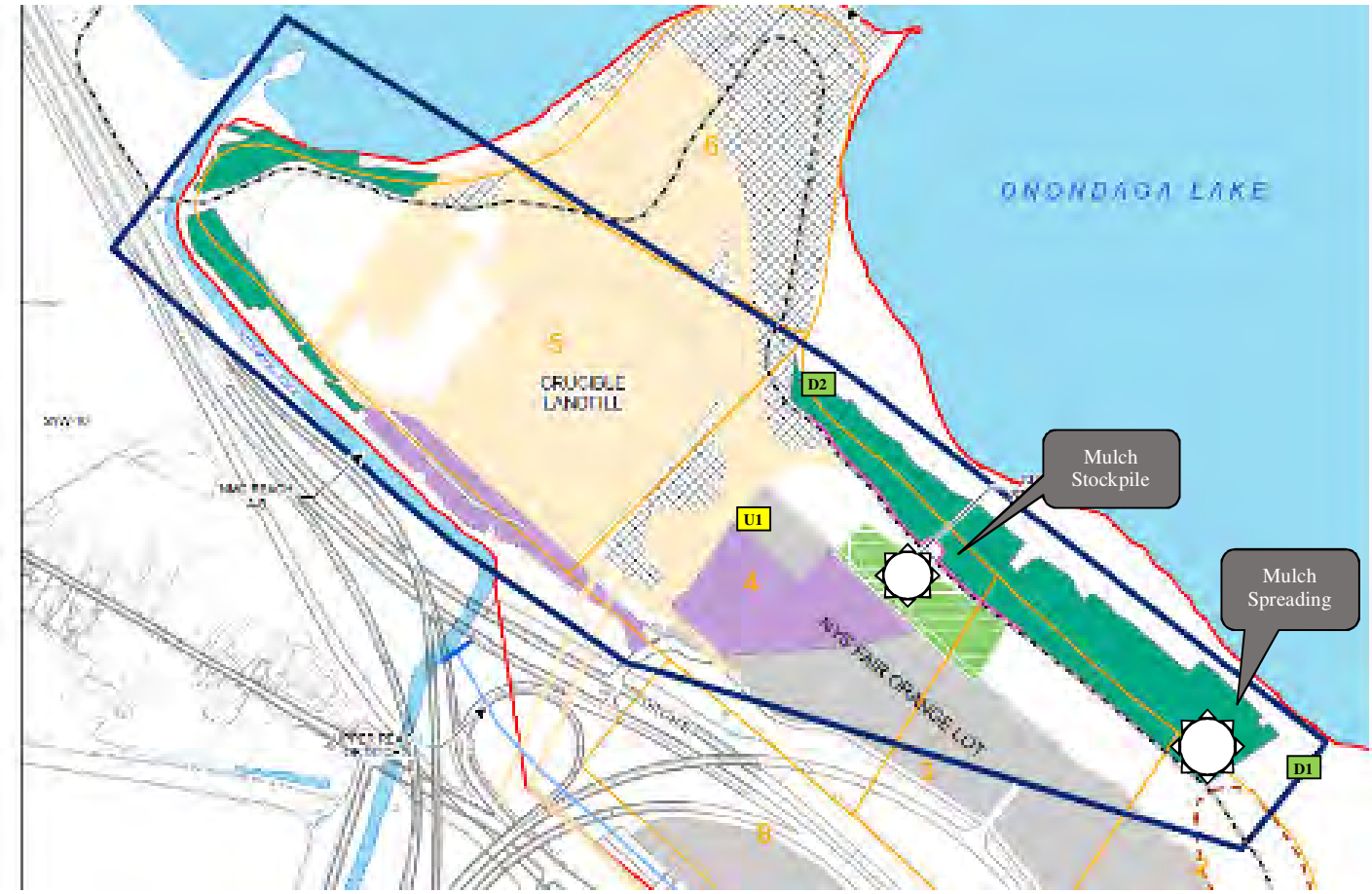
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.8 to 6.5
	Temperature Range (degrees F):	64 to 79
	Relative Humidity Range (%):	56 to 100
	Barometric Pressure Average (inches of Hg):	29.57
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/20/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JJF		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

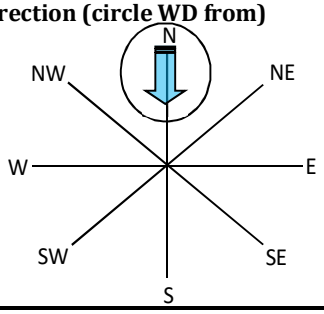
Project: Honeywell WB 1-8 **Date:** 09/21/17

Project Number: 66677 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulching of southern end of C – 101 from bike path.	0730	1630
Perimeter air quality monitoring performed	0730	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	16 to 51	8 to 42	10 to 56	**100**	**150**	**No**

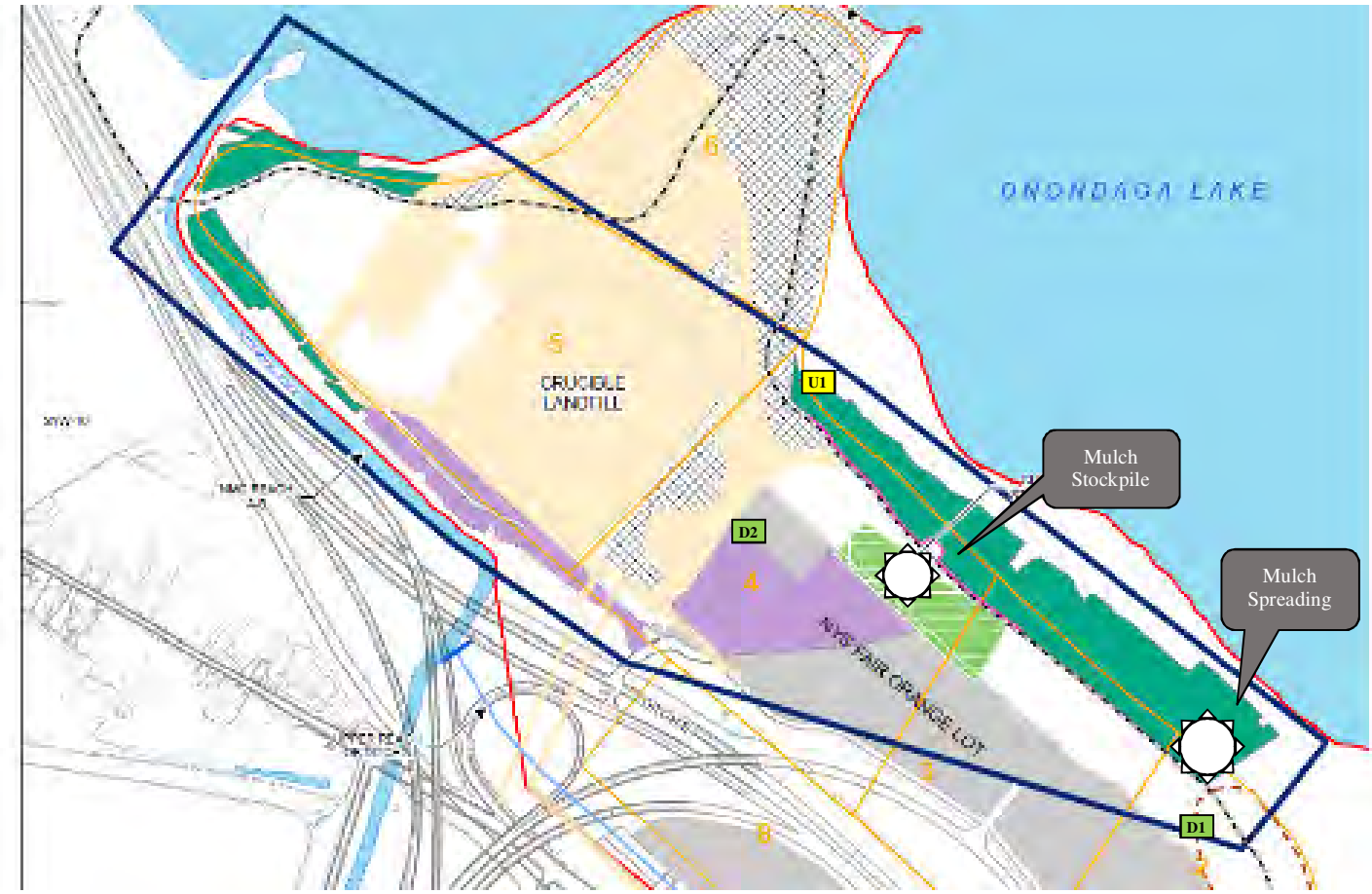
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.7 to 7.9
	Temperature Range (degrees F):	78 to 97
	Relative Humidity Range (%):	54 to 100
	Barometric Pressure Average (inches of Hg):	29.65
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/21/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JJF		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

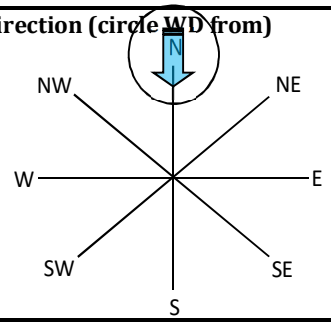
Project: Honeywell WB 1-8 **Date:** 09/25/17

Project Number: 66677 **AQM Operator:** MAS/JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulching of southern end of C – 101 from bike path.	0730	1600
Perimeter air quality monitoring performed	0730	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	19 to 40	12 to 37	13 to 41	**100**	**150**	**No**

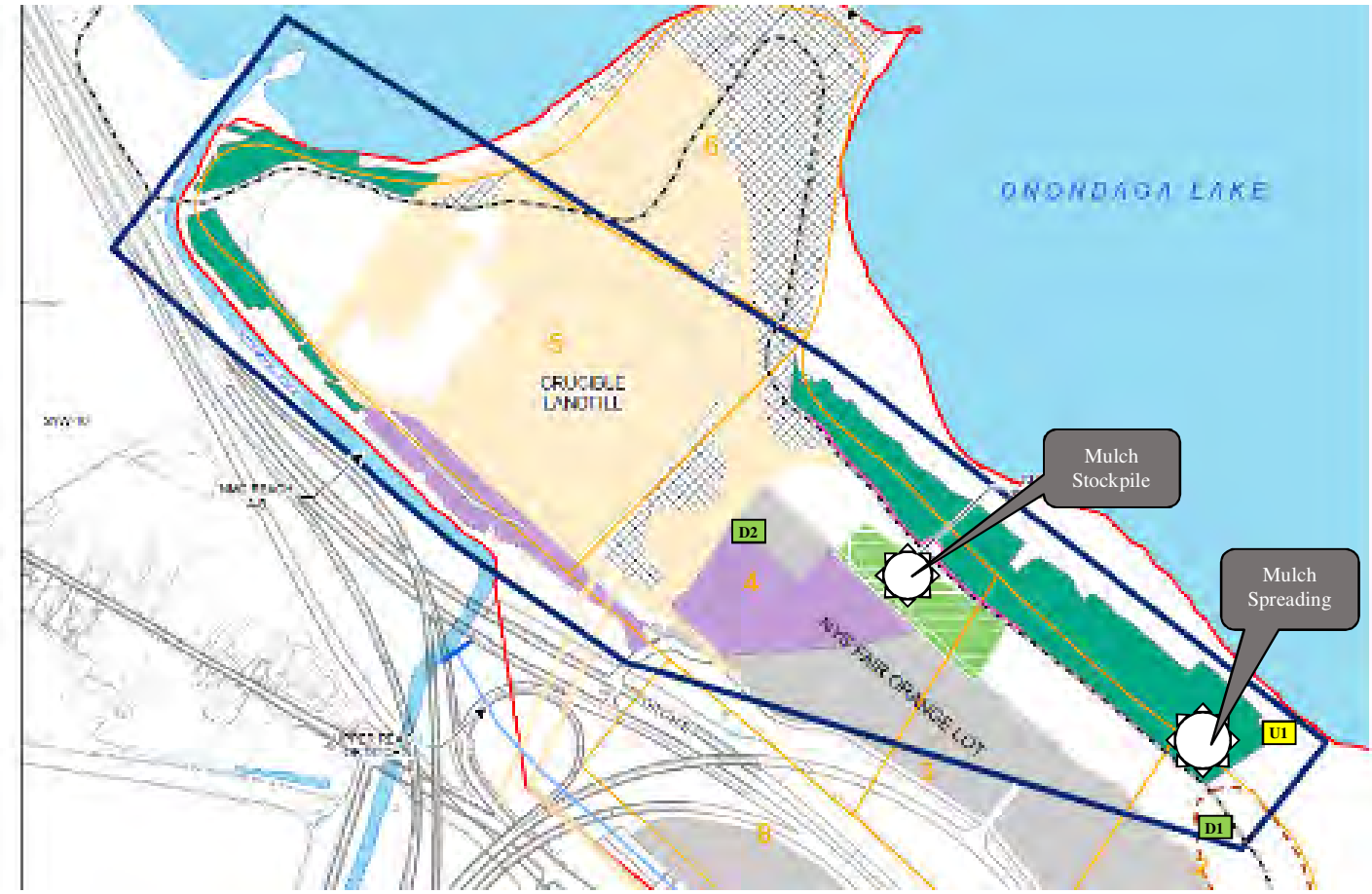
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.6 to 4.8
	Temperature Range (degrees F):	69 to 88
	Relative Humidity Range (%):	47 to 100
	Barometric Pressure Average (inches of Hg):	29.64
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/25/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	MAS/JJF		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

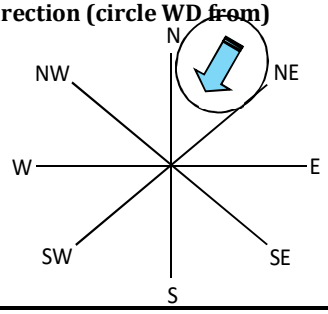
Project: Honeywell WB 1-8 **Date:** 09/26/17

Project Number: 66677 **AQM Operator:** MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulching of southern end of C – 101 from bike path	0700	1600
Perimeter air quality monitoring performed	0700	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	20 to 42	12 to 59	15 to 42	**100**	**150**	**No**

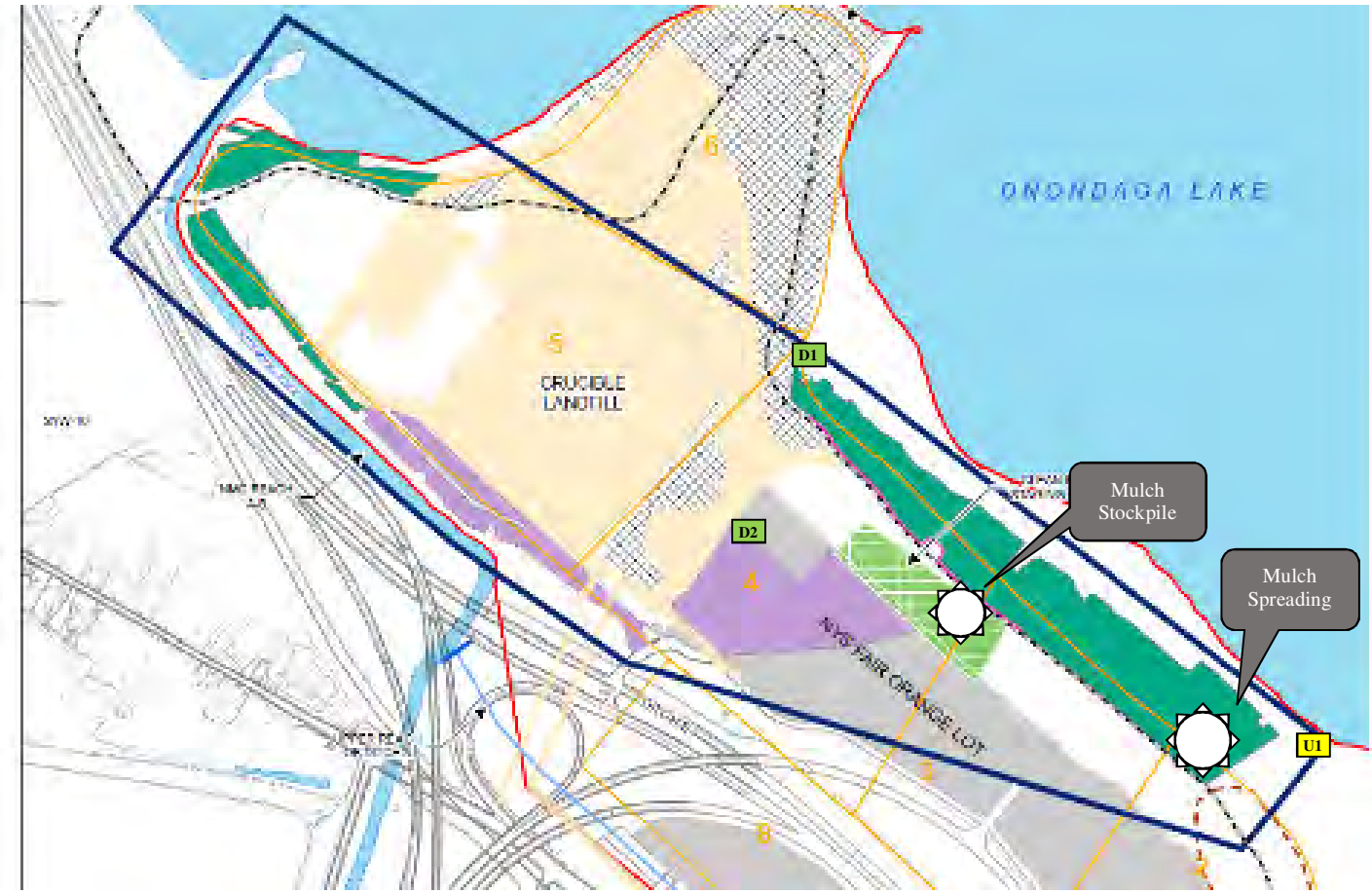
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.7 to 5.4
	Temperature Range (degrees F):	68 to 86
	Relative Humidity Range (%):	55 to 100
	Barometric Pressure Average (inches of Hg):	29.56
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/26/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

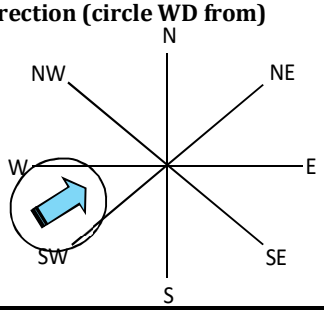
Project: Honeywell WB 1-8 **Date:** 09/27/17

Project Number: 66677 **AQM Operator:** MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulching of southern end of C – 101 from bike path	0700	1630
Perimeter air quality monitoring performed	0700	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	13 to 116*	15 to 46	13 to 46	**100**	**150**	**No**

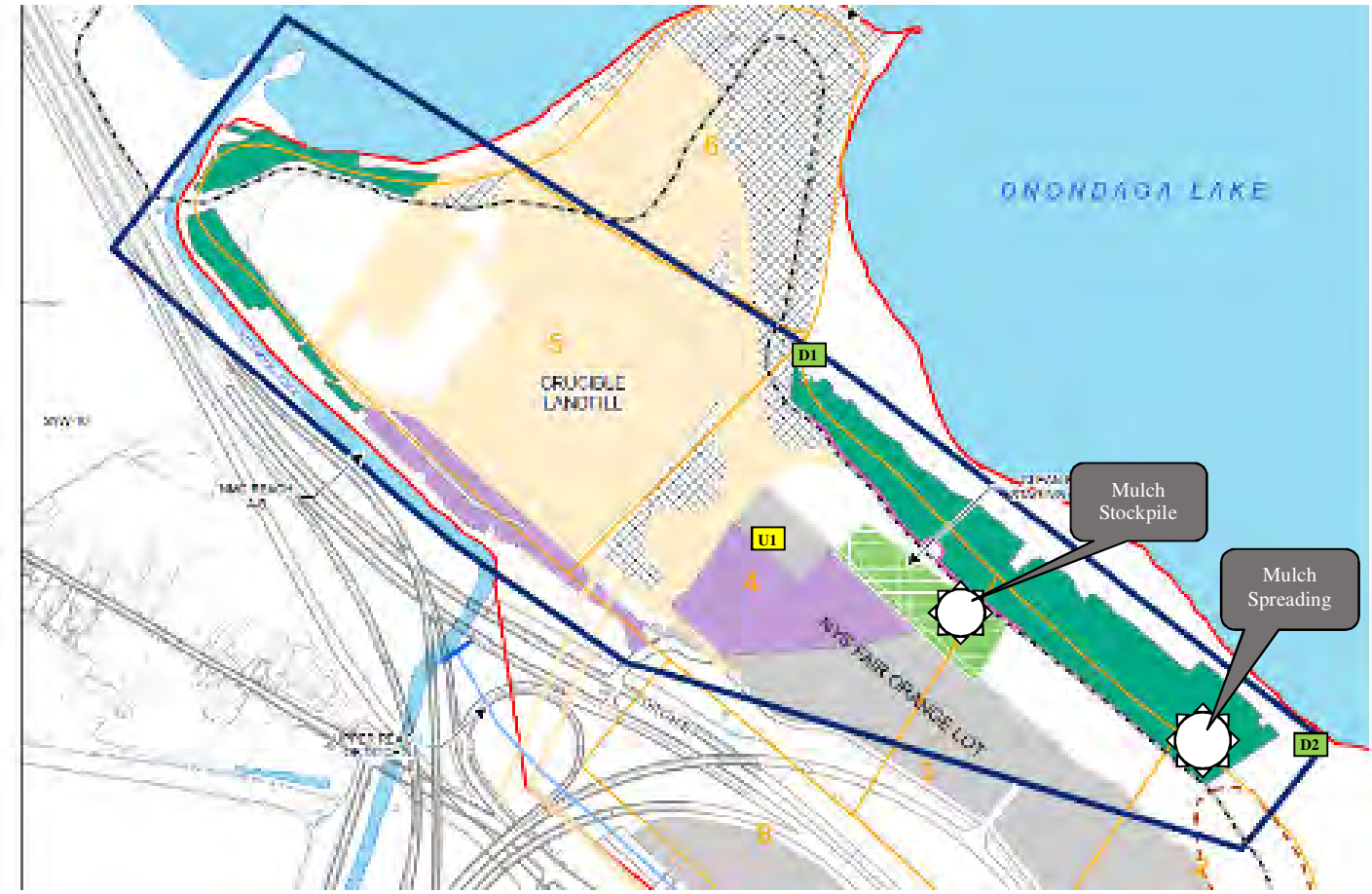
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.9 to 8.7
	Temperature Range (degrees F):	70 to 89
	Relative Humidity Range (%):	41 to 100
	Barometric Pressure Average (inches of Hg):	29.41
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations. *One 15-minute averaged dust concentration above the Control Level occurred at 1615 (116 $\mu g/m^3$) at the upwind monitoring station (U1). The elevated dust concentration was due to non-site-related traffic and not attributable to project activities. The next highest 15-minute average at U1 was 49 $\mu g/m^3$, which is below project action criteria. Monitoring locations were based on observed local wind directions by the AQM operator.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/27/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

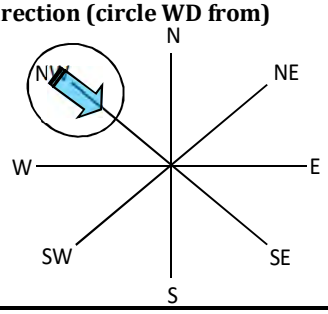
Project: Honeywell WB 1-8 **Date:** 09/28/17

Project Number: 66677 **AQM Operator:** MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulching of southern end of C – 101 from bike path	0700	1600
Perimeter air quality monitoring performed	0700	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	3 to 8	5 to 11	4 to 77	**100**	**150**	**No**

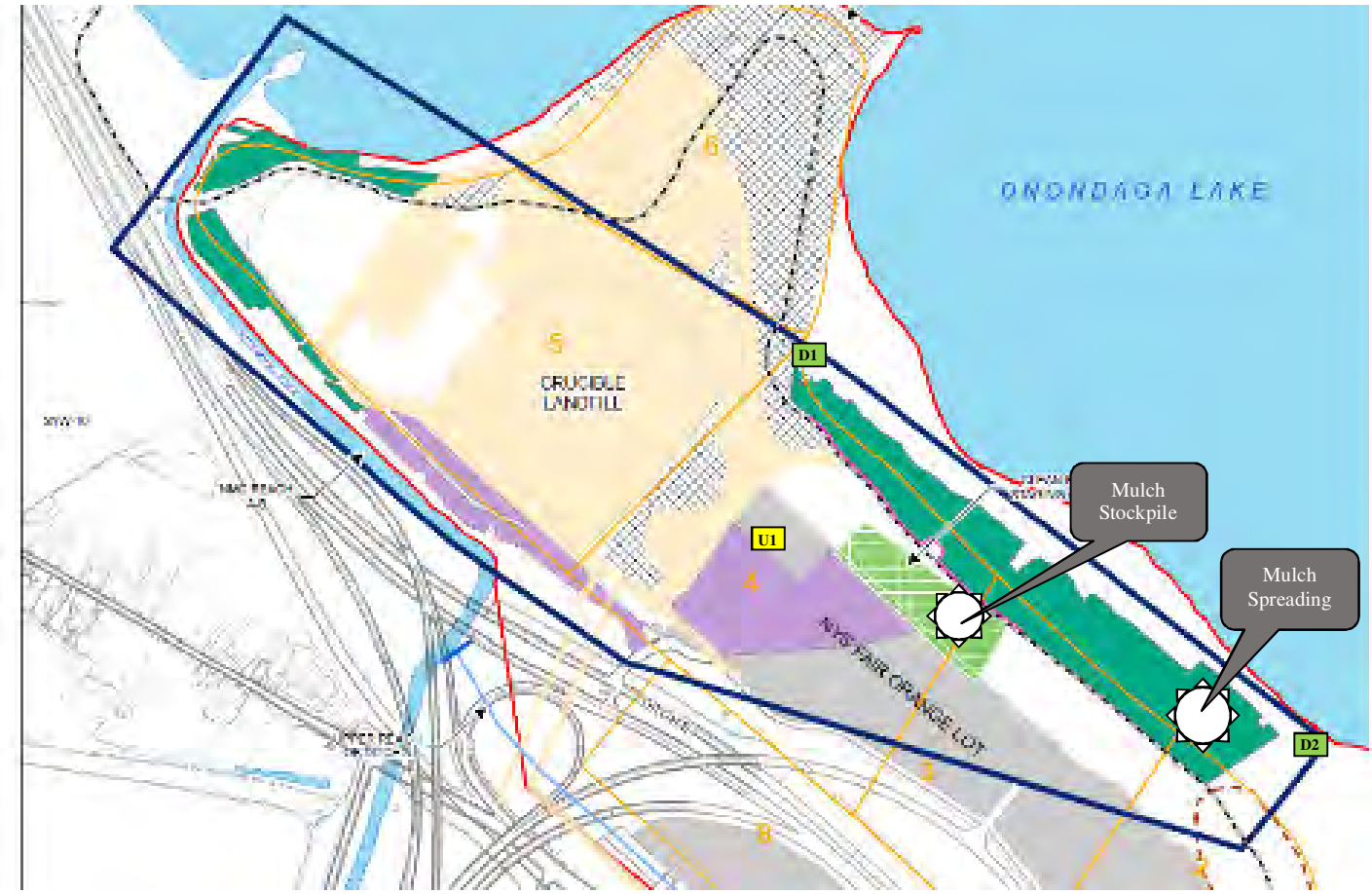
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 5.2 to 11.5
	Temperature Range (degrees F): 59 to 62
	Relative Humidity Range (%): 49 to 76
	Barometric Pressure Average (inches of Hg): 29.52
	Precipitation (total inches): 0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	09/28/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

Project: Honeywell WB 1-8 **Date:** 10/02/17

Project Number: 66677 **AQM Operator:** S. Milo

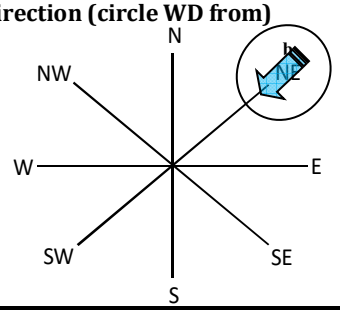
Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Mulching of southern end of C – 101 from bike path.	0715	1625
Perimeter air quality monitoring performed	0715	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} (µg/m³)	2 to 21	3 to 21	3 to 29	**100**	**150**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]

Wind Direction (circle WD from)

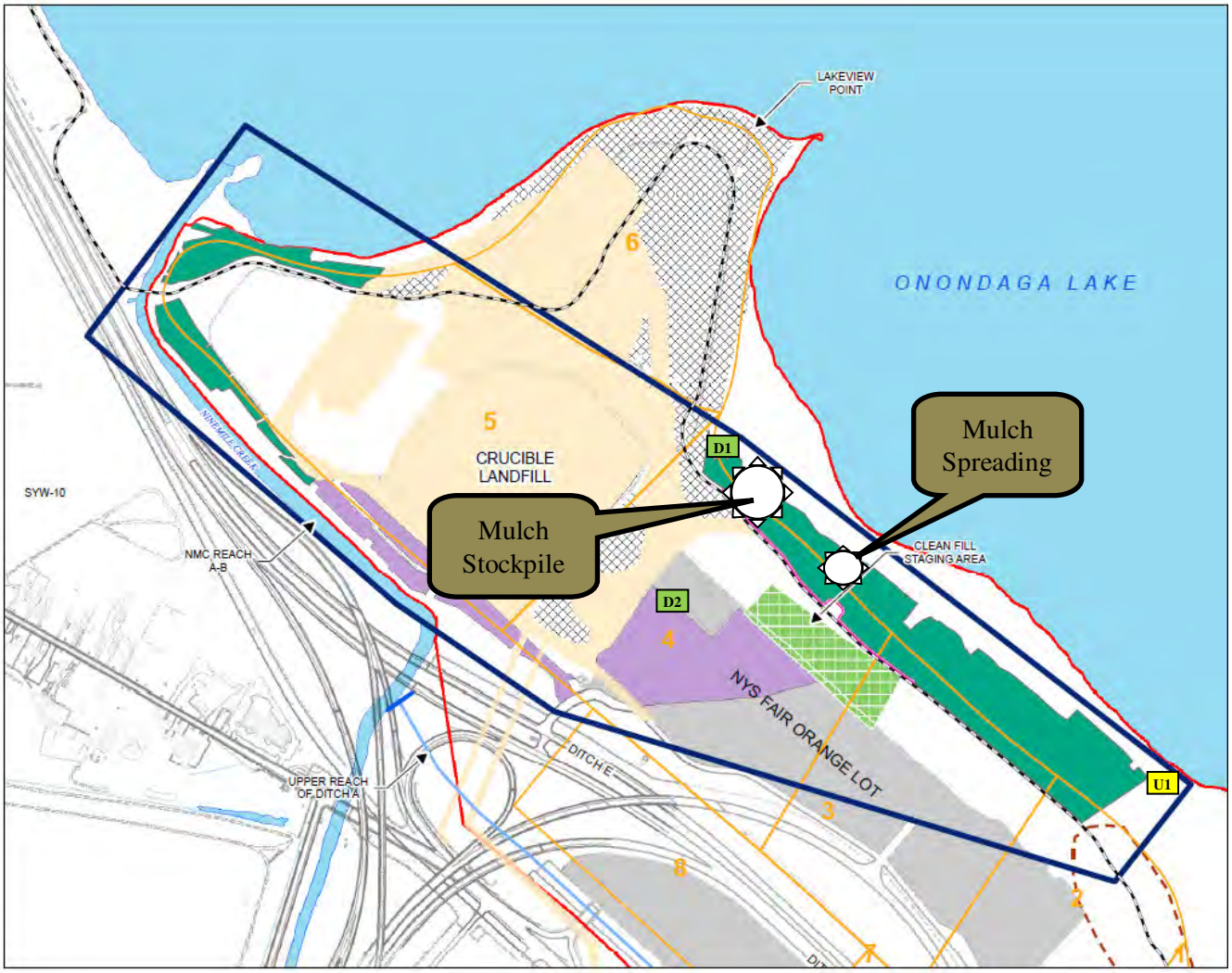


Wind Speed Range (mph):	2.7 to 6.0
Temperature Range (degrees F):	49 to 68
Relative Humidity Range (%):	30
Barometric Pressure Average (inches of Hg):	29.51
Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/02/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	S. Milo		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

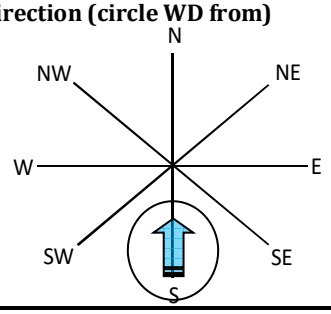
Project: Honeywell WB 1-8 **Date:** 10/03/17

Project Number: 66677 **AQM Operator:** S. Milo

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102	0715	1630
Perimeter air quality monitoring performed	0715	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	4 to 16	6 to 41	4 to 41	**100**	**150**	**No**

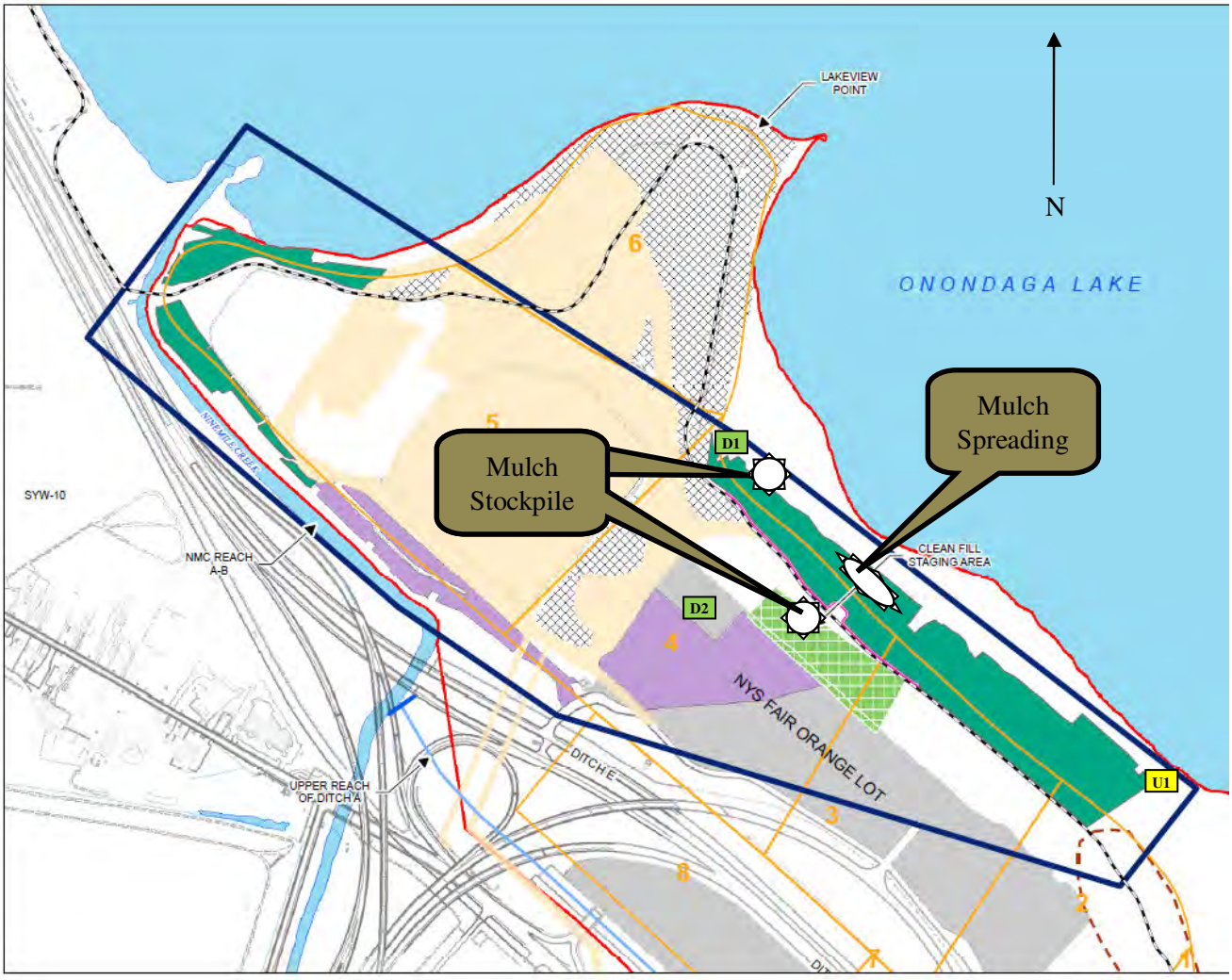
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.9 to 9.5
	Temperature Range (degrees F):	49 to 75
	Relative Humidity Range (%):	38 to 90
	Barometric Pressure Average (inches of Hg):	30.05
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/03/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	S. Milo		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

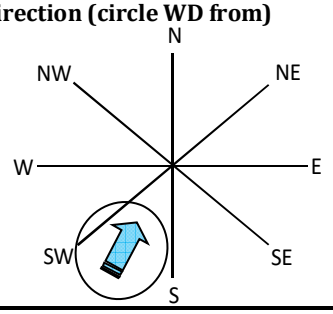
Project: Honeywell WB 1-8 **Date:** 10/04/17

Project Number: 66677 **AQM Operator:** LHR

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102	0705	1619
Perimeter air quality monitoring performed	0700	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	5 to 20	6 to 24	6 to 30	**100**	**150**	**No**

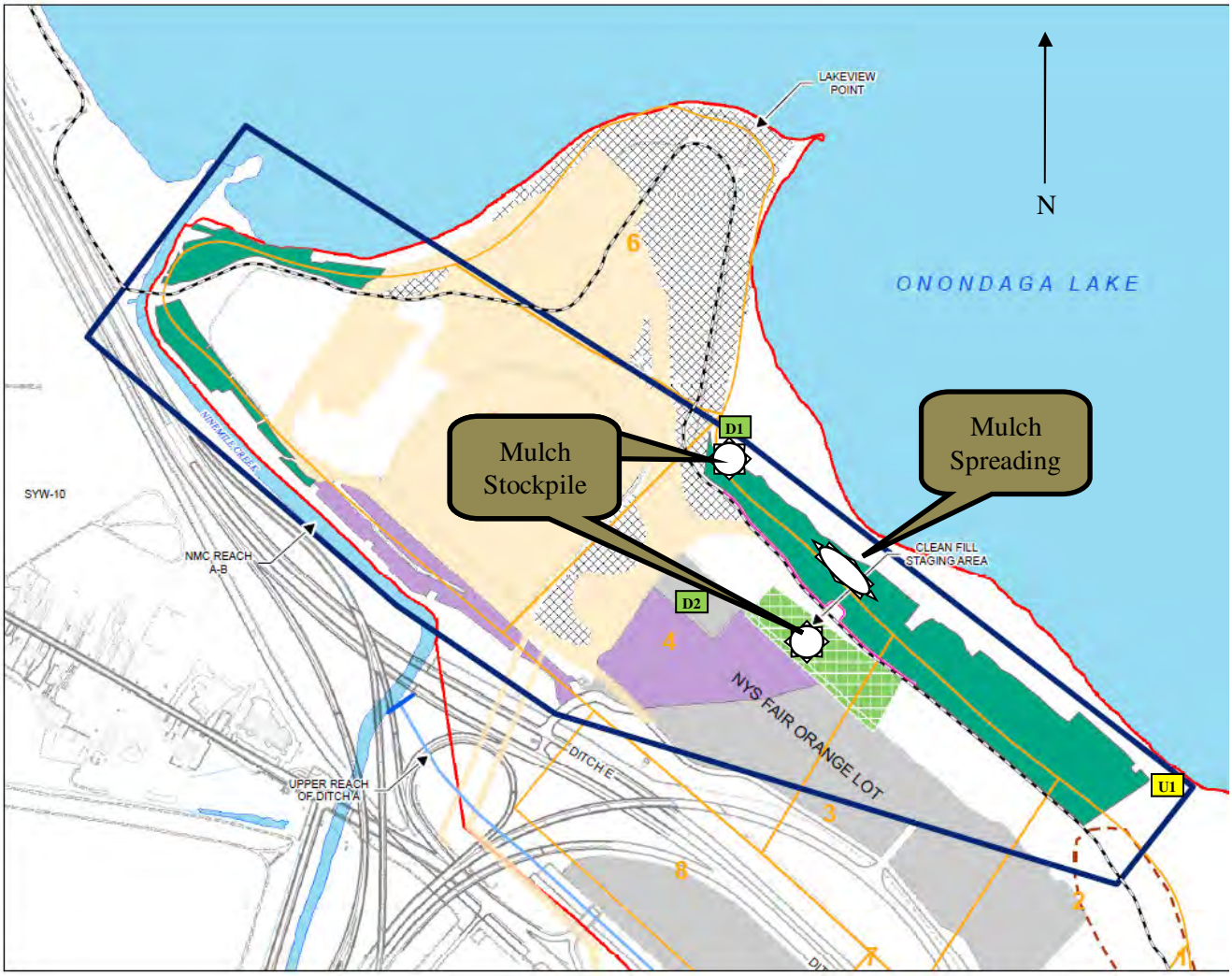
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	2.6 to 12.3
	Temperature Range (degrees F):	60 to 83
	Relative Humidity Range (%):	45 to 71
	Barometric Pressure Average (inches of Hg):	29.78
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/04/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	LHR		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

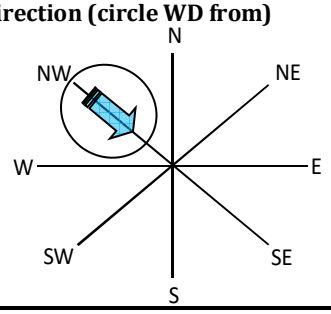
Project: Honeywell WB 1-8 **Date:** 10/05/17

Project Number: 66677 **AQM Operator:** LHR

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102	0700	1600
Perimeter air quality monitoring performed	0700	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	2 to 7	2 to 5	1 to 7	**100**	**150**	**No**

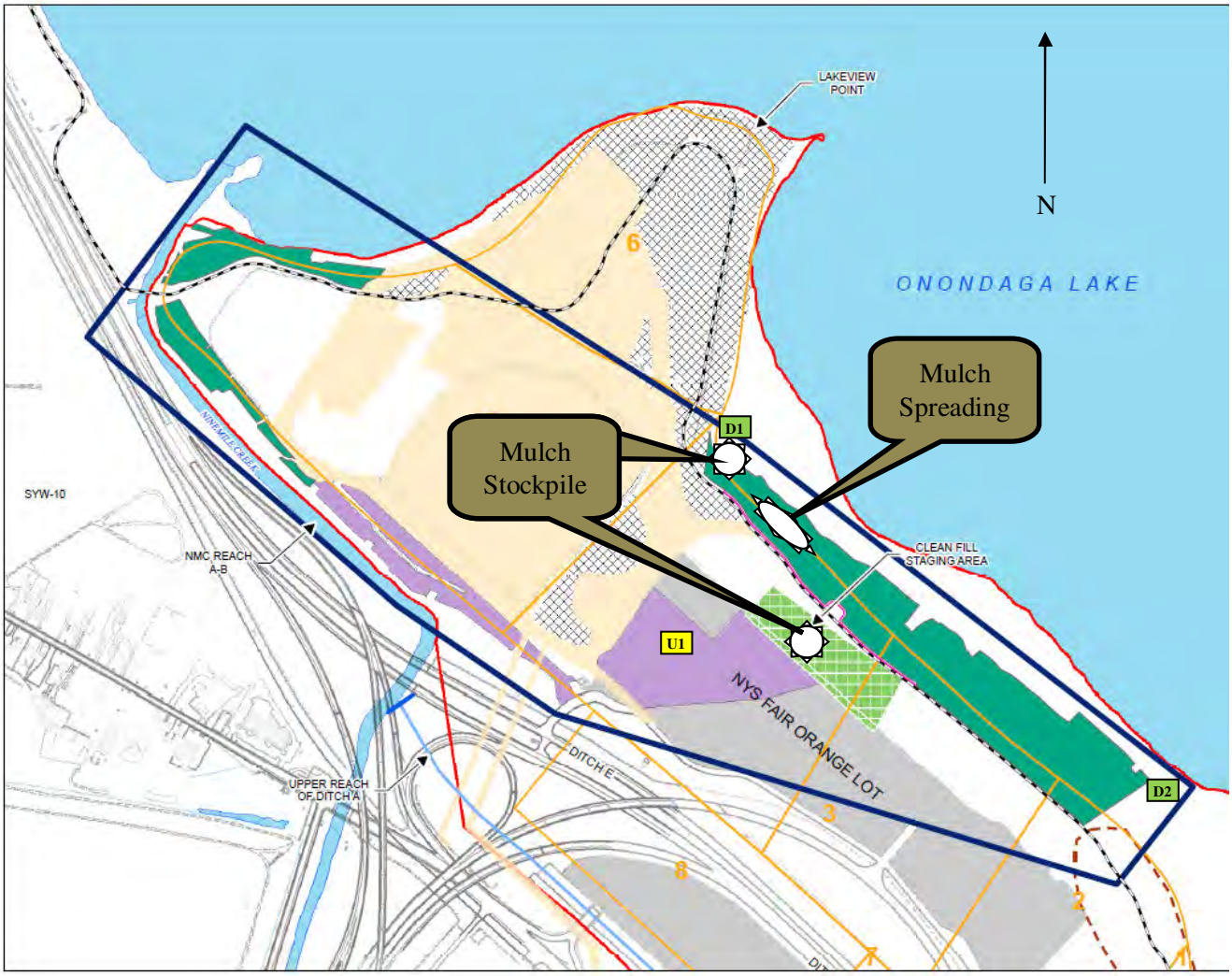
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	2.2 to 10.2
	Temperature Range (degrees F):	58 to 71
	Relative Humidity Range (%):	46 to 99
	Barometric Pressure Average (inches of Hg):	29.66
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/05/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	LHR		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

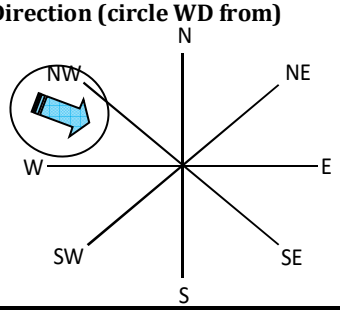
Project: Honeywell WB 1-8 **Date:** 10/10/17

Project Number: 66677 **AQM Operator:** LHR

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102	0703	1609
Perimeter air quality monitoring performed	0700	1615

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	5 to 24	5 to 19	4 to 21	**100**	**150**	**No**

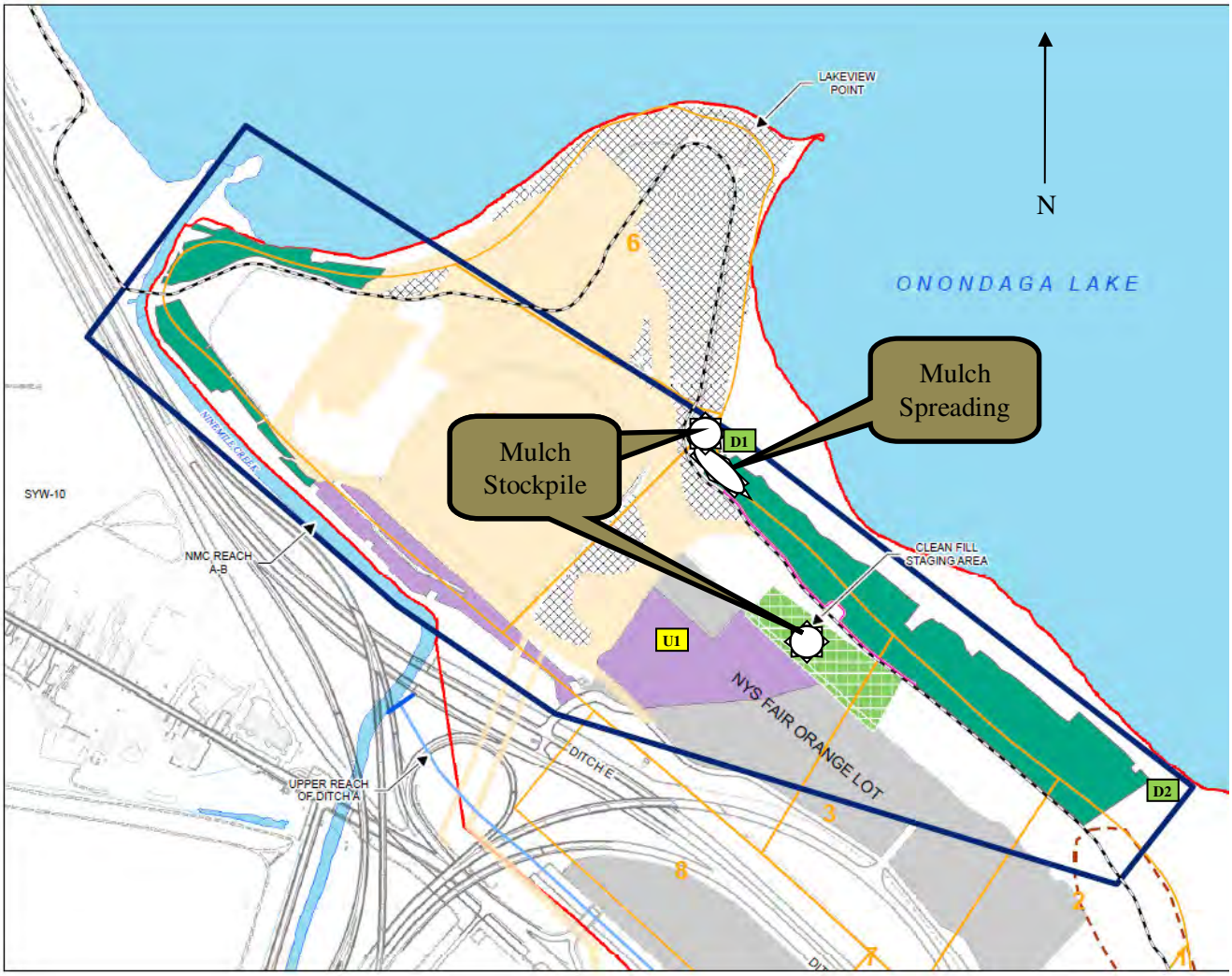
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	4.2 to 7.4
	Temperature Range (degrees F):	63 to 72
	Relative Humidity Range (%):	59 to 100
	Barometric Pressure Average (inches of Hg):	29.66
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/10/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	LHR		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

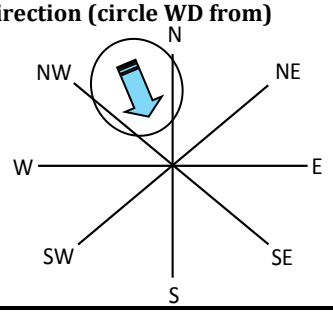
Project: Honeywell WB 1-8 **Date:** 10/11/17

Project Number: 66677 **AQM Operator:** LHR, JP

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102 and C-104	0700	1600
Perimeter air quality monitoring performed	0700	1600*

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	7 to 19*	6 to 17*	7 to 18*	**100**	**150**	**No**

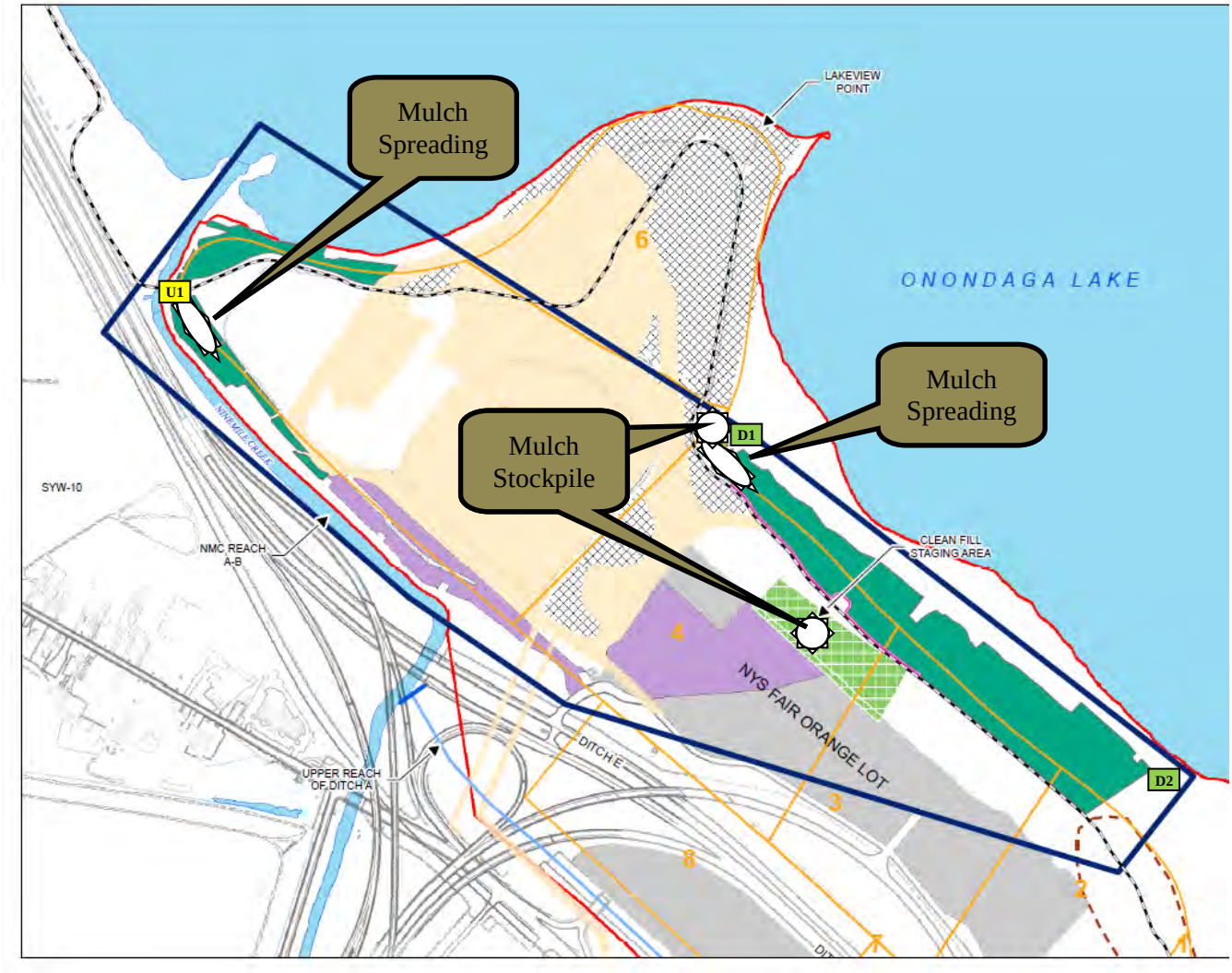
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	2.9 to 10.4
	Temperature Range (degrees F):	57 to 60
	Relative Humidity Range (%):	88 to 98
	Barometric Pressure Average (inches of Hg):	29.73
	Precipitation (total inches):	0.04

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations. *Dust monitoring stopped at 1255 due to rain, and remained off through the end of the workday.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/11/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	LHR, JP		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

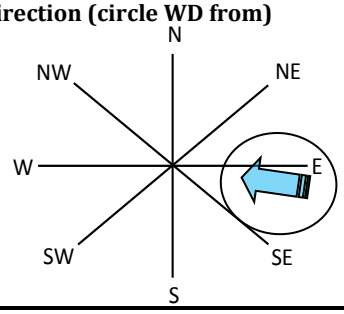
Project: Honeywell WB 1-8 **Date:** 10/12/17

Project Number: 66677 **AQM Operator:** LHR, JP

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102, C-101 and C-104	0715	1626
Perimeter air quality monitoring performed	0715	1630

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	1 to 3	3 to 6	2 to 3	**100**	**150**	**No**

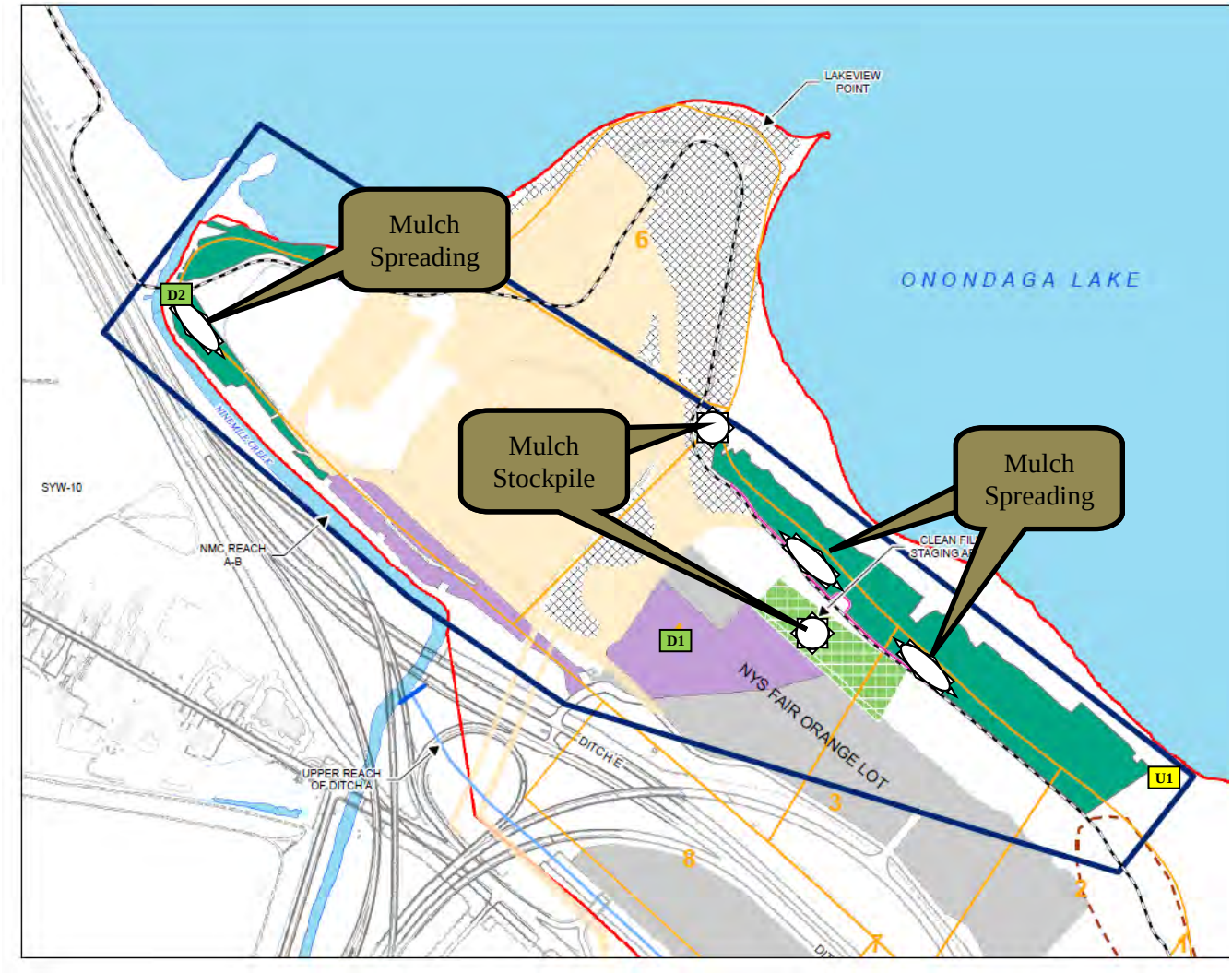
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	7.7 to 12.2
	Temperature Range (degrees F):	48 to 61
	Relative Humidity Range (%):	69 to 97
	Barometric Pressure Average (inches of Hg):	29.90
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/12/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	LHR, JP		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

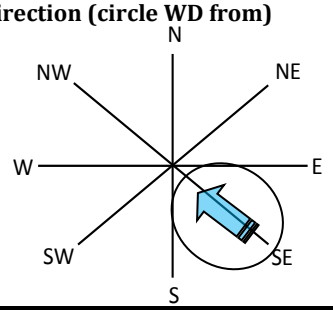
Project: Honeywell WB 1-8 **Date:** 10/13/17

Project Number: 66677 **AQM Operator:** LHR, JP

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102, C-101 and C-104.	0700	1330
Perimeter air quality monitoring performed	0700	1400

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	3 to 5	4 to 6	4 to 14	**100**	**150**	**No**

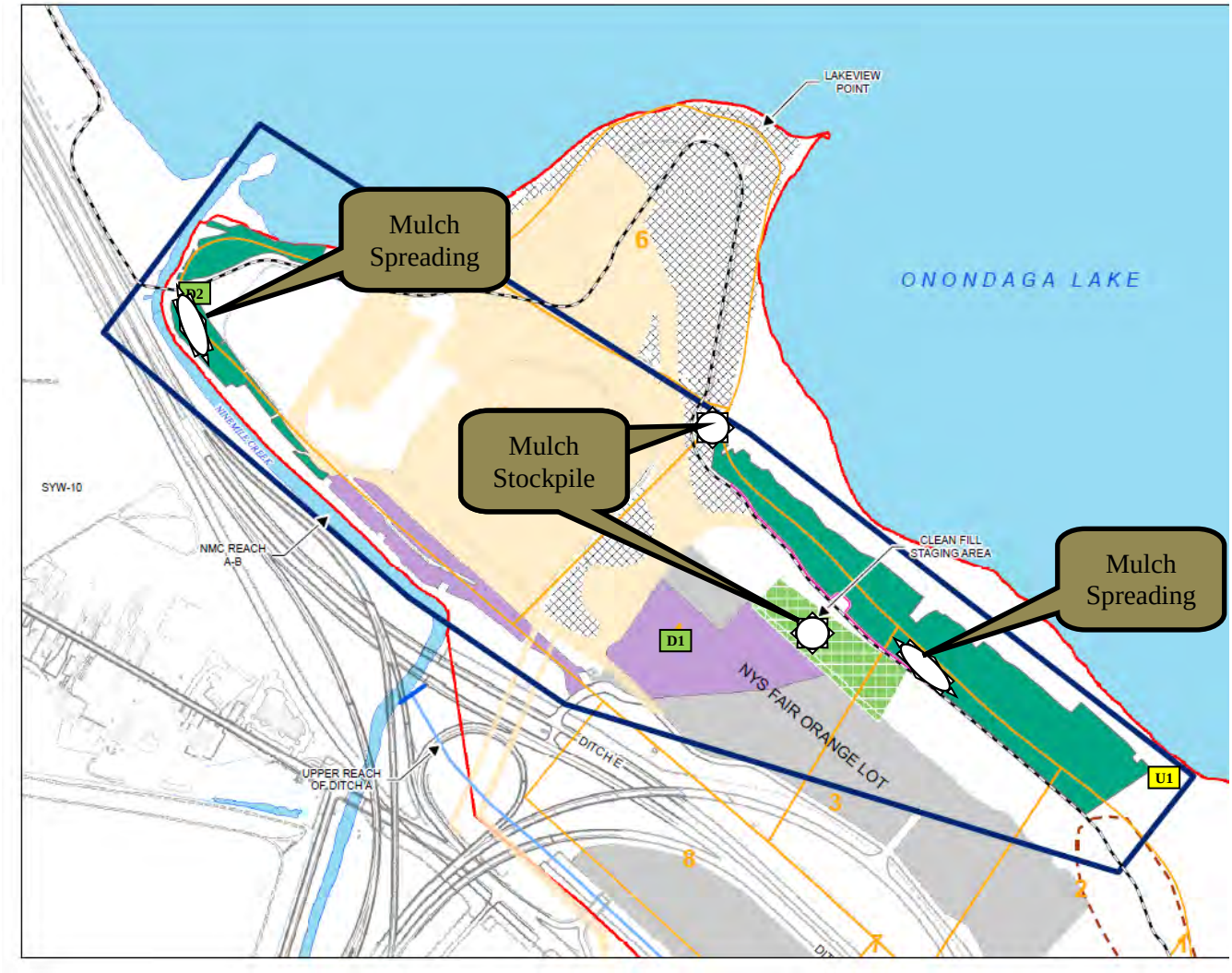
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 4.2 to 10.7
	Temperature Range (degrees F): 53 to 61
	Relative Humidity Range (%): 58 to 66
	Barometric Pressure Average (inches of Hg): 29.88
	Precipitation (total inches): 0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/13/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	LHR, JP		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

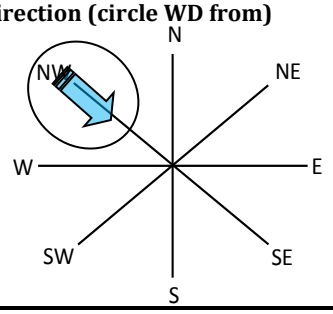
Project: Honeywell WB 1-8 **Date:** 10/16/17

Project Number: 66677 **AQM Operator:** JLS, CJF, MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102, C-101 and C-104	0700	1600
Perimeter air quality monitoring performed	0700	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	1 to 2*	1 to 3*	1 to 2*	**100**	**150**	**No**

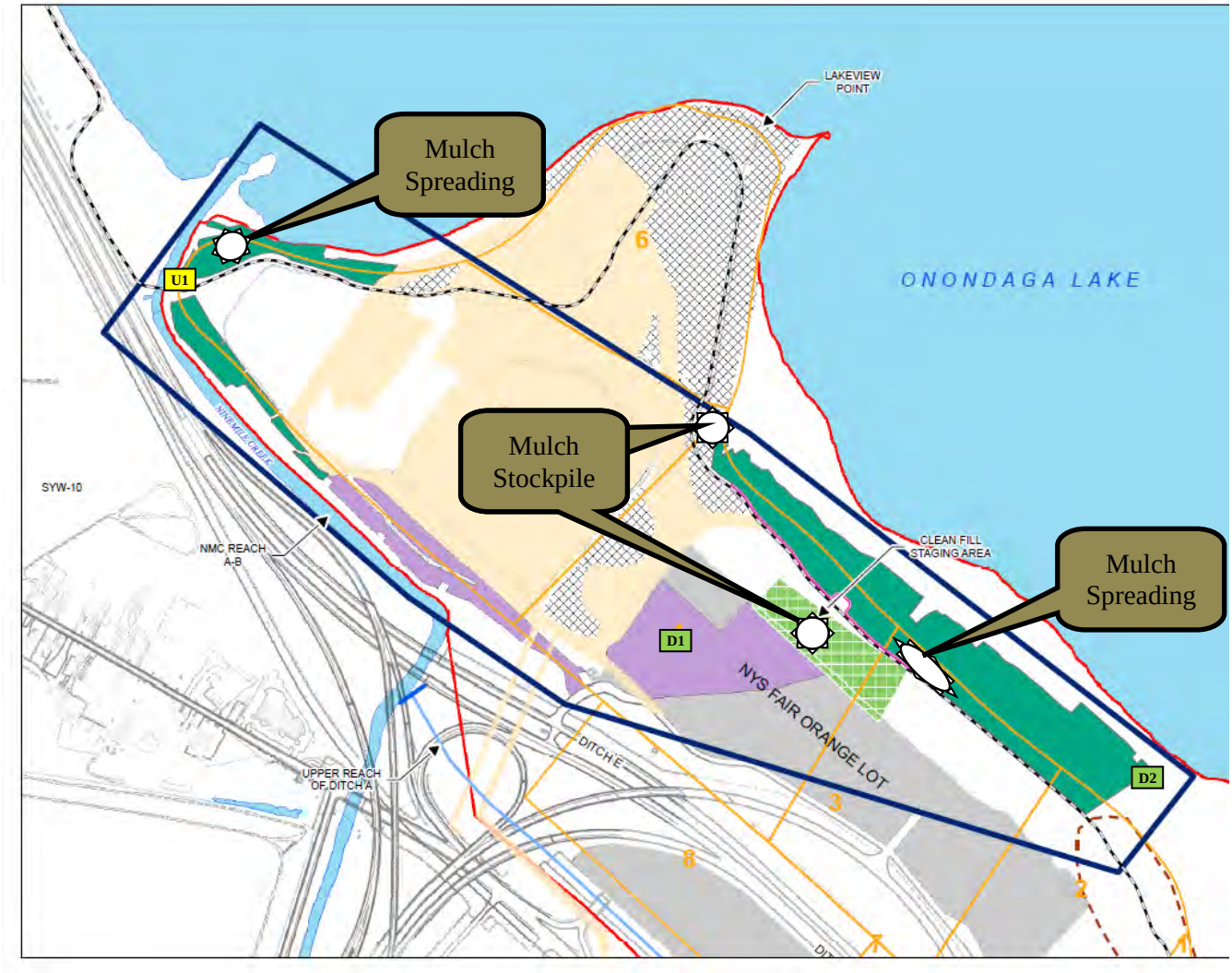
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	4.3 to 10.7
	Temperature Range (degrees F):	45 to 47
	Relative Humidity Range (%):	60 to 90
	Barometric Pressure Average (inches of Hg):	29.68
	Precipitation (total inches):	0.02

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations. *PM-10 dust monitoring was curtailed between 0900 to 0930, 1300 to 1330, and 1400 to 1430 due to intermittent rain showers.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/16/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JLS, CJF, MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

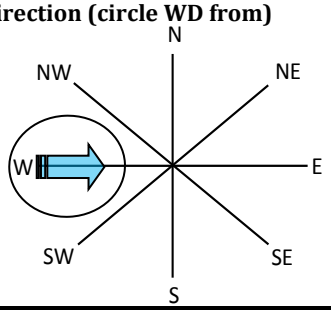
Project: Honeywell WB 1-8 **Date:** 10/17/17

Project Number: 66677 **AQM Operator:** JLS, MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102, C-101 and C-104	0715	1600
Perimeter air quality monitoring performed	0715	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	1 to 11	17 to 24	10 to 24	**100**	**150**	**No**

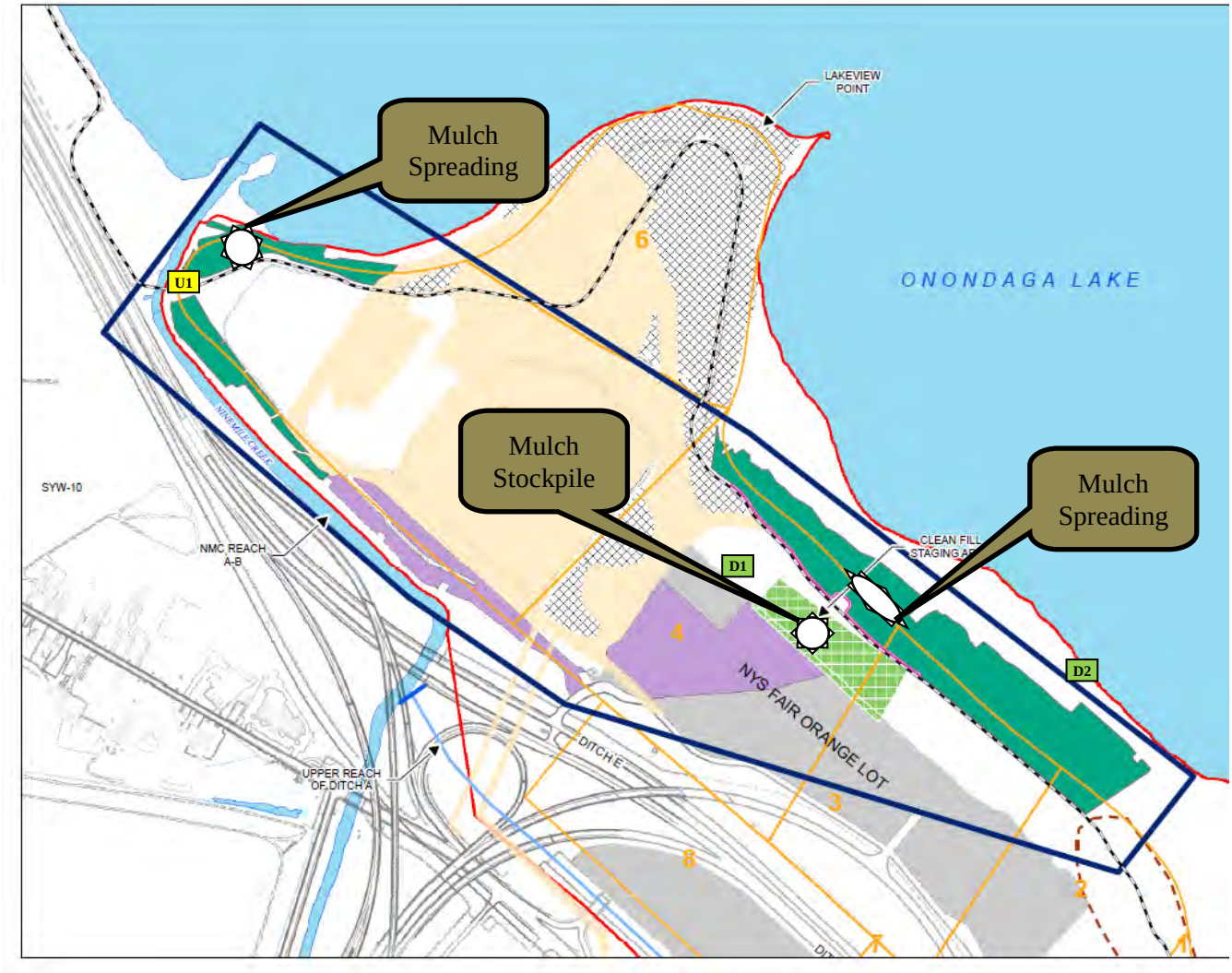
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	2.5 to 10.9
	Temperature Range (degrees F):	36 to 60
	Relative Humidity Range (%):	36 to 99
	Barometric Pressure Average (inches of Hg):	29.80
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/17/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JLS, MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

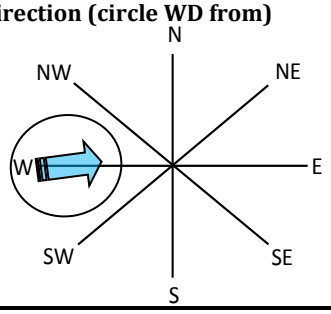
Project: Honeywell WB 1-8 **Date:** 10/18/17

Project Number: 66677 **AQM Operator:** JP ,MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-101, C-102, C-103 and C-104	0715	1600
Perimeter air quality monitoring performed	0715	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	3 to 23	2 to 7	3 to 8	**100**	**150**	**No**

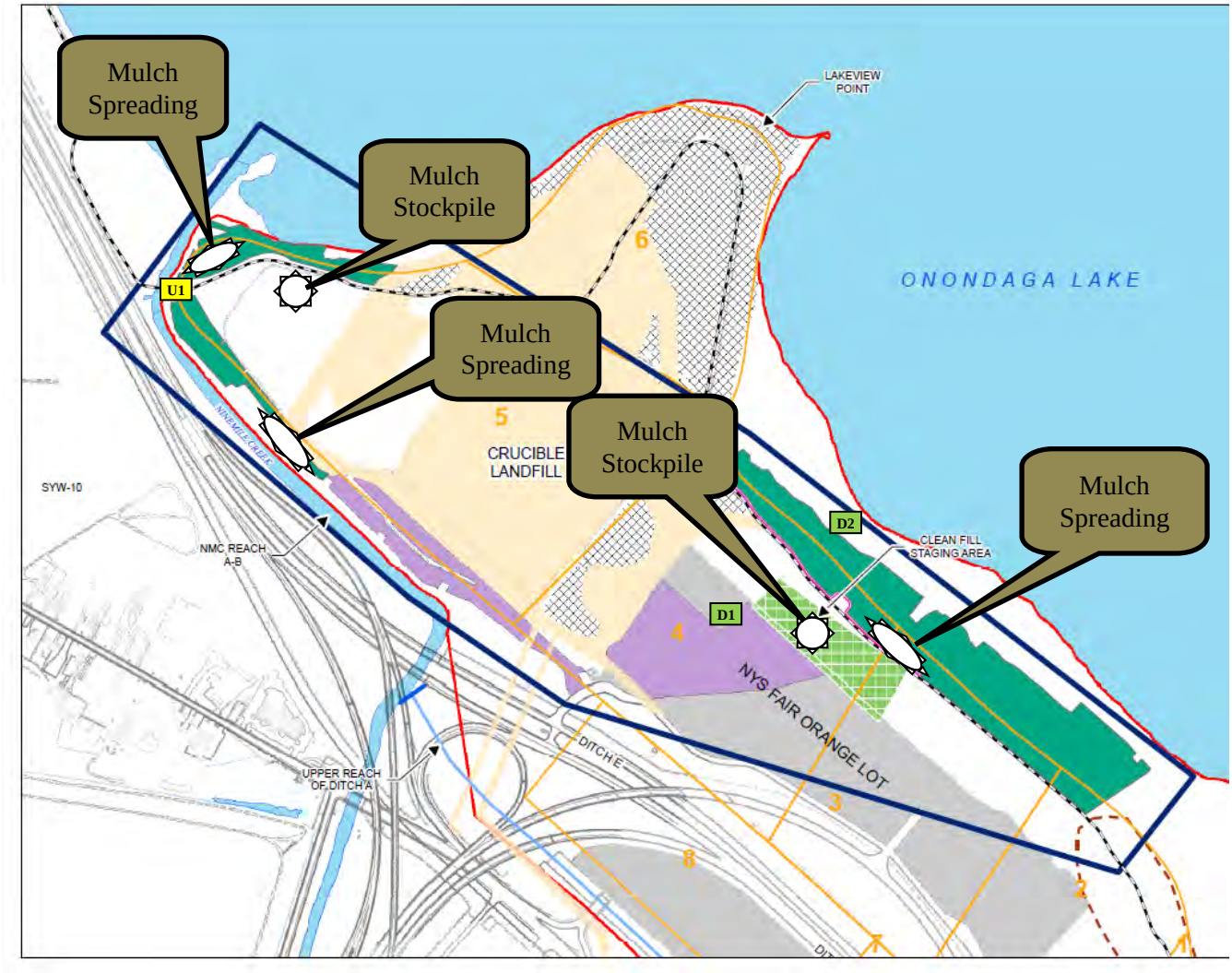
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	3.6 to 8.4
	Temperature Range (degrees F):	57 to 70
	Relative Humidity Range (%):	40 to 69
	Barometric Pressure Average (inches of Hg):	29.80
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/18/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JP, MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

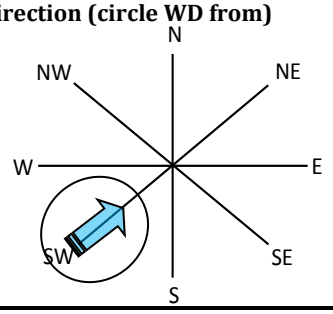
Project: Honeywell WB 1-8 **Date:** 10/19/17

Project Number: 66677 **AQM Operator:** JP ,MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpile and spreading mulch in C-102, C-101 and C-104	0715	1600
Perimeter air quality monitoring performed	0715	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	1 to 6	3 to 13	3 to 35	**100**	**150**	**No**

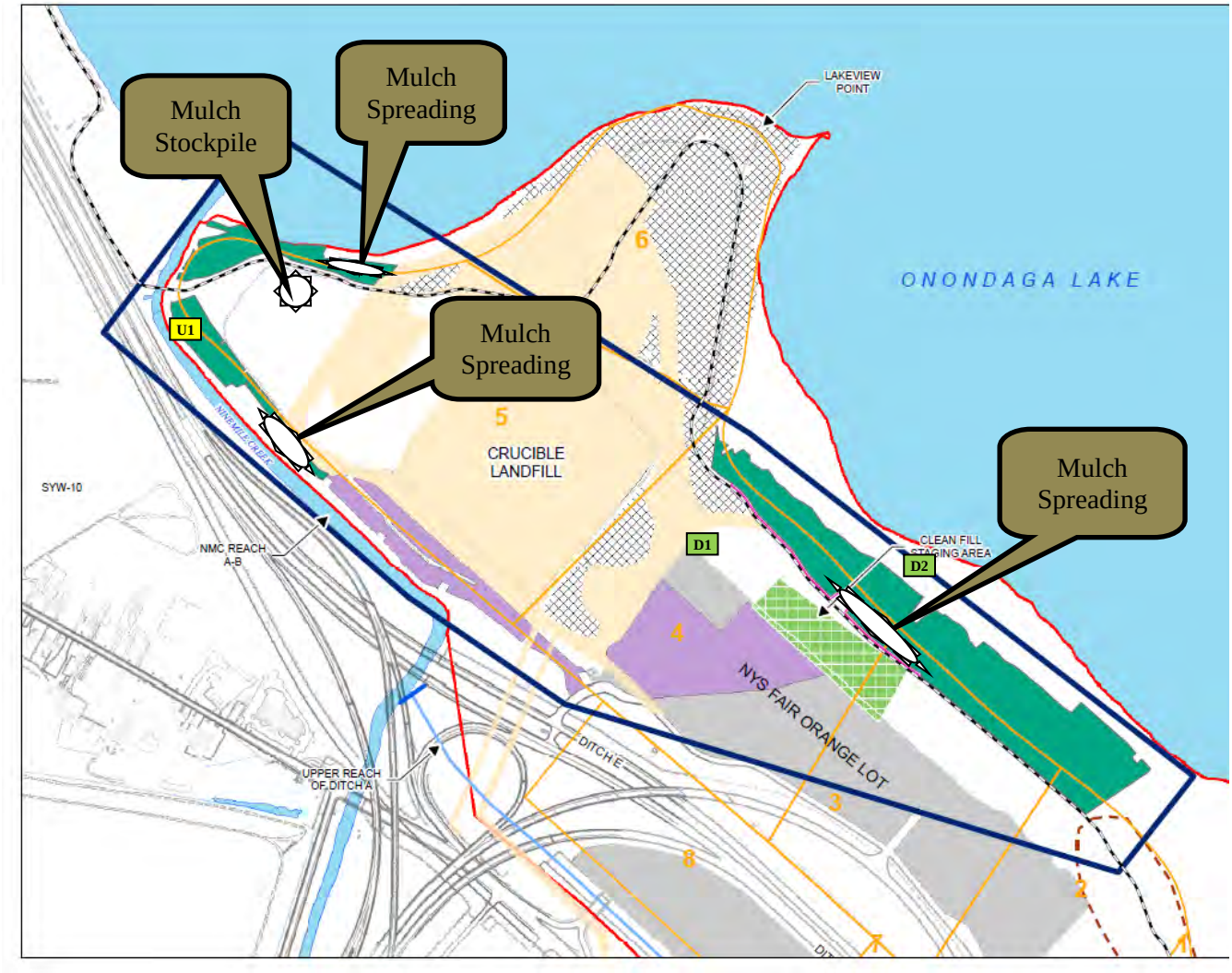
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	5.9 to 13.6
	Temperature Range (degrees F):	57 to 72
	Relative Humidity Range (%):	35 to 63
	Barometric Pressure Average (inches of Hg):	29.61
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/19/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JP, MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

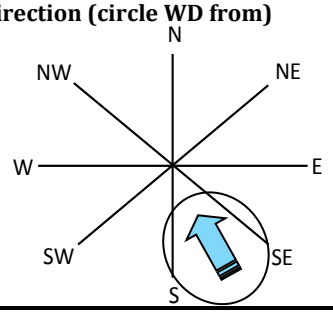
Project: Honeywell WB 1-8 **Date:** 10/23/17

Project Number: 66677 **AQM Operator:** JLS, MAS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102, C-101 and C-104.	0700	1539
Perimeter air quality monitoring performed	0700	1545

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	4 to 21	4 to 57	5 to 22	**100**	**150**	**No**

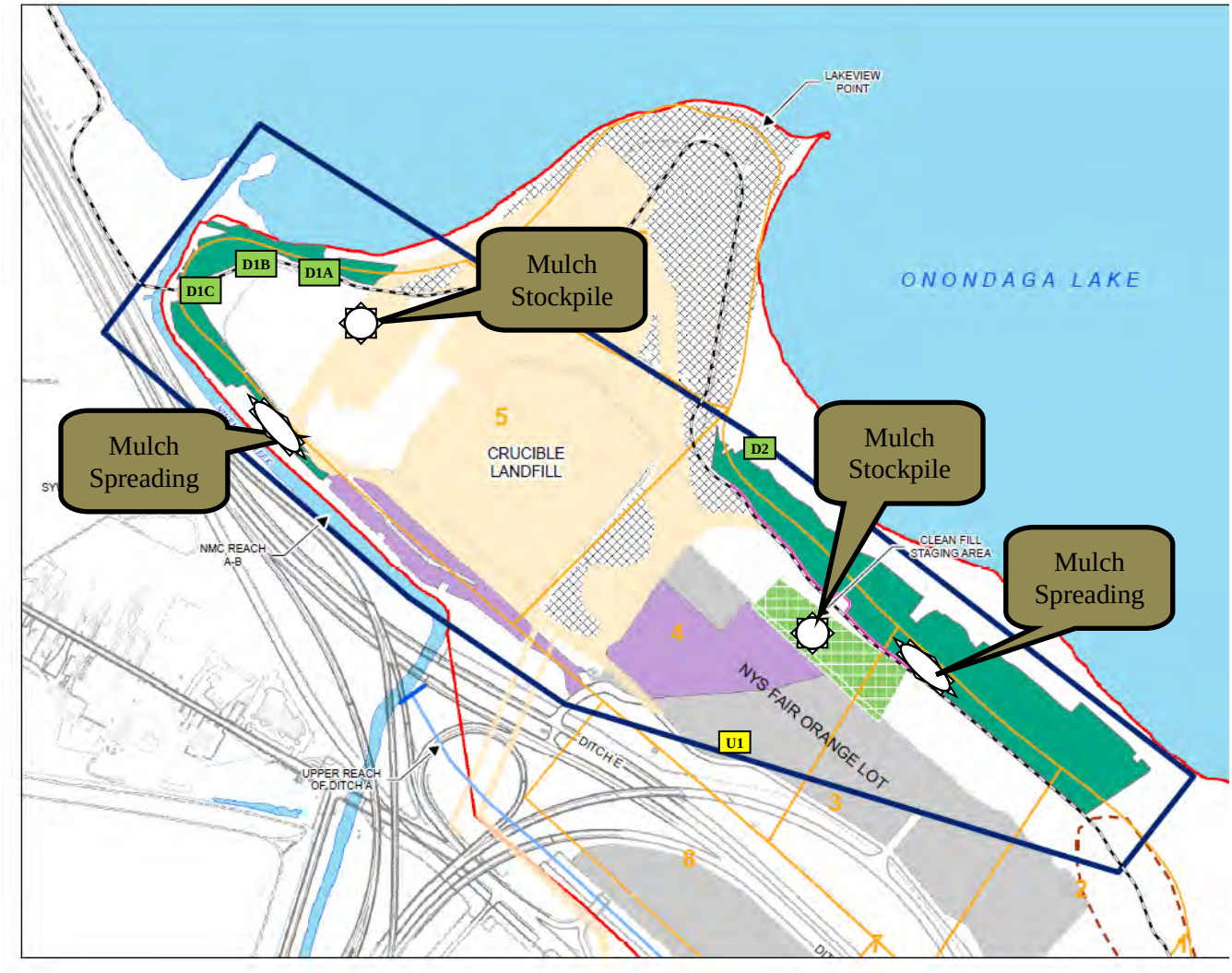
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	5.5 to 13.4
	Temperature Range (degrees F):	69 to 81
	Relative Humidity Range (%):	52 to 70
	Barometric Pressure Average (inches of Hg):	29.65
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No odors were observed leaving site from mulch spreading operations.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/23/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JLS, MAS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air Quality Monitoring Daily Summary

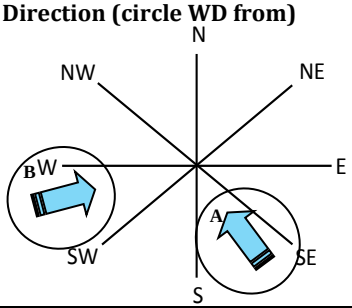
Project: Honeywell WB 1-8 **Date:** 10/24/17

Project Number: 66677 **AQM Operator:** JLS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Loading mulch from stockpiles and spreading mulch in C-102, C-101 and C-104.	0700	1550
Perimeter air quality monitoring performed	0700	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} (µg/m³)	1 to 2*	1 to 5*	2 to 11*	**100**	**150**	**No**

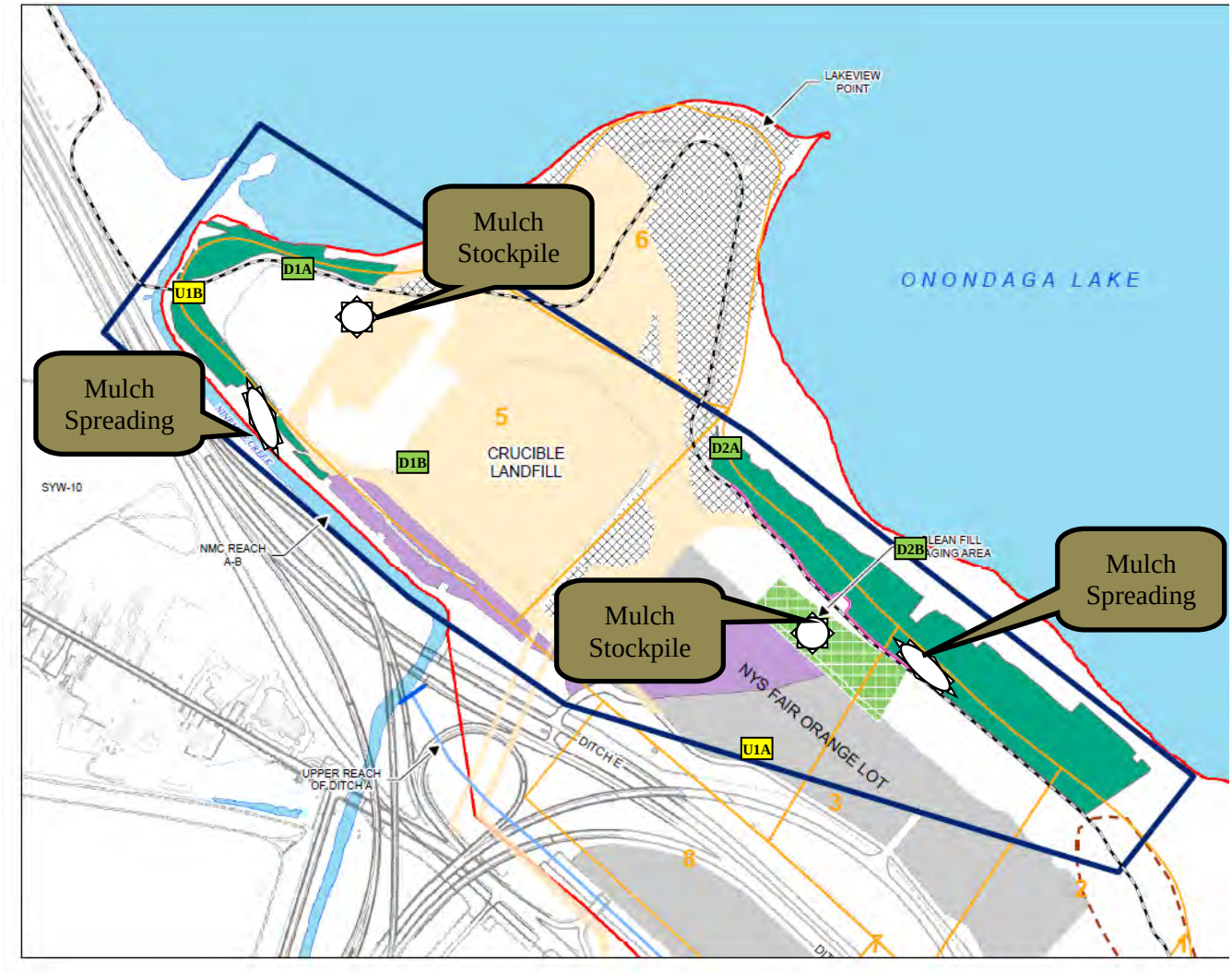
[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 5.6 to 10.8
	Temperature Range (degrees F): 65 to 79
	Relative Humidity Range (%): 54 to 98
	Barometric Pressure Average (inches of Hg): 29.20
	Precipitation (total inches): 0.40

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No visible dust or odors were observed leaving site from mulch spreading operations. *Dust monitoring was curtailed between 0721 to 0929 due to rain. Note: Stations were relocated at 0850 due to a change in the prevailing wind direction.

Project:	Honeywell WB 1-8 AQM	**Project Number:**	66677	**Date:**	10/24/17
Test Parameters:	PM_{10} (Dust)	**AQM Operator:**	JLS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

AIR QUALITY MONITORING DAILY SUMMARY

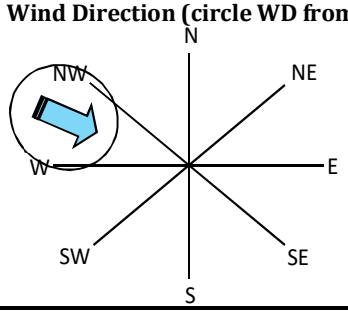
Project: HW WB 1-8 DOT SW Outfall **Date:** 02/05/18

Project Number: 68135 **AQM Operator:** JP,SM

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation began for installation of DOT SW Outfall pipe	1100	1600
Perimeter air quality monitoring performed	1100	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	2 to 5	2 to 2	2 to 4	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to <0.1	<0.1 to <0.1	<0.1 to 0.1	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	5.2 to 13.0
	Temperature Range (degrees F):	27 to 30
	Relative Humidity Range (%):	61 to 78
	Barometric Pressure (inches of Hg):	29.74
	Precipitation (total inches during site activities):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	

Project:	HW WB1-8 DOT SW Outfall	Project Number:	68135	Date:	02/05/18
Test Parameters:	PM_{10} (Dust), TVOCs	AQM Operator:	JP, SM		

Air Quality Monitoring Location IDs and Description:

- U1 — Air Monitoring Station Upwind of Construction Activity
- D1 & D2 — Air Monitoring Stations Downwind of Construction Activity
- Location of Project Construction Activity
- Air monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

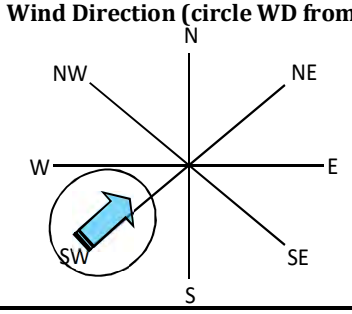
Project: HW WB 1-8 DOT SW Outfall **Date:** 02/06/18

Project Number: 68135 **AQM Operator:** JP

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation began for installation of DOT SW Outfall pipe	0745	1610
Perimeter air quality monitoring performed	0745	1615

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	8 to 13	6 to 11	4 to 10	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to <0.1	<0.1 to 0.5	<0.1 to 0.1	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	1.8 to 11.9
	Temperature Range (degrees F):	28 to 37
	Relative Humidity Range (%):	63 to 100
	Barometric Pressure (inches of Hg):	29.86
	Precipitation (total inches during site activities):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	Dust monitoring was paused several times throughout the day due to snowfall.

Project:	HW WB1-8 DOT SW Outfall	Project Number:	68135	Date:	02/06/18
Test Parameters:	PM_{10} (Dust), TVOCs	AQM Operator:	JP		

Air Quality Monitoring Location IDs and Description:

- U1 — Air Monitoring Station Upwind of Construction Activity
- D1 & D2 — Air Monitoring Stations Downwind of Construction Activity
- Location of Project Construction Activity
- Air monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

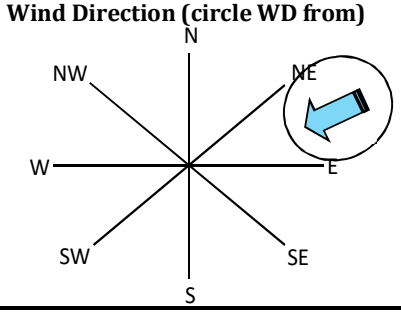
Project: HW WB 1-8 DOT SW Outfall **Date:** 02/07/18

Project Number: 68135 **AQM Operator:** JP

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation continues for installation of DOT SW Outfall pipe	0730	1300
Perimeter air quality monitoring performed	0730	1300

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	14 to 14	11 to 12	11 to 13	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to 0.1	<0.1 to 0.3	<0.1 to 0.1	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	6.4 to 10.6
	Temperature Range (degrees F):	22 to 29
	Relative Humidity Range (%):	83 to 97
	Barometric Pressure (inches of Hg):	29.74
	Precipitation (total inches during site activities):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	Dust monitoring was curtailed at 0817 due to heavy snow throughout the day.

Project:	HW WB1-8 DOT SW Outfall	Project Number:	68135	Date:	02/07/18
Test Parameters:	PM_{10} (Dust), TVOCs	AQM Operator:	JP		

Air Quality Monitoring Location IDs and Description:

- U1 Air Monitoring Station Upwind of Construction Activity
- D1 & D2 Air Monitoring Stations Downwind of Construction Activity
- Location of Project Construction Activity
- Air Monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

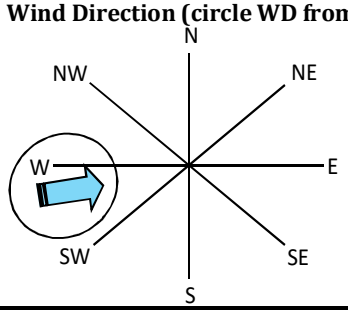
Project: HW WB 1-8 DOT SW Outfall **Date:** 02/08/18

Project Number: 68135 **AQM Operator:** JP

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation continues for installation of DOT SW Outfall pipe	0730	1600
Perimeter air quality monitoring performed	0730	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	6 to 9	4 to 7	4 to 8	**100**	**150**	**No**
TVOCs (ppm)	0.1 to 0.2	<0.1 to 0.8	<0.1 to <0.1	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable;

Daily Meteorological Summary[b]		
Wind Direction (circle WD from) 	**Wind Speed Range (mph):**	4.7 to 8.3
	Temperature Range (degrees F):	27 to 37
	Relative Humidity Range (%):	57 to 99
	Barometric Pressure (inches of Hg):	29.89
	Precipitation (total inches during site activities):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	Dust monitoring was paused between 0741 and 1155, and then again between 1315 and 1442 due to steady snowfall.

Project:	HW WB1-8 DOT SW Outfall	Project Number:	68135	Date:	02/08/18
Test Parameters:	PM_{10} (Dust), TVOCs	AQM Operator:	JP		

Air Quality Monitoring Location IDs and Description:

- U1 Air Monitoring Station Upwind of Construction Activity
- D1 & D2 Air Monitoring Stations Downwind of Construction Activity
- Location of Project Construction Activity
- Air monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

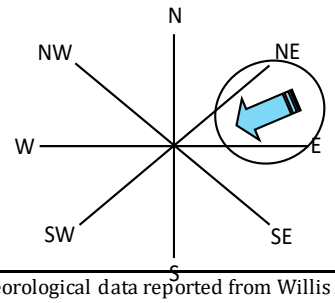
Project: Honeywell Ditch A Remediation **Date:** 06/11/18

Project Number: 67268 **AQM Operator:** MNS/JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation, load out, stone delivery, and backfill placement	0700	1500
Perimeter air quality monitoring performed	0700	1500

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	4 to 9	3 to 26	---	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to 0.2	<0.1 to <0.1	---	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 5.6 to 9.7
	Temperature Range (degrees F): 58 to 73
	Relative Humidity Range (%): 30 to 68
	Barometric Pressure Average (inches of Hg): 29.62
	Precipitation (total inches): 0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No odors were observed during site activities. Station locations were determined using observed on-site wind conditions. Downwind monitoring station D2 was not operated.

Project:	Honeywell Ditch A Remediation	**Project Number:**	67268	**Date:**	06/11/18
Test Parameters:	PM_{10} (Dust), TVOCs	**AQM Operator:**	MNS/JJF		

Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

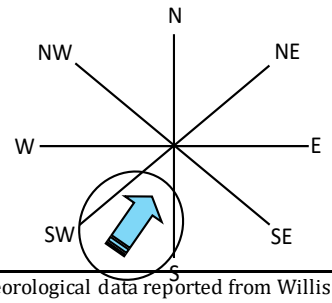
Project: Honeywell Ditch A Remediation **Date:** 06/12/18

Project Number: 67268 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Backfill placement	0700	1500
Perimeter air quality monitoring performed	0700	1500

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	7 to 20	6 to 31	---	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to <0.1	<0.1 to 0.1	---	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 3.8 to 11.4
	Temperature Range (degrees F): 64 to 79
	Relative Humidity Range (%): 35 to 59
	Barometric Pressure Average (inches of Hg): 29.65
	Precipitation (total inches): 0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No odors were observed during site activities. Station locations were determined using observed on-site wind conditions. Downwind monitoring station D2 was not operated.

Project:	Honeywell Ditch A Remediation	**Project Number:**	67268	**Date:**	06/12/18
Test Parameters:	PM_{10} (Dust), TVOCs	**AQM Operator:**	JJF		

Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

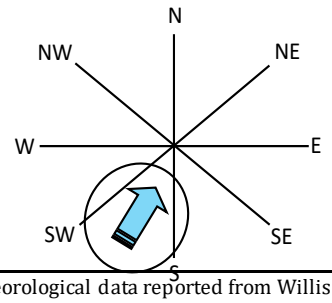
Project: Honeywell Ditch A Remediation **Date:** 06/13/18

Project Number: 67268 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation Ditch A Crucible Lot	0730	1500
Secondary excavation, stone delivery and backfill placement	0945	1500
Perimeter air quality monitoring performed	0700	1500

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	17 to 43	7 to 36	11 to 32	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to 0.1	<0.1 to <0.1	<0.1 to <0.1	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 3.1 to 9.8
	Temperature Range (degrees F): 67 to 75
	Relative Humidity Range (%): 71 to 91
	Barometric Pressure Average (inches of Hg): 29.34
	Precipitation (total inches): 0.14

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No odors were observed during site activities. ADR'S off due to rain 0700 - 0915 and 1300 -1422. Station locations were determined using observed on-site wind conditions (SSW).

Project:	Honeywell Ditch A Remediation	**Project Number:**	67268	**Date:**	06/13/18
Test Parameters:	PM_{10} (Dust), TVOCs	**AQM Operator:**	JJF		

Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

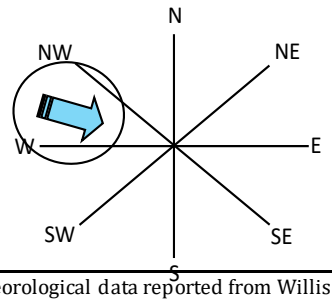
Project: Honeywell Ditch A Remediation **Date:** 06/14/18

Project Number: 67268 **AQM Operator:** JJF

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation and Loadout Ditch A Crucible Lot	0730	1615
Secondary excavation, stone delivery and backfill placement	0730	1615
Perimeter air quality monitoring performed	0715	1615

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	3 to 6	4 to 63	4 to 42	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to <0.1	<0.1 to <0.1	<0.1 to 0.1	**3.0**	**5.0**	**No**

[a] 15-minute averages without background correction; NA – Not Applicable

Daily Meteorological Summary[b]		
Wind Direction (circle WD from)	**Wind Speed Range (mph):**	8 to 16.7
	**Temperature Range (degrees F):**	62 to 66
	Relative Humidity Range (%):	56 to 68
	Barometric Pressure Average (inches of Hg):	29.37
	Precipitation (total inches):	0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No odors were observed during site activities. Station locations were determined using observed on-site wind conditions.

Project:	Honeywell Ditch A Remediation	**Project Number:**	67268	**Date:**	06/14/18
Test Parameters:	PM_{10} (Dust), TVOCs	**AQM Operator:**	JJF		

Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air monitoring Boundary (Approximate)

AIR QUALITY MONITORING DAILY SUMMARY

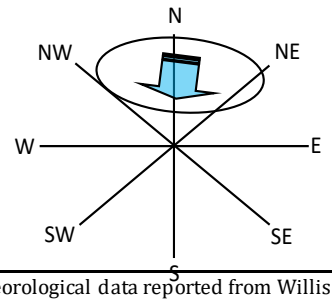
Project: Honeywell Ditch A Remediation **Date:** 07/12/18

Project Number: 67268 **AQM Operator:** MNS

Daily Construction Activity Summary		
Description of Activity	**Start Time**	**Stop Time**
Excavation and Load out Crucible lot Ditch A	0700	1552
Perimeter air quality monitoring performed	0700	1600

Summary of Air Quality Monitoring (AQM) Results[a]				Summary of Criteria and Exceedances		
Monitoring Station Location ID	**Upwind**	**Downwind**		**Control Level**	**Work Perimeter Limit**	**Exceeds Work Perimeter Limit?**
	U1	**D1**	**D2**			
Dust as PM_{10} ($\mu g/m^3$)	4 to 13	6 to 28	---	**100**	**150**	**No**
TVOCs (ppm)	<0.1 to <0.1	<0.1 to 0.1	---	**3.0**	**5.0**	**No**

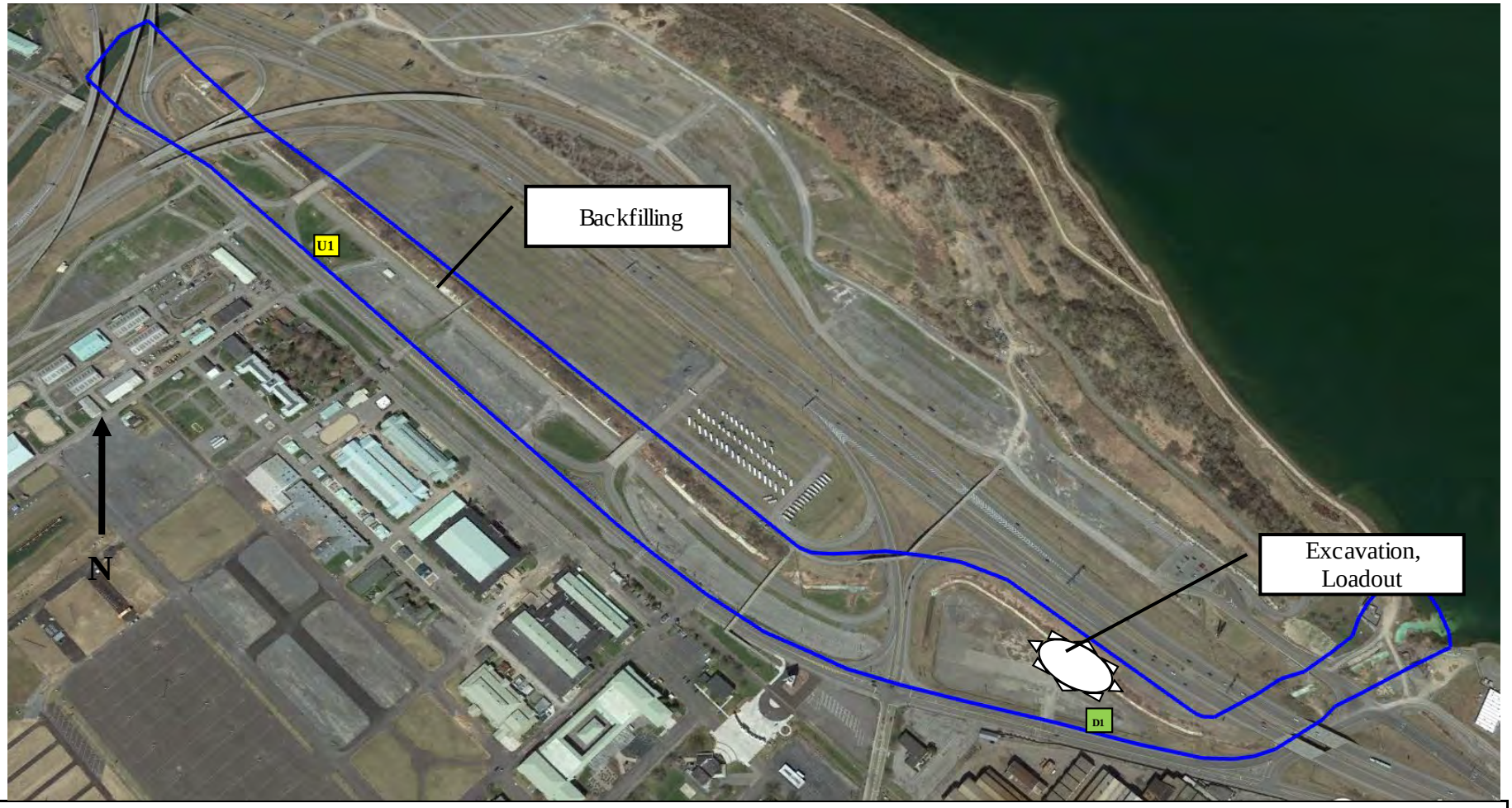
[a] 15-minute averages without background correction; NA – Not Applicable

Daily Meteorological Summary[b]	
Wind Direction (circle WD from) 	**Wind Speed Range (mph):** 1.7 to 6.5
	Temperature Range (degrees F): 62 to 81
	Relative Humidity Range (%): 36 to 78
	Barometric Pressure Average (inches of Hg): 29.78
	Precipitation (total inches): 0.00

[b] Meteorological data reported from Willis Ave. Tower, except precipitation which is reported from SCA Tower.

General Notes:	No odors were observed during site activities. Station locations were determined using observed on-site wind conditions. Downwind monitoring station D2 was not operated.

Project:	Honeywell Ditch A Remediation	**Project Number:**	67268	**Date:**	07/12/18
Test Parameters:	PM_{10} (Dust), TVOCs	**AQM Operator:**	MNS		



Air Quality Monitoring Location IDs and Description:

U1 Air Monitoring Station Upwind of Construction Activity

D1 & D2 Air Monitoring Stations Downwind of Construction Activity

Location of Project Construction Activity

Air monitoring Boundary (Approximate)

APPENDIX E
PHOTO LOG

APPENDIX E – PHOTOGRAPHIC LOG

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
1	09/05/17

DESCRIPTION
Selective Clearing of Eastern Shoreline Vegetation Enhancement Areas.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
2	09/08/17

DESCRIPTION
Removal of Brush from Eastern Shoreline Vegetation Enhancement Area.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
3	09/12/17

DESCRIPTION
Blower Truck Installation of Mulch/Compost Cover within Eastern Shoreline Vegetation Areas.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
4	09/15/17

DESCRIPTION
Post Mulch/Compost Cover Installation within Eastern Shoreline Vegetation Enhancement Area.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
5	09/18/17

DESCRIPTION
Temporary construction pathway construction within Eastern Shoreline Vegetation Enhancement Area.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
6	09/27/17

DESCRIPTION
Post Installation of Vegetative Enhancement Cover System.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
7	10/18/17

DESCRIPTION
Completed Eastern Shoreline Vegetation Enhancement Area (West).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
8	10/18/17

DESCRIPTION
Completed Eastern Shoreline Vegetation Enhancement Area (East Toward Bike Trail).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

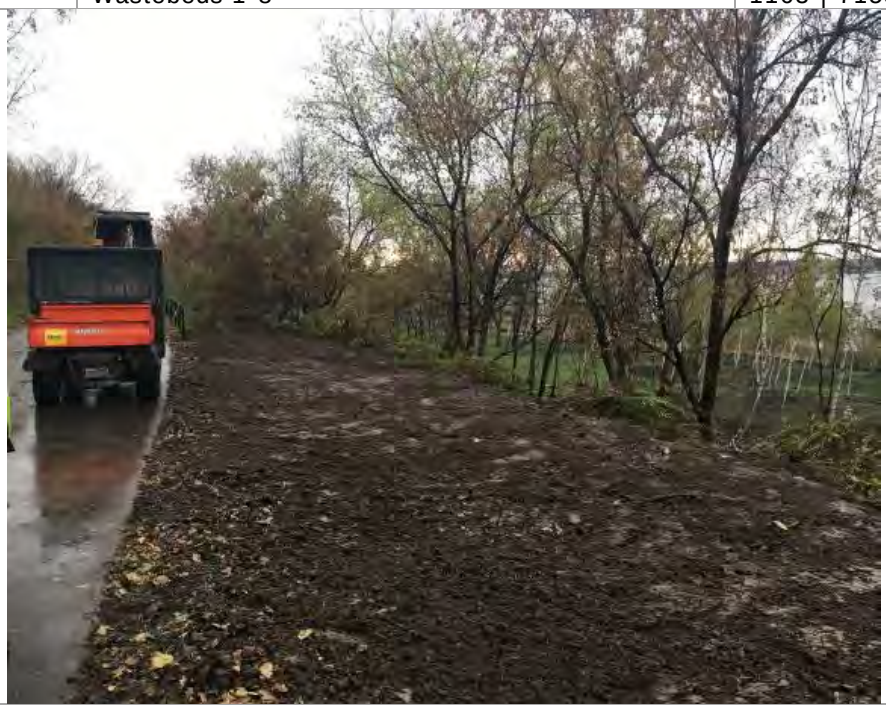
PHOTO NO.	DATE:
9	10/19/17

DESCRIPTION
Completed Nine Mile Creek Vegetation Enhancement Cover Area.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
10	11/08/17

DESCRIPTION
Topsoil Placement and Restoration of 1-ft cover Areas.



CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
11	11/09/17

DESCRIPTION
Completed Eastern Shoreline Vegetation Enhancement Area and 1-ft Soil Cover Area.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
12	04/13/18

DESCRIPTION
Restoration of Disturbed Areas from the Construction of the storm water Outfall to aid in storm water conveyance from the NYSDOT settling basin.

CLIENT NAME: Honeywell	SITE LOCATION: Wastebeds 1-8	PROJECT NO. 1163 | 71536

PHOTO NO.	DATE:
13	11/07/18

DESCRIPTION
Vegetation Enhancement on Ditch A (FM#1).

CLIENT NAME: Honeywell	SITE LOCATION: Wastebeds 1-8	PROJECT NO. 1163 | 71536

PHOTO NO.	DATE:
14	11/07/18

DESCRIPTION
Vegetation Enhancement on Ditch A (FM#1).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
15	11/07/18

DESCRIPTION
Vegetation Enhancement on Ditch A (FM#1).

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
16	11/07/18

DESCRIPTION
Downspout completion on Ditch A (FM#2) to aid in stormwater runoff.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
17	11/07/17

DESCRIPTION
Toe build-out at the southern end of FM #3.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
18	11/04/18

DESCRIPTION
Layback of Berm; continuing West toward Entrance to Staging Area C within FM #3.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
19	11/20/18

DESCRIPTION
Placement of Item-70 to 1:2 Slopes at the eastern end of FM #3.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
20	12/05/18

DESCRIPTION
Installation of Temporary Roadway at the northwestern end of FM#3.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
21	12/07/18

DESCRIPTION
Completion of Topsoil Installation, Seeding, and Erosion Control Blanket Installation in the middle of FM #3.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
22	7/18/19

DESCRIPTION
Image facing north from the Onondaga Canalways trail towards Nine Mile Creek. Area used as access pathway and stabilized with crusher stone as final cover.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
23	7/18/19

DESCRIPTION
Image facing north from the Onondaga Canalways Trail towards Nine Mile Creek. Area used as access pathway and stabilized with crusher stone as final cover.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
24	7/18/19

DESCRIPTION
Image facing south from Nine Mile Creek, north of the Onondaga Canalways Trail. Area used as access pathway and stabilized with crusher stone as final cover.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
25	7/18/19

DESCRIPTION
Image facing west on the south side of the Onondaga Canalways Trail. Area utilized as access pathway and stabilized with crusher stone as final cover.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
26	7/18/19

DESCRIPTION
Image facing south from the southern side of the Onondaga Canalways Trail. Area used as access pathway and stabilized with crusher stone as final cover.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
27	9/12/19

DESCRIPTION
Photo taken from location A along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-1 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
28	9/12/19

DESCRIPTION
Photo taken from location B along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-3 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
29	9/12/19

DESCRIPTION
Photo taken from location C along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-4 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
30	9/12/19

DESCRIPTION
Photo taken from location D along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-5 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
31	9/12/19

DESCRIPTION
Photo taken from location E along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-6 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
32	9/12/19

DESCRIPTION
Photo taken from location F along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-7 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
33	9/12/19

DESCRIPTION
Photo taken from location G along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-8 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
34	9/12/19

DESCRIPTION
Photo taken from location H along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-9 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
35	9/12/19

DESCRIPTION
Photo taken from location I along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-10 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
36	9/12/19

DESCRIPTION
Photo taken from location J along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-13 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
37	9/20/19

DESCRIPTION
Photo taken from location K along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-14 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
38	9/12/19

DESCRIPTION
Photo taken from location L along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-15 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
39	9/12/19

DESCRIPTION
Photo taken from location M along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-17 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
40	9/20/19

DESCRIPTION
Photo taken from location N along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-19 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
41	9/12/19

DESCRIPTION
Photo taken from location O along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-20 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
42	9/12/19

DESCRIPTION
Photo taken from location P along the Onondaga Canalways Trail. Photo shows successful vegetation enhancement in Area P3-21 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
43	9/12/19

DESCRIPTION
Photo taken from location Q north of NMC . Photo shows successful vegetation enhancement in Area P3-23 as it meets the remedial objective to prevent direct contact with Solvay waste material.

CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

PHOTO NO.	DATE:
44	9/12/19

DESCRIPTION
Photo taken from location R along the Amphitheater access roads. Photo shows successful vegetation enhancement in Area P3-25 as it meets the remedial objective to prevent direct contact with Solvay waste material.

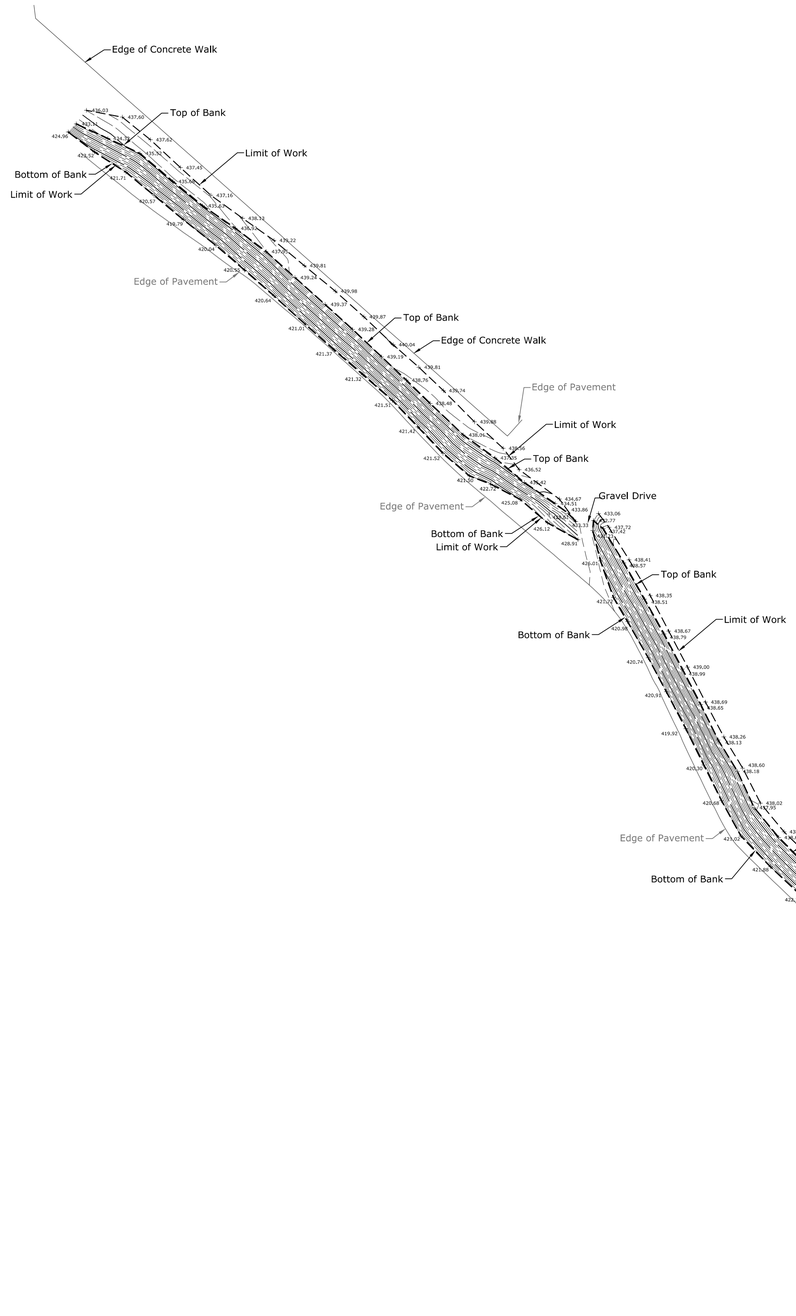
CLIENT NAME:	SITE LOCATION:	PROJECT NO.
Honeywell	Wastebeds 1-8	1163 | 71536

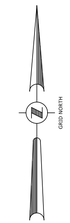
PHOTO NO.	DATE:
45	9/12/19

DESCRIPTION

Photo taken from location S along the Amphitheater access roads. Photo shows successful vegetation enhancement in Area P3-26 as it meets the remedial objective to prevent direct contact with Solvay waste material.

APPENDIX F
AS-BUILT SURVEY





MAP NOTES

1.) NORTH ORIENTATION IS BASED ON GRID NORTH FROM RTK GPS OBSERVATIONS.

2.) VERTICAL DATUM IS BASED ON NAVD 1988 DATUM FROM RTK GPS OBSERVATIONS.

3.) UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM DATA OBTAINED BY FIELD SURVEY, PREVIOUS MAPS AND RECORDS, (AND PAROLE TESTIMONY). THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UNDERGROUND UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN TO THE UNDERSIGNED. SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES MUST BE VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION.

4.) THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OR UP TO DATE TITLE REPORT AND IS THEREFORE SUBJECT TO ANY EASEMENTS, RESTRICTIONS, COVENANTS OR ANY STATEMENT OF FACTS THAT SUCH DOCUMENTS MAY DISCLOSE.

5.) FIELD WORK PERFORMED BETWEEN MARCH 27, 2019.

BAR SCALE

100 0 50 100 200

1 inch = 100 ft.

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".

DAVID M. SLISKI
P.L.S. NO. 50105

STATE OF NEW YORK · DAVID MICHAEL SLISKI · 050105 · LICENSED LAND SURVEYOR

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
	1				
	2				
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	4				
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	7				
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	9				

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C.T. MALE ASSOCIATES

APPROVED:

DRAFTED : DMS

CHECKED : DMS

PROJ. NO : 18.8503

SCALE : 1" = 100 FT.

DATE : MARCH 28, 2019

TOPOGRAPHIC SURVEY MAP

FOR A PORTION OF THE

ORANGE PARKING LOT SLOPE RECORD SURVEY

TOWN OF GEDDES — ONONDAGA COUNTY, NEW YORK

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SHEET 1 OF 1

DWG. NO: 19-0231

CAD DWG. FILE NAME: \\Sv-fp\data\Projects\18850935\Survey\Orange Lot - Slope Asbuilt.dwg

CAD DWG. FILE NAME: Orange Lot - Slope Asbuilt.dwg

APPENDIX G
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Automated Report

Technical Report for

Honeywell International Inc.

OBGNYS: Waste Beds 1-8, Syracuse, NY

Wastebeds 1-8 OU1 FS Mulch

SGS Accutest Job Number: JC37713

Sampling Date: 02/22/17

Report to:

O'Brien & Gere Engineers, Inc

Michael.Miller@obg.com

ATTN: Michael Miller

Total number of pages in report: 49

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Marty Vitanza 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Test results relate only to samples analyzed.

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Sample Summary

Honeywell International Inc.

Job No: JC37713

OBGNYS: Waste Beds 1-8, Syracuse, NY
Project No: Wastebeds 1-8 OU1 FS Mulch

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC37713-1	02/22/17	13:30		02/23/17	SO	Soil	WB18-022217-01
JC37713-2	02/22/17	13:30		02/23/17	SO	Soil	WB18-022217-02
JC37713-2A	02/22/17	13:30		02/23/17	SO	Soil	WB18-022217-02
JC37713-3	02/22/17	14:30		02/23/17	SO	Soil	WB18-022217-03
JC37713-4	02/22/17	14:40		02/23/17	SO	Soil	WB18-022217-04
JC37713-4A	02/22/17	14:40		02/23/17	SO	Soil	WB18-022217-04
JC37713-5	02/22/17	14:40		02/23/17	AQ	Trip Blank Soil	WB18-022217-05

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Honeywell International Inc. **Job No** JC37713

Site: OBGNYS: Waste Beds 1-8, Syracuse, NY **Report Date** 3/3/2017 5:29:43 PM

On 02/23/2017, 4 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 4 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC37713 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Volatiles by GCMS By Method SW846 8260C

Matrix: AQ **Batch ID:** V2A7467

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37733-1MS, JC37733-1MSD were used as the QC samples indicated.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Trichloroethene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Matrix: LEACHATE **Batch ID:** V2V1551

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC37728-2LS, JC37728-2MS, JC37728-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: SO **Batch ID:** VC7971

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC37651-7MS, JC37651-6DUP were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for Duplicate for Methylene chloride are outside control limits for sample JC37651-6DUP. High RPD due to possible sample nonhomogeneity.
- JC37713-3: Sample prepared from intact soil.
- JC37713-1: Sample prepped from intact soil.

Matrix: SO **Batch ID:** VY7378

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC37876-32MS, JC37876-32MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC37713-1: Sample prepped from intact soil.
- JC37713-3: Sample prepared from intact soil.
- JC37713-1 for 4-Bromofluorobenzene: Outside of in house control limits.
- JC37713-3 for 4-Bromofluorobenzene: Outside control limits.

Extractables by GCMS By Method SW846 8270D

Matrix: LEACHATE **Batch ID:** OP792

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37728-7ACLS, JC37728-7ACMS, JC37728-7ACMSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP786

- All samples were extracted within the recommended method holding time.
- Sample(s) JC37600-1MS, JC37600-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC37713-4: Elevated detection limit due to low volume of bad matrix sample extracted.
- JC37713-2: Elevated detection limit due to low volume of bad matrix sample extracted.

Extractables by GC By Method SW846 8081B

Matrix: LEACHATE **Batch ID:** OP795

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37728-1ACLS, JC37728-1ACMS, JC37728-1ACMSD, OP795-MSMSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP781

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37600-1MS, JC37600-1MSD were used as the QC samples indicated.
- JC37713-4 for 4,4'-DDE: More than 40 % RPD for detected concentrations between the two GC columns.

Extractables by GC By Method SW846 8082A

Matrix: SO **Batch ID:** OP782

- All samples were extracted within the recommended method holding time.
- Sample(s) JC37600-2MS, JC37600-2MSD, OP782-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846 8151

Matrix: LEACHATE **Batch ID:** OP798

- All samples were extracted within the recommended method holding time.
- Sample(s) JC37728-3ACLS, JC37728-3ACMS, JC37728-3ACMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: SO **Batch ID:** OP777

- All samples were extracted within the recommended method holding time.
- Sample(s) JC37297-1RMS, JC37297-1RMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix:	LEACHATE	Batch ID:	MP98889

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37713-2AMS, JC37713-2AMSD, JC37713-2ASDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic, Chromium, Lead are outside control limits for sample MP98889-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix:	SO	Batch ID:	MP98866

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37736-21MS, JC37736-21MSD, JC37736-21SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Cadmium are outside control limits for sample MP98866-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals By Method SW846 7470A

Matrix:	LEACHATE	Batch ID:	MP98884

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37713-2AMS, JC37713-2AMSD were used as the QC samples for metals.

Metals By Method SW846 7471B

Matrix:	SO	Batch ID:	MP98912

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37710-1DUP, JC37710-1MS, JC37710-1MSD were used as the QC samples for metals.

Wet Chemistry By Method ASTM D1498-76M

Matrix:	SO	Batch ID:	GN60146

- Sample(s) JC37452-2DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method EPA 335.4/LACHAT

Matrix:	AQ	Batch ID:	GP3503

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37650-14MS,JC37650-14DUP were used as the QC samples for Cyanide.

Wet Chemistry By Method SM2540 G-97

Matrix: SO	Batch ID: GN59893

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37713-2DUP were used as the QC samples for Solids, Total.

Matrix: SO	Batch ID: GN59913

- The data for SM2540 G-97 meets quality control requirements.

Matrix: SO	Batch ID: GN59996

- The data for SM2540 G-97 meets quality control requirements.

Wet Chemistry By Method SW846 1010A/ASTM D93

Matrix: SO	Batch ID: GN60173

- Sample(s) JC37345-14RDUP were used as the QC samples for Ignitability (Flashpoint).

Wet Chemistry By Method SW846 3060A/7196A

Matrix: SO	Batch ID: GP3535

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37713-2DUP, JC37713-2MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Insoluble XCR matrix spike recovery indicates possible matrix interference. See additional comments on soluble matrix spike recovery.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP3535-D1. High RPD due to possible sample nonhomogeneity.
- GP3535-S1 for Chromium, Hexavalent: Soluble XCR matrix spike recovery indicates possible matrix interference. Low post spike recovery (14_%) on this sample. Low pH adjusted post spike (29%). Good agreement between the sample and 1:5 dilution.

Wet Chemistry By Method SW846 6010/7196A M

Matrix: SO	Batch ID: R161586

- The data for SW846 6010/7196A M meets quality control requirements.
- JC37713-4 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO	Batch ID: R161587

- The data for SW846 6010/7196A M meets quality control requirements.
- JC37713-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045D

Matrix: SO	Batch ID: GN60145

- Sample(s) JC37452-2DUP were used as the QC samples for pH.

Matrix: SO	Batch ID: GN60187

- Sample(s) JC37345-12RDUP were used as the QC samples for Corrosivity as pH.

Wet Chemistry By Method SW846 CHAP7/9012 B

Matrix: SO	Batch ID: GP3517

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37713-4ADUP were used as the QC samples for Cyanide Reactivity.

Wet Chemistry By Method SW846 CHAP7/9034

Matrix:	SO	Batch ID:	GP3518

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC37713-4ADUP, JC37713-4AMS were used as the QC samples for Sulfide Reactivity.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC37713
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY
Collected: 02/22/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC37713-1	**WB18-022217-01**					
Acetone [a]		2070	52	26	ug/kg	SW846 8260C
2-Butanone (MEK) [a]		2290	41	7.2	ug/kg	SW846 8260C
2-Butanone (MEK)		0.0966 J	0.10	0.0095	mg/l	SW846 8260C
JC37713-2	**WB18-022217-02**					
3&4-Methylphenol [b]		1450	420	170	ug/kg	SW846 8270D
Phenol [b]		1350	420	110	ug/kg	SW846 8270D
Acenaphthene [b]		136 J	210	73	ug/kg	SW846 8270D
Anthracene [b]		198 J	210	130	ug/kg	SW846 8270D
Benzo(a)anthracene [b]		685	210	60	ug/kg	SW846 8270D
Benzo(a)pyrene [b]		610	210	96	ug/kg	SW846 8270D
Benzo(b)fluoranthene [b]		1290	210	93	ug/kg	SW846 8270D
Benzo(g,h,i)perylene [b]		627	210	110	ug/kg	SW846 8270D
Benzo(k)fluoranthene [b]		374	210	98	ug/kg	SW846 8270D
Chrysene [b]		1110	210	66	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene [b]		171 J	210	93	ug/kg	SW846 8270D
Dibenzofuran [b]		157 J	420	86	ug/kg	SW846 8270D
Fluoranthene [b]		1990	210	94	ug/kg	SW846 8270D
Fluorene [b]		181 J	210	97	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene [b]		653	210	99	ug/kg	SW846 8270D
Phenanthrene [b]		1400	210	71	ug/kg	SW846 8270D
Pyrene [b]		1470	210	67	ug/kg	SW846 8270D
Dieldrin		5.3	4.0	2.0	ug/kg	SW846 8081B
4,4'-DDE		19.1	4.0	2.1	ug/kg	SW846 8081B
Arsenic		3.3 B	4.3	0.46	mg/kg	SW846 6010C
Barium		54.9	43	0.18	mg/kg	SW846 6010C
Beryllium		0.22 B	0.43	0.048	mg/kg	SW846 6010C
Cadmium		0.46 B	1.1	0.11	mg/kg	SW846 6010C
Chromium		11.5	2.2	0.26	mg/kg	SW846 6010C
Copper		34.2	5.4	0.47	mg/kg	SW846 6010C
Lead		35.6	4.3	0.48	mg/kg	SW846 6010C
Manganese		285	3.3	0.078	mg/kg	SW846 6010C
Mercury		0.030 B	0.034	0.0055	mg/kg	SW846 7471B
Nickel		7.7 B	8.7	0.16	mg/kg	SW846 6010C
Selenium		1.0 B	4.3	1.0	mg/kg	SW846 6010C
Zinc		130	11	0.48	mg/kg	SW846 6010C
Chromium, Hexavalent		3.3	0.88	0.62	mg/kg	SW846 3060A/7196A
Chromium, Trivalent [c]		8.2	3.1	0.88	mg/kg	SW846 6010/7196A M
Cyanide		0.19 B	0.51	0.17	mg/kg	SW846 9012B/LACHAT
Redox Potential Vs H2		13.7			mv	ASTM D1498-76M
Solids, Total		445000	100		mg/kg	SM2540 G-97
pH		7.91			su	SW846 9045D

Summary of Hits

Job Number: JC37713
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY
Collected: 02/22/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC37713-2A	**WB18-022217-02**					
Corrosivity as pH		7.91 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Arsenic		0.028 B	0.50	0.0088	mg/l	SW846 6010C
Barium		0.032 B	1.0	0.0016	mg/l	SW846 6010C
Chromium		0.0060 B	0.050	0.0032	mg/l	SW846 6010C
JC37713-3	**WB18-022217-03**					
Acetone [d]		53.9	21	11	ug/kg	SW846 8260C
Methylene chloride [d]		3.3 J	11	2.1	ug/kg	SW846 8260C
Toluene [d]		0.43 J	2.1	0.27	ug/kg	SW846 8260C
JC37713-4	**WB18-022217-04**					
Benzo(a)anthracene [b]		810	190	54	ug/kg	SW846 8270D
Benzo(a)pyrene [b]		899	190	86	ug/kg	SW846 8270D
Benzo(b)fluoranthene [b]		1620	190	84	ug/kg	SW846 8270D
Benzo(g,h,i)perylene [b]		941	190	95	ug/kg	SW846 8270D
Benzo(k)fluoranthene [b]		506	190	88	ug/kg	SW846 8270D
Chrysene [b]		1170	190	60	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene [b]		189 J	190	84	ug/kg	SW846 8270D
Fluoranthene [b]		1100	190	84	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene [b]		941	190	89	ug/kg	SW846 8270D
Phenanthrene [b]		261	190	64	ug/kg	SW846 8270D
Pyrene [b]		920	190	61	ug/kg	SW846 8270D
4,4'-DDE [e]		14.3	3.7	1.9	ug/kg	SW846 8081B
Arsenic		5.0	3.9	0.42	mg/kg	SW846 6010C
Barium		77.2	39	0.16	mg/kg	SW846 6010C
Beryllium		0.31 B	0.39	0.043	mg/kg	SW846 6010C
Cadmium		0.43 B	0.98	0.098	mg/kg	SW846 6010C
Chromium		12.8	2.0	0.23	mg/kg	SW846 6010C
Copper		29.8	4.9	0.42	mg/kg	SW846 6010C
Lead		21.0	3.9	0.44	mg/kg	SW846 6010C
Manganese		404	2.9	0.071	mg/kg	SW846 6010C
Mercury		0.13	0.059	0.0095	mg/kg	SW846 7471B
Nickel		13.1	7.9	0.15	mg/kg	SW846 6010C
Zinc		95.1	9.8	0.43	mg/kg	SW846 6010C
Chromium, Hexavalent		4.2	0.81	0.57	mg/kg	SW846 3060A/7196A
Chromium, Trivalent [c]		8.6	2.8	0.80	mg/kg	SW846 6010/7196A M
Cyanide		0.27 B	0.45	0.15	mg/kg	SW846 9012B/LACHAT
Redox Potential Vs H2		310			mv	ASTM D1498-76M
Solids, Total		486000	100		mg/kg	SM2540 G-97

Summary of Hits

Job Number: JC37713
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY
Collected: 02/22/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
pH		7.95			su	SW846 9045D
JC37713-4A	**WB18-022217-04**					
Corrosivity as pH		7.95 NC			su	SW846 9045D
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Arsenic		0.024 B	0.50	0.011	mg/l	SW846 6010C
Barium		0.20 B	1.0	0.0020	mg/l	SW846 6010C
JC37713-5	**WB18-022217-05**					

No hits reported in this sample.

(a) Sample prepped from intact soil.
(b) Elevated detection limit due to low volume of bad matrix sample extracted.
(c) Calculated as: (Chromium) - (Chromium, Hexavalent)
(d) Sample prepared from intact soil.
(e) More than 40 % RPD for detected concentrations between the two GC columns.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: WB18-022217-01
Lab Sample ID: JC37713-1
Matrix: SO - Soil
Method: SW846 8260C SW846 5035
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 50.6

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	C216551.D	1	02/25/17	SY	02/24/17 09:00	n/a	VC7971
Run #2 [a]	Y170342.D	1	02/27/17	PS	02/24/17 09:00	n/a	VY7378

	Initial Weight
Run #1	1.9 g
Run #2	2.4 g

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2070	52	26	ug/kg	
71-43-2	Benzene	ND	2.6	0.62	ug/kg	
78-93-3	2-Butanone (MEK)	2290 [b]	41	7.2	ug/kg	
104-51-8	n-Butylbenzene	ND	10	0.79	ug/kg	
135-98-8	sec-Butylbenzene	ND	10	0.80	ug/kg	
98-06-6	tert-Butylbenzene	ND	10	0.82	ug/kg	
56-23-5	Carbon tetrachloride	ND	10	0.86	ug/kg	
108-90-7	Chlorobenzene	ND	10	0.84	ug/kg	
67-66-3	Chloroform	ND [b]	8.2	0.98	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	5.2	0.89	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	5.2	0.71	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	5.2	0.80	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.2	0.97	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.2	0.89	ug/kg	
75-35-4	1,1-Dichloroethene	ND	5.2	0.80	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	5.2	2.3	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	5.2	0.82	ug/kg	
123-91-1	1,4-Dioxane	ND	650	250	ug/kg	
100-41-4	Ethylbenzene	ND	5.2	0.77	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5.2	1.4	ug/kg	
75-09-2	Methylene chloride	ND	26	5.2	ug/kg	
103-65-1	n-Propylbenzene	ND	10	1.0	ug/kg	
127-18-4	Tetrachloroethene	ND	10	1.5	ug/kg	
108-88-3	Toluene	ND	5.2	0.65	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	10	0.87	ug/kg	
79-01-6	Trichloroethene	ND	5.2	0.99	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	10	0.90	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	10	0.86	ug/kg	
75-01-4	Vinyl chloride	ND	10	1.1	ug/kg	
	m,p-Xylene	ND	5.2	1.1	ug/kg	
95-47-6	o-Xylene	ND	5.2	1.1	ug/kg	
1330-20-7	Xylene (total)	ND	5.2	1.1	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-01		
Lab Sample ID:	JC37713-1	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8260C SW846 5035	**Percent Solids:**	50.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	99%	70-122%
17060-07-0	1,2-Dichloroethane-D4	101%	115%	68-124%
2037-26-5	Toluene-D8	93%	100%	77-125%
460-00-4	4-Bromofluorobenzene	109%	131% [c]	72-130%

(a) Sample prepped from intact soil.
(b) Result is from Run# 2
(c) Outside of in house control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-01		
Lab Sample ID:	JC37713-1	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8260C SW846 1311	**Percent Solids:**	50.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V39540.D	5	02/28/17	EH	02/23/17	GP3489	V2V1551
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.00070	mg/l	
78-93-3	2-Butanone (MEK)	0.0966	D035	200	0.10	0.0095	mg/l	J
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0027	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.00087	mg/l	
67-66-3	Chloroform	ND	D022	6.0	0.0050	0.0011	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0011	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0020	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0010	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0012	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0013	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		76-120%
17060-07-0	1,2-Dichloroethane-D4	96%		64-135%
2037-26-5	Toluene-D8	101%		76-117%
460-00-4	4-Bromofluorobenzene	102%		72-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-02
Lab Sample ID: JC37713-2
Matrix: SO - Soil
Method: SW846 8270D SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 45.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5P36014.D	1	02/28/17	AN	02/27/17	OP786	E5P1806
Run #2							

	Initial Weight	Final Volume
Run #1	10.5 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	420	130	ug/kg	
	3&4-Methylphenol	1450	420	170	ug/kg	
87-86-5	Pentachlorophenol	ND	840	200	ug/kg	
108-95-2	Phenol	1350	420	110	ug/kg	
83-32-9	Acenaphthene	136	210	73	ug/kg	J
208-96-8	Acenaphthylene	ND	210	110	ug/kg	
120-12-7	Anthracene	198	210	130	ug/kg	J
56-55-3	Benzo(a)anthracene	685	210	60	ug/kg	
50-32-8	Benzo(a)pyrene	610	210	96	ug/kg	
205-99-2	Benzo(b)fluoranthene	1290	210	93	ug/kg	
191-24-2	Benzo(g,h,i)perylene	627	210	110	ug/kg	
207-08-9	Benzo(k)fluoranthene	374	210	98	ug/kg	
218-01-9	Chrysene	1110	210	66	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	171	210	93	ug/kg	J
132-64-9	Dibenzofuran	157	420	86	ug/kg	J
206-44-0	Fluoranthene	1990	210	94	ug/kg	
86-73-7	Fluorene	181	210	97	ug/kg	J
118-74-1	Hexachlorobenzene	ND	420	53	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	653	210	99	ug/kg	
91-20-3	Naphthalene	ND	210	59	ug/kg	
85-01-8	Phenanthrene	1400	210	71	ug/kg	
129-00-0	Pyrene	1470	210	67	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	84%		23-115%
4165-62-2	Phenol-d5	80%		27-114%
118-79-6	2,4,6-Tribromophenol	77%		19-152%
4165-60-0	Nitrobenzene-d5	86%		26-134%
321-60-8	2-Fluorobiphenyl	86%		39-124%
1718-51-0	Terphenyl-d14	81%		36-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-02		
Lab Sample ID:	JC37713-2	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8270D SW846 3546	**Percent Solids:**	45.2
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) Elevated detection limit due to low volume of bad matrix sample extracted.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-02
Lab Sample ID: JC37713-2
Matrix: SO - Soil
Method: SW846 8151 SW846 8151/3550C
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 45.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA123999.D	1	02/28/17	VDT	02/27/17	OP777	GOA4252
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	7.0	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	40%		10-159%
19719-28-9	2,4-DCAA	31%		10-159%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-02		
Lab Sample ID:	JC37713-2	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8081B SW846 3546	**Percent Solids:**	45.2
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G78531.D	1	03/02/17	RK	02/27/17	OP781	G4G2040
Run #2							

	Initial Weight	Final Volume
Run #1	5.6 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	4.0	1.9	ug/kg	
319-84-6	alpha-BHC	ND	4.0	2.1	ug/kg	
319-85-7	beta-BHC	ND	4.0	2.5	ug/kg	
319-86-8	delta-BHC	ND	4.0	1.8	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	4.0	1.7	ug/kg	
5103-71-9	alpha-Chlordane	ND	4.0	1.9	ug/kg	
60-57-1	Dieldrin	5.3	4.0	2.0	ug/kg	
72-54-8	4,4'-DDD	ND	4.0	2.5	ug/kg	
72-55-9	4,4'-DDE	19.1	4.0	2.1	ug/kg	
50-29-3	4,4'-DDT	ND	4.0	2.4	ug/kg	
72-20-8	Endrin	ND	4.0	1.9	ug/kg	
1031-07-8	Endosulfan sulfate	ND	4.0	1.6	ug/kg	
959-98-8	Endosulfan-I	ND	4.0	2.1	ug/kg	
33213-65-9	Endosulfan-II	ND	4.0	2.1	ug/kg	
76-44-8	Heptachlor	ND	4.0	1.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	108%		25-135%
877-09-8	Tetrachloro-m-xylene	74%		25-135%
2051-24-3	Decachlorobiphenyl	97%		10-156%
2051-24-3	Decachlorobiphenyl	90%		10-156%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-02		
Lab Sample ID:	JC37713-2	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	45.2
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G143325.D	1	03/01/17	SP	02/27/17	OP782	G2G3952
Run #2							

	Initial Weight	Final Volume
Run #1	5.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	200	98	ug/kg	
11104-28-2	Aroclor 1221	ND	200	97	ug/kg	
11141-16-5	Aroclor 1232	ND	200	78	ug/kg	
53469-21-9	Aroclor 1242	ND	200	70	ug/kg	
12672-29-6	Aroclor 1248	ND	200	120	ug/kg	
11097-69-1	Aroclor 1254	ND	200	99	ug/kg	
11096-82-5	Aroclor 1260	ND	200	84	ug/kg	
11100-14-4	Aroclor 1268	ND	200	70	ug/kg	
37324-23-5	Aroclor 1262	ND	200	130	ug/kg	
1336-36-3	Total PCBs	ND	200		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	95%		24-152%
877-09-8	Tetrachloro-m-xylene	106%		24-152%
2051-24-3	Decachlorobiphenyl	106%		10-166%
2051-24-3	Decachlorobiphenyl	103%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-02
Lab Sample ID: JC37713-2
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 45.2

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.3 B	4.3	0.46	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Barium	54.9	43	0.18	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Beryllium	0.22 B	0.43	0.048	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Cadmium	0.46 B	1.1	0.11	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Chromium	11.5	2.2	0.26	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Copper	34.2	5.4	0.47	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Lead	35.6	4.3	0.48	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Manganese	285	3.3	0.078	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Mercury	0.030 B	0.034	0.0055	mg/kg	1	02/27/17	02/27/17	JPM	SW846 7471B [2]	SW846 7471B [4]
Nickel	7.7 B	8.7	0.16	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Selenium	1.0 B	4.3	1.0	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Silver	0.21 U	1.1	0.21	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Zinc	130	11	0.48	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA41446
(2) Instrument QC Batch: MA41450
(3) Prep QC Batch: MP98866
(4) Prep QC Batch: MP98912

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: WB18-022217-02
Lab Sample ID: JC37713-2
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 45.2

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	3.3	0.88	0.62	mg/kg	1	02/28/17 15:36	RI	SW846 3060A/7196A
Chromium, Trivalent [a]	8.2	3.1	0.88	mg/kg	1	02/28/17 15:36	RI	SW846 6010/7196A M
Cyanide	0.19 B	0.51	0.17	mg/kg	1	02/26/17 09:02	YZ	SW846 9012B/LACHAT
Redox Potential Vs H2	13.7			mv	1	03/02/17 14:00	PO	ASTM D1498-76M
Solids, Percent	45.2			%	1	02/24/17 16:42	TZ	SM2540 G-97
Solids, Total	445000	100		mg/kg	1	02/24/17 10:13	TZ	SM2540 G-97
pH	7.91			su	1	03/02/17 14:00	PO	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-022217-02		
Lab Sample ID:	JC37713-2A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	45.2
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z119382.D	1	03/01/17	JJ	02/28/17	OP792	EZ5929
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	50%		14-88%
4165-62-2	Phenol-d5	38%		10-110%
118-79-6	2,4,6-Tribromophenol	93%		39-149%
4165-60-0	Nitrobenzene-d5	110%		32-128%
321-60-8	2-Fluorobiphenyl	91%		35-119%
1718-51-0	Terphenyl-d14	108%		10-126%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-02		
Lab Sample ID:	JC37713-2A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8151 SW846 8151/3510C	**Percent Solids:**	45.2
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA124037.D	1	03/01/17	VDT	02/28/17	OP798	GOA4253
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	10.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.0050	0.0039	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0015	0.00047	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	109%		50-142%
19719-28-9	2,4-DCAA	116%		50-142%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-02		
Lab Sample ID:	JC37713-2A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	45.2
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	8G3433.D	1	03/02/17	RK	03/01/17	OP795	G8G103
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	10.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.00010	0.000028	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0050	0.0011	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.00010	0.000050	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.00010	0.000038	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.00010	0.000065	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00020	0.000057	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0025	0.0018	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	82%		30-137%
877-09-8	Tetrachloro-m-xylene	88%		30-137%
2051-24-3	Decachlorobiphenyl	51%		10-137%
2051-24-3	Decachlorobiphenyl	52%		10-137%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-02
Lab Sample ID: JC37713-2A
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 45.2

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	MDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	0.028 B	D004	5.0	0.50	0.0088	mg/l	2	02/25/17	02/27/17	ND	SW846 6010C [2]
Barium	0.032 B	D005	100	1.0	0.0016	mg/l	2	02/25/17	02/27/17	ND	SW846 6010C [2]
Cadmium	0.0016 U	D006	1.0	0.025	0.0016	mg/l	2	02/25/17	02/27/17	ND	SW846 6010C [2]
Chromium	0.0060 B	D007	5.0	0.050	0.0032	mg/l	2	02/25/17	02/27/17	ND	SW846 6010C [2]
Lead	0.0092 U	D008	5.0	0.50	0.0092	mg/l	2	02/25/17	02/27/17	ND	SW846 6010C [2]
Mercury	0.000047 U	D009	0.20	0.00020	0.000047	mg/l	1	02/25/17	02/25/17	JA	SW846 7470A [1]
Selenium	0.016 U	D010	1.0	0.50	0.016	mg/l	2	02/25/17	02/27/17	ND	SW846 6010C [2]
Silver	0.0036 U	D011	5.0	0.050	0.0036	mg/l	2	02/25/17	02/27/17	ND	SW846 6010C [2]

(1) Instrument QC Batch: MA41449
(2) Instrument QC Batch: MA41457
(3) Prep QC Batch: MP98884
(4) Prep QC Batch: MP98889

RL = Reporting Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-022217-02		
Lab Sample ID:	JC37713-2A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
		Percent Solids:	45.2
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.91 NC			su	1	03/02/17 21:00	AT	SW846 9045D
Cyanide Reactivity	13 U	22	13	mg/kg	1	02/26/17 12:22	YZ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200			Deg. F	1	03/02/17 15:00	PO	SW846 1010A/ASTM D93
Sulfide Reactivity	130 U	220	130	mg/kg	1	02/27/17 11:53	MP	SW846 CHAP7/9034

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-022217-03		
Lab Sample ID:	JC37713-3	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8260C SW846 5035	**Percent Solids:**	47.8
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	C216552.D	1	02/25/17	SY	02/24/17 09:00	n/a	VC7971
Run #2 [a]	Y170341.D	1	02/27/17	PS	02/24/17 09:00	n/a	VY7378

	Initial Weight
Run #1	4.9 g
Run #2	3.8 g

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	53.9	21	11	ug/kg	
71-43-2	Benzene	ND	1.1	0.26	ug/kg	
78-93-3	2-Butanone (MEK)	ND	21	3.8	ug/kg	
104-51-8	n-Butylbenzene	ND	4.3	0.32	ug/kg	
135-98-8	sec-Butylbenzene	ND	4.3	0.33	ug/kg	
98-06-6	tert-Butylbenzene	ND	4.3	0.34	ug/kg	
56-23-5	Carbon tetrachloride	ND	4.3	0.35	ug/kg	
108-90-7	Chlorobenzene	ND	4.3	0.35	ug/kg	
67-66-3	Chloroform	ND [b]	5.5	0.66	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.37	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.29	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.33	ug/kg	
75-34-3	1,1-Dichloroethane	ND	2.1	0.40	ug/kg	
107-06-2	1,2-Dichloroethane	ND	2.1	0.37	ug/kg	
75-35-4	1,1-Dichloroethene	ND	2.1	0.33	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	2.1	0.94	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	2.1	0.34	ug/kg	
123-91-1	1,4-Dioxane	ND	270	100	ug/kg	
100-41-4	Ethylbenzene	ND	2.1	0.32	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2.1	0.57	ug/kg	
75-09-2	Methylene chloride	3.3	11	2.1	ug/kg	J
103-65-1	n-Propylbenzene	ND	4.3	0.42	ug/kg	
127-18-4	Tetrachloroethene	ND	4.3	0.60	ug/kg	
108-88-3	Toluene	0.43	2.1	0.27	ug/kg	J
71-55-6	1,1,1-Trichloroethane	ND	4.3	0.36	ug/kg	
79-01-6	Trichloroethene	ND	2.1	0.41	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	4.3	0.37	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	4.3	0.35	ug/kg	
75-01-4	Vinyl chloride	ND	4.3	0.43	ug/kg	
	m,p-Xylene	ND	2.1	0.47	ug/kg	
95-47-6	o-Xylene	ND	2.1	0.43	ug/kg	
1330-20-7	Xylene (total)	ND	2.1	0.43	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-03		
Lab Sample ID:	JC37713-3	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8260C SW846 5035	**Percent Solids:**	47.8
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	99%	70-122%
17060-07-0	1,2-Dichloroethane-D4	101%	114%	68-124%
2037-26-5	Toluene-D8	104%	101%	77-125%
460-00-4	4-Bromofluorobenzene	113%	133% [c]	72-130%

(a) Sample prepared from intact soil.
(b) Result is from Run# 2
(c) Outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-03		
Lab Sample ID:	JC37713-3	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8260C SW846 1311	**Percent Solids:**	47.8
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V39539.D	5	02/28/17	EH	02/23/17	GP3489	V2V1551
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
71-43-2	Benzene	ND	D018	0.50	0.0025	0.00070	mg/l	
78-93-3	2-Butanone (MEK)	ND	D035	200	0.10	0.0095	mg/l	
56-23-5	Carbon tetrachloride	ND	D019	0.50	0.0050	0.0027	mg/l	
108-90-7	Chlorobenzene	ND	D021	100	0.0050	0.00087	mg/l	
67-66-3	Chloroform	ND	D022	6.0	0.0050	0.0011	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.0050	0.0011	mg/l	
107-06-2	1,2-Dichloroethane	ND	D028	0.50	0.0050	0.0020	mg/l	
75-35-4	1,1-Dichloroethene	ND	D029	0.70	0.0050	0.0010	mg/l	
127-18-4	Tetrachloroethene	ND	D039	0.70	0.0050	0.0012	mg/l	
79-01-6	Trichloroethene	ND	D040	0.50	0.0050	0.0013	mg/l	
75-01-4	Vinyl chloride	ND	D043	0.20	0.0050	0.0016	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		76-120%
17060-07-0	1,2-Dichloroethane-D4	97%		64-135%
2037-26-5	Toluene-D8	101%		76-117%
460-00-4	4-Bromofluorobenzene	103%		72-122%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-04		
Lab Sample ID:	JC37713-4	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8270D SW846 3546	**Percent Solids:**	49.4
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	5P36015.D	1	02/28/17	AN	02/27/17	OP786	E5P1806
Run #2							

	Initial Weight	Final Volume
Run #1	10.7 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	380	120	ug/kg	
	3&4-Methylphenol	ND	380	160	ug/kg	
87-86-5	Pentachlorophenol	ND	760	180	ug/kg	
108-95-2	Phenol	ND	380	99	ug/kg	
83-32-9	Acenaphthene	ND	190	65	ug/kg	
208-96-8	Acenaphthylene	ND	190	96	ug/kg	
120-12-7	Anthracene	ND	190	120	ug/kg	
56-55-3	Benzo(a)anthracene	810	190	54	ug/kg	
50-32-8	Benzo(a)pyrene	899	190	86	ug/kg	
205-99-2	Benzo(b)fluoranthene	1620	190	84	ug/kg	
191-24-2	Benzo(g,h,i)perylene	941	190	95	ug/kg	
207-08-9	Benzo(k)fluoranthene	506	190	88	ug/kg	
218-01-9	Chrysene	1170	190	60	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	189	190	84	ug/kg	J
132-64-9	Dibenzofuran	ND	380	77	ug/kg	
206-44-0	Fluoranthene	1100	190	84	ug/kg	
86-73-7	Fluorene	ND	190	87	ug/kg	
118-74-1	Hexachlorobenzene	ND	380	48	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	941	190	89	ug/kg	
91-20-3	Naphthalene	ND	190	53	ug/kg	
85-01-8	Phenanthrene	261	190	64	ug/kg	
129-00-0	Pyrene	920	190	61	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	69%		23-115%
4165-62-2	Phenol-d5	64%		27-114%
118-79-6	2,4,6-Tribromophenol	72%		19-152%
4165-60-0	Nitrobenzene-d5	74%		26-134%
321-60-8	2-Fluorobiphenyl	76%		39-124%
1718-51-0	Terphenyl-d14	67%		36-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-04		
Lab Sample ID:	JC37713-4	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8270D SW846 3546	**Percent Solids:**	49.4
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) Elevated detection limit due to low volume of bad matrix sample extracted.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-04
Lab Sample ID: JC37713-4
Matrix: SO - Soil
Method: SW846 8151 SW846 8151/3550C
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 49.4

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA124000.D	1	02/28/17	VDT	02/27/17	OP777	GOA4252
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	6.6	2.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	46%		10-159%
19719-28-9	2,4-DCAA	35%		10-159%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-04
Lab Sample ID: JC37713-4
Matrix: SO - Soil
Method: SW846 8081B SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 49.4

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G78532.D	1	03/02/17	RK	02/27/17	OP781	G4G2040
Run #2							

	Initial Weight	Final Volume
Run #1	5.5 g	10.0 ml
Run #2		

Pesticide TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	3.7	1.8	ug/kg	
319-84-6	alpha-BHC	ND	3.7	2.0	ug/kg	
319-85-7	beta-BHC	ND	3.7	2.3	ug/kg	
319-86-8	delta-BHC	ND	3.7	1.7	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	3.7	1.6	ug/kg	
5103-71-9	alpha-Chlordane	ND	3.7	1.7	ug/kg	
60-57-1	Dieldrin	ND	3.7	1.8	ug/kg	
72-54-8	4,4'-DDD	ND	3.7	2.4	ug/kg	
72-55-9	4,4'-DDE [a]	14.3	3.7	1.9	ug/kg	
50-29-3	4,4'-DDT	ND	3.7	2.2	ug/kg	
72-20-8	Endrin	ND	3.7	1.7	ug/kg	
1031-07-8	Endosulfan sulfate	ND	3.7	1.5	ug/kg	
959-98-8	Endosulfan-I	ND	3.7	1.9	ug/kg	
33213-65-9	Endosulfan-II	ND	3.7	1.9	ug/kg	
76-44-8	Heptachlor	ND	3.7	1.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		25-135%
877-09-8	Tetrachloro-m-xylene	69%		25-135%
2051-24-3	Decachlorobiphenyl	68%		10-156%
2051-24-3	Decachlorobiphenyl	73%		10-156%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-04		
Lab Sample ID:	JC37713-4	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	49.4
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G143326.D	1	03/01/17	SP	02/27/17	OP782	G2G3952
Run #2							

	Initial Weight	Final Volume
Run #1	5.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	180	91	ug/kg	
11104-28-2	Aroclor 1221	ND	180	90	ug/kg	
11141-16-5	Aroclor 1232	ND	180	73	ug/kg	
53469-21-9	Aroclor 1242	ND	180	66	ug/kg	
12672-29-6	Aroclor 1248	ND	180	120	ug/kg	
11097-69-1	Aroclor 1254	ND	180	92	ug/kg	
11096-82-5	Aroclor 1260	ND	180	78	ug/kg	
11100-14-4	Aroclor 1268	ND	180	66	ug/kg	
37324-23-5	Aroclor 1262	ND	180	120	ug/kg	
1336-36-3	Total PCBs	ND	180		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	90%		24-152%
877-09-8	Tetrachloro-m-xylene	94%		24-152%
2051-24-3	Decachlorobiphenyl	88%		10-166%
2051-24-3	Decachlorobiphenyl	97%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-04
Lab Sample ID: JC37713-4
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 49.4

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.0	3.9	0.42	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Barium	77.2	39	0.16	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Beryllium	0.31 B	0.39	0.043	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Cadmium	0.43 B	0.98	0.098	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Chromium	12.8	2.0	0.23	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Copper	29.8	4.9	0.42	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Lead	21.0	3.9	0.44	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Manganese	404	2.9	0.071	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Mercury	0.13	0.059	0.0095	mg/kg	1	02/27/17	02/27/17	JPM	SW846 7471B [2]	SW846 7471B [4]
Nickel	13.1	7.9	0.15	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Selenium	0.91 U	3.9	0.91	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Silver	0.19 U	0.98	0.19	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]
Zinc	95.1	9.8	0.43	mg/kg	1	02/24/17	02/24/17	KS	SW846 6010C [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA41446
(2) Instrument QC Batch: MA41450
(3) Prep QC Batch: MP98866
(4) Prep QC Batch: MP98912

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: WB18-022217-04
Lab Sample ID: JC37713-4
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 49.4

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.2	0.81	0.57	mg/kg	1	02/28/17 15:44	RI	SW846 3060A/7196A
Chromium, Trivalent [a]	8.6	2.8	0.80	mg/kg	1	02/28/17 15:44	RI	SW846 6010/7196A M
Cyanide	0.27 B	0.45	0.15	mg/kg	1	02/26/17 09:03	YZ	SW846 9012B/LACHAT
Redox Potential Vs H2	310			mv	1	03/02/17 14:00	PO	ASTM D1498-76M
Solids, Percent	49.4			%	1	02/27/17 16:54	TZ	SM2540 G-97
Solids, Total	486000	100		mg/kg	1	02/24/17 10:13	TZ	SM2540 G-97
pH	7.95			su	1	03/02/17 14:00	PO	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-022217-04		
Lab Sample ID:	JC37713-4A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	49.4
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z119383.D	1	03/01/17	JJ	02/28/17	OP792	EZ5929
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

ABN TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	D023	200	0.020	0.0089	mg/l	
	3&4-Methylphenol	ND	D024	200	0.020	0.0088	mg/l	
87-86-5	Pentachlorophenol	ND	D037	100	0.10	0.014	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	D041	400	0.050	0.013	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	D042	2.0	0.050	0.0092	mg/l	
106-46-7	1,4-Dichlorobenzene	ND	D027	7.5	0.020	0.0017	mg/l	
121-14-2	2,4-Dinitrotoluene	ND	D030	0.13	0.020	0.0055	mg/l	
118-74-1	Hexachlorobenzene	ND	D032	0.13	0.020	0.0033	mg/l	
87-68-3	Hexachlorobutadiene	ND	D033	0.50	0.010	0.0049	mg/l	
67-72-1	Hexachloroethane	ND	D034	3.0	0.050	0.0039	mg/l	
98-95-3	Nitrobenzene	ND	D036	2.0	0.020	0.0064	mg/l	
110-86-1	Pyridine	ND	D038	5.0	0.020	0.0039	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	49%		14-88%
4165-62-2	Phenol-d5	34%		10-110%
118-79-6	2,4,6-Tribromophenol	92%		39-149%
4165-60-0	Nitrobenzene-d5	106%		32-128%
321-60-8	2-Fluorobiphenyl	88%		35-119%
1718-51-0	Terphenyl-d14	111%		10-126%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-04		
Lab Sample ID:	JC37713-4A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8151 SW846 8151/3510C	**Percent Solids:**	49.4
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA124038.D	1	03/01/17	VDT	02/28/17	OP798	GOA4253
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	10.0 ml
Run #2		

Herbicide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
94-75-7	2,4-D	ND	D016	10	0.0050	0.0039	mg/l	
93-72-1	2,4,5-TP (Silvex)	ND	D017	1.0	0.0015	0.00047	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	101%		50-142%
19719-28-9	2,4-DCAA	83%		50-142%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-04		
Lab Sample ID:	JC37713-4A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
Method:	SW846 8081B SW846 3510C	**Percent Solids:**	49.4
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	8G3434.D	1	03/02/17	RK	03/01/17	OP795	G8G103
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	10.0 ml
Run #2		

Pesticide TCLP Leachate **TCLP Leachate method SW846 1311**

CAS No.	Compound	Result	HW#	MCL	RL	MDL	Units	Q
58-89-9	gamma-BHC (Lindane)	ND	D013	0.40	0.00010	0.000028	mg/l	
12789-03-6	Chlordane	ND	D020	0.030	0.0050	0.0011	mg/l	
72-20-8	Endrin	ND	D012	0.020	0.00010	0.000050	mg/l	
76-44-8	Heptachlor	ND	D031	0.0080	0.00010	0.000038	mg/l	
1024-57-3	Heptachlor epoxide	ND	D031	0.0080	0.00010	0.000065	mg/l	
72-43-5	Methoxychlor	ND	D014	10	0.00020	0.000057	mg/l	
8001-35-2	Toxaphene	ND	D015	0.50	0.0025	0.0018	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	84%		30-137%
877-09-8	Tetrachloro-m-xylene	88%		30-137%
2051-24-3	Decachlorobiphenyl	66%		10-137%
2051-24-3	Decachlorobiphenyl	66%		10-137%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-022217-04
Lab Sample ID: JC37713-4A
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 02/22/17
Date Received: 02/23/17
Percent Solids: 49.4

Metals Analysis, TCLP Leachate SW846 1311

Analyte	Result	HW#	MCL	RL	MDL	Units	DF	Prep	Analyzed	By	Method
Arsenic	0.024 B	D004	5.0	0.50	0.011	mg/l	5	02/25/17	02/27/17	ND	SW846 6010C [2]
Barium	0.20 B	D005	100	1.0	0.0020	mg/l	5	02/25/17	02/27/17	ND	SW846 6010C [2]
Cadmium	0.0020 U	D006	1.0	0.025	0.0020	mg/l	5	02/25/17	02/27/17	ND	SW846 6010C [2]
Chromium	0.0040 U	D007	5.0	0.050	0.0040	mg/l	5	02/25/17	02/27/17	ND	SW846 6010C [2]
Lead	0.012 U	D008	5.0	0.50	0.012	mg/l	5	02/25/17	02/27/17	ND	SW846 6010C [2]
Mercury	0.000047 U	D009	0.20	0.00020	0.000047	mg/l	1	02/25/17	02/25/17	JA	SW846 7470A [1]
Selenium	0.021 U	D010	1.0	0.50	0.021	mg/l	5	02/25/17	02/27/17	ND	SW846 6010C [2]
Silver	0.0045 U	D011	5.0	0.050	0.0045	mg/l	5	02/25/17	02/27/17	ND	SW846 6010C [2]

(1) Instrument QC Batch: MA41449
(2) Instrument QC Batch: MA41457
(3) Prep QC Batch: MP98884
(4) Prep QC Batch: MP98889

RL = Reporting Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (40 CFR 261 7/1/11) B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-022217-04		
Lab Sample ID:	JC37713-4A	**Date Sampled:**	02/22/17
Matrix:	SO - Soil	**Date Received:**	02/23/17
		Percent Solids:	49.4
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Corrosivity as pH	7.95 NC			su	1	03/02/17 21:00	AT	SW846 9045D
Cyanide Reactivity	11 U	20	11	mg/kg	1	02/26/17 12:24	YZ	SW846 CHAP7/9012 B
Ignitability (Flashpoint)	> 200			Deg. F	1	03/02/17 15:00	PO	SW846 1010A/ASTM D93
Sulfide Reactivity	120 U	200	120	mg/kg	1	02/27/17 11:53	MP	SW846 CHAP7/9034

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-022217-05		
Lab Sample ID:	JC37713-5	**Date Sampled:**	02/22/17
Matrix:	AQ - Trip Blank Soil	**Date Received:**	02/23/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2A176345.D	1	02/25/17	JC	n/a	n/a	V2A7467
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.28	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.28	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
67-66-3	Chloroform	ND	1.0	0.23	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.23	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.19	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.21	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
123-91-1	1,4-Dioxane	ND	130	32	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.34	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.17	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.26	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.26	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.32	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.42	ug/l	
95-47-6	o-Xylene	ND	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.21	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-022217-05		
Lab Sample ID:	JC37713-5	**Date Sampled:**	02/22/17
Matrix:	AQ - Trip Blank Soil	**Date Received:**	02/23/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		76-120%
17060-07-0	1,2-Dichloroethane-D4	94%		73-122%
2037-26-5	Toluene-D8	99%		84-119%
460-00-4	4-Bromofluorobenzene	98%		78-117%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

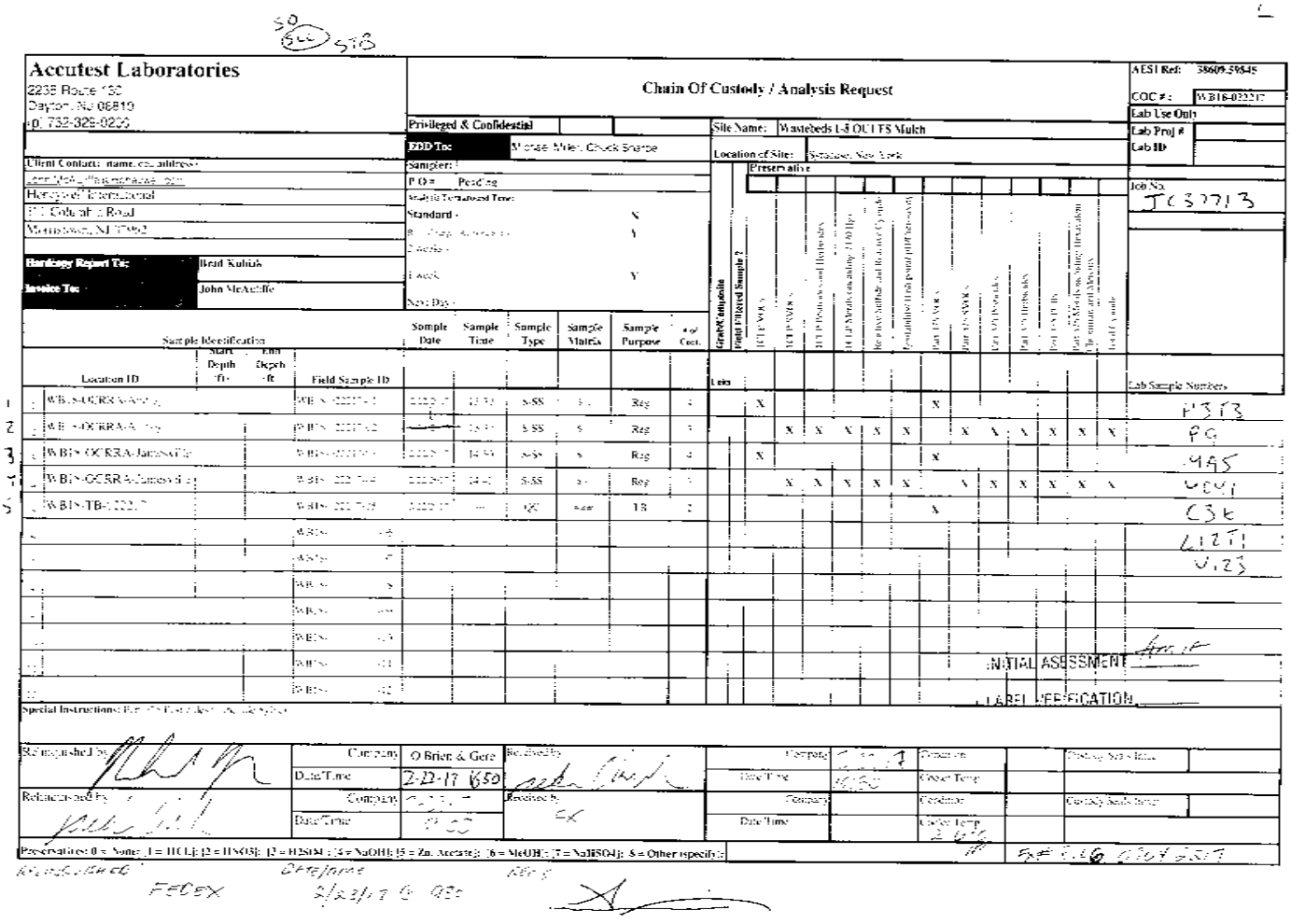
Job Number: JC37713
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		**SW846 6010/7196A M**	SO	Accutest is not certified for this parameter. [a]
Cyanide Reactivity		**SW846 CHAP7/9012 B**	SO	Accutest is not certified for this parameter. [b]
Redox Potential Vs H2		**ASTM D1498-76M**	SO	Accutest is not certified for this parameter. [a]
Sulfide Reactivity		**SW846 CHAP7/9034**	SO	Accutest is not certified for this parameter. [b]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.
(b) Reactivity analyzed following SW846 Chapter 7 is no longer recognized by regulatory agencies. Use of results should be verified through the program to which the data is being submitted.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.



Accutest Laboratories
2235 Route 130
Dayton, NJ 08810
p: 732-329-0200

Chain Of Custody / Analysis Request

AESI Ref: 38609.39545
COC #: WB16-032217
Lab Use Only
Lab Proj #
Lab ID

Privileged & Confidential
EDD To: Monse Miller, Chuck Sharpe
Sampler:
P.O.#: Pending
Analysis Turnaround Time:
Standard: N
B: Y
Fax: Y
Next Day:

Site Name: Wastebeds 1-8 OU1 FS Mulch
Location of Site: Syracuse, New York
Preservative

Client Contact: name, co., address, ...
Jeff McAuliffe@honeywell.com
Honeywell International
115 Columbia Road
Morristown, NJ 07962

Hardcopy Report To: Brad Kuhida
Invoice To: John McAuliffe

Job No: JC37713

	Sample Identification			Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Grab/C Composite	Field Filtered Sample?	TCLP VOCs	TCLP SVOCs	TCLP Pesticides and Herbicides	TCLP Metals (including 7140 Hg)	Reactive Sulfide and Reactive Cyanide	Ignitability, Halogens and pH (Soil only)	Part 375 VOCs	Part 375 SVOCs	Part 375 Pesticides	Part 375 PCB	Part 375 Metals (including Hexavalent Chromium and Mercury)	Total Cyanide	Lab Sample Numbers
	Location ID	Start Depth ft	End Depth ft	Field Sample ID																				
1	WBIN-OCRSA-[illegible]			[illegible]	[illegible]	SS	S	Reg	1			X						X						P3713
2	WBIN-OCRRA-[illegible]			[illegible]	[illegible]	SS	S	Reg	7				X	X	X	X	X		X	X	X	X	X	X	PG
3	WBIN-OCRRA-[illegible]			[illegible]	[illegible]	SS	S	Reg	4			X						X							995
4	WBIN-OCSRA-[illegible]			[illegible]	[illegible]	SS	S	Reg	7				X	X	X	X	X		X	X	X	X	X	X	UCU
5	WBIN-TB-[illegible]			[illegible]	[illegible]	QC	Water	TB	2									X							C3K
				WBIN-[illegible]																					L12T
				WBIN-[illegible]																					U.23
				WBIN-[illegible]																					
				WBIN-[illegible]																					
				WBIN-[illegible]																					
				WBIN-[illegible]																					
				WBIN-[illegible]																					

INITIAL ASSESSMENT
LABEL VERIFICATION

Special Instructions: [illegible]

Relinquished by:	Company: O'Brien & Gere	Received by:	Temperature: [illegible]	Preservation:		Shipping Info / Notes:	
Date/Time: 2-2-17 1650			Date/Time: 1650	Cooler Temp:			
Relinquished by:	Company: [illegible]	Received by: CK	Temperature:	Preservation:		Custody Seals Intact:	
Date/Time: [illegible]			Date/Time:	Cooler Temp: 2.6°C			

Preservative: 0 = None; 1 = HCL; 2 = HNO3; 3 = H2SO4; 4 = NaOH; 5 = Zn. Acetate; 6 = MeOH; 7 = NaHSO4; 8 = Other (specify)

FEDEX
Date/Time: 2/23/17 @ 0830

JC37713: Chain of Custody
Page 1 of 3

SGS Accutest Sample Receipt Summary

Job Number: JC37713 **Client:** O'Brien & Gere **Project:** Wastebeds 1-8 OU1 FS Mulch

Date / Time Received: 2/23/2017 9:30:00 AM **Delivery Method:** FedEx **Airbill #'s:** 810607642217

Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);

Cooler Temps (Corrected) °C: Cooler 1: (4.0);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments -1 & -3 Soil volatiles was not collected in accrodance to 5035 Specifications. VOA lab to prep from intact volume.

SM089-02
Rev. Date 12/1/16

Responded to by: CSR: N/A

Response Date: Response Date: 2/23/2017

Response:

Response: Proceed with analysis

JC37713: Chain of Custody
Page 3 of 3

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

e-Hardcopy 2.0
Automated Report

Technical Report for

Honeywell International Inc.

OBGNYS: Waste Beds 1-8, Syracuse, NY

PO # 4500203939 Wastebeds 1-8 OU1 FS Mulch

SGS Accutest Job Number: JC50017

Sampling Date: 08/31/17

Report to:

O'Brien & Gere Engineers, Inc

Michael.Miller@obg.com

ATTN: Michael Miller

Total number of pages in report: 35

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Sample Summary

Honeywell International Inc.

Job No: JC50017

OBGNYS: Waste Beds 1-8, Syracuse, NY
Project No: PO # 4500203939 Wastebeds 1-8 OU1 FS Mulch

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC50017-1	08/31/17	07:20	MK	09/01/17	SO	Soil	WB18-083117-01
JC50017-2	08/31/17	07:20	MK	09/01/17	SO	Soil	WB18-083117-02
JC50017-3	08/31/17	07:45	MK	09/01/17	SO	Soil	WB18-083117-03
JC50017-4	08/31/17	07:45	MK	09/01/17	SO	Soil	WB18-083117-04
JC50017-5	08/31/17	07:45	MK	09/01/17	AQ	Trip Blank Soil	WB18-083117-05

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Honeywell International Inc.	**Job No**	JC50017
Site:	OBGNYS: Waste Beds 1-8, Syracuse, NY	**Report Date**	9/12/2017 11:58:44 A

On 09/01/2017, 4 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.8 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC50017 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VA8936

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50115-3DUP, JC50115-4MS were used as the QC samples indicated.
- Matrix Spike Recovery(s) for Acetone are outside control limits. Outside control limits due to matrix interference.

Matrix: SO **Batch ID:** V3V1486

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50018-2MS, JC50018-4DUP were used as the QC samples indicated.
- Blank Spike Recovery(s) for cis-1,2-Dichloroethene are outside control limits. High percent recoveries and no associated positive reported in the QC batch.
- RPD(s) for Duplicate for 2-Butanone (MEK), Acetone, Methyl Tert Butyl Ether are outside control limits for sample JC50018-4DUP. High RPD due to possible sample nonhomogeneity.
- JC50017-3 for cis-1,2-Dichloroethene: This compound in BS is outside in house QC limits bias high.
- JC50017-1 for cis-1,2-Dichloroethene: This compound in BS is outside in house QC limits bias high.

MS Semi-volatiles By Method SW846 8270D

Matrix: SO **Batch ID:** OP5817

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC49988-1MS, JC49988-1MSD were used as the QC samples indicated.
- JC50017-4: Elevated detection limit due to bad sample matrix and reduced volume of sample extracted.
- JC50017-2: Elevated detection limit due to bad sample matrix and reduced volume of sample extracted.

GC/LC Semi-volatiles By Method SW846 8081B

Matrix: SO **Batch ID:** OP5816

- All samples were extracted within the recommended method holding time.
- Sample(s) JC49997-2MS, JC49997-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Heptachlor are outside control limits. Outside of in house control limits.
- RPD(s) for MSD for beta-BHC, Heptachlor are outside control limits for sample OP5816-MSD. Outside control limits due to matrix interference.
- JC50017-2: Elevated detection limit due to low volume of sample extracted.
- JC50017-4: Elevated detection limit due to low volume of sample extracted.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP5815

- All samples were extracted within the recommended method holding time.
- Sample(s) JC49997-1MS, JC49997-1MSD, OP5815-MSMSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method SW846 8151

Matrix: SO **Batch ID:** OP5823

- All samples were extracted within the recommended method holding time.
- Sample(s) JC50062-1MS, JC50062-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC50017-4: Elevated detection limit due to low volume of sample extracted.
- JC50017-2: Elevated detection limit due to low volume of sample extracted.

Metals Analysis By Method SW846 6010C

Matrix: SO **Batch ID:** MP2774

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50034-1PS, JC50034-1SDL, JC50034-1MS, JC50034-1MSD were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Barium are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Barium, Lead, Manganese are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- RPD(s) for MSD for Barium are outside control limits for sample MP2774-S2. High rpd due to possible sample nonhomogeneity.
- RPD(s) for Serial Dilution for Selenium, Silver are outside control limits for sample MP2774-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method SW846 7471B

Matrix: SO **Batch ID:** MP2764

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50049-2MS, JC50049-2MSD were used as the QC samples for metals.

General Chemistry By Method ASTM D1498-76M

Matrix: SO	Batch ID: GN69082

- Sample(s) JC50110-1DUP were used as the QC samples for Redox Potential Vs H2.

General Chemistry By Method SM2540 G-97

Matrix: SO	Batch ID: GN69124

- The data for SM2540 G-97 meets quality control requirements.

General Chemistry By Method SW846 3060A/7196A

Matrix: SO	Batch ID: GP7594

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50017-4DUP, JC50017-4MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Insoluble XCR matrix spike recovery indicates possible matrix interference. See additional comments on soluble matrix spike recovery.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP7594-D1. High RPD due to possible sample nonhomogeneity.
- GP7594-S1 for Chromium, Hexavalent: Soluble XCR matrix spike recovery indicates possible matrix interference. Low post spike recovery (36.7%) on this sample. Low pH adjusted post spike (22.6%).Not good agreement between the sample and 1:5 dilution.

General Chemistry By Method SW846 6010/7196A M

Matrix: SO	Batch ID: R165416

- The data for SW846 6010/7196A M meets quality control requirements.
- JC50017-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: SO	Batch ID: R165417

- The data for SW846 6010/7196A M meets quality control requirements.
- JC50017-4 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

General Chemistry By Method SW846 9012B/LACHAT

Matrix: SO	Batch ID: GP7570

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC50040-2DUP, JC50040-2MS were used as the QC samples for Cyanide.

General Chemistry By Method SW846 9045D

Matrix: SO	Batch ID: GN69083

- Sample(s) JC50110-1DUP were used as the QC samples for pH.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC50017
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY
Collected: 08/31/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC50017-1	**WB18-083117-01**					
No hits reported in this sample.						
JC50017-2	**WB18-083117-02**					
3&4-Methylphenol [a]		165 J	220	92	ug/kg	SW846 8270D
Acenaphthene [a]		49.6 J	110	39	ug/kg	SW846 8270D
Acenaphthylene [a]		91.9 J	110	57	ug/kg	SW846 8270D
Anthracene [a]		144	110	69	ug/kg	SW846 8270D
Benzo(a)anthracene [a]		559	110	32	ug/kg	SW846 8270D
Benzo(a)pyrene [a]		447	110	51	ug/kg	SW846 8270D
Benzo(b)fluoranthene [a]		1070	110	50	ug/kg	SW846 8270D
Benzo(g,h,i)perylene [a]		594	110	56	ug/kg	SW846 8270D
Benzo(k)fluoranthene [a]		269	110	52	ug/kg	SW846 8270D
Chrysene [a]		912	110	35	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene [a]		155	110	50	ug/kg	SW846 8270D
Dibenzofuran [a]		65.4 J	220	46	ug/kg	SW846 8270D
Fluoranthene [a]		1120	110	50	ug/kg	SW846 8270D
Fluorene [a]		65.6 J	110	52	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene [a]		444	110	53	ug/kg	SW846 8270D
Phenanthrene [a]		450	110	38	ug/kg	SW846 8270D
Pyrene [a]		1330	110	36	ug/kg	SW846 8270D
Dieldrin [b]		3.4	3.2	2.2	ug/kg	SW846 8081B
4,4'-DDE [b]		11.5	3.2	2.8	ug/kg	SW846 8081B
Arsenic		4.4	3.5	0.44	mg/kg	SW846 6010C
Barium		51.8	35	0.30	mg/kg	SW846 6010C
Beryllium		0.25 B	0.35	0.086	mg/kg	SW846 6010C
Cadmium		0.44 B	0.88	0.10	mg/kg	SW846 6010C
Chromium		9.6	1.8	0.31	mg/kg	SW846 6010C
Copper		33.2	4.4	0.69	mg/kg	SW846 6010C
Lead		19.1	3.5	0.60	mg/kg	SW846 6010C
Manganese		294	2.6	0.15	mg/kg	SW846 6010C
Mercury		0.046 B	0.057	0.025	mg/kg	SW846 7471B
Nickel		7.2	7.0	0.43	mg/kg	SW846 6010C
Zinc		101	8.8	6.7	mg/kg	SW846 6010C
Chromium, Hexavalent		2.7	0.70	0.67	mg/kg	SW846 3060A/7196A
Chromium, Trivalent [c]		6.9	2.5	0.98	mg/kg	SW846 6010/7196A M
Cyanide		1.3	0.46	0.14	mg/kg	SW846 9012B/LACHAT
Redox Potential Vs H2		231			mv	ASTM D1498-76M
pH		8.14			su	SW846 9045D
JC50017-3	**WB18-083117-03**					
No hits reported in this sample.						

Summary of Hits

Job Number: JC50017
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY
Collected: 08/31/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC50017-4	**WB18-083117-04**					
Acenaphthylene [a]		89.8 J	110	58	ug/kg	SW846 8270D
Anthracene [a]		135	110	70	ug/kg	SW846 8270D
Benzo(a)anthracene [a]		711	110	32	ug/kg	SW846 8270D
Benzo(a)pyrene [a]		661	110	52	ug/kg	SW846 8270D
Benzo(b)fluoranthene [a]		1260	110	50	ug/kg	SW846 8270D
Benzo(g,h,i)perylene [a]		753	110	57	ug/kg	SW846 8270D
Benzo(k)fluoranthene [a]		481	110	53	ug/kg	SW846 8270D
Chrysene [a]		1100	110	36	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene [a]		200	110	50	ug/kg	SW846 8270D
Fluoranthene [a]		1460	110	51	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene [a]		625	110	53	ug/kg	SW846 8270D
Phenanthrene [a]		460	110	38	ug/kg	SW846 8270D
Pyrene [a]		1510	110	36	ug/kg	SW846 8270D
Dieldrin [b]		2.9 J	3.0	2.1	ug/kg	SW846 8081B
4,4'-DDE [b]		12.7	3.0	2.7	ug/kg	SW846 8081B
Arsenic		3.7	3.4	0.43	mg/kg	SW846 6010C
Barium		60.0	34	0.29	mg/kg	SW846 6010C
Beryllium		0.22 B	0.34	0.083	mg/kg	SW846 6010C
Cadmium		0.37 B	0.84	0.096	mg/kg	SW846 6010C
Chromium		10.4	1.7	0.30	mg/kg	SW846 6010C
Copper		33.1	4.2	0.67	mg/kg	SW846 6010C
Lead		20.0	3.4	0.58	mg/kg	SW846 6010C
Manganese		330	2.5	0.15	mg/kg	SW846 6010C
Mercury		0.043 B	0.052	0.023	mg/kg	SW846 7471B
Nickel		8.3	6.8	0.42	mg/kg	SW846 6010C
Zinc		107	8.4	6.4	mg/kg	SW846 6010C
Chromium, Hexavalent		4.7	0.68	0.65	mg/kg	SW846 3060A/7196A
Chromium, Trivalent [c]		5.7	2.4	0.95	mg/kg	SW846 6010/7196A M
Cyanide		1.1	0.82	0.26	mg/kg	SW846 9012B/LACHAT
Redox Potential Vs H2		297			mv	ASTM D1498-76M
pH		7.75			su	SW846 9045D
JC50017-5	**WB18-083117-05**					
No hits reported in this sample.						

(a) Elevated detection limit due to bad sample matrix and reduced volume of sample extracted.
(b) Elevated detection limit due to low volume of sample extracted.
(c) Calculated as: (Chromium) - (Chromium, Hexavalent)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: WB18-083117-01
Lab Sample ID: JC50017-1
Matrix: SO - Soil
Method: SW846 8260C
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 08/31/17
Date Received: 09/01/17
Percent Solids: 57.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V37122.D	1	09/05/17 11:10	TDN	n/a	n/a	V3V1486
Run #2							

	Initial Weight
Run #1	2.0 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	44	28	ug/kg	
71-43-2	Benzene	ND	2.2	0.47	ug/kg	
78-93-3	2-Butanone (MEK)	ND	44	23	ug/kg	
104-51-8	n-Butylbenzene	ND	8.8	1.6	ug/kg	
135-98-8	sec-Butylbenzene	ND	8.8	1.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	8.8	1.9	ug/kg	
56-23-5	Carbon tetrachloride	ND	8.8	2.8	ug/kg	
108-90-7	Chlorobenzene	ND	8.8	1.3	ug/kg	
67-66-3	Chloroform	ND	8.8	1.4	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	4.4	2.3	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	4.4	1.3	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	4.4	2.1	ug/kg	
75-34-3	1,1-Dichloroethane	ND	4.4	1.1	ug/kg	
107-06-2	1,2-Dichloroethane	ND	4.4	0.79	ug/kg	
75-35-4	1,1-Dichloroethene	ND	4.4	3.1	ug/kg	
156-59-2	cis-1,2-Dichloroethene [a]	ND	4.4	1.8	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	4.4	2.6	ug/kg	
123-91-1	1,4-Dioxane	ND	550	210	ug/kg	
100-41-4	Ethylbenzene	ND	4.4	1.3	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	4.4	1.9	ug/kg	
75-09-2	Methylene chloride	ND	22	11	ug/kg	
103-65-1	n-Propylbenzene	ND	8.8	1.0	ug/kg	
127-18-4	Tetrachloroethene	ND	8.8	2.8	ug/kg	
108-88-3	Toluene	ND	4.4	2.4	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	8.8	2.5	ug/kg	
79-01-6	Trichloroethene	ND	4.4	2.4	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	8.8	4.4	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	8.8	4.4	ug/kg	
75-01-4	Vinyl chloride	ND	8.8	3.3	ug/kg	
	m,p-Xylene	ND	4.4	2.4	ug/kg	
95-47-6	o-Xylene	ND	4.4	1.1	ug/kg	
1330-20-7	Xylene (total)	ND	4.4	1.1	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-01		
Lab Sample ID:	JC50017-1	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8260C	**Percent Solids:**	57.1
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		72-129%
17060-07-0	1,2-Dichloroethane-D4	110%		73-132%
2037-26-5	Toluene-D8	106%		80-120%
460-00-4	4-Bromofluorobenzene	123%		77-125%

(a) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-083117-02
Lab Sample ID: JC50017-2
Matrix: SO - Soil
Method: SW846 8270D SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 08/31/17
Date Received: 09/01/17
Percent Solids: 57.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	6P40962.D	1	09/05/17 17:42	FW	09/02/17 08:00	OP5817	E6P1888
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	220	72	ug/kg	
	3&4-Methylphenol	165	220	92	ug/kg	J
87-86-5	Pentachlorophenol	ND	450	110	ug/kg	
108-95-2	Phenol	ND	220	59	ug/kg	
83-32-9	Acenaphthene	49.6	110	39	ug/kg	J
208-96-8	Acenaphthylene	91.9	110	57	ug/kg	J
120-12-7	Anthracene	144	110	69	ug/kg	
56-55-3	Benzo(a)anthracene	559	110	32	ug/kg	
50-32-8	Benzo(a)pyrene	447	110	51	ug/kg	
205-99-2	Benzo(b)fluoranthene	1070	110	50	ug/kg	
191-24-2	Benzo(g,h,i)perylene	594	110	56	ug/kg	
207-08-9	Benzo(k)fluoranthene	269	110	52	ug/kg	
218-01-9	Chrysene	912	110	35	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	155	110	50	ug/kg	
132-64-9	Dibenzofuran	65.4	220	46	ug/kg	J
206-44-0	Fluoranthene	1120	110	50	ug/kg	
86-73-7	Fluorene	65.6	110	52	ug/kg	J
118-74-1	Hexachlorobenzene	ND	220	28	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	444	110	53	ug/kg	
91-20-3	Naphthalene	ND	110	32	ug/kg	
85-01-8	Phenanthrene	450	110	38	ug/kg	
129-00-0	Pyrene	1330	110	36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	64%		23-115%
4165-62-2	Phenol-d5	65%		27-114%
118-79-6	2,4,6-Tribromophenol	75%		19-152%
4165-60-0	Nitrobenzene-d5	70%		26-134%
321-60-8	2-Fluorobiphenyl	72%		39-124%
1718-51-0	Terphenyl-d14	67%		36-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-02		
Lab Sample ID:	JC50017-2	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8270D SW846 3546	**Percent Solids:**	57.1
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) Elevated detection limit due to bad sample matrix and reduced volume of sample extracted.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-02		
Lab Sample ID:	JC50017-2	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8151 SW846 8151/3510C	**Percent Solids:**	57.1
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3G111291.D	1	09/06/17 20:11	VDT	09/05/17 12:45	OP5823	G3G3867
Run #2							

	Initial Weight	Final Volume
Run #1	8.2 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	11	9.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	76%		10-159%
19719-28-9	2,4-DCAA	72%		10-159%

(a) Elevated detection limit due to low volume of sample extracted.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-02		
Lab Sample ID:	JC50017-2	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8081B SW846 3546	**Percent Solids:**	57.1
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1G138795.D	1	09/05/17 02:17	CP	09/02/17 01:25	OP5816	G1G4409
Run #2							

	Initial Weight	Final Volume
Run #1	5.5 g	10.0 ml
Run #2		

Pesticides, Soil Cleanup Objectives

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	3.2	2.6	ug/kg	
319-84-6	alpha-BHC	ND	3.2	2.6	ug/kg	
319-85-7	beta-BHC	ND	3.2	2.9	ug/kg	
319-86-8	delta-BHC	ND	3.2	3.1	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	3.2	2.3	ug/kg	
5103-71-9	alpha-Chlordane	ND	3.2	2.6	ug/kg	
60-57-1	Dieldrin	3.4	3.2	2.2	ug/kg	
72-54-8	4,4'-DDD	ND	3.2	2.9	ug/kg	
72-55-9	4,4'-DDE	11.5	3.2	2.8	ug/kg	
50-29-3	4,4'-DDT	ND	3.2	2.8	ug/kg	
72-20-8	Endrin	ND	3.2	2.5	ug/kg	
1031-07-8	Endosulfan sulfate	ND	3.2	2.5	ug/kg	
959-98-8	Endosulfan-I	ND	3.2	1.8	ug/kg	
33213-65-9	Endosulfan-II	ND	3.2	2.0	ug/kg	
76-44-8	Heptachlor	ND	3.2	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	76%		25-135%
877-09-8	Tetrachloro-m-xylene	81%		25-135%
2051-24-3	Decachlorobiphenyl	89%		10-156%
2051-24-3	Decachlorobiphenyl	79%		10-156%

(a) Elevated detection limit due to low volume of sample extracted.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-083117-02
Lab Sample ID: JC50017-2
Matrix: SO - Soil
Method: SW846 8082A SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 08/31/17
Date Received: 09/01/17
Percent Solids: 57.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G151876.D	1	09/06/17 01:39	MH	09/02/17 01:25	OP5815	G2G4114
Run #2							

	Initial Weight	Final Volume
Run #1	5.5 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	160	64	ug/kg	
11104-28-2	Aroclor 1221	ND	160	65	ug/kg	
11141-16-5	Aroclor 1232	ND	160	43	ug/kg	
53469-21-9	Aroclor 1242	ND	160	25	ug/kg	
12672-29-6	Aroclor 1248	ND	160	93	ug/kg	
11097-69-1	Aroclor 1254	ND	160	39	ug/kg	
11096-82-5	Aroclor 1260	ND	160	50	ug/kg	
11100-14-4	Aroclor 1268	ND	160	24	ug/kg	
37324-23-5	Aroclor 1262	ND	160	12	ug/kg	
1336-36-3	Total PCBs	ND	160		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		24-152%
877-09-8	Tetrachloro-m-xylene	78%		24-152%
2051-24-3	Decachlorobiphenyl	84%		10-166%
2051-24-3	Decachlorobiphenyl	143%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-083117-02
Lab Sample ID: JC50017-2
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 08/31/17
Date Received: 09/01/17
Percent Solids: 57.1

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.4	3.5	0.44	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Barium	51.8	35	0.30	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Beryllium	0.25 B	0.35	0.086	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Cadmium	0.44 B	0.88	0.10	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Chromium	9.6	1.8	0.31	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Copper	33.2	4.4	0.69	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Lead	19.1	3.5	0.60	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Manganese	294	2.6	0.15	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.046 B	0.057	0.025	mg/kg	1	09/05/17	09/05/17	MS	SW846 7471B [1]	SW846 7471B [3]
Nickel	7.2	7.0	0.43	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Selenium	1.1 U	3.5	1.1	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Silver	0.51 U	0.88	0.51	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Zinc	101	8.8	6.7	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42727
(2) Instrument QC Batch: MA42748
(3) Prep QC Batch: MP2764
(4) Prep QC Batch: MP2774

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-083117-02		
Lab Sample ID:	JC50017-2	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
		Percent Solids:	57.1
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	2.7	0.70	0.67	mg/kg	1	09/08/17 15:19	RP	SW846 3060A/7196A
Chromium, Trivalent [a]	6.9	2.5	0.98	mg/kg	1	09/08/17 15:19	RP	SW846 6010/7196A M
Cyanide	1.3	0.46	0.14	mg/kg	1	09/05/17 16:46	TG	SW846 9012B/LACHAT
Redox Potential Vs H2	231			mv	1	09/06/17 19:37	HS	ASTM D1498-76M
Solids, Percent	57.1			%	1	09/07/17 16:16	LV	SM2540 G-97
pH	8.14			su	1	09/06/17 19:36	HS	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: WB18-083117-03
Lab Sample ID: JC50017-3
Matrix: SO - Soil
Method: SW846 8260C
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 08/31/17
Date Received: 09/01/17
Percent Solids: 58.6

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V37123.D	1	09/05/17 11:36	TDN	n/a	n/a	V3V1486
Run #2							

	Initial Weight
Run #1	2.3 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	37	24	ug/kg	
71-43-2	Benzene	ND	1.9	0.40	ug/kg	
78-93-3	2-Butanone (MEK)	ND	37	19	ug/kg	
104-51-8	n-Butylbenzene	ND	7.4	1.4	ug/kg	
135-98-8	sec-Butylbenzene	ND	7.4	0.86	ug/kg	
98-06-6	tert-Butylbenzene	ND	7.4	1.6	ug/kg	
56-23-5	Carbon tetrachloride	ND	7.4	2.4	ug/kg	
108-90-7	Chlorobenzene	ND	7.4	1.1	ug/kg	
67-66-3	Chloroform	ND	7.4	1.2	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	3.7	1.9	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	3.7	1.1	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	3.7	1.8	ug/kg	
75-34-3	1,1-Dichloroethane	ND	3.7	0.96	ug/kg	
107-06-2	1,2-Dichloroethane	ND	3.7	0.67	ug/kg	
75-35-4	1,1-Dichloroethene	ND	3.7	2.6	ug/kg	
156-59-2	cis-1,2-Dichloroethene [a]	ND	3.7	1.5	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	3.7	2.2	ug/kg	
123-91-1	1,4-Dioxane	ND	460	180	ug/kg	
100-41-4	Ethylbenzene	ND	3.7	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	3.7	1.6	ug/kg	
75-09-2	Methylene chloride	ND	19	9.3	ug/kg	
103-65-1	n-Propylbenzene	ND	7.4	0.85	ug/kg	
127-18-4	Tetrachloroethene	ND	7.4	2.4	ug/kg	
108-88-3	Toluene	ND	3.7	2.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	7.4	2.2	ug/kg	
79-01-6	Trichloroethene	ND	3.7	2.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	7.4	3.7	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	7.4	3.7	ug/kg	
75-01-4	Vinyl chloride	ND	7.4	2.8	ug/kg	
	m,p-Xylene	ND	3.7	2.0	ug/kg	
95-47-6	o-Xylene	ND	3.7	0.93	ug/kg	
1330-20-7	Xylene (total)	ND	3.7	0.93	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-03		
Lab Sample ID:	JC50017-3	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8260C	**Percent Solids:**	58.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		72-129%
17060-07-0	1,2-Dichloroethane-D4	113%		73-132%
2037-26-5	Toluene-D8	106%		80-120%
460-00-4	4-Bromofluorobenzene	115%		77-125%

(a) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-083117-04
Lab Sample ID: JC50017-4
Matrix: SO - Soil
Method: SW846 8270D SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 08/31/17
Date Received: 09/01/17
Percent Solids: 58.6

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	6P40931.D	1	09/04/17 07:10	CS	09/02/17 08:00	OP5817	E6P1887
Run #2 [b]	6P40963.D	1	09/05/17 18:06	FW	09/02/17 08:00	OP5817	E6P1888

	Initial Weight	Final Volume
Run #1	15.0 g	1.0 ml
Run #2	15.0 g	1.0 ml

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	230	73	ug/kg	
	3&4-Methylphenol	ND	230	94	ug/kg	
87-86-5	Pentachlorophenol	ND	460	110	ug/kg	
108-95-2	Phenol	ND	230	59	ug/kg	
83-32-9	Acenaphthene	ND	110	39	ug/kg	
208-96-8	Acenaphthylene	89.8	110	58	ug/kg	J
120-12-7	Anthracene	135	110	70	ug/kg	
56-55-3	Benzo(a)anthracene	711	110	32	ug/kg	
50-32-8	Benzo(a)pyrene	661	110	52	ug/kg	
205-99-2	Benzo(b)fluoranthene	1260	110	50	ug/kg	
191-24-2	Benzo(g,h,i)perylene	753	110	57	ug/kg	
207-08-9	Benzo(k)fluoranthene	481	110	53	ug/kg	
218-01-9	Chrysene	1100	110	36	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	200	110	50	ug/kg	
132-64-9	Dibenzofuran	ND	230	46	ug/kg	
206-44-0	Fluoranthene	1460	110	51	ug/kg	
86-73-7	Fluorene	ND	110	52	ug/kg	
118-74-1	Hexachlorobenzene	ND	230	29	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	625	110	53	ug/kg	
91-20-3	Naphthalene	ND	110	32	ug/kg	
85-01-8	Phenanthrene	460	110	38	ug/kg	
129-00-0	Pyrene	1510	110	36	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	65%	61%	23-115%
4165-62-2	Phenol-d5	63%	62%	27-114%
118-79-6	2,4,6-Tribromophenol	70%	73%	19-152%
4165-60-0	Nitrobenzene-d5	72%	68%	26-134%
321-60-8	2-Fluorobiphenyl	68%	69%	39-124%
1718-51-0	Terphenyl-d14	71%	66%	36-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-04		
Lab Sample ID:	JC50017-4	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8270D SW846 3546	**Percent Solids:**	58.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) Elevated detection limit due to bad sample matrix and reduced volume of sample extracted.
(b) Confirmation run for internal standard areas.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-04		
Lab Sample ID:	JC50017-4	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8151 SW846 8151/3510C	**Percent Solids:**	58.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3G111292.D	1	09/06/17 20:39	VDT	09/05/17 12:45	OP5823	G3G3867
Run #2							

	Initial Weight	Final Volume
Run #1	8.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	11	9.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	55%		10-159%
19719-28-9	2,4-DCAA	49%		10-159%

(a) Elevated detection limit due to low volume of sample extracted.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-04		
Lab Sample ID:	JC50017-4	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8081B SW846 3546	**Percent Solids:**	58.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1G138796.D	1	09/05/17 02:34	CP	09/02/17 01:25	OP5816	G1G4409
Run #2 [b]	1G138842.D	5	09/06/17 15:44	KD	09/02/17 01:25	OP5816	G1G4411

	Initial Weight	Final Volume
Run #1	5.6 g	10.0 ml
Run #2	5.6 g	10.0 ml

Pesticides, Soil Cleanup Objectives

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	3.0	2.5	ug/kg	
319-84-6	alpha-BHC	ND	3.0	2.5	ug/kg	
319-85-7	beta-BHC	ND	3.0	2.8	ug/kg	
319-86-8	delta-BHC	ND	3.0	2.9	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	3.0	2.2	ug/kg	
5103-71-9	alpha-Chlordane	ND	3.0	2.5	ug/kg	
60-57-1	Dieldrin	2.9	3.0	2.1	ug/kg	J
72-54-8	4,4'-DDD	ND	3.0	2.8	ug/kg	
72-55-9	4,4'-DDE	12.7	3.0	2.7	ug/kg	
50-29-3	4,4'-DDT	ND	3.0	2.7	ug/kg	
72-20-8	Endrin	ND	3.0	2.4	ug/kg	
1031-07-8	Endosulfan sulfate	ND	3.0	2.4	ug/kg	
959-98-8	Endosulfan-I	ND	3.0	1.8	ug/kg	
33213-65-9	Endosulfan-II	ND	3.0	1.9	ug/kg	
76-44-8	Heptachlor	ND	3.0	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	83%	108%	25-135%
877-09-8	Tetrachloro-m-xylene	85%	103%	25-135%
2051-24-3	Decachlorobiphenyl	73%	113%	10-156%
2051-24-3	Decachlorobiphenyl	85%	107%	10-156%

(a) Elevated detection limit due to low volume of sample extracted.
(b) Confirmation run.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-04		
Lab Sample ID:	JC50017-4	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
Method:	SW846 8082A SW846 3546	**Percent Solids:**	58.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G151877.D	1	09/06/17 01:56	MH	09/02/17 01:25	OP5815	G2G4114
Run #2							

	Initial Weight	Final Volume
Run #1	5.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	150	61	ug/kg	
11104-28-2	Aroclor 1221	ND	150	62	ug/kg	
11141-16-5	Aroclor 1232	ND	150	41	ug/kg	
53469-21-9	Aroclor 1242	ND	150	24	ug/kg	
12672-29-6	Aroclor 1248	ND	150	89	ug/kg	
11097-69-1	Aroclor 1254	ND	150	37	ug/kg	
11096-82-5	Aroclor 1260	ND	150	48	ug/kg	
11100-14-4	Aroclor 1268	ND	150	23	ug/kg	
37324-23-5	Aroclor 1262	ND	150	12	ug/kg	
1336-36-3	Total PCBs	ND	150		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	88%		24-152%
877-09-8	Tetrachloro-m-xylene	79%		24-152%
2051-24-3	Decachlorobiphenyl	67%		10-166%
2051-24-3	Decachlorobiphenyl	68%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-083117-04
Lab Sample ID: JC50017-4
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 08/31/17
Date Received: 09/01/17
Percent Solids: 58.6

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.7	3.4	0.43	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Barium	60.0	34	0.29	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Beryllium	0.22 B	0.34	0.083	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Cadmium	0.37 B	0.84	0.096	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Chromium	10.4	1.7	0.30	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Copper	33.1	4.2	0.67	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Lead	20.0	3.4	0.58	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Manganese	330	2.5	0.15	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Mercury	0.043 B	0.052	0.023	mg/kg	1	09/05/17	09/05/17	MS	SW846 7471B [1]	SW846 7471B [3]
Nickel	8.3	6.8	0.42	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Selenium	1.1 U	3.4	1.1	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Silver	0.49 U	0.84	0.49	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]
Zinc	107	8.4	6.4	mg/kg	1	09/06/17	09/07/17	AB	SW846 6010C [2]	SW846 3050B [4]

(1) Instrument QC Batch: MA42727
(2) Instrument QC Batch: MA42748
(3) Prep QC Batch: MP2764
(4) Prep QC Batch: MP2774

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-083117-04		
Lab Sample ID:	JC50017-4	**Date Sampled:**	08/31/17
Matrix:	SO - Soil	**Date Received:**	09/01/17
		Percent Solids:	58.6
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.7	0.68	0.65	mg/kg	1	09/08/17 15:15	RP	SW846 3060A/7196A
Chromium, Trivalent [a]	5.7	2.4	0.95	mg/kg	1	09/08/17 15:15	RP	SW846 6010/7196A M
Cyanide	1.1	0.82	0.26	mg/kg	1	09/05/17 16:47	TG	SW846 9012B/LACHAT
Redox Potential Vs H2	297			mv	1	09/06/17 19:42	HS	ASTM D1498-76M
Solids, Percent	58.6			%	1	09/07/17 16:16	LV	SM2540 G-97
pH	7.75			su	1	09/06/17 19:38	HS	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-083117-05		
Lab Sample ID:	JC50017-5	**Date Sampled:**	08/31/17
Matrix:	AQ - Trip Blank Soil	**Date Received:**	09/01/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A235781.D	1	09/06/17 17:59	GA	n/a	n/a	VA8936
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.27	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.27	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.34	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
123-91-1	1,4-Dioxane	ND	130	52	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.24	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.20	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.22	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-083117-05		
Lab Sample ID:	JC50017-5	**Date Sampled:**	08/31/17
Matrix:	AQ - Trip Blank Soil	**Date Received:**	09/01/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		81-124%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	102%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

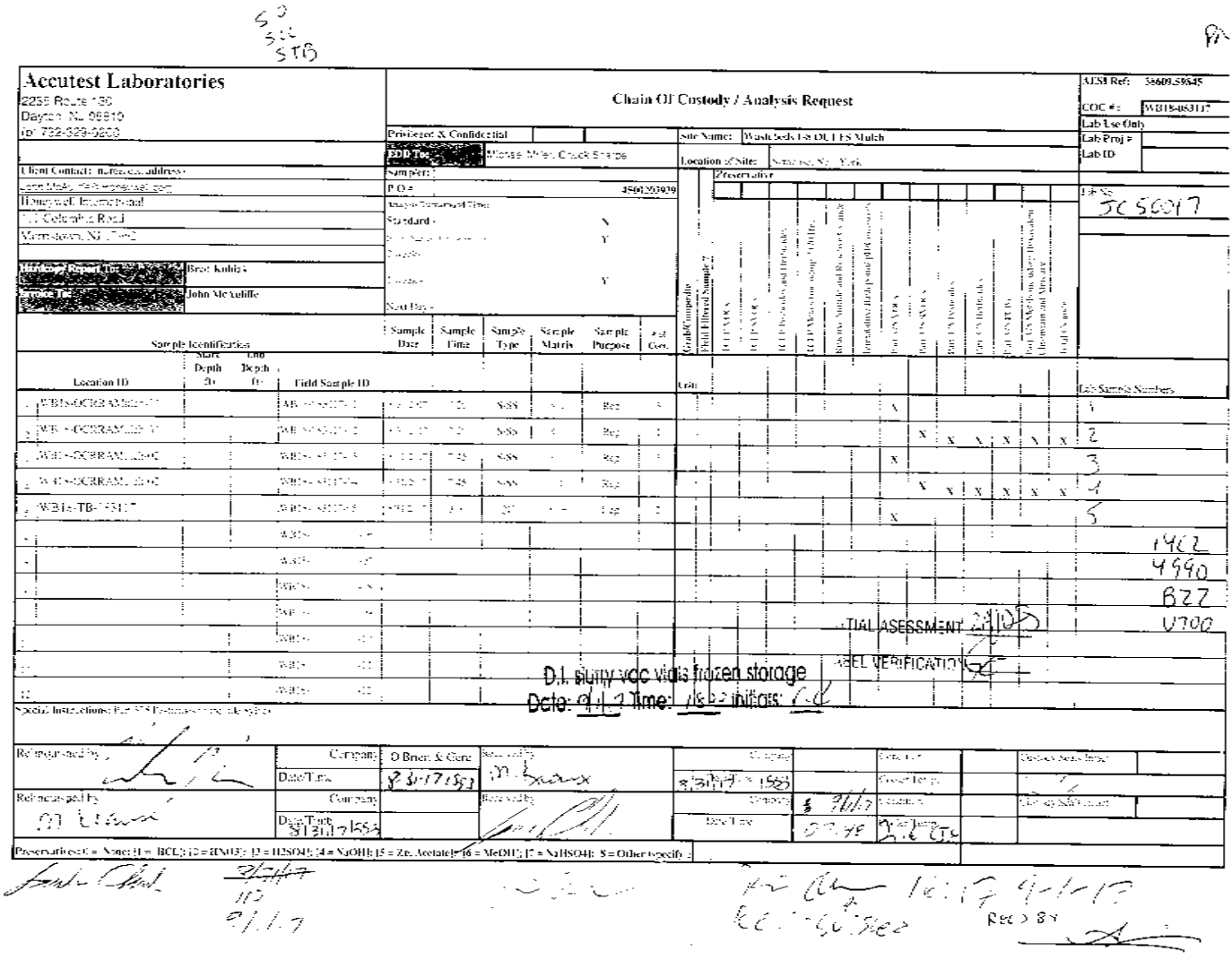
Job Number: JC50017
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		**SW846 6010/7196A M**	SO	Accutest is not certified for this parameter. [a]
Redox Potential Vs H2		**ASTM D1498-76M**	SO	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.



Accutest Laboratories
2235 Route 130
Dayton, NJ 08810
ph: 732-329-0200

Chain Of Custody / Analysis Request

ATSI Ref: 33609,33635
COC #: WBTB-083117
Lab Use Only
Lab Proj #
Lab ID

Project: Wastebed 1-8 OU 1 ES Mulch
Location of Site: Somerset, NJ - York

Preservative

Lab #s: JC50017

Client Contact: name, email, address
Jane Mody, mody@woodard.com
Woodard & Curran
991 Comprehensive Road
Morristown, NJ 07960

Project Manager/Report To: Brad Kuhlik
Invoice To: John McAuliffe

Analysis Turnaround Time
Standard: N
Rush: Y
Date:
Time:
Next Day: Y

Sample Identification | Start Depth ft | End Depth ft | Field Sample ID | Sample Date | Sample Time | Sample Type | Sample Matrix | Sample Purpose | # of Cont.

Location ID	Start Depth ft	End Depth ft	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Grab/Composite	Field Filtered Sample?	TCL VOAs	TCL BNAs	TCL Pesticides and Herbicides	TCL PCBs/Aroclors using Ultrafilter	Rhodamine, Naphthionate and Resorcyl Conc.	Formaldehyde, Polyphosphate (Inorganic)	Total Cr (VI) by	Total Cr by	Dissolved Cr (VI) by	Total Cr (VI) by	Dissolved Cr by	Total ASME/Chromium Speciation	Chromium and Mercury	Total Cyanide	Lab Sample Numbers
1	WBTB-OCRB-083117-GW			MB [illegible]	[illegible]	SSS		Reg										X								1
2	WB [illegible]			MB [illegible]	[illegible]	SSS		Reg											X	X	X	X	X	X		2
3	WBTB-OCRBAM-083117-GW			WBTB-[illegible]	[illegible]	SSS		Reg										X								3
4	WBTB-OCRBAM-083117-GW			WBTB-[illegible]	[illegible]	SSS		Reg											X	X	X	X	X	X		4
5	WBTB-TB-[illegible]			WBTB-[illegible]	[illegible]	[illegible]		Trip										X								5
6				WBTB-[illegible]																						1962
7				WBTB-[illegible]																						4990
8				WBTB-[illegible]																						B22
9				WBTB-[illegible]																						V700
10				WBTB-[illegible]																						
11				WBTB-[illegible]																						

INITIAL ASSESSMENT 2/10/17
LABEL VERIFICATION

D.I. slurry vac vials frozen storage
Date: 9/1/17 Time: 1552 Initials: CH

Special Instructions: [illegible]

Relinquished by	Company	Received by	Shipping	Cooler Temp	Custody Seal Intact
	O'Brien & Gere				
Date/Time	8/31/17 1553		8/31/17 1553		
Relinquished by	Company	Received by	Shipping	Cooler Temp	Custody Seal Intact
			$ 9/1/17		
Date/Time	8/31/17 1554		Date/Time		

Preservation (C = None; H = HCl; N = HNO3; S = H2SO4; Na = NaOH; Zn = Zn Acetate; Me = MeOH; NaHSO4 = NaHSO4; O = Other (specify))

9/1/17 1:15 9/1/17 Rec'd 8x

SGS ACCUTEST

Soil VOC Vial Tracking Log

JOB NUMBER:

SAMPLE #	MeOH	MeOH	DIH2O / NaHSO4	DIH2O / NaHSO4
1	40.5		25.07	25.01
2	40.51		25.01	25.05

All strike outs must be initialed & dated. A reason code must be applied if not a transcription error.

Form: SM087-01

Rev Date: 6/1/16

JC50017: Chain of Custody
Page 2 of 4

SGS Accutest Sample Receipt Summary

Job Number: JC50017 **Client:** O'BRIEN & GERE ENGINEERS, INC. **Project:** OBGNYS: WBB/HB MATERIALS MANAGEMENT

Date / Time Received: 9/1/2017 4:17:00 PM **Delivery Method:** Accutest Courier **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);

Cooler Temps (Corrected) °C: Cooler 1: (1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments -1 & -3 Did not receive % Solids volume.

SM089-02
Rev. Date 12/1/16

Responded to by: Shalini Williams

Response Date: 9/5/2017

Please use representative aliquote from sample 2 for solids calculation on sample 1

Please use representative aliquote from sample 4 for solids calculation on sample 3

Per client email M. Miller dated 9/5/2017

JC50017: Chain of Custody
Page 4 of 4

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

e-Hardcopy 2.0
Automated Report

Technical Report for

Honeywell International Inc.

OBGNYS: Waste Beds 1-8, Syracuse, NY

PO # 4500203939

SGS Accutest Job Number: JC53162

Sampling Date: 10/13/17

Report to:

O'Brien & Gere Engineers, Inc

Michael.Miller@obg.com

ATTN: Michael Miller

Total number of pages in report: **23**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Test results relate only to samples analyzed.

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Sample Summary

Honeywell International Inc.

Job No: JC53162

OBGNYS: Waste Beds 1-8, Syracuse, NY
Project No: PO # 4500203939

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC53162-1	10/13/17	09:00	M	10/14/17	SO	Soil	WB18-101217-01
JC53162-2	10/13/17	09:00	M	10/14/17	SO	Soil	WB18-101217-02
JC53162-3	10/13/17	09:00	M	10/14/17	AQ	Trip Blank Soil	WB18-101217-03

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Honeywell International Inc. **Job No** JC53162

Site: OBGNYS: Waste Beds 1-8, Syracuse, NY **Report Date** 10/23/2017 2:43:55 P

On 10/14/2017, 2 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 1.2 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of JC53162 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** V3D5630

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC52706-10MS, JC52706-10MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Trichloroethene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Methylene chloride, Tetrachloroethene are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Recovery(s) for Carbon tetrachloride, Chloroform are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- JC53162-3 for Carbon tetrachloride: Associated CCV outside of control limits high, sample was ND.

Matrix: SO **Batch ID:** VC8142

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC53064-10DUP, JC53064-9MS were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Acetone are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for Duplicate for Acetone are outside control limits for sample JC53064-10DUP. High RPD due to low concentration of hit

MS Semi-volatiles By Method SW846 8270D

Matrix: SO **Batch ID:** OP6958

- All samples were extracted within the recommended method holding time.
- Sample(s) JC52907-1MS, JC52907-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method SW846 8081B

Matrix: SO **Batch ID:** OP6955

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53162-2MS, JC53162-2MSD were used as the QC samples indicated.
- RPD(s) for MSD for alpha-Chlordane, beta-BHC are outside control limits for sample OP6955-MSD. Outside control limits due to matrix interference.
- JC53162-2 for Dieldrin: More than 40 % RPD for detected concentrations between the two GC columns.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP6954

- All samples were extracted within the recommended method holding time.
- Sample(s) JC52986-1MS, JC52986-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Aroclor 1016, Aroclor 1260 are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Aroclor 1260 are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for Aroclor 1016 are outside control limits for sample OP6954-MSD. Outside control limits due to matrix interference.
- OP6954-BSD for Aroclor 1260: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP6954-BS1 for Aroclor 1016: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP6954-BSD for Aroclor 1016: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.
- OP6954-BS1 for Aroclor 1260: Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 20%, so it being used for confirmation only.

GC/LC Semi-volatiles By Method SW846 8151A

Matrix: SO **Batch ID:** OP6957

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53162-2MS, JC53162-2MSD were used as the QC samples indicated.

Metals Analysis By Method SW846 6010C

Matrix: SO **Batch ID:** MP3506

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) TD10537-1MS, TD10537-1MSD, TD10537-1SDL, TD10537-1DUP were used as the QC samples for metals.
- RPD(s) for Duplicate for Beryllium are outside control limits for sample MP3506-D1. RPD acceptable due to low duplicate and sample concentrations.
- RPD(s) for Serial Dilution for Lead, Beryllium, Cadmium are outside control limits for sample MP3506-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method SW846 7471B

Matrix: SO **Batch ID:** MP3551

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53162-2MS, JC53162-2MSD were used as the QC samples for metals.

General Chemistry By Method ASTM D1498-76M

Matrix: SO **Batch ID:** GN71146

- Sample(s) JC52669-1DUP were used as the QC samples for Redox Potential Vs H2.

General Chemistry By Method SM2540 G-97

Matrix:	SO	Batch ID:	GN71071

- The data for SM2540 G-97 meets quality control requirements.

Matrix:	SO	Batch ID:	GN71153

- The data for SM2540 G-97 meets quality control requirements.

General Chemistry By Method SW846 3060A/7196A

Matrix:	SO	Batch ID:	GP8541

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC53162-2DUP, JC53162-2MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Insoluble XCR matrix spike recovery indicates possible matrix interference. See additional comments on soluble matrix spike recovery.
- RPD(s) for Duplicate for Chromium, Hexavalent are outside control limits for sample GP8541-D1. High RPD due to possible sample nonhomogeneity.
- GP8541-S1 for Chromium, Hexavalent: Soluble XCR matrix spike recovery indicates possible matrix interference. Low post spike recovery (16_%) on this sample. Low pH adjusted post spike (29%).Not a good agreement between the sample and 1:5 dilution.

General Chemistry By Method SW846 6010/7196A M

Matrix:	SO	Batch ID:	R166368

- The data for SW846 6010/7196A M meets quality control requirements.
- JC53162-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

General Chemistry By Method SW846 9012B/LACHAT

Matrix:	SO	Batch ID:	GP8533

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC52988-2DUP, JC52988-2MS were used as the QC samples for Cyanide.

General Chemistry By Method SW846 9045D

Matrix:	SO	Batch ID:	GN71145

- Sample(s) JC52669-1DUP were used as the QC samples for pH.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: JC53162
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY
Collected: 10/13/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC53162-1	**WB18-101217-01**					
Acetone		46.8	38	25	ug/kg	SW846 8260C
JC53162-2	**WB18-101217-02**					
3&4-Methylphenol		135	110	45	ug/kg	SW846 8270D
Acenaphthene		48.0 J	54	19	ug/kg	SW846 8270D
Acenaphthylene		62.2	54	28	ug/kg	SW846 8270D
Anthracene		104	54	33	ug/kg	SW846 8270D
Benzo(a)anthracene		307	54	15	ug/kg	SW846 8270D
Benzo(a)pyrene		325	54	25	ug/kg	SW846 8270D
Benzo(b)fluoranthene		456	54	24	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		300	54	27	ug/kg	SW846 8270D
Benzo(k)fluoranthene		200	54	25	ug/kg	SW846 8270D
Chrysene		406	54	17	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		79.7	54	24	ug/kg	SW846 8270D
Dibenzofuran		35.2 J	110	22	ug/kg	SW846 8270D
Fluoranthene		657	54	24	ug/kg	SW846 8270D
Fluorene		71.5	54	25	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		321	54	26	ug/kg	SW846 8270D
Phenanthrene		368	54	18	ug/kg	SW846 8270D
Pyrene		801	54	17	ug/kg	SW846 8270D
alpha-Chlordane		5.3	1.1	0.86	ug/kg	SW846 8081B
Dieldrin [a]		1.1	1.1	0.73	ug/kg	SW846 8081B
4,4'-DDE		8.4	1.1	0.94	ug/kg	SW846 8081B
Arsenic		3.5	3.1	0.40	mg/kg	SW846 6010C
Barium		55.9	31	0.27	mg/kg	SW846 6010C
Beryllium		0.17 B	0.31	0.076	mg/kg	SW846 6010C
Cadmium		0.45 B	0.78	0.089	mg/kg	SW846 6010C
Chromium		10.6	1.6	0.28	mg/kg	SW846 6010C
Copper		29.1	3.9	0.62	mg/kg	SW846 6010C
Lead		25.1	3.1	0.54	mg/kg	SW846 6010C
Manganese		335	2.3	0.14	mg/kg	SW846 6010C
Mercury		0.064	0.052	0.023	mg/kg	SW846 7471B
Nickel		7.4	6.2	0.38	mg/kg	SW846 6010C
Zinc		107	7.8	5.9	mg/kg	SW846 6010C
Chromium, Hexavalent		4.8	0.65	0.62	mg/kg	SW846 3060A/7196A
Chromium, Trivalent [b]		5.8	2.3	0.90	mg/kg	SW846 6010/7196A M
Cyanide		0.36 B	0.73	0.23	mg/kg	SW846 9012B/LACHAT
Redox Potential Vs H2		93.7			mv	ASTM D1498-76M
pH		8.22			su	SW846 9045D

Summary of Hits

Job Number: JC53162
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY
Collected: 10/13/17

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC53162-3	**WB18-101217-03**					

No hits reported in this sample.

(a) More than 40 % RPD for detected concentrations between the two GC columns.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: WB18-101217-01
Lab Sample ID: JC53162-1
Matrix: SO - Soil
Method: SW846 8260C
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 10/13/17
Date Received: 10/14/17
Percent Solids: 62.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C220445.D	1	10/16/17 20:47	RS	n/a	n/a	VC8142
Run #2							

	Initial Weight
Run #1	2.1 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	46.8	38	25	ug/kg	
71-43-2	Benzene	ND	1.9	0.41	ug/kg	
78-93-3	2-Butanone (MEK)	ND	38	20	ug/kg	
104-51-8	n-Butylbenzene	ND	7.7	1.4	ug/kg	
135-98-8	sec-Butylbenzene	ND	7.7	0.89	ug/kg	
98-06-6	tert-Butylbenzene	ND	7.7	1.7	ug/kg	
56-23-5	Carbon tetrachloride	ND	7.7	2.5	ug/kg	
108-90-7	Chlorobenzene	ND	7.7	1.1	ug/kg	
67-66-3	Chloroform	ND	7.7	1.2	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	3.8	2.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	3.8	1.1	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	3.8	1.8	ug/kg	
75-34-3	1,1-Dichloroethane	ND	3.8	0.99	ug/kg	
107-06-2	1,2-Dichloroethane	ND	3.8	0.69	ug/kg	
75-35-4	1,1-Dichloroethene	ND	3.8	2.7	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	3.8	1.5	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	3.8	2.2	ug/kg	
123-91-1	1,4-Dioxane	ND	480	180	ug/kg	
100-41-4	Ethylbenzene	ND	3.8	1.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	3.8	1.6	ug/kg	
75-09-2	Methylene chloride	ND	19	9.6	ug/kg	
103-65-1	n-Propylbenzene	ND	7.7	0.88	ug/kg	
127-18-4	Tetrachloroethene	ND	7.7	2.4	ug/kg	
108-88-3	Toluene	ND	3.8	2.1	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	7.7	2.2	ug/kg	
79-01-6	Trichloroethene	ND	3.8	2.1	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	7.7	3.8	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	7.7	3.8	ug/kg	
75-01-4	Vinyl chloride	ND	7.7	2.9	ug/kg	
	m,p-Xylene	ND	3.8	2.1	ug/kg	
95-47-6	o-Xylene	ND	3.8	0.96	ug/kg	
1330-20-7	Xylene (total)	ND	3.8	0.96	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-101217-01		
Lab Sample ID:	JC53162-1	**Date Sampled:**	10/13/17
Matrix:	SO - Soil	**Date Received:**	10/14/17
Method:	SW846 8260C	**Percent Solids:**	62.1
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		72-129%
17060-07-0	1,2-Dichloroethane-D4	109%		73-132%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	110%		77-125%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-101217-02
Lab Sample ID: JC53162-2
Matrix: SO - Soil
Method: SW846 8270D SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 10/13/17
Date Received: 10/14/17
Percent Solids: 61.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Z125980.D	1	10/17/17 21:08	FW	10/16/17 06:30	OP6958	EZ6236
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	110	35	ug/kg	
	3&4-Methylphenol	135	110	45	ug/kg	
87-86-5	Pentachlorophenol	ND	220	51	ug/kg	
108-95-2	Phenol	ND	110	28	ug/kg	
83-32-9	Acenaphthene	48.0	54	19	ug/kg	J
208-96-8	Acenaphthylene	62.2	54	28	ug/kg	
120-12-7	Anthracene	104	54	33	ug/kg	
56-55-3	Benzo(a)anthracene	307	54	15	ug/kg	
50-32-8	Benzo(a)pyrene	325	54	25	ug/kg	
205-99-2	Benzo(b)fluoranthene	456	54	24	ug/kg	
191-24-2	Benzo(g,h,i)perylene	300	54	27	ug/kg	
207-08-9	Benzo(k)fluoranthene	200	54	25	ug/kg	
218-01-9	Chrysene	406	54	17	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	79.7	54	24	ug/kg	
132-64-9	Dibenzofuran	35.2	110	22	ug/kg	J
206-44-0	Fluoranthene	657	54	24	ug/kg	
86-73-7	Fluorene	71.5	54	25	ug/kg	
118-74-1	Hexachlorobenzene	ND	110	14	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	321	54	26	ug/kg	
91-20-3	Naphthalene	ND	54	15	ug/kg	
85-01-8	Phenanthrene	368	54	18	ug/kg	
129-00-0	Pyrene	801	54	17	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	64%		23-115%
4165-62-2	Phenol-d5	65%		27-114%
118-79-6	2,4,6-Tribromophenol	72%		19-152%
4165-60-0	Nitrobenzene-d5	71%		26-134%
321-60-8	2-Fluorobiphenyl	66%		39-124%
1718-51-0	Terphenyl-d14	93%		36-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-101217-02		
Lab Sample ID:	JC53162-2	**Date Sampled:**	10/13/17
Matrix:	SO - Soil	**Date Received:**	10/14/17
Method:	SW846 8151A SW846 8151/3546	**Percent Solids:**	61.1
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G112005.D	1	10/19/17 00:22	VDT	10/16/17 06:30	OP6957	G3G3898
Run #2							

	Initial Weight	Final Volume
Run #1	15.0 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	5.5	4.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	55%		10-159%
19719-28-9	2,4-DCAA	44%		10-159%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-101217-02
Lab Sample ID: JC53162-2
Matrix: SO - Soil
Method: SW846 8081B SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 10/13/17
Date Received: 10/14/17
Percent Solids: 61.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G85935.D	1	10/16/17 13:45	KD	10/15/17 07:30	OP6955	G4G2251
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

Pesticides, Soil Cleanup Objectives

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	1.1	0.88	ug/kg	
319-84-6	alpha-BHC	ND	1.1	0.87	ug/kg	
319-85-7	beta-BHC	ND	1.1	0.97	ug/kg	
319-86-8	delta-BHC	ND	1.1	1.0	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	1.1	0.79	ug/kg	
5103-71-9	alpha-Chlordane	5.3	1.1	0.86	ug/kg	
60-57-1	Dieldrin [a]	1.1	1.1	0.73	ug/kg	
72-54-8	4,4'-DDD	ND	1.1	0.98	ug/kg	
72-55-9	4,4'-DDE	8.4	1.1	0.94	ug/kg	
50-29-3	4,4'-DDT	ND	1.1	0.95	ug/kg	
72-20-8	Endrin	ND	1.1	0.83	ug/kg	
1031-07-8	Endosulfan sulfate	ND	1.1	0.84	ug/kg	
959-98-8	Endosulfan-I	ND	1.1	0.62	ug/kg	
33213-65-9	Endosulfan-II	ND	1.1	0.67	ug/kg	
76-44-8	Heptachlor	ND	1.1	0.92	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	59%		25-135%
877-09-8	Tetrachloro-m-xylene	53%		25-135%
2051-24-3	Decachlorobiphenyl	45%		10-156%
2051-24-3	Decachlorobiphenyl	105%		10-156%

(a) More than 40 % RPD for detected concentrations between the two GC columns.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-101217-02
Lab Sample ID: JC53162-2
Matrix: SO - Soil
Method: SW846 8082A SW846 3546
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 10/13/17
Date Received: 10/14/17
Percent Solids: 61.1

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX217576.D	1	10/16/17 18:21	RK	10/15/17 07:30	OP6954	GXX6147
Run #2							

	Initial Weight	Final Volume
Run #1	15.3 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	53	22	ug/kg	
11104-28-2	Aroclor 1221	ND	53	22	ug/kg	
11141-16-5	Aroclor 1232	ND	53	14	ug/kg	
53469-21-9	Aroclor 1242	ND	53	8.5	ug/kg	
12672-29-6	Aroclor 1248	ND	53	31	ug/kg	
11097-69-1	Aroclor 1254	ND	53	13	ug/kg	
11096-82-5	Aroclor 1260	ND	53	17	ug/kg	
11100-14-4	Aroclor 1268	ND	53	8.0	ug/kg	
37324-23-5	Aroclor 1262	ND	53	4.1	ug/kg	
1336-36-3	Total PCBs	ND	53		ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	39%		24-152%
877-09-8	Tetrachloro-m-xylene	34%		24-152%
2051-24-3	Decachlorobiphenyl	46%		10-166%
2051-24-3	Decachlorobiphenyl	54%		10-166%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-101217-02
Lab Sample ID: JC53162-2
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 10/13/17
Date Received: 10/14/17
Percent Solids: 61.1

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.5	3.1	0.40	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Barium	55.9	31	0.27	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Beryllium	0.17 B	0.31	0.076	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Cadmium	0.45 B	0.78	0.089	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Chromium	10.6	1.6	0.28	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Copper	29.1	3.9	0.62	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Lead	25.1	3.1	0.54	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Manganese	335	2.3	0.14	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Mercury	0.064	0.052	0.023	mg/kg	1	10/16/17	10/17/17	JA	SW846 7471B [1]	SW846 7471B [4]
Nickel	7.4	6.2	0.38	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Selenium	1.0 U	3.1	1.0	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Silver	0.45 U	0.78	0.45	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]
Zinc	107	7.8	5.9	mg/kg	1	10/16/17	10/17/17	AB	SW846 6010C [2]	SW846 3050B [3]

(1) Instrument QC Batch: MA43020
(2) Instrument QC Batch: MA43026
(3) Prep QC Batch: MP3506
(4) Prep QC Batch: MP3551

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: WB18-101217-02
Lab Sample ID: JC53162-2
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 10/13/17
Date Received: 10/14/17
Percent Solids: 61.1

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	4.8	0.65	0.62	mg/kg	1	10/17/17 22:10	AT	SW846 3060A/7196A
Chromium, Trivalent [a]	5.8	2.3	0.90	mg/kg	1	10/17/17 22:10	AT	SW846 6010/7196A M
Cyanide	0.36 B	0.73	0.23	mg/kg	1	10/17/17 13:06	BM	SW846 9012B/LACHAT
Redox Potential Vs H2	93.7			mv	1	10/17/17 14:47	RI	ASTM D1498-76M
Solids, Percent	61.1			%	1	10/17/17 16:16	LV	SM2540 G-97
pH	8.22			su	1	10/17/17 15:11	RI	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: WB18-101217-03
Lab Sample ID: JC53162-3
Matrix: AQ - Trip Blank Soil
Method: SW846 8260C
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

Date Sampled: 10/13/17
Date Received: 10/14/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D133036.D	1	10/18/17 11:09	JP	n/a	n/a	V3D5630
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.17	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	4.8	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.27	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.27	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.34	ug/l	
56-23-5	Carbon tetrachloride [a]	ND	1.0	0.34	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.24	ug/l	
67-66-3	Chloroform	ND	1.0	0.29	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.20	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.47	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.40	ug/l	
123-91-1	1,4-Dioxane	ND	130	52	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.22	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.25	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.24	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.27	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.20	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.62	ug/l	
	m,p-Xylene	ND	1.0	0.43	ug/l	
95-47-6	o-Xylene	ND	1.0	0.22	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.22	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-101217-03		
Lab Sample ID:	JC53162-3	**Date Sampled:**	10/13/17
Matrix:	AQ - Trip Blank Soil	**Date Received:**	10/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	OBGNYS: Waste Beds 1-8, Syracuse, NY		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		81-124%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	98%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

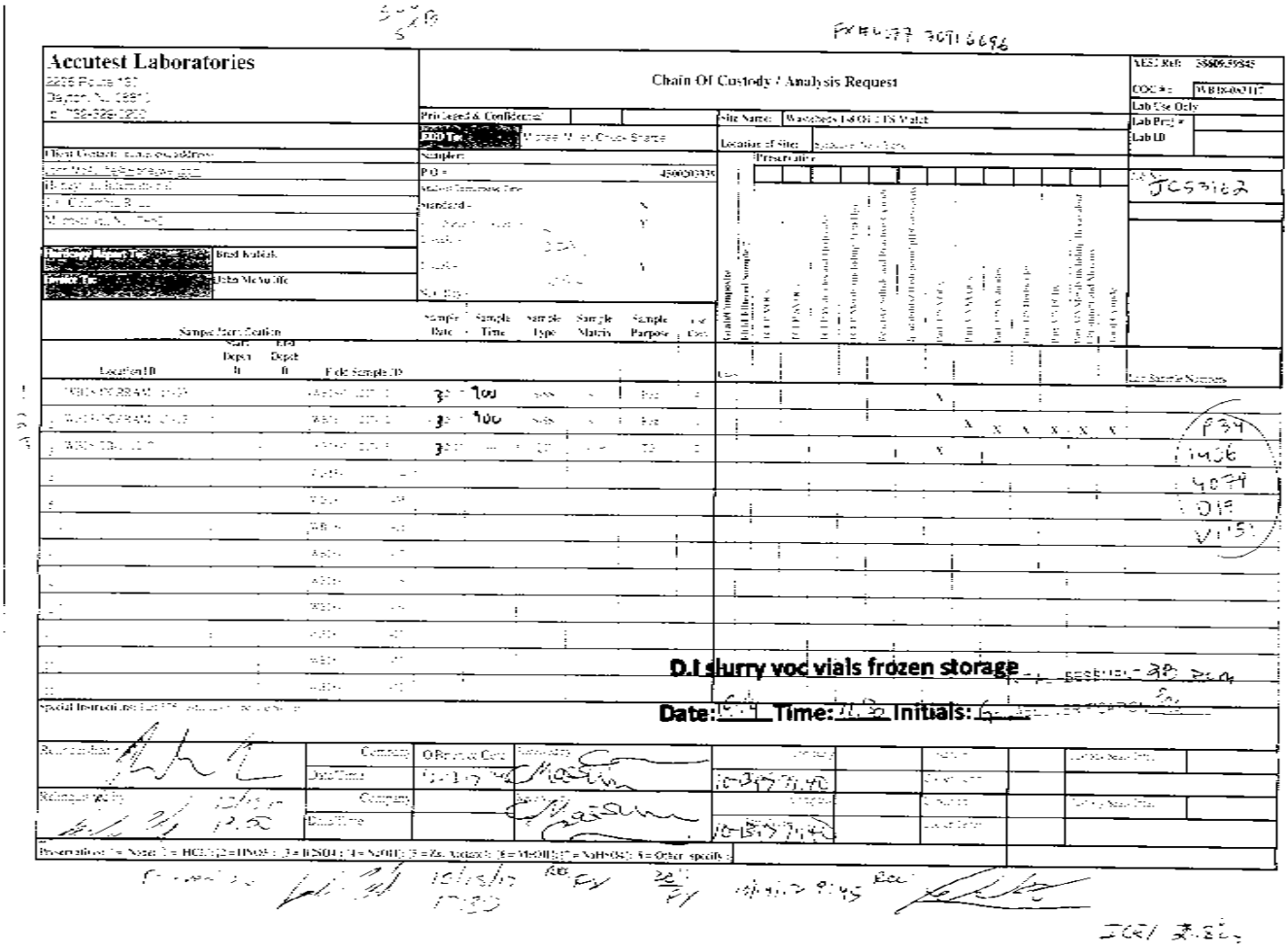
Job Number: JC53162
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8, Syracuse, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		**SW846 6010/7196A M**	SO	Accutest is not certified for this parameter. [a]
Redox Potential Vs H2		**ASTM D1498-76M**	SO	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.



JC53162: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC53162 **Client:** _____ **Project:** _____

Date / Time Received: 10/14/2017 9:45:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (1.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC53162: Chain of Custody
Page 2 of 2

Kenney Geotechnical Engineering Services, PLLC
Office: 6901 Herman Road, Syracuse, NY 13209
Mail: P.O. Box 117, Warners, N.Y. 13164
Phone: (315) 638-2706 Fax: (315) 638-1544

Kenney Geotechnical Services

GEOTECHNICAL TESTING RESULTS

January 25, 2019

O'Brien & Gere Engineering
333 West Washington Street
Syracuse, NY 13221
<via email>

Attn: Reagan Cuddy

Re.: Laboratory Soils Testing
Wastebed 1-8 (WB18-011819 & WB18-011819A)
Geddes, NY

Dear Reagan,

Pursuant to your request, Kenney Geotechnical Engineering Services, PLLC has completed the laboratory testing for the referenced project. Testing included Particle Size Analysis (ASTM D422), Atterberg Limits (ASTM D4318), pH Content (ASTM D4972), and Organic Content (ASTM D5268). The detailed laboratory results are attached.

Thank you for the opportunity to be of service, and please contact me at your convenience with any questions you may have.

Respectfully submitted,
KENNEY GEOTECHNICAL ENGINEERING SERVICES, PLLC

Christopher M. Kenney, P.E.

Kenney Geotechnical Engineering Services, PLLC
Office: 6901 Herman Road, Syracuse, NY 13209
Mail: P.O. Box 117, Warners, N.Y. 13164
Phone: (315) 638-2706

Kenney Geotechnical Services

Sample Identification

Field/Laboratory Sample ID

WB18-011819-01

WB18-011819-02

WB18-011819-03

WB18-011819-04

WB18-011819-05

WB18-011819-06

WB18-011819-07

WB18-011819-08

WB18-011819-09

WB18-011819-10

WB18-011819-11

WB18-011819-12

WB18-011819A-01

WB18-011819A-02

WB18-011819A-03

WB18-011819A-04

WB18-011819A-05

WB18-011819A-06

WB18-011819A-07

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-01					100	98.5	96.5	89.9	78.2	59.7	42.1

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

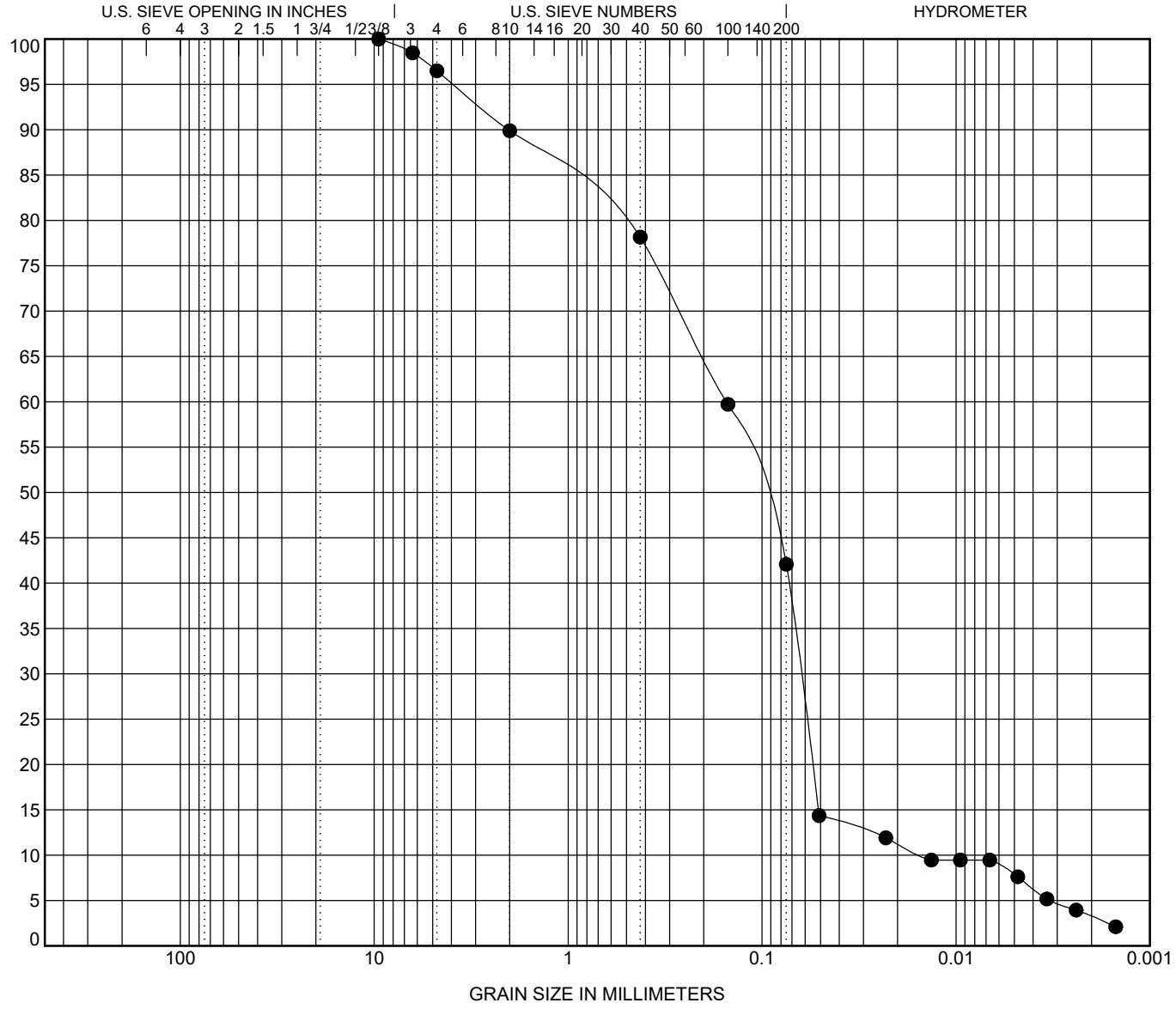
REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819-01	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.74**	**10.10**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819-01	1.0	**9.5**	**0.152**	**0.063**	**0.015**	**3.5**	**54.4**	**34.2**	**7.8**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
			3/4"	1/2"	3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-02			100	98.3	97.8	95.4	92.6	86.7	77.6	56.4	37.6

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

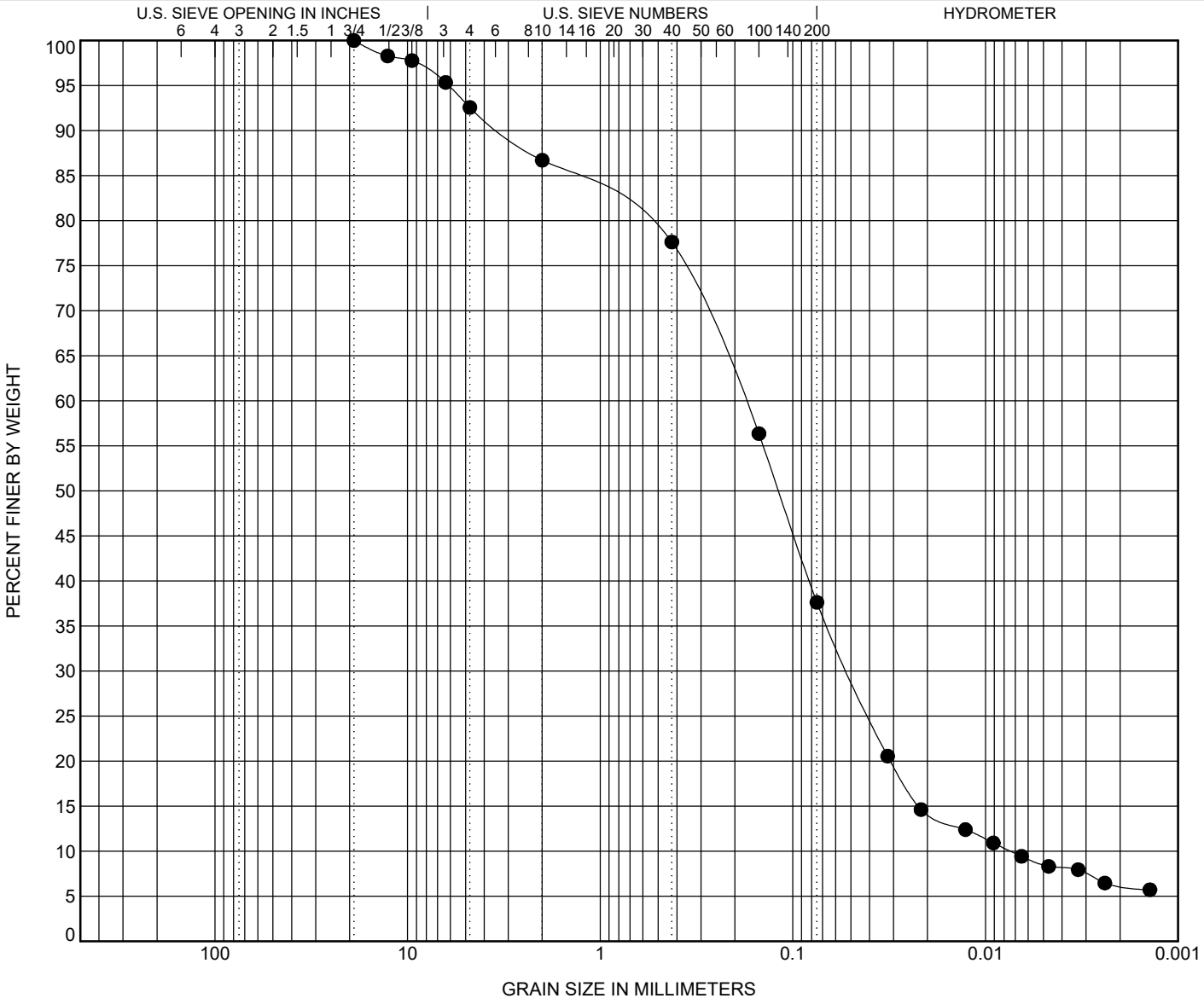
REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819-02	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.99**	**24.24**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819-02	1.0	**19**	**0.179**	**0.051**	**0.007**	**7.4**	**54.9**	**29.1**	**8.5**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-03					100	98.8	97.5	89.8	73.6	49.9	31.2

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

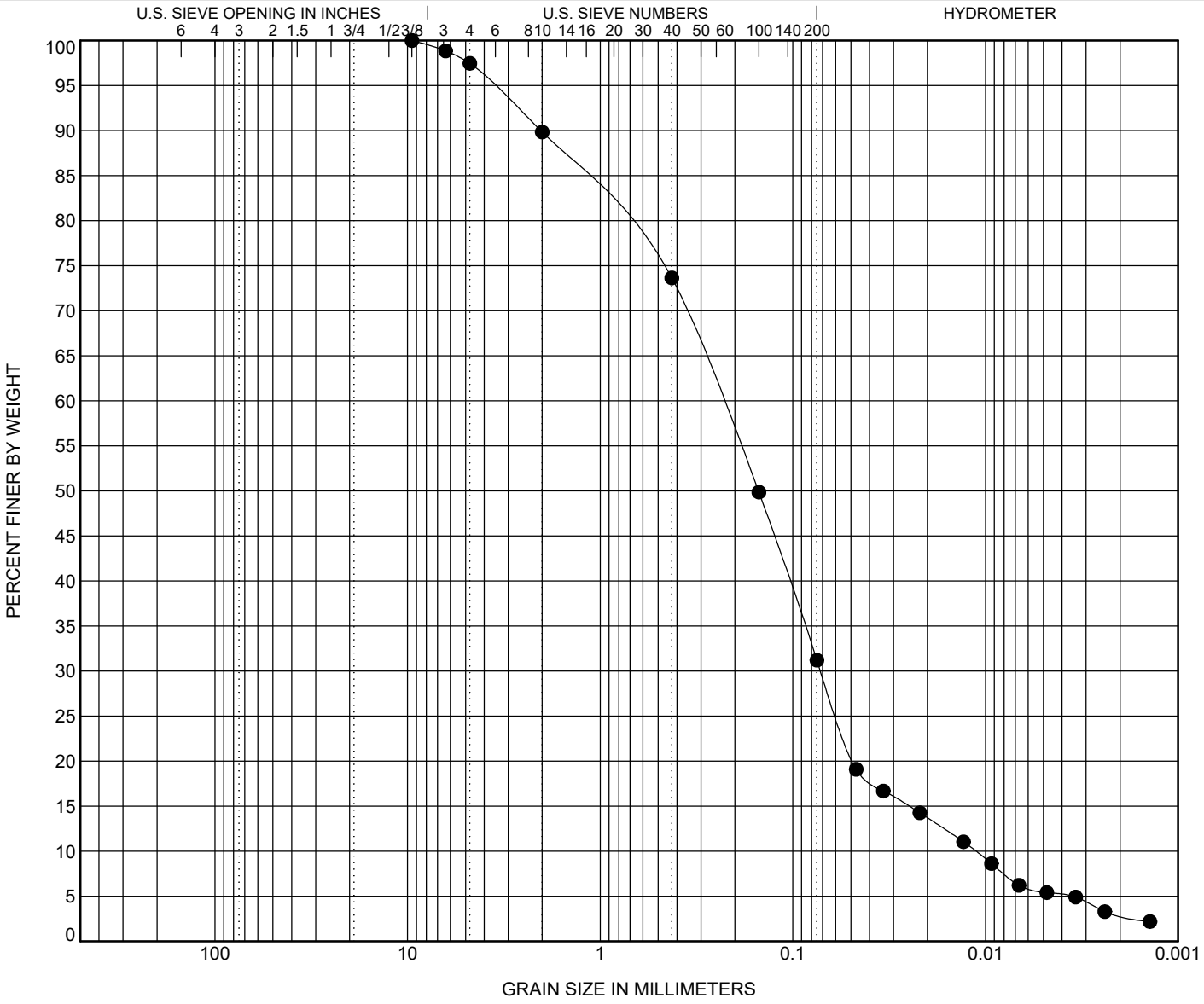
REMARKS:

PREWASH
ENTIRE SAMPLE X
MASS RETAINED ON #200 ONLY
NOT PREWASHED

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819-03**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.95**	**20.78**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819-03**	**1.0**	**9.5**	**0.234**	**0.072**	**0.011**	**2.5**	**66.3**	**25.7**	**5.5**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-04					100	98.3	95.3	89.4	79.3	59.9	43.2

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

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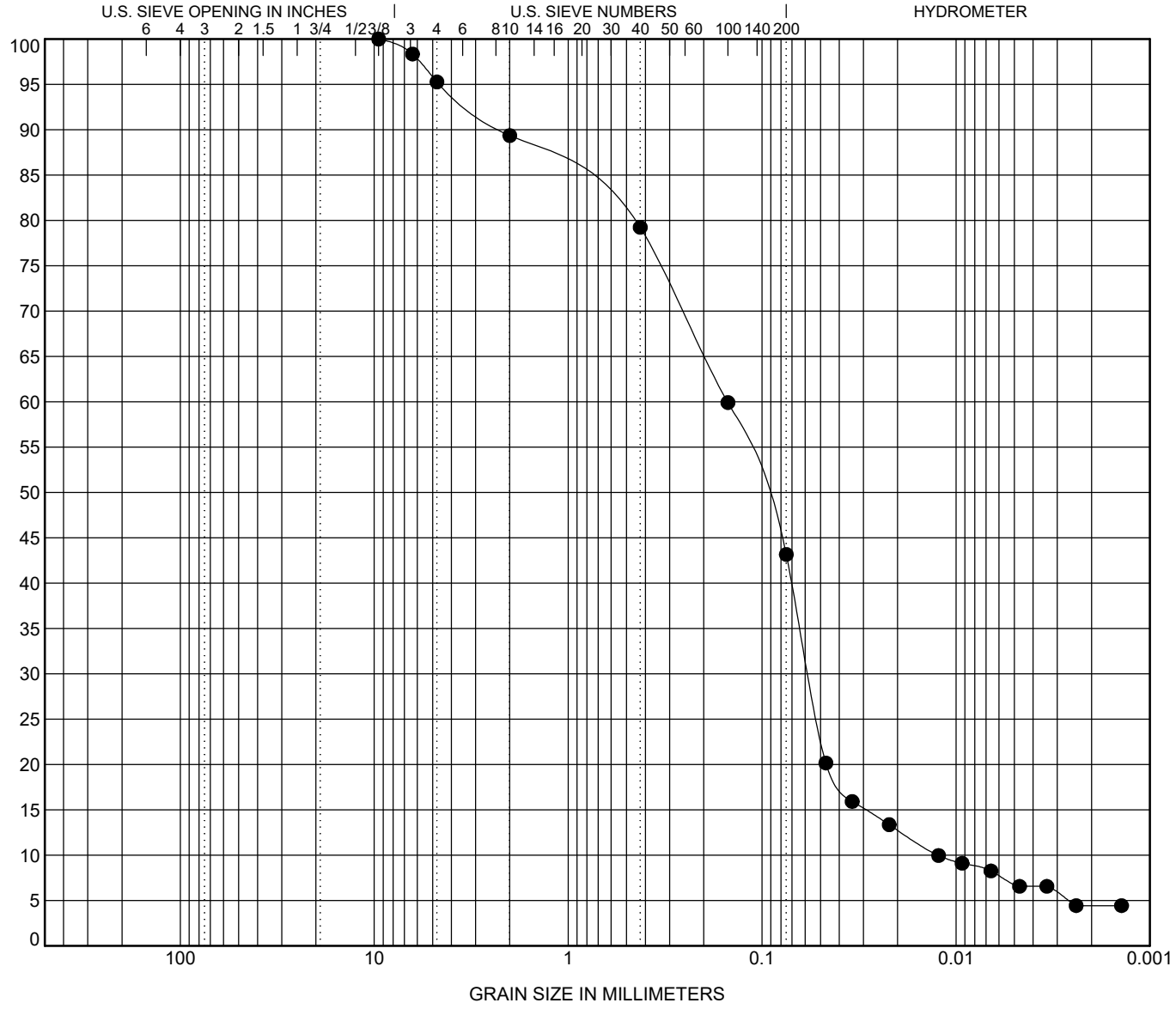
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819-04**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.76**	**12.17**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819-04**	**1.0**	**9.5**	**0.151**	**0.057**	**0.012**	**4.7**	**52.1**	**36.3**	**6.9**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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6901 Herman Road
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Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
						1/4"	#4	#10	#40	#100	#200
WB18-011819-05						100	99.9	95.8	84.6	61.4	41.0

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

Kenney Geotechnical Engineering Services, PLLC
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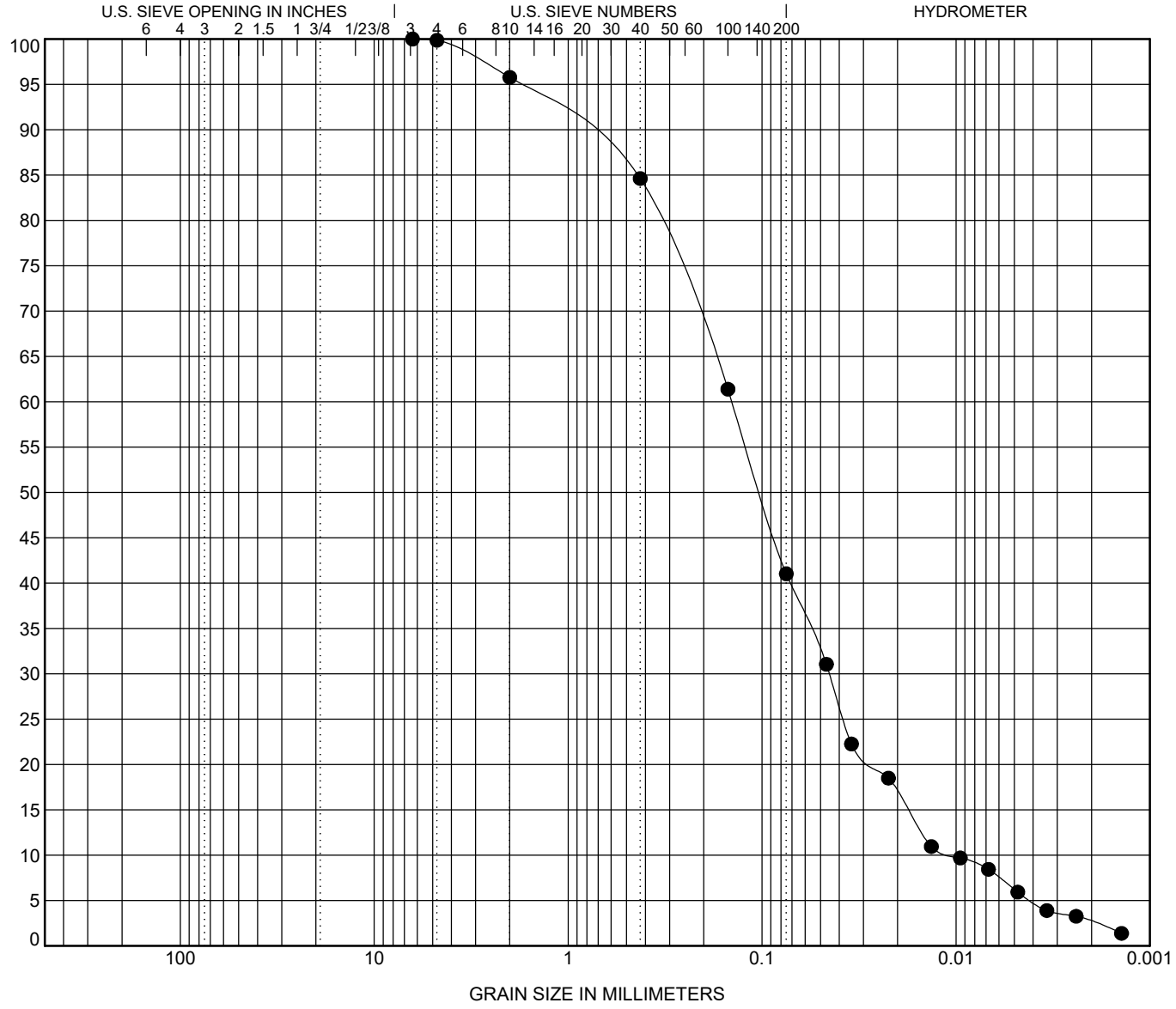
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819-05	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.37**	**13.85**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819-05	1.0	**6.35**	**0.143**	**0.045**	**0.01**	**0.1**	**58.8**	**34.8**	**6.2**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-06					100	98.4	96.3	89.5	79.0	59.3	41.3

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

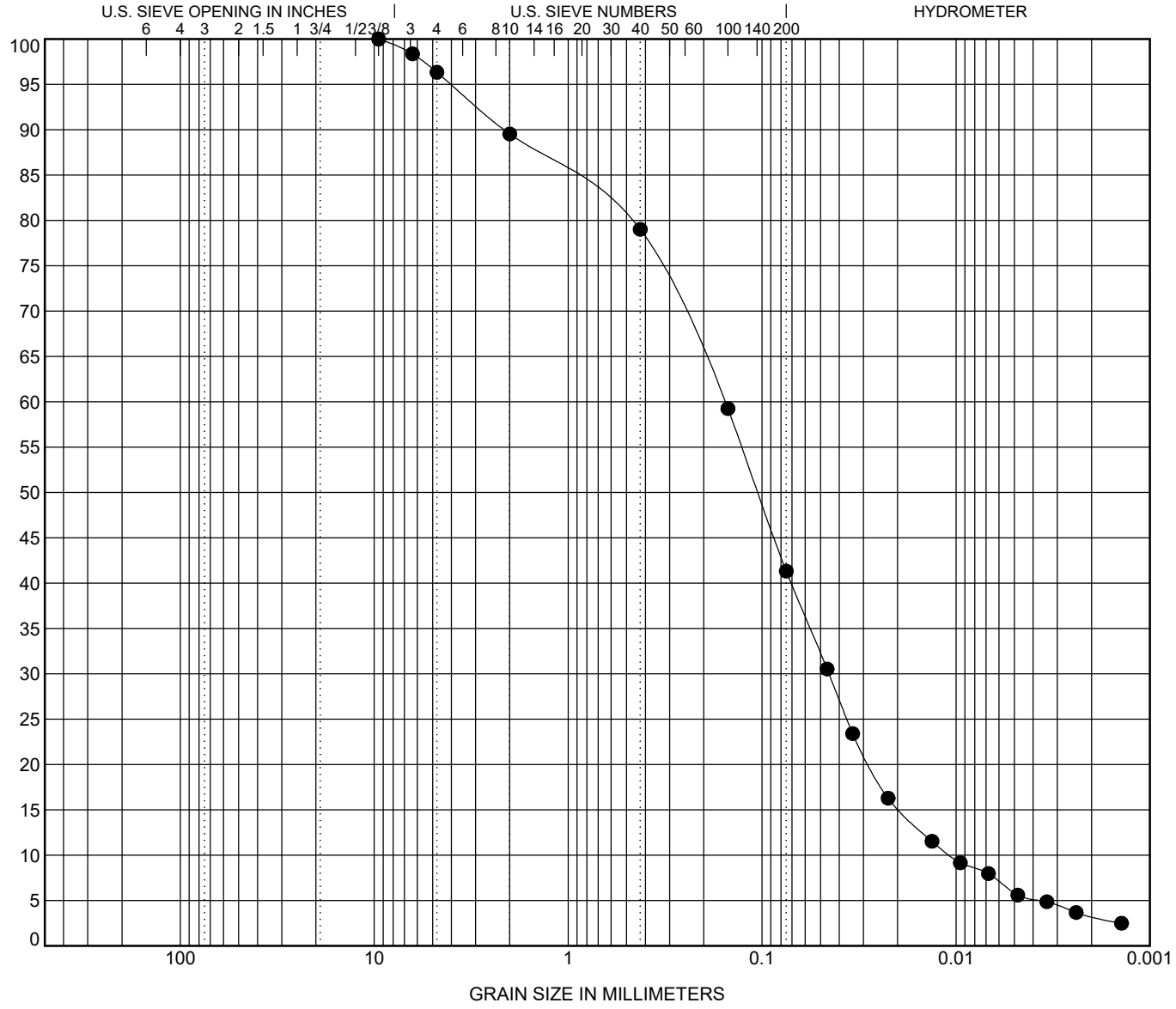
REMARKS:

PREWASH
ENTIRE SAMPLE: X
MASS RETAINED ON #200 ONLY:
NOT PREWASHED:

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819-06	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.22**	**14.58**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819-06	1.0	**9.5**	**0.156**	**0.045**	**0.011**	**3.7**	**55.0**	**35.4**	**5.9**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
						1/4"	#4	#10	#40	#100	#200
WB18-011819-07						100	99.7	96.0	83.7	60.5	38.9

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

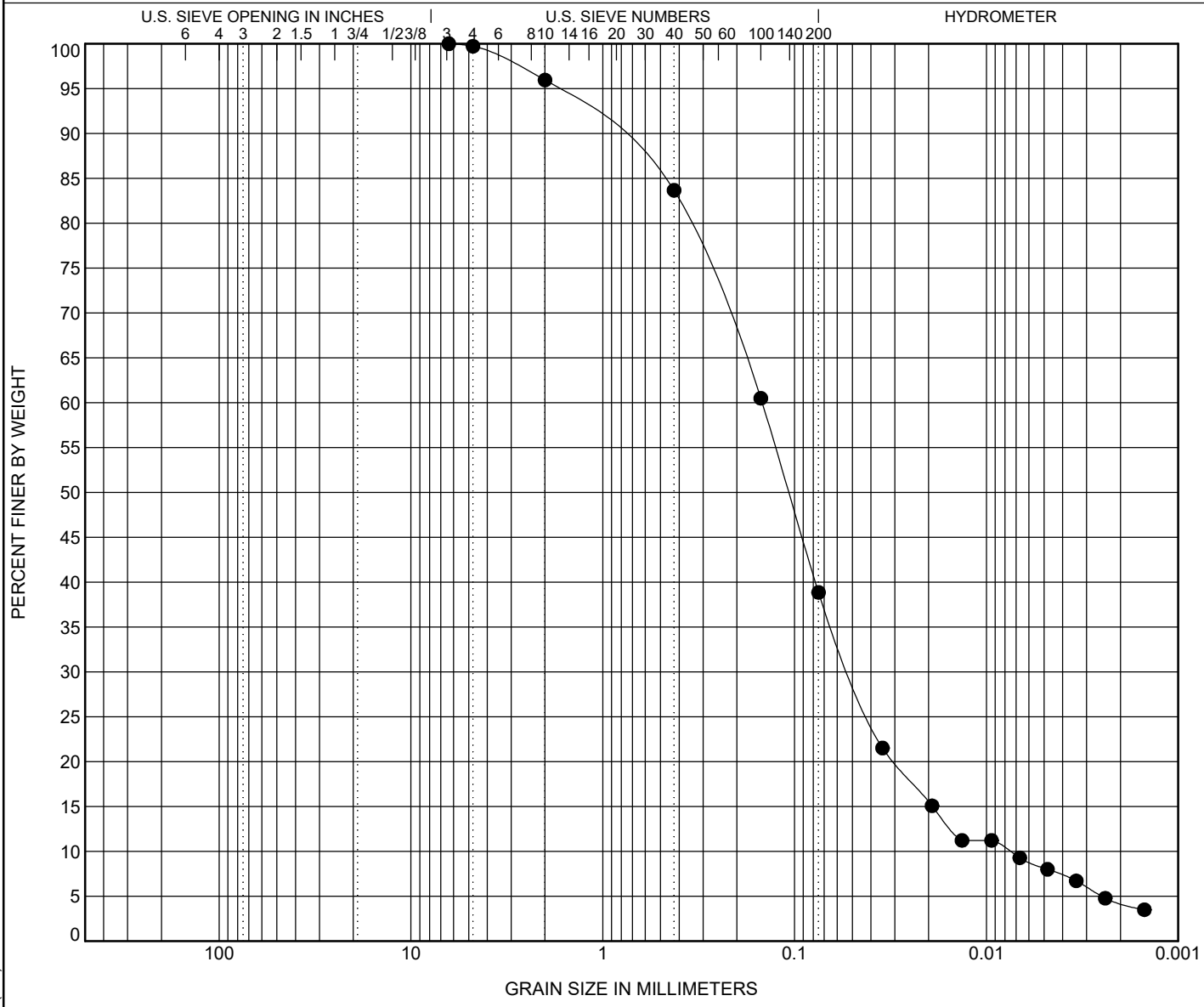
REMARKS:

	PREWASH
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819-07	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**2.29**	**19.45**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819-07	1.0	**6.35**	**0.148**	**0.051**	**0.008**	**0.3**	**60.9**	**30.7**	**8.2**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-08					100	99.5	98.0	91.5	79.8	59.8	45.4

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

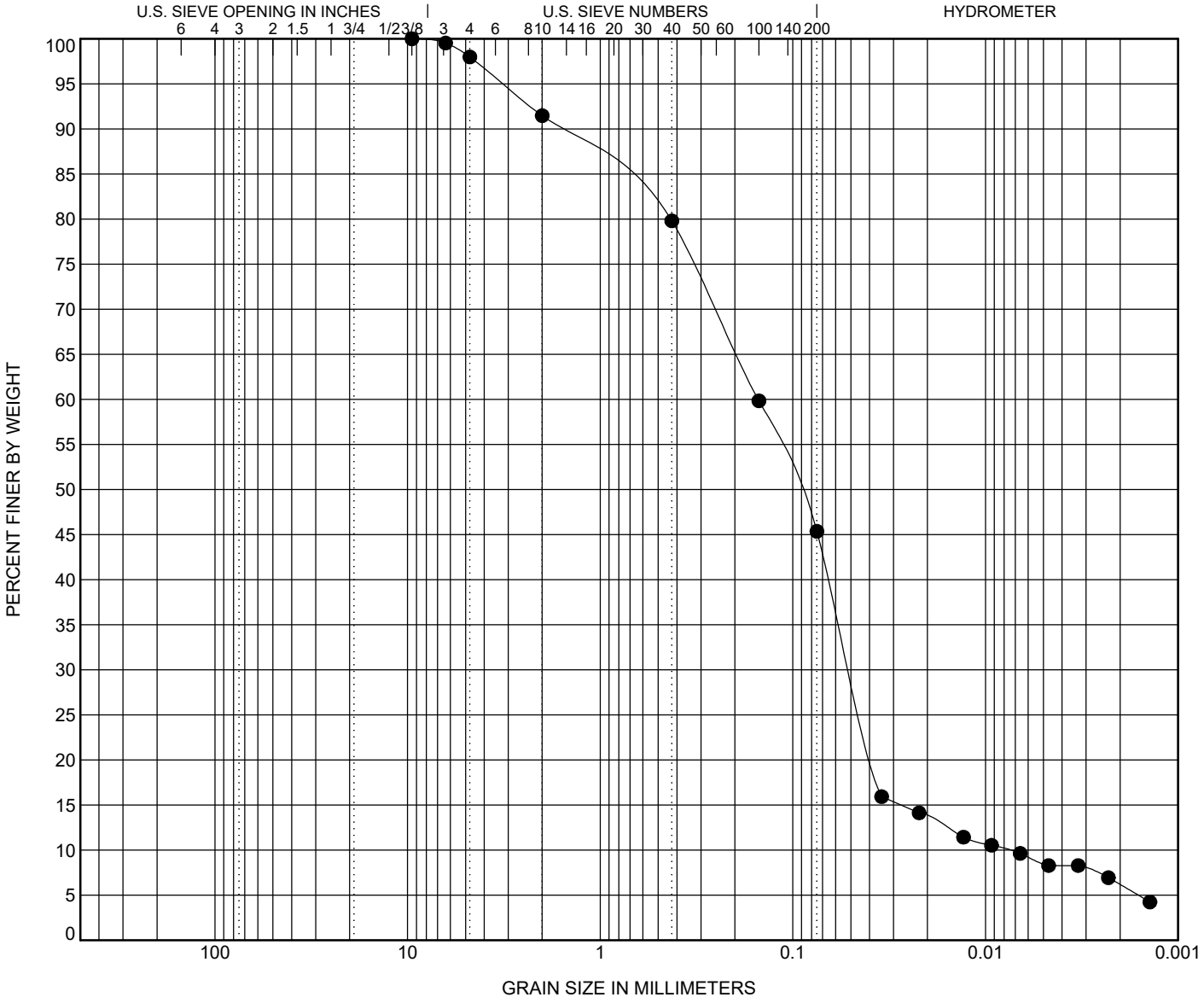
REMARKS:

PREWASH
ENTIRE SAMPLE X
MASS RETAINED ON #200 ONLY
NOT PREWASHED

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819-08**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**2.18**	**19.92**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819-08**	**1.0**	**9.5**	**0.151**	**0.05**	**0.008**	**2.0**	**52.6**	**36.8**	**8.5**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-09					100	98.1	94.4	83.8	73.0	51.9	33.8

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

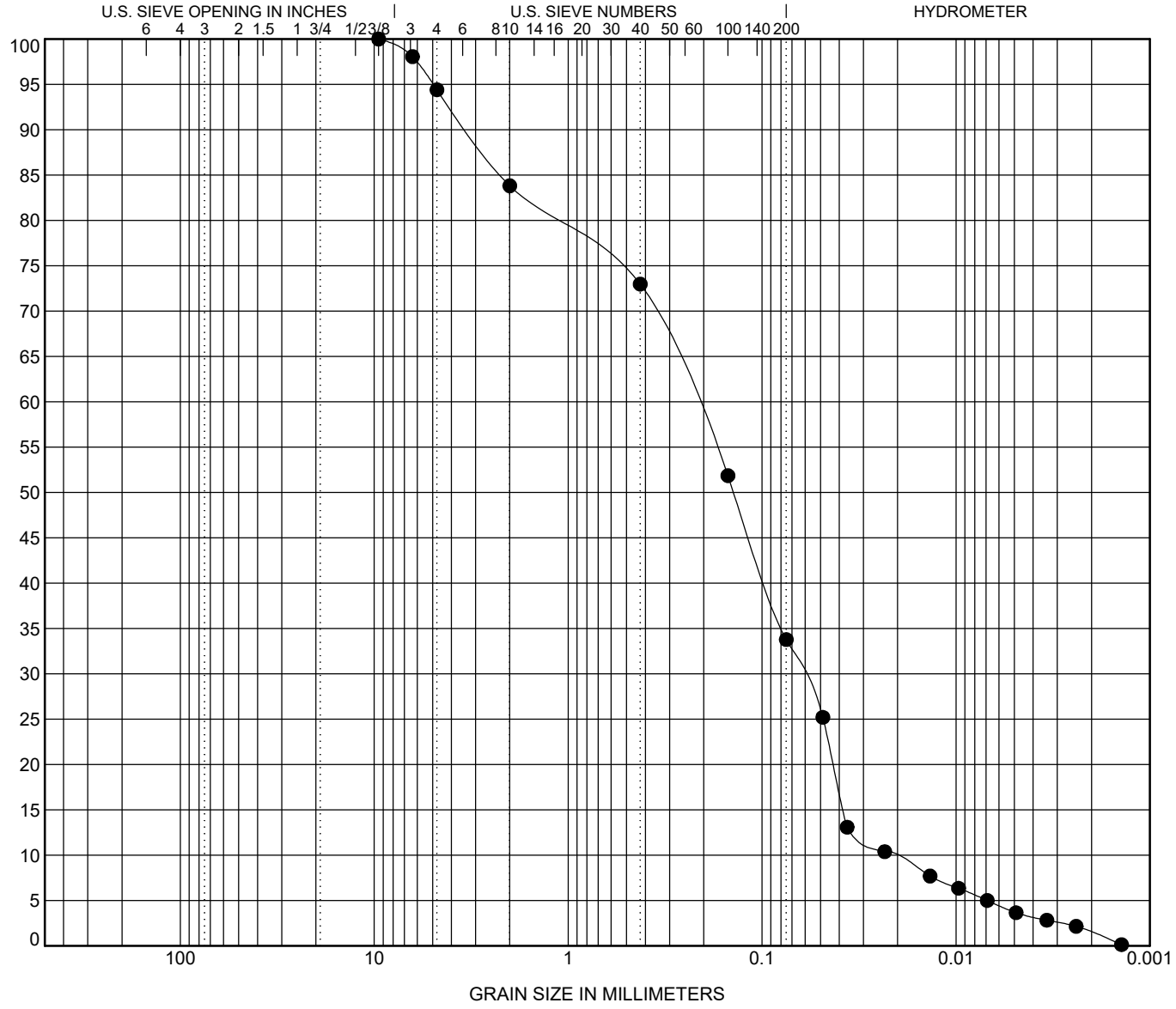
REMARKS:

PREWASH
ENTIRE SAMPLE: X
MASS RETAINED ON #200 ONLY:
NOT PREWASHED:

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819-09**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**0.79**	**10.40**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819-09**	**1.0**	**9.5**	**0.224**	**0.062**	**0.022**	**5.6**	**60.6**	**30.0**	**3.7**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-10					100	99.7	98.4	93.5	79.0	55.7	40.4

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

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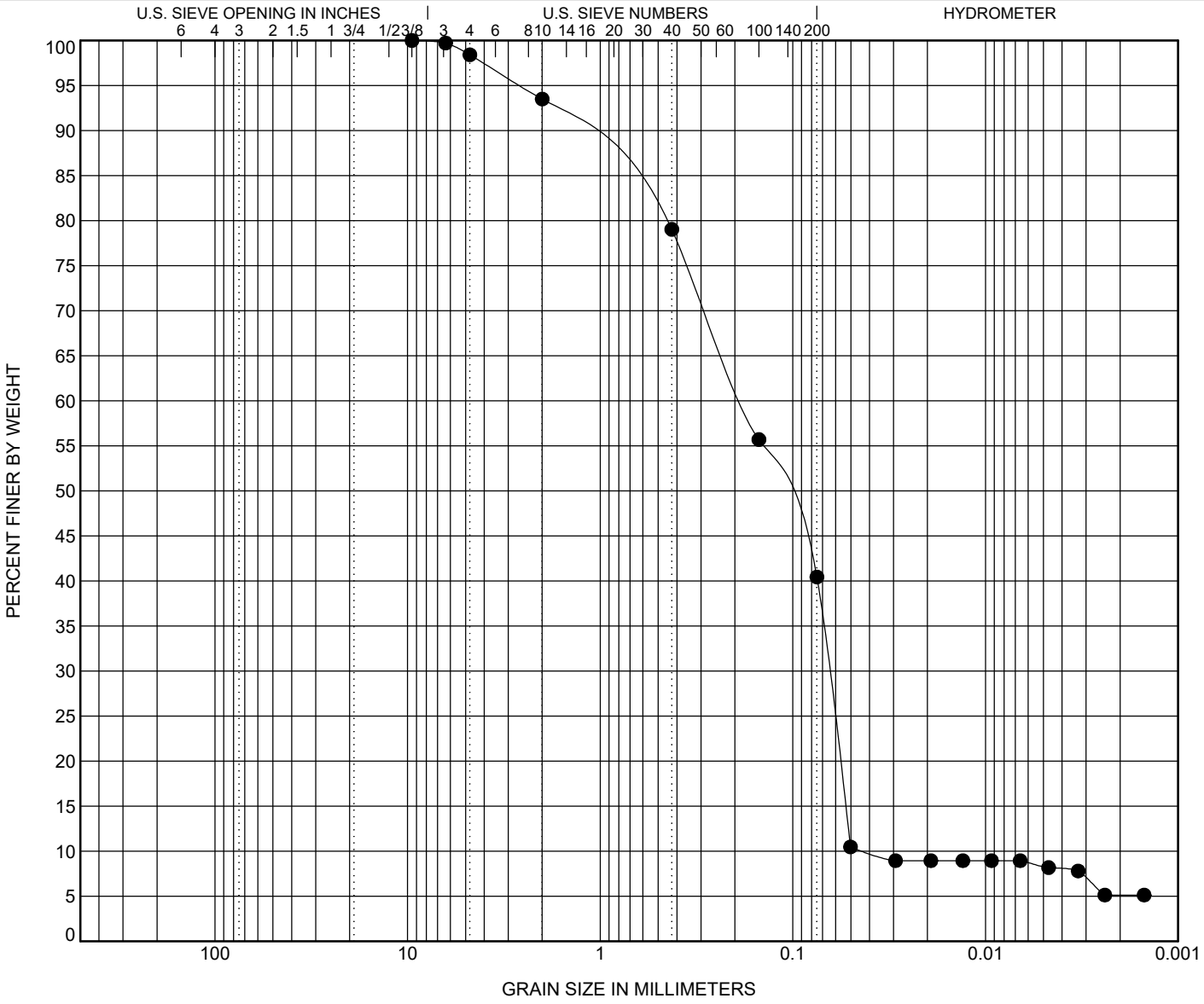
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819-10**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**0.55**	**4.28**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819-10**	**1.0**	**9.5**	**0.182**	**0.065**	**0.042**	**1.6**	**58.0**	**32.1**	**8.3**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Services, PLLC
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Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-11					100	98.8	97.3	91.6	81.6	59.5	40.7

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH
ENTIRE SAMPLE: X
MASS RETAINED ON #200 ONLY:
NOT PREWASHED:

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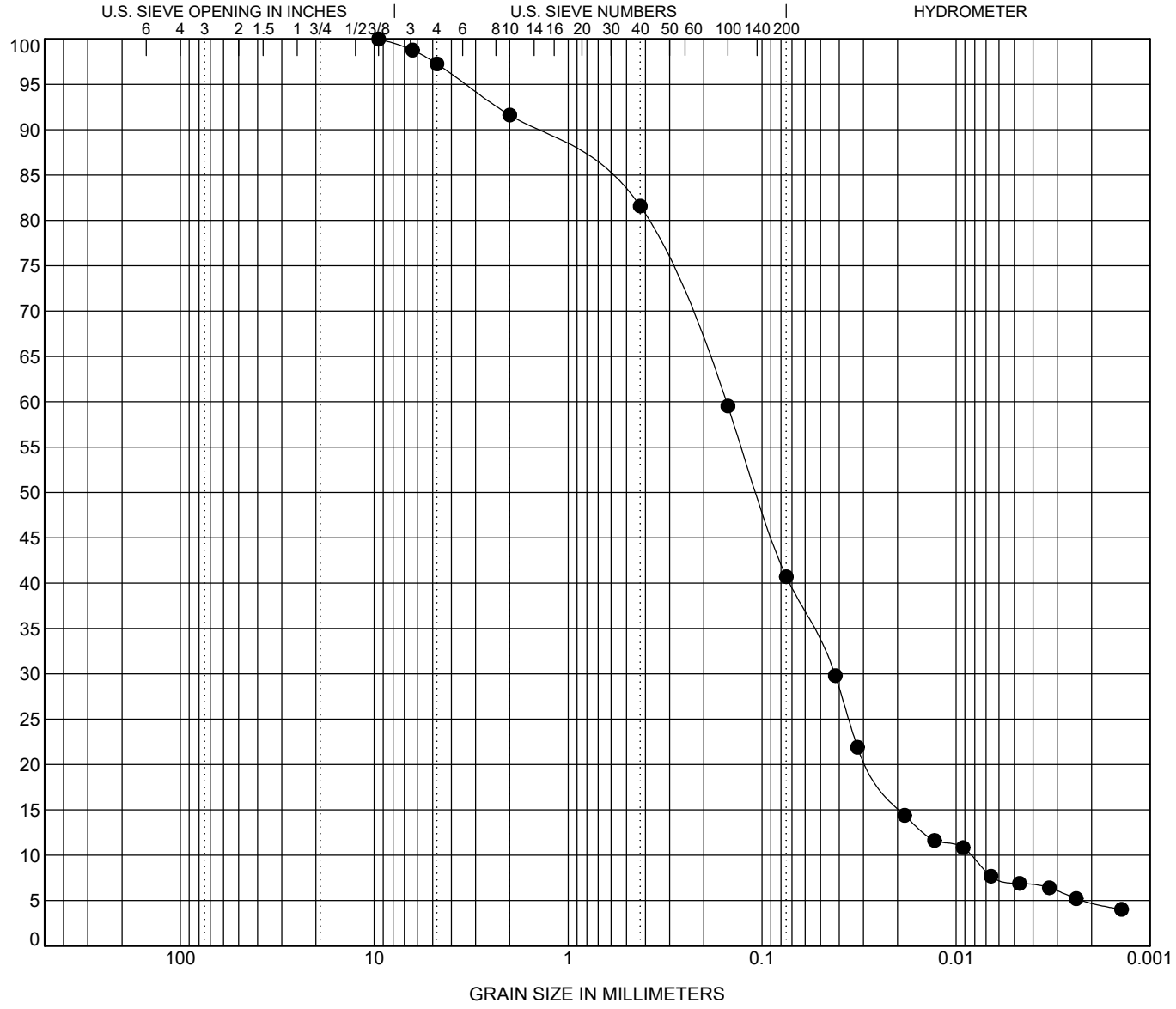
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819-11	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.39**	**18.20**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819-11	1.0	**9.5**	**0.153**	**0.042**	**0.008**	**2.7**	**56.6**	**33.7**	**7.0**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
				1/2"	3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819-12				100	98.4	97.2	95.7	90.3	81.0	59.1	40.7

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

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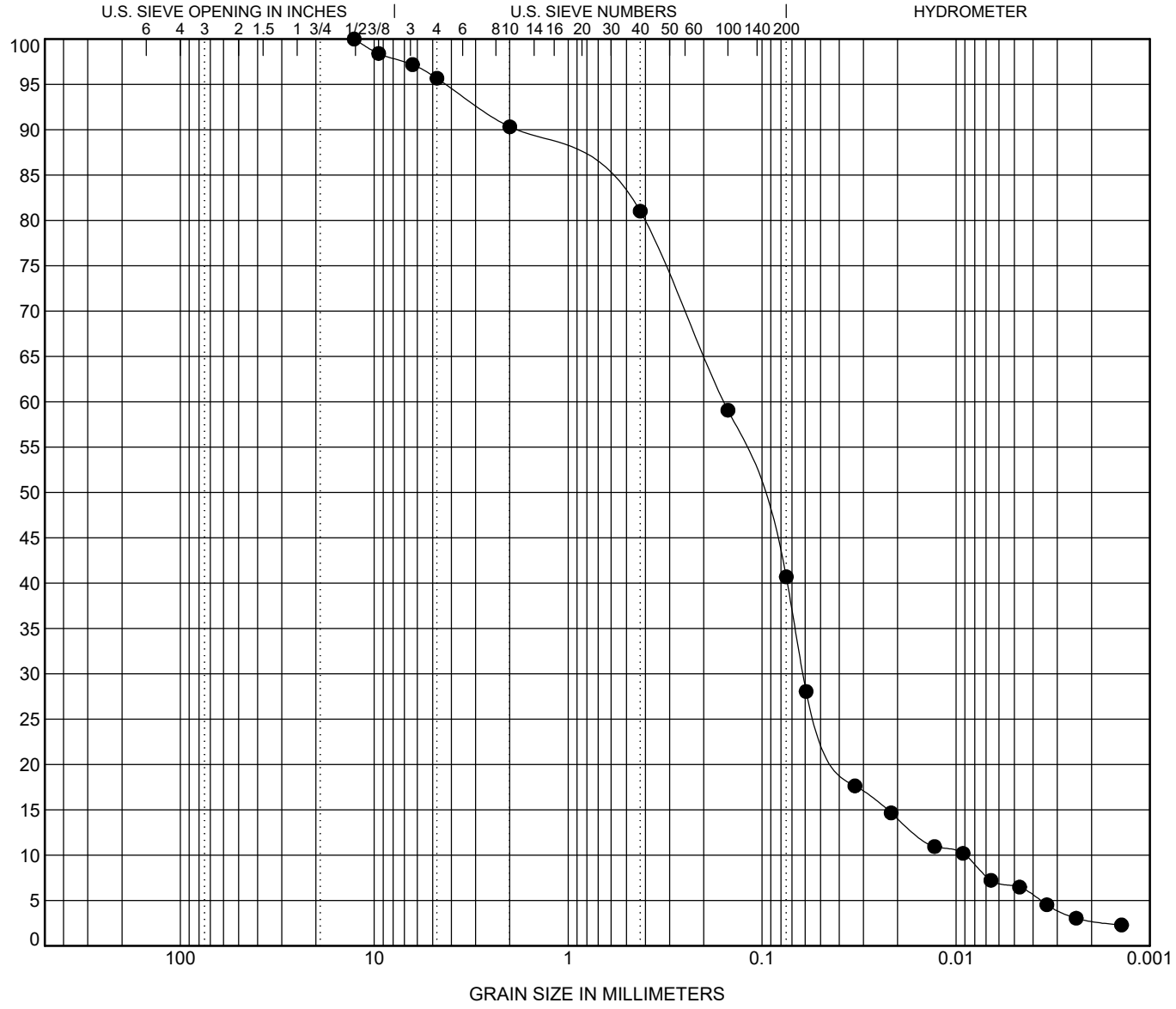
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING **PROJECT NAME** WASTEBEDS 1-8

PROJECT NUMBER 2019-010 **PROJECT LOCATION** GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819-12	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**2.68**	**17.43**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819-12	1.0	**12.7**	**0.157**	**0.061**	**0.009**	**4.3**	**55.0**	**34.1**	**6.6**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819A-01					100	99.6	97.7	91.1	80.2	60.4	40.0

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH
ENTIRE SAMPLE X
MASS RETAINED ON #200 ONLY
NOT PREWASHED

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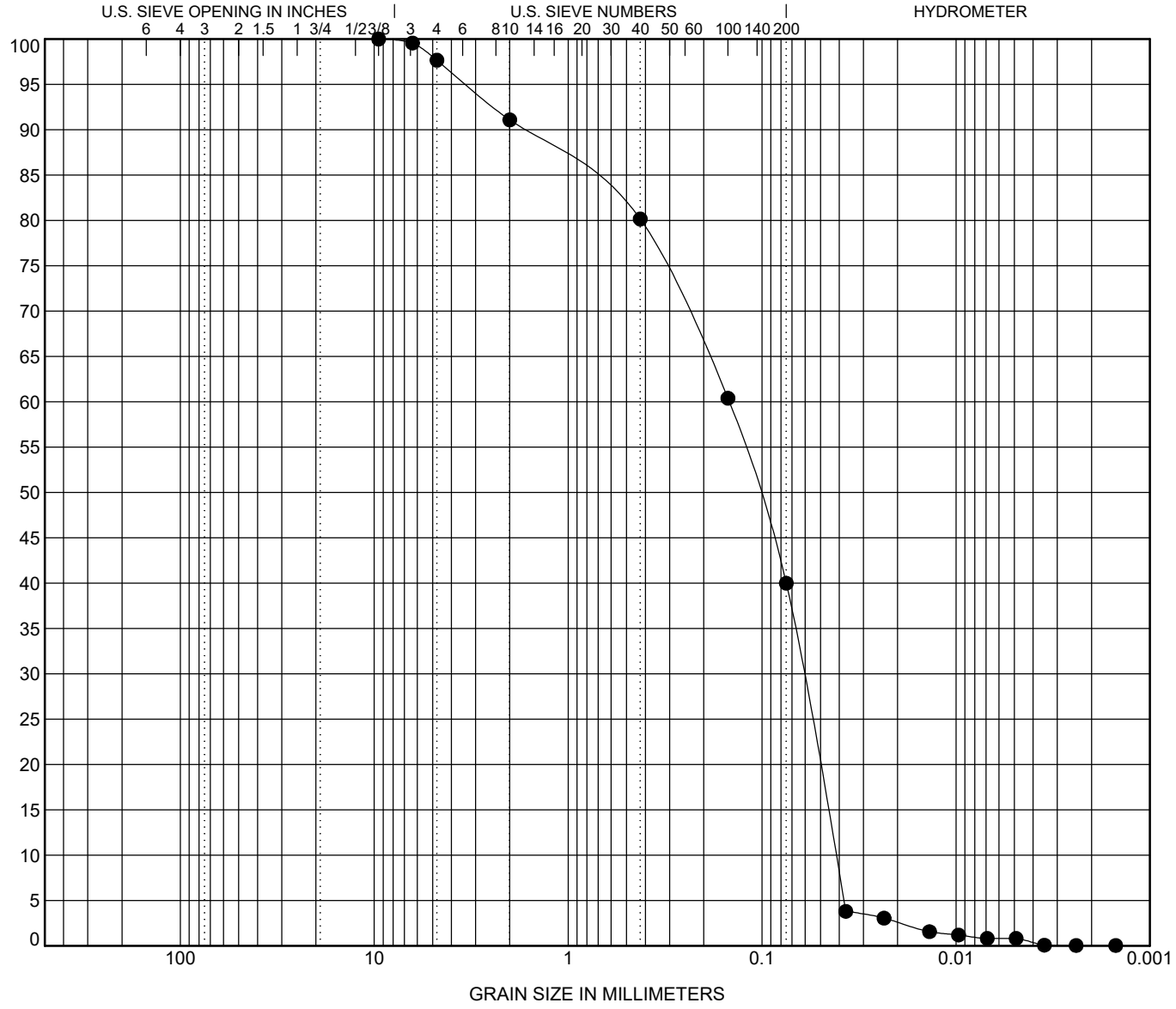
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819A-01**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**0.62**	**3.54**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819A-01**	**1.0**	**9.5**	**0.148**	**0.062**	**0.042**	**2.3**	**57.7**	**39.2**	**0.8**
⊠									
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GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819A-02					100	99.7	98.0	92.0	81.6	57.4	38.1

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

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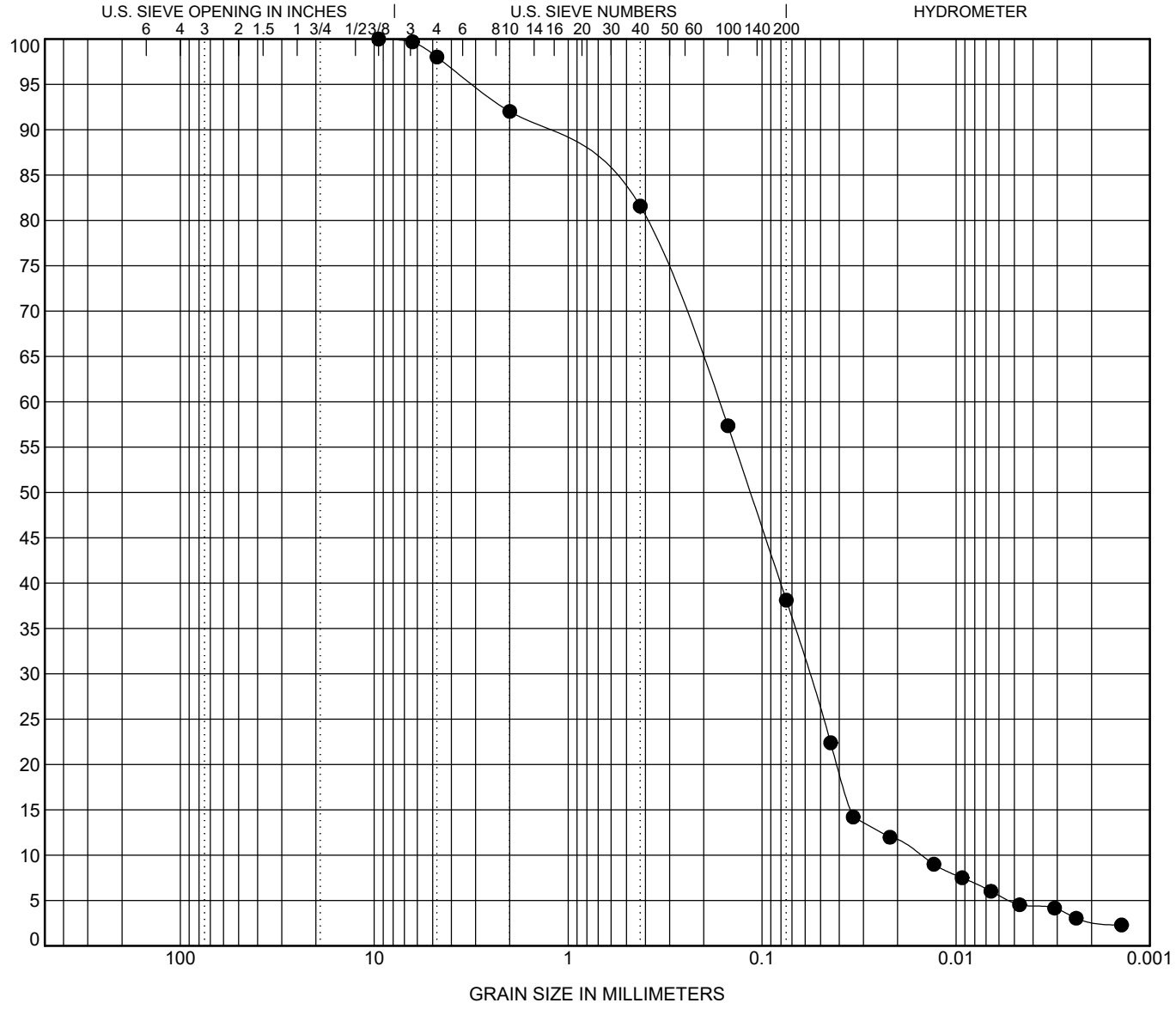
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819A-02**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.25**	**10.85**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819A-02**	**1.0**	**9.5**	**0.168**	**0.057**	**0.015**	**2.0**	**59.9**	**33.3**	**4.8**
⊠									
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⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819A-03					100	98.3	96.2	90.6	78.0	59.2	39.5

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH
ENTIRE SAMPLE: X
MASS RETAINED ON #200 ONLY:
NOT PREWASHED:

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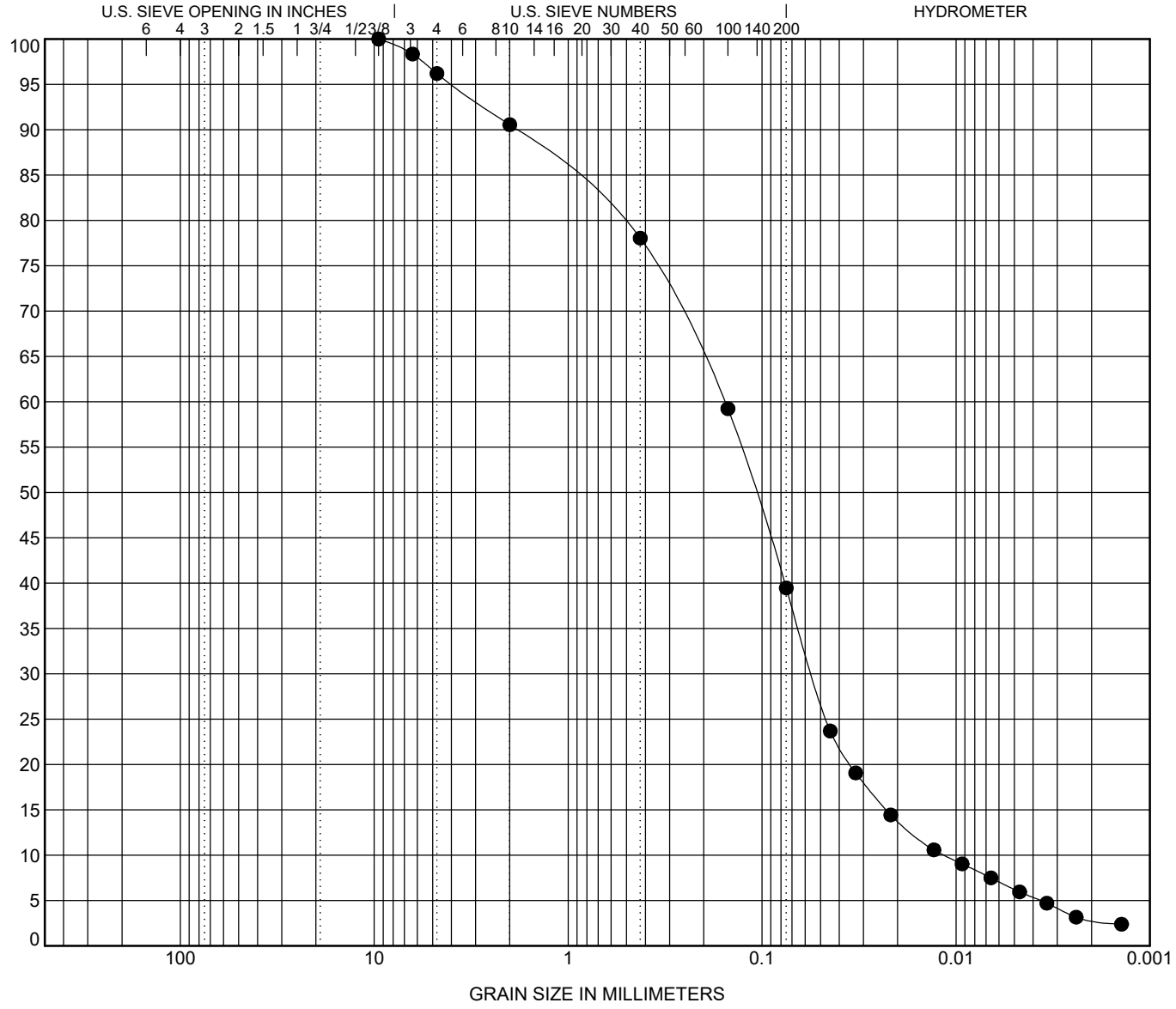
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● WB18-011819A-03	1.0	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.68**	**13.65**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● WB18-011819A-03	1.0	**9.5**	**0.156**	**0.055**	**0.011**	**3.8**	**56.7**	**33.2**	**6.2**
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⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:11 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819A-04					100	99.7	98.9	94.6	85.1	61.7	40.7

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

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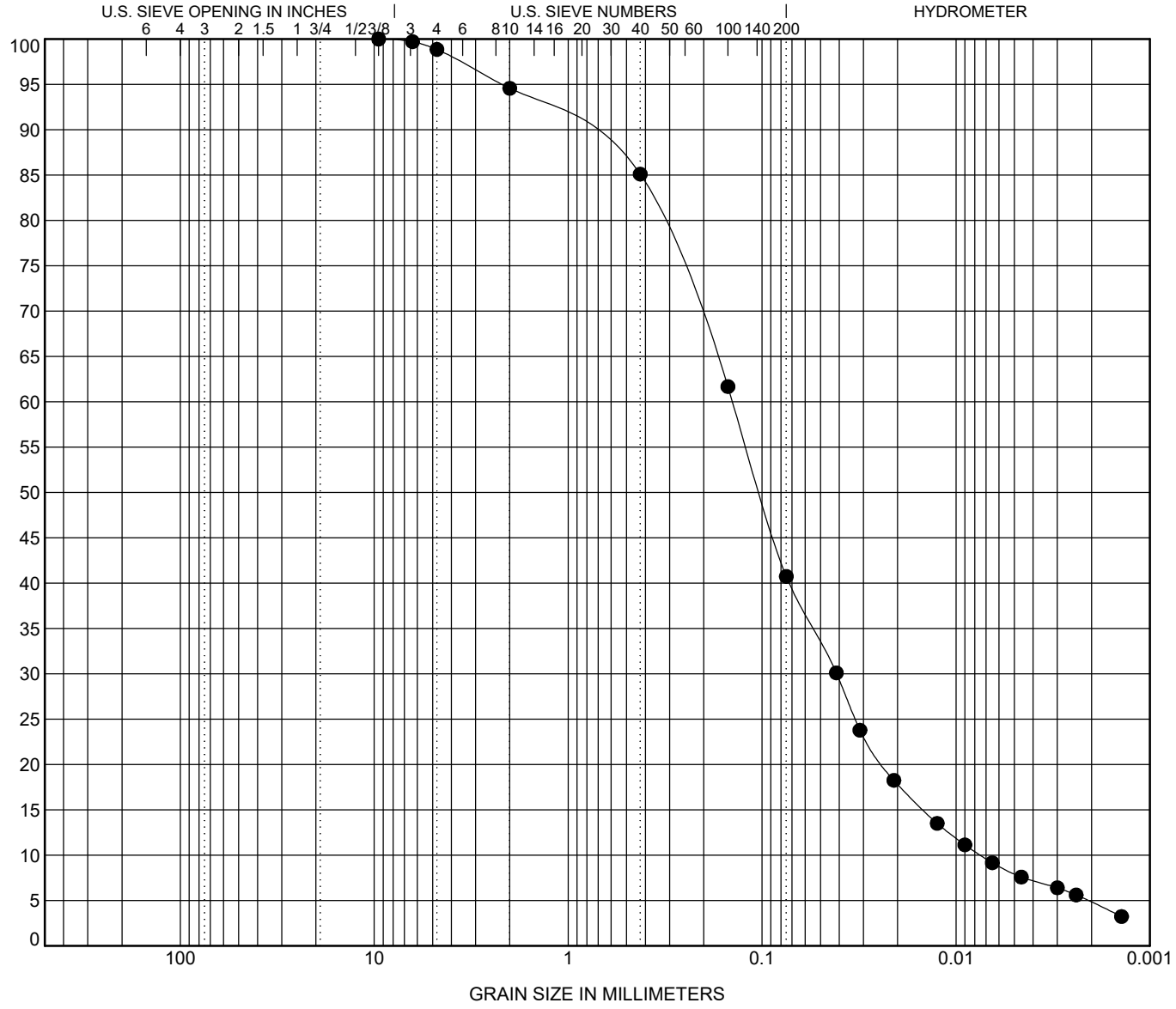
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING **PROJECT NAME** WASTEBEDS 1-8

PROJECT NUMBER 2019-010 **PROJECT LOCATION** GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819A-04**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.60**	**19.03**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819A-04**	**1.0**	**9.5**	**0.142**	**0.041**	**0.007**	**1.1**	**58.1**	**32.8**	**8.0**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:12 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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Syracuse, NY 13209
Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2019-010
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819A-05					100	99.8	98.9	94.5	83.4	62.8	41.6

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH
ENTIRE SAMPLE: X
MASS RETAINED ON #200 ONLY:
NOT PREWASHED:

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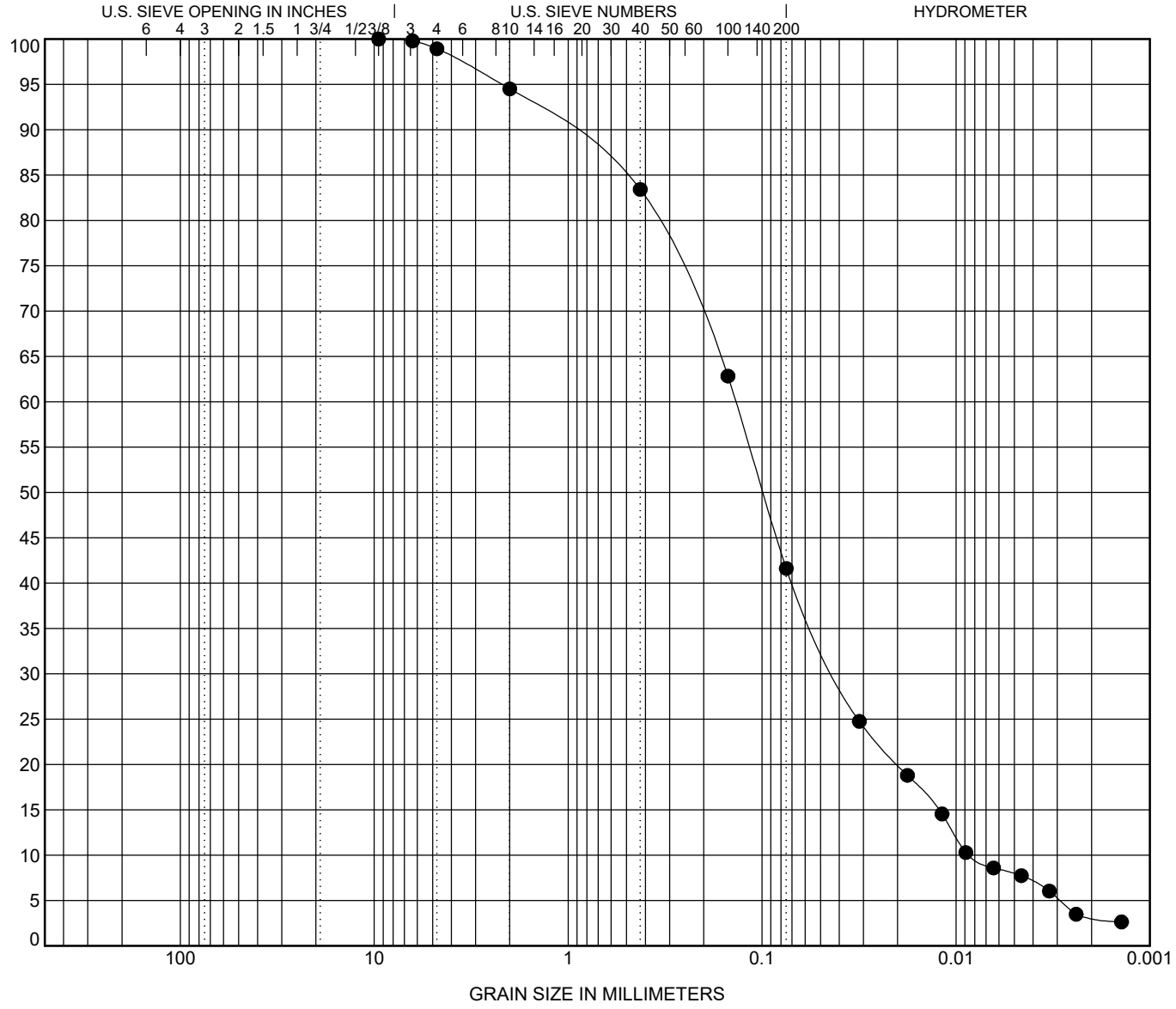
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819A-05**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.48**	**16.26**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819A-05**	**1.0**	**9.5**	**0.137**	**0.041**	**0.008**	**1.1**	**57.3**	**33.7**	**8.0**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:12 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
					3/8"	1/4"	#4	#10	#40	#100	#200
WB18-011819A-06					100	99.0	97.4	92.2	81.3	58.3	36.9

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

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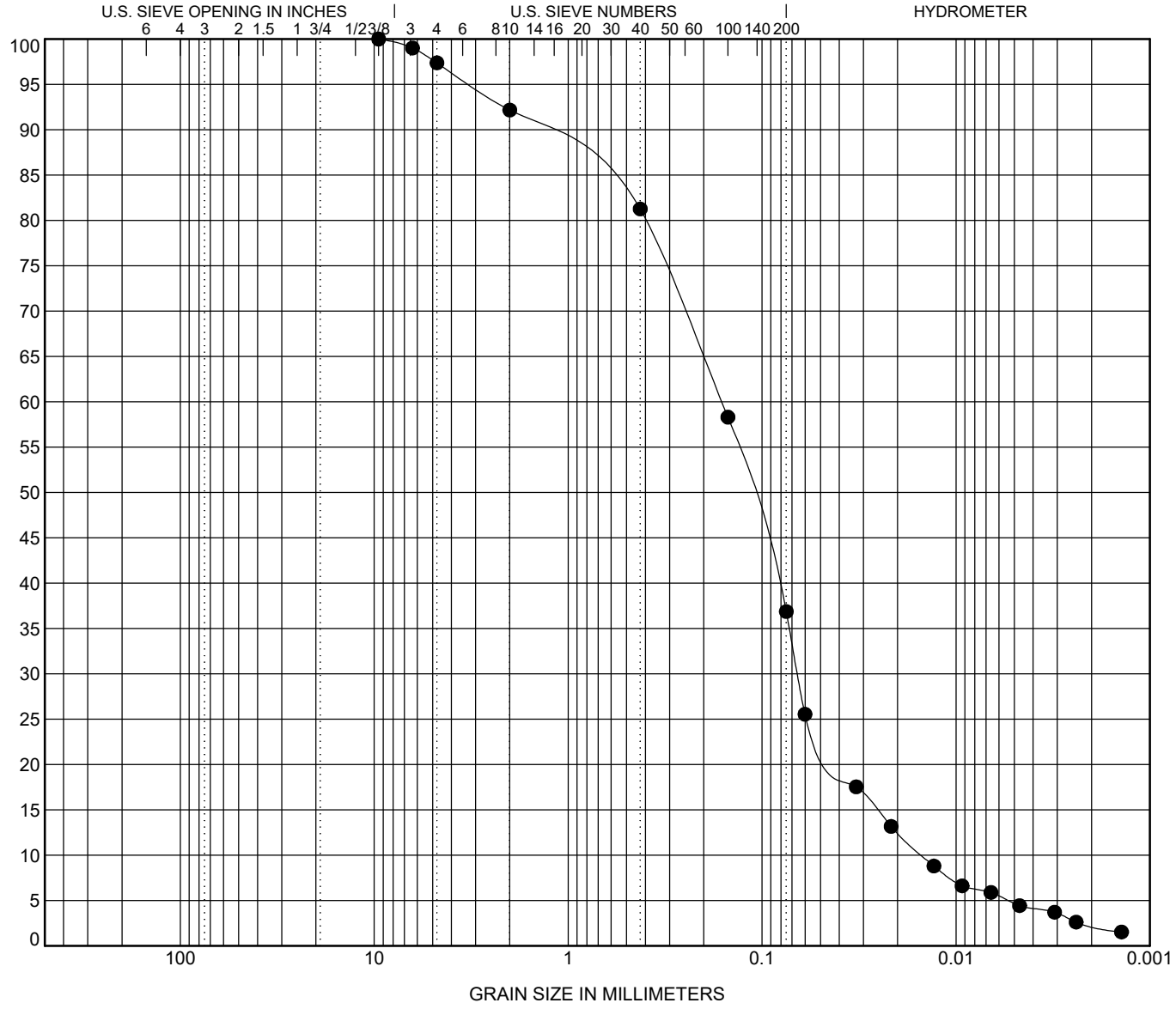
GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819A-06**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**1.78**	**10.84**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819A-06**	**1.0**	**9.5**	**0.162**	**0.066**	**0.015**	**2.6**	**60.5**	**32.2**	**4.7**
⊠									
▲									
★									
⊙									

GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:12 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

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Telephone: 315-638-2706

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Number: 2019-010
Project Name: Wastebed 1-8
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
						1/4"	#4	#10	#40	#100	#200
WB18-011819A-07						100	99.5	95.0	83.5	62.3	40.0

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

REMARKS:

PREWASH	
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

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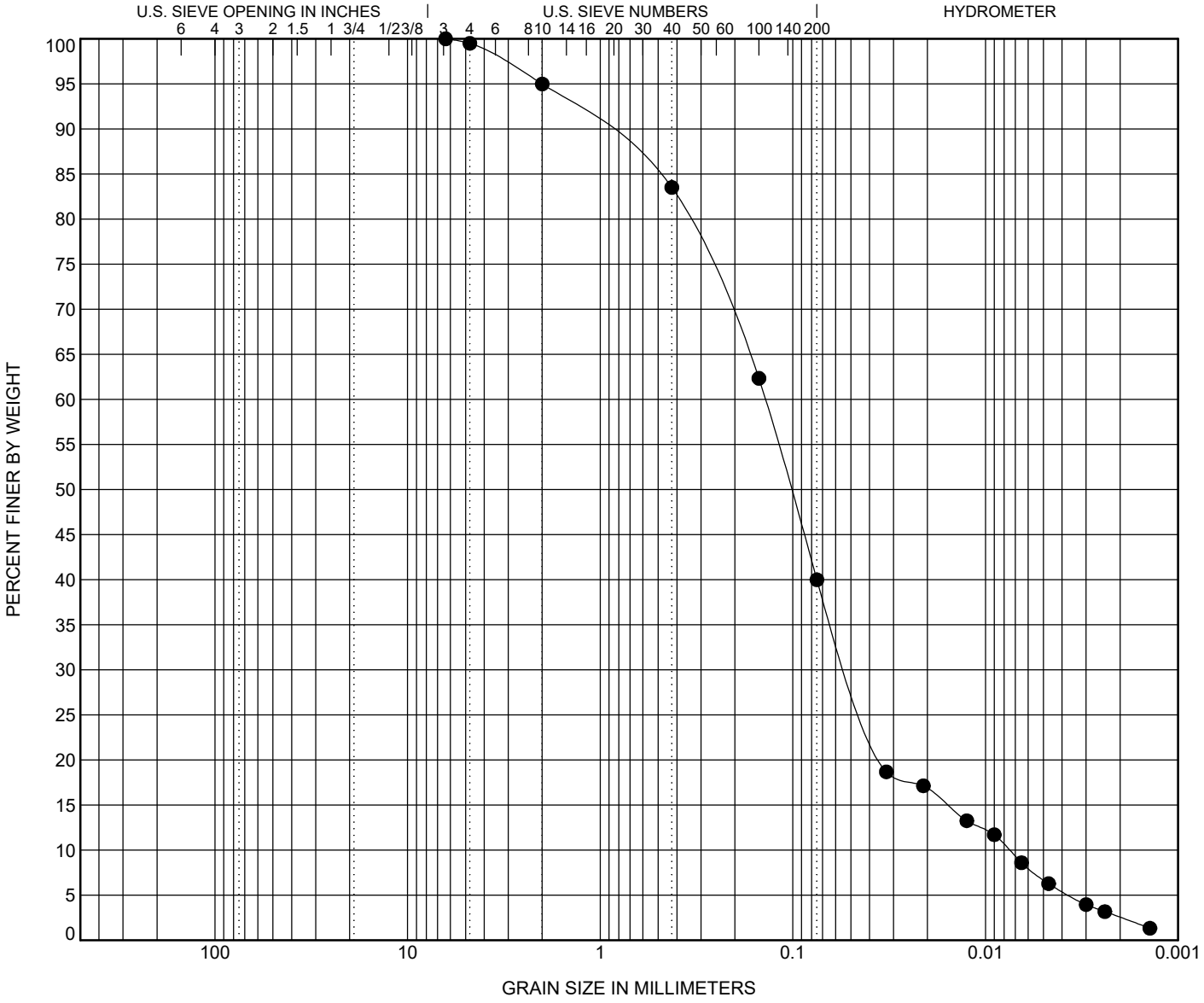
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBEDS 1-8
PROJECT NUMBER 2019-010
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-011819A-07**	**1.0**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**	**2.46**	**18.54**
⊠							
▲							
★							
⊙							

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-011819A-07**	**1.0**	**6.35**	**0.14**	**0.051**	**0.008**	**0.5**	**59.5**	**33.3**	**6.7**
⊠									
▲									
★									
⊙									

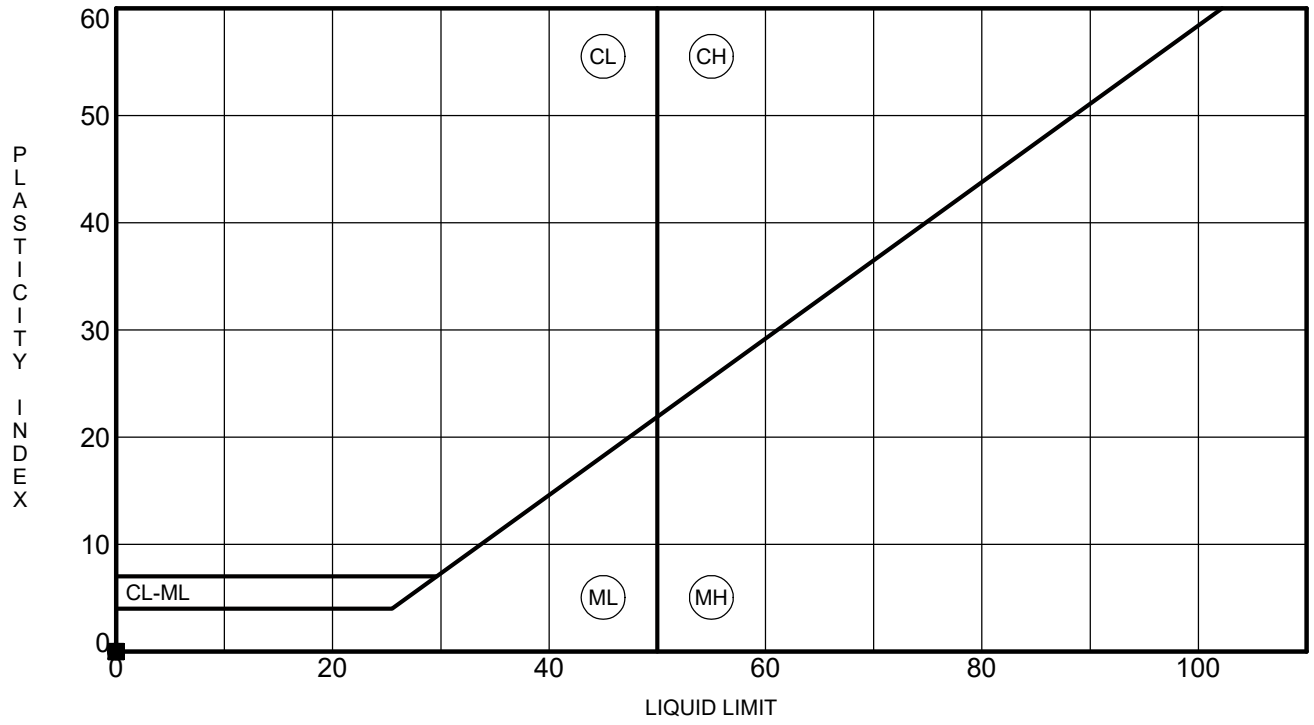
GRAIN SIZE - GINT STD US LAB.GDT - 1/25/19 11:12 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

ATTERBERG LIMITS' RESULTS

CLIENT O'BRIEN & GERE ENGINEERING **PROJECT NAME** WASTEBEDS 1-8

PROJECT NUMBER 2019-010 **PROJECT LOCATION** GEDDES, NY



	Specimen Identification		LL	PL	PI	Fines	Classification
●	WB18-011819-01	1.0	NP	NP	NP	42	SILTY SAND (SM)
⊠	WB18-011819-02	1.0	NP	NP	NP	38	SILTY SAND (SM)
▲	WB18-011819-03	1.0	NP	NP	NP	31	SILTY SAND (SM)
★	WB18-011819-04	1.0	NP	NP	NP	43	SILTY SAND (SM)
⊙	WB18-011819-05	1.0	NP	NP	NP	41	SILTY SAND (SM)
✿	WB18-011819-06	1.0	NP	NP	NP	41	SILTY SAND (SM)
○	WB18-011819-07	1.0	NP	NP	NP	39	SILTY SAND (SM)
△	WB18-011819-08	1.0	NP	NP	NP	45	SILTY SAND (SM)
⊗	WB18-011819-09	1.0	NP	NP	NP	34	SILTY SAND (SM)
⊕	WB18-011819-10	1.0	NP	NP	NP	40	SILTY SAND (SM)
□	WB18-011819-11	1.0	NP	NP	NP	41	SILTY SAND (SM)
⊛	WB18-011819-12	1.0	NP	NP	NP	41	SILTY SAND (SM)
◕	WB18-011819A-01	1.0	NP	NP	NP	40	SILTY SAND (SM)
☆	WB18-011819A-02	1.0	NP	NP	NP	38	SILTY SAND (SM)
⊠	WB18-011819A-03	1.0	NP	NP	NP	39	SILTY SAND (SM)
■	WB18-011819A-04	1.0	NP	NP	NP	41	SILTY SAND (SM)
◆	WB18-011819A-05	1.0	NP	NP	NP	42	SILTY SAND (SM)
◇	WB18-011819A-06	1.0	NP	NP	NP	37	SILTY SAND (SM)
×	WB18-011819A-07	1.0	NP	NP	NP	40	SILTY SAND (SM)

ATTERBERG LIMITS - GINT STD US LAB.GDT - 1/25/19 11:12 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2019-010 OBG LABORATORY TESTING.GPJ

Kenney Geotechnical Engineering Services, PLLC

Office: 6901 Herman Road, Syracuse, N.Y. 13209
Mail: P.O. Box 117 Warners, N.Y. 13209
Phone: (315) 638-2706

pH Testing

Client:	O'Brien & Gere Engineering	**Project Name:**	Wastebed 1-8
Project Number:	2019-010	**Project Location:**	Geddes, New York

TEST METHOD: ASTM D4972; METHOD A & B

PERFORMED BY: D. Allen, E.I.T. CHECKED BY: C. Kenney, P.E.

Sample ID	pH of Soil (in water)
WB18-011819-01	6.3
WB18-011819-02	6.3
WB18-011819-03	6.3
WB18-011819-04	6.3
WB18-011819-05	6.3
WB18-011819-06	6.4
WB18-011819-07	6.6
WB18-011819-08	6.5
WB18-011819-09	6.2
WB18-011819-10	6.3
WB18-011819-11	6.4
WB18-011819-12	6.6
WB18-011819A-01	6.5
WB18-011819A-02	6.7
WB18-011819A-03	6.6
WB18-011819A-04	6.3
WB18-011819A-05	6.2
WB18-011819A-06	6.8
WB18-011819A-07	6.8

Kenney Geotechnical Engineering Services, PLLC

Office: 6901 Herman Road, Syracuse, N.Y. 13209
Mail: P.O. Box 117 Warners, N.Y. 13209
Phone: (315) 638-2706

Organic Content Testing

Client:	O'Brien & Gere Engineering	**Project Name:**	Wastebed 1-8
Project Number:	2019-010	**Project Location:**	Geddes, New York

TEST METHOD: ASTM D5268

PERFORMED BY: D. Allen, E.I.T. CHECKED BY: C. Kenney, P.E.

Sample ID	Organic Content (% by mass)
WB18-011819-01	4.4
WB18-011819-02	4.3
WB18-011819-03	5.5
WB18-011819-04	5.5
WB18-011819-05	5.3
WB18-011819-06	5.2
WB18-011819-07	5.3
WB18-011819-08	4.7
WB18-011819-09	4.0
WB18-011819-10	5.2
WB18-011819-11	4.2
WB18-011819-12	3.6
WB18-011819A-01	5.3
WB18-011819A-02	4.4
WB18-011819A-03	4.3
WB18-011819A-04	5.2
WB18-011819A-05	5.4
WB18-011819A-06	4.3
WB18-011819A-07	5.4

Kenney Geotechnical Engineering Services, PLLC

Office: 6901 Herman Road, Syracuse, N.Y. 13209
Mail: P.O. Box 117 Warners, N.Y. 13209
Phone: (315) 638-2706

Moisture Content Testing

Client:	O'Brien & Gere Engineering	**Project Name:**	Wastebed 1-8
Project Number:	2019-010	**Project Location:**	Geddes, New York

TEST METHOD: ASTM D2974 (via D5268)

PERFORMED BY: D. Allen, E.I.T. CHECKED BY: C. Kenney, P.E.

Sample ID	Moisture Content (%)
WB18-011819-01	17.8
WB18-011819-02	19.3
WB18-011819-03	18.9
WB18-011819-04	17.5
WB18-011819-05	21.2
WB18-011819-06	16.1
WB18-011819-07	23.2
WB18-011819-08	20.6
WB18-011819-09	14.6
WB18-011819-10	22.3
WB18-011819-11	12.0
WB18-011819-12	19.2
WB18-011819A-01	19.6
WB18-011819A-02	17.7
WB18-011819A-03	19.2
WB18-011819A-04	22.1
WB18-011819A-05	23.3
WB18-011819A-06	17.9
WB18-011819A-07	23.7

Kenney Geotechnical Engineering Services, PLLC
Office: 6901 Herman Road, Syracuse, NY 13209
Mail: P.O. Box 117, Warners, N.Y. 13164
Phone: (315) 638-2706 Fax: (315) 638-1544

Kenney Geotechnical Services

GEOTECHNICAL TESTING RESULTS

December 21, 2018

O'Brien & Gere Engineering
333 West Washington Street
Syracuse, NY 13221
<via email>

Attn: Reagan Cuddy

Re.: Laboratory Soils Testing
Wastebed 1-8 (WB18-121318)
Geddes, NY

Dear Reagan,

Pursuant to your request, Kenney Geotechnical Engineering Services, PLLC has completed the laboratory testing for the referenced project. Testing included Particle Size Analysis (ASTM D422), Atterberg Limits (ASTM D4318), pH Content (ASTM D4972), and Organic Content (ASTM D5268). The detailed laboratory results are attached.

Thank you for the opportunity to be of service, and please contact me at your convenience with any questions you may have.

Respectfully submitted,
KENNEY GEOTECHNICAL ENGINEERING SERVICES, PLLC

Christopher M. Kenney, P.E.

Kenney Geotechnical Engineering Services, PLLC
Office: 6901 Herman Road, Syracuse, NY 13209
Mail: P.O. Box 117, Warners, N.Y. 13164
Phone: (315) 638-2706 Fax: (315) 638-1544

Kenney Geotechnical Services

Sample Identification

Field/Laboratory Sample ID

WB18-121318-01

Kenney Geotechnical Services, PLLC
6901 Herman Road
Syracuse, NY 13209
Telephone: 315-638-2706
Fax: 315-638-1544

SIEVE ANALYSIS OF SOIL/AGGREGATE

TEST METHOD: ASTM D422, D1140

Client: O'Brien & Gere Engineering
Project Name: Wastebed 1-8
Project Number: 2018-141
Project Location: Geddes, New York

Sample ID	SIEVE SIZE - PERCENT PASSING SIEVE										
			3/4"	1/2"	3/8"	1/4"	#4	#10	#40	#100	#200
WBB-101918-01			100	99.5	98.5	95.9	92.5	87.3	76.3	52.4	34.4

PERFORMED BY: D. Allen, E.I.T.
CHECKED BY: C. Kenney, P.E.

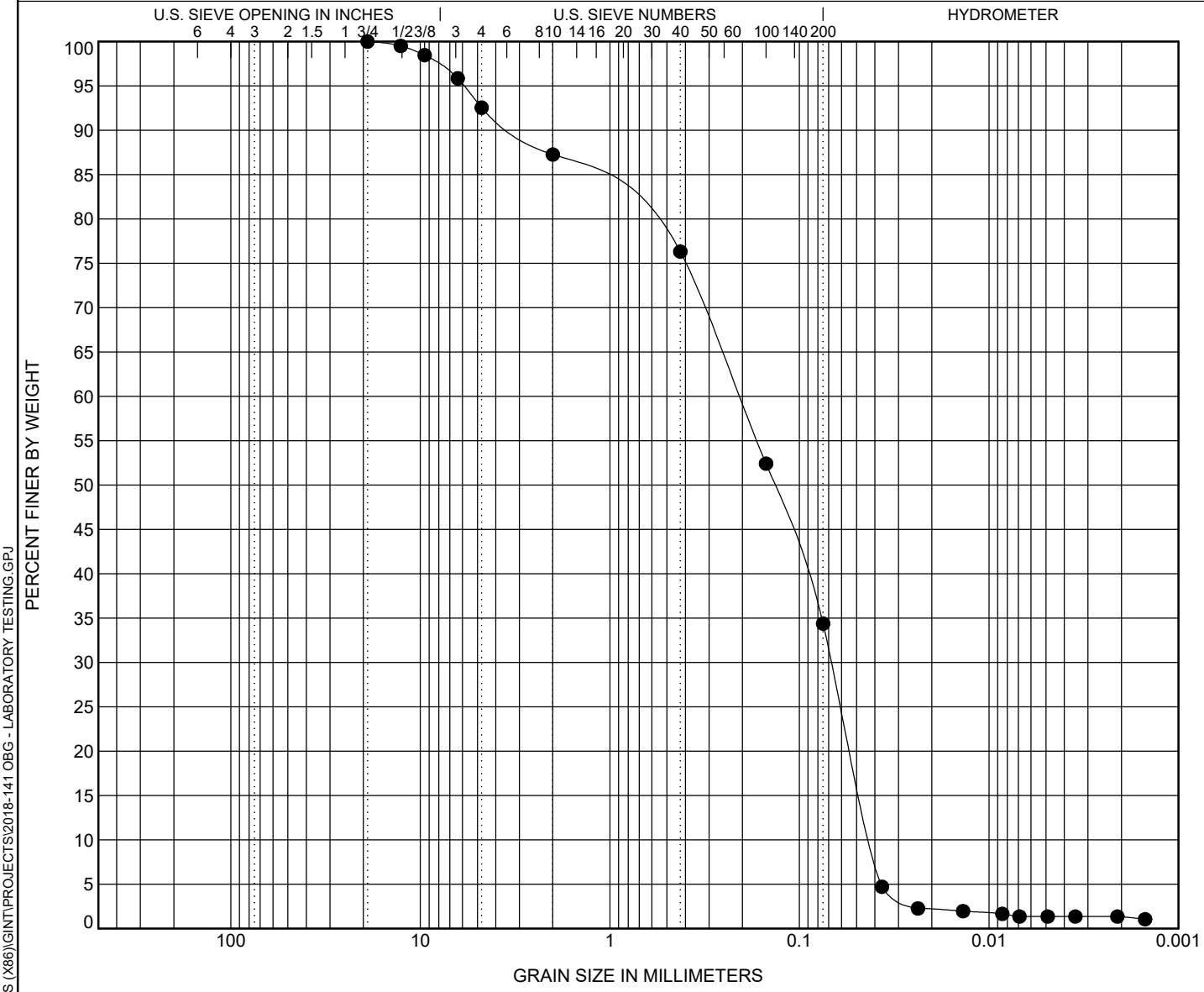
REMARKS:

	PREWASH
ENTIRE SAMPLE	X
MASS RETAINED ON #200 ONLY	
NOT PREWASHED	

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

GRAIN SIZE DISTRIBUTION

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBED 1-8
PROJECT NUMBER 2018-141
PROJECT LOCATION GEDDES, NY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● **WB18-121318-01**	**1.0**	**SILTY SAND(SM)**	**NP**	**NP**	**NP**	**0.52**	**5.01**

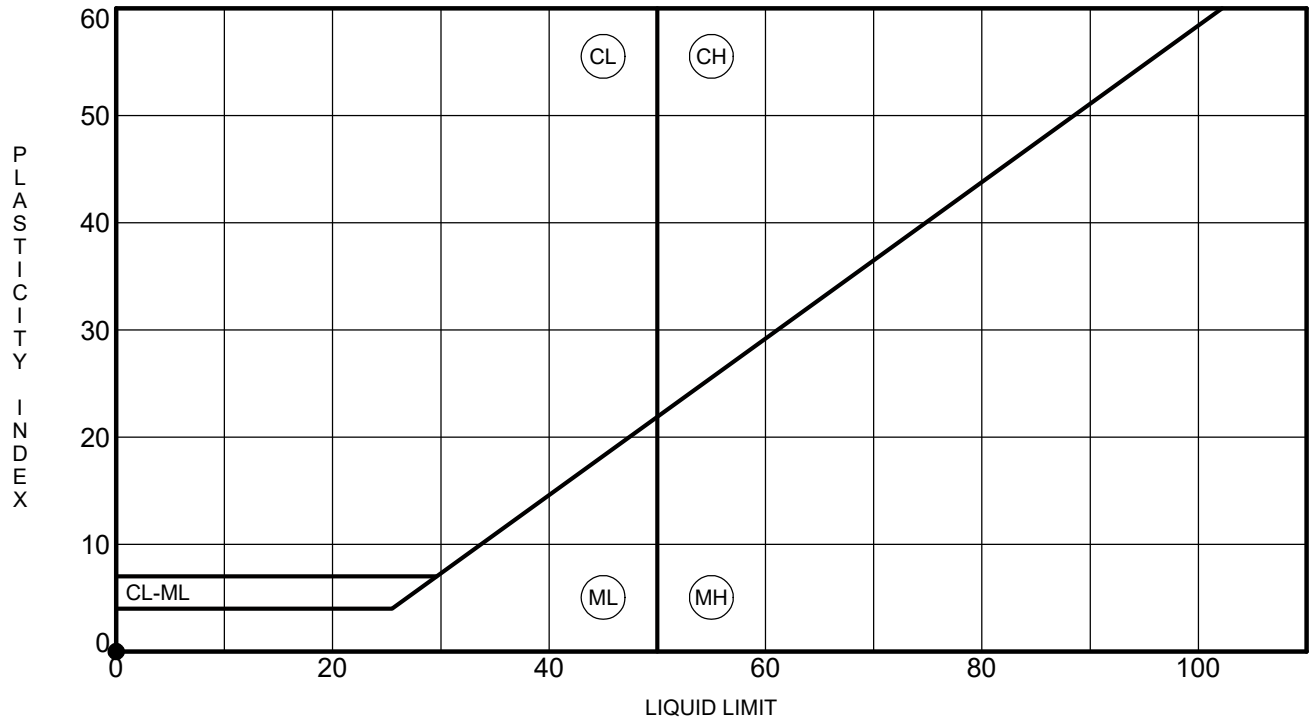
Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **WB18-121318-01**	**1.0**	**19**	**0.209**	**0.067**	**0.042**	**7.5**	**58.2**	**33.0**	**1.4**

GRAIN SIZE - GINT STD US LAB.GDT - 12/21/18 15:19 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2018-141 OBG - LABORATORY TESTING.GPJ

Kenney Geotechnical Engineering Services, PLLC
6901 Herman Road
Syracuse, NY 13209
315-638-2706

ATTERBERG LIMITS' RESULTS

CLIENT O'BRIEN & GERE ENGINEERING
PROJECT NAME WASTEBED 1-8
PROJECT NUMBER 2018-141
PROJECT LOCATION GEDDES, NY



	Specimen Identification		LL	PL	PI	Fines	Classification
●	**WB18-121318-01**	**1.0**	**NP**	**NP**	**NP**	**34**	**SILTY SAND(SM)**

ATTERBERG LIMITS - GINT STD US LAB.GDT - 12/21/18 15:20 - C:\PROGRAM FILES (X86)\GINT\PROJECTS\2018-141 OBG - LABORATORY TESTING.GPJ

Kenney Geotechnical Engineering Services, PLLC

Office: 6901 Herman Road, Syracuse, N.Y. 13209
Mail: P.O. Box 117 Warners, N.Y. 13209
Phone: (315) 638-2706

pH Testing

Client:	O'Brien & Gere Engineering	**Project Name:**	Wastebed 1-8
Project Number:	2018-141	**Project Location:**	Geddes, New York

TEST METHOD: ASTM D4972; METHOD A & B

PERFORMED BY:	D. Allen, E.I.T.	CHECKED BY:	C. Kenney, P.E.

Sample ID	pH of Soil (in water)
WB18-121318-01	6.8

Kenney Geotechnical Engineering Services, PLLC

Office: 6901 Herman Road, Syracuse, N.Y. 13209
Mail: P.O. Box 117 Warners, N.Y. 13209
Phone: (315) 638-2706 Fax: (315) 638-1544

Organic Content Testing

Client:	O'Brien & Gere Engineering	**Project Name:**	Wastebed 1-8
Project Number:	2018-141	**Project Location:**	Geddes, New York

TEST METHOD: ASTM D5268

PERFORMED BY: D. Allen, E.I.T. CHECKED BY: C. Kenney, P.E.

Sample ID	Organic Content (% by mass)
WB18-121318-01	4.9

Kenney Geotechnical Engineering Services, PLLC

Office: 6901 Herman Road, Syracuse, N.Y. 13209
Mail: P.O. Box 117 Warners, N.Y. 13209
Phone: (315) 638-2706 Fax: (315) 638-1544

Moisture Content Testing

Client:	O'Brien & Gere Engineering	**Project Name:**	Wastebed 1-8
Project Number:	2018-141	**Project Location:**	Geddes, New York

TEST METHOD: ASTM D2974 (via D5268)

PERFORMED BY: D. Allen, E.I.T. CHECKED BY: C. Kenney, P.E.

Sample ID	Moisture Content (%)
WB18-121318-01	21.4

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-85914-1
Client Project/Site: Honeywell 9-15 Closure Sampling

For:
O'Brien & Gere Inc of North America
333 West Washington St.
PO BOX 4873
East Syracuse, New York 13221

Attn: Charles Sharpe

Authorized for release by:
1/31/2019 9:07:23 AM

Jill Colussy, Project Manager I
(412)963-2444
jill.colussy@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

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Receipt Checklists 70

Job ID: 180-85914-1

Laboratory: TestAmerica Pittsburgh

Narrative

CASE NARRATIVE

Client: O'Brien & Gere Inc of North America

Project: Honeywell 9-15 Closure Sampling

Report Number: 180-85914-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 01/19/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.0 C.

VOLATILES

Internal standard (ISTD) responses for TBA-d9 for the following samples were outside acceptance criteria: (MB 180-268406/8) and (180-85928-E-1). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

The laboratory control standard for batch 180-268637 recovered high and outside of the control limits for 1,1,2,2-Tetrachloroethane and 1,2-Dichlorobenzene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

The continuing calibration verification (CCV) analyzed in batch 180-268318 was outside the method criteria for the following analyte(s): 1,4-Dioxane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 180-268406 was outside the method criteria for the following analyte(s): 1,2-Dibromo-3-Chloropropane, 1,4-Dioxane, 1,2,4-Trichlorobenzene, 4-Methyl-2-pentanone, Bromomethane, Chloromethane, Chloroethane and Dichloro-difluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 180-268406 was outside the method criteria for the following analyte(s): N-Propylbenzene, sec-Butylbenzene and tert-Butylbenzene.. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) analyzed in batch 180-268637 was outside the method criteria for the following analyte(s): 1,4-Dioxane, Bromomethane, Carbon Tetrachloride, Chloroethane, Dichlorodifluoro-Methane, and Trichlorofluoromethane. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Job ID: 180-85914-1 (Continued)

Laboratory: TestAmerica Pittsburgh (Continued)

SEMIVOLATILES

The matrix spike and matrix spike duplicate of sample SB915-011819-02 (180-85914-2) recovered outside of the control limits for Benzaldehyde. The relative percent difference between the matrix spike and the matrix spike duplicate was outside of the control limits for Benzaldehyde.

The continuing calibration verification (CCV) analyzed in batch 180-268685 was outside the method criteria for the following analyte(s): 2,2'-oxybis[1-chloropropane] and 4-Nitroaniline are >20% high. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

PESTICIDES

The continuing calibration verification (CCV) associated with batch 268690 recovered above the upper control limit for 4,4'-DDD and Methoxychlor on MR-1 column only. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

PCBS

The relative percent difference between the matrix spike and the matrix spike duplicate of sample SB915-011819-02 (180-85914-2) was outside of the control limits for PCB-1260.

HERBICIDES

The relative percent difference between the matrix spike and the matrix spike duplicate of sample SB915-011819-02 (180-85914-2) was outside of the control limits for PCB-1260.

The continuing calibration verification (CCV) associated with batch 180-268875 recovered outside acceptance criteria, low biased, for 2,4,5-T. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

Surrogate recovery for the following was outside the upper control limit: (CCVL 180-268875/20). The samples associated with this CCVL did not contain any target analytes, and recoveries for calibration analytes were good. All data was reported.

METALS

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GENERAL CHEMISTRY

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Laboratory: TestAmerica Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11182	03-31-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Moisture
2540G		Solid	Percent Solids
EPA 8260C	5035	Solid	Cyclohexane

Sample Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-85914-1	SB915-011819-01	Solid	01/18/19 13:40	01/19/19 09:30
180-85914-2	SB915-011819-02	Solid	01/18/19 13:45	01/19/19 09:30
180-85914-3	SB915-011819-03	Solid	01/18/19 11:35	01/19/19 09:30
180-85914-4	SB915-011819-04	Solid	01/18/19 11:35	01/19/19 09:30
180-85914-5	SB915-011819-05	Solid	01/18/19 11:45	01/19/19 09:30
180-85914-6	SB915-011819-06	Solid	01/18/19 11:45	01/19/19 09:30
180-85914-7	SB915-011819-07	Solid	01/18/19 11:55	01/19/19 09:30
180-85914-8	SB915-011819-08	Solid	01/18/19 11:55	01/19/19 09:30
180-85914-9	SB915-011819-09	Water	01/18/19 00:00	01/19/19 09:30

Method Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Method	Method Description	Protocol	Laboratory
EPA 8260C	Volatile Organic Compounds by GC/MS	SW846	TAL PIT
EPA 8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL PIT
EPA 8081B	Organochlorine Pesticides (GC)	SW846	TAL PIT
EPA 8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL PIT
EPA 8151A	Herbicides (GC)	SW846	TAL PIT
EPA 6010C	Metals (ICP)	SW846	TAL PIT
EPA 7471B	Mercury (CVAA)	SW846	TAL PIT
2540G	SM 2540G	SM22	TAL PIT
EPA 7196A	Chromium, Hexavalent	SW846	TAL PIT
EPA 9014	Cyanide	SW846	TAL PIT
3050B	Preparation, Metals	SW846	TAL PIT
3060A	Alkaline Digestion (Chromium, Hexavalent)	SW846	TAL PIT
3541	Automated Soxhlet Extraction	SW846	TAL PIT
5030C	Purge and Trap	SW846	TAL PIT
5035	Closed System Purge and Trap	SW846	TAL PIT
7471B	Preparation, Mercury	SW846	TAL PIT
8151A	Extraction (Herbicides)	SW846	TAL PIT
9010C	Cyanide, Distillation	SW846	TAL PIT

Protocol References:

SM22 = Standard Methods For The Examination Of Water And Wastewater, 22nd Edition

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-01
Date Collected: 01/18/19 13:40
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 09:07	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SB915-011819-01
Date Collected: 01/18/19 13:40
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-1
Matrix: Solid
Percent Solids: 91.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.9498 g	5 mL	268324	01/21/19 06:00	KLG	TAL PIT
Total/NA	Analysis	EPA 8260C		1	5 mL	5 mL	268318	01/21/19 15:03	KLG	TAL PIT
	Instrument ID: CHHP3									

Client Sample ID: SB915-011819-02
Date Collected: 01/18/19 13:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 09:07	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SB915-011819-02
Date Collected: 01/18/19 13:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-2
Matrix: Solid
Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			15.0 g	5.0 mL	268506	01/23/19 04:15	BAP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	268786	01/25/19 17:11	SAB	TAL PIT
	Instrument ID: CH71									
Total/NA	Prep	3541			15.3 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8081B		1			268690	01/24/19 20:47	DFE	TAL PIT
	Instrument ID: CHGC17									
Total/NA	Prep	3541			15.3 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			268695	01/24/19 15:46	DFE	TAL PIT
	Instrument ID: CHGC10									
Total/NA	Prep	8151A			10.0 g	40.0 mL	268720	01/24/19 10:20	CBY	TAL PIT
Total/NA	Analysis	EPA 8151A		1			268875	01/28/19 13:13	JBF	TAL PIT
	Instrument ID: CGC1									
Total/NA	Prep	3050B			0.99 g	100 mL	268387	01/21/19 16:09	NAM	TAL PIT
Total/NA	Analysis	EPA 6010C		1			268567	01/23/19 08:49	RJG	TAL PIT
	Instrument ID: C									
Total/NA	Prep	7471B			0.62 g	100 mL	268615	01/23/19 14:40	KA	TAL PIT
Total/NA	Analysis	EPA 7471B		1			268809	01/25/19 13:10	KA	TAL PIT
	Instrument ID: HGZ									

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-02
Date Collected: 01/18/19 13:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-2
Matrix: Solid
Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.55 g	100 mL	268721	01/24/19 14:02	SES	TAL PIT
Total/NA	Analysis	EPA 7196A		1	25 mL	25 mL	268806	01/25/19 14:52	SES	TAL PIT
	Instrument ID: GEN10S									
Total/NA	Prep	9010C			1.03 g	50 mL	268555	01/23/19 12:10	JAS	TAL PIT
Total/NA	Analysis	EPA 9014		1			268692	01/24/19 09:35	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: SB915-011819-03
Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 09:07	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SB915-011819-03
Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-3
Matrix: Solid
Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.0175 g	5 mL	268324	01/21/19 06:00	KLG	TAL PIT
Total/NA	Analysis	EPA 8260C		1	5 mL	5 mL	268318	01/21/19 15:26	KLG	TAL PIT
	Instrument ID: CHHP3									

Client Sample ID: SB915-011819-04
Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 11:13	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SB915-011819-04
Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-4
Matrix: Solid
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			15.1 g	5.0 mL	268506	01/23/19 04:15	BAP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	268786	01/25/19 18:31	SAB	TAL PIT
	Instrument ID: CH71									
Total/NA	Prep	3541			15.4 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8081B		1			268690	01/24/19 21:03	DFE	TAL PIT
	Instrument ID: CHGC17									

Client Sample ID: SB915-011819-04

Lab Sample ID: 180-85914-4
Date Collected: 01/18/19 11:35
Matrix: Solid
Date Received: 01/19/19 09:30
Percent Solids: 82.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			15.4 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			268695	01/24/19 16:04	DFE	TAL PIT
	Instrument ID: CHGC10									
Total/NA	Prep	8151A			10.0 g	40.0 mL	268720	01/24/19 10:20	CBY	TAL PIT
Total/NA	Analysis	EPA 8151A		1			268875	01/28/19 14:38	JBF	TAL PIT
	Instrument ID: CGC1									
Total/NA	Prep	3050B			0.97 g	100 mL	268387	01/21/19 16:09	NAM	TAL PIT
Total/NA	Analysis	EPA 6010C		1			268567	01/23/19 08:54	RJG	TAL PIT
	Instrument ID: C									
Total/NA	Prep	7471B			0.63 g	100 mL	268615	01/23/19 14:40	KA	TAL PIT
Total/NA	Analysis	EPA 7471B		1			268809	01/25/19 13:11	KA	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	3060A			2.54 g	100 mL	268721	01/24/19 14:02	SES	TAL PIT
Total/NA	Analysis	EPA 7196A		1	25 mL	25 mL	268806	01/25/19 14:54	SES	TAL PIT
	Instrument ID: GEN10S									
Total/NA	Prep	9010C			1.04 g	50 mL	268555	01/23/19 12:10	JAS	TAL PIT
Total/NA	Analysis	EPA 9014		1			268692	01/24/19 09:37	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: SB915-011819-05

Lab Sample ID: 180-85914-5
Date Collected: 01/18/19 11:45
Matrix: Solid
Date Received: 01/19/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 09:07	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SB915-011819-05

Lab Sample ID: 180-85914-5
Date Collected: 01/18/19 11:45
Matrix: Solid
Date Received: 01/19/19 09:30
Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.1054 g	5 mL	268654	01/24/19 06:00	KLG	TAL PIT
Total/NA	Analysis	EPA 8260C		1	5 mL	5 mL	268637	01/24/19 10:25	KLG	TAL PIT
	Instrument ID: CHHP3									

Client Sample ID: SB915-011819-06

Lab Sample ID: 180-85914-6
Date Collected: 01/18/19 11:45
Matrix: Solid
Date Received: 01/19/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 09:07	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-06

Lab Sample ID: 180-85914-6
Date Collected: 01/18/19 11:45
Matrix: Solid
Date Received: 01/19/19 09:30
Percent Solids: 79.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			15.2 g	5.0 mL	268506	01/23/19 04:15	BAP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	268685	01/24/19 21:22	DLF	TAL PIT
	Instrument ID: CH71									
Total/NA	Prep	3541			15.4 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8081B		1			268690	01/24/19 21:52	DFE	TAL PIT
	Instrument ID: CHGC17									
Total/NA	Prep	3541			15.4 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			268695	01/24/19 17:01	DFE	TAL PIT
	Instrument ID: CHGC10									
Total/NA	Prep	8151A			10.0 g	40.0 mL	268720	01/24/19 10:20	CBY	TAL PIT
Total/NA	Analysis	EPA 8151A		1			268875	01/28/19 14:58	JBF	TAL PIT
	Instrument ID: CGC1									
Total/NA	Prep	3050B			0.99 g	100 mL	268387	01/21/19 16:09	NAM	TAL PIT
Total/NA	Analysis	EPA 6010C		1			268567	01/23/19 08:59	RJG	TAL PIT
	Instrument ID: C									
Total/NA	Prep	7471B			0.64 g	100 mL	268617	01/23/19 14:42	KA	TAL PIT
Total/NA	Analysis	EPA 7471B		1			268809	01/25/19 13:24	KA	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	3060A			2.52 g	100 mL	268721	01/24/19 14:02	SES	TAL PIT
Total/NA	Analysis	EPA 7196A		1	25 mL	25 mL	268806	01/25/19 14:55	SES	TAL PIT
	Instrument ID: GEN10S									
Total/NA	Prep	9010C			1.18 g	50 mL	268555	01/23/19 12:10	JAS	TAL PIT
Total/NA	Analysis	EPA 9014		1			268692	01/24/19 09:39	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: SB915-011819-07

Lab Sample ID: 180-85914-7
Date Collected: 01/18/19 11:55
Matrix: Solid
Date Received: 01/19/19 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 09:07	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SB915-011819-07

Lab Sample ID: 180-85914-7
Date Collected: 01/18/19 11:55
Matrix: Solid
Date Received: 01/19/19 09:30
Percent Solids: 82.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.2665 g	5 mL	268324	01/21/19 06:00	KLG	TAL PIT
Total/NA	Analysis	EPA 8260C		1	5 mL	5 mL	268318	01/21/19 16:13	KLG	TAL PIT
	Instrument ID: CHHP3									

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-08
Date Collected: 01/18/19 11:55
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540G		1			268429	01/22/19 11:13	AVS	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SB915-011819-08
Date Collected: 01/18/19 11:55
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-8
Matrix: Solid
Percent Solids: 81.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			15.2 g	5.0 mL	268506	01/23/19 04:15	BAP	TAL PIT
Total/NA	Analysis	EPA 8270D		1	1 mL	1 mL	268786	01/25/19 18:58	SAB	TAL PIT
	Instrument ID: CH71									
Total/NA	Prep	3541			15.2 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8081B		1			268690	01/24/19 22:09	DFE	TAL PIT
	Instrument ID: CHGC17									
Total/NA	Prep	3541			15.2 g	20.0 mL	268511	01/23/19 05:00	BAP	TAL PIT
Total/NA	Analysis	EPA 8082A		1			268695	01/24/19 17:19	DFE	TAL PIT
	Instrument ID: CHGC10									
Total/NA	Prep	8151A			10.0 g	40.0 mL	268720	01/24/19 10:20	CBY	TAL PIT
Total/NA	Analysis	EPA 8151A		1			268875	01/28/19 15:19	JBF	TAL PIT
	Instrument ID: CGC1									
Total/NA	Prep	3050B			1.01 g	100 mL	268387	01/21/19 16:09	NAM	TAL PIT
Total/NA	Analysis	EPA 6010C		1			268567	01/23/19 09:05	RJG	TAL PIT
	Instrument ID: C									
Total/NA	Prep	7471B			0.59 g	100 mL	268617	01/23/19 14:42	KA	TAL PIT
Total/NA	Analysis	EPA 7471B		1			268809	01/25/19 13:25	KA	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	3060A			2.55 g	100 mL	268721	01/24/19 14:02	SES	TAL PIT
Total/NA	Analysis	EPA 7196A		1	25 mL	25 mL	268806	01/25/19 14:56	SES	TAL PIT
	Instrument ID: GEN10S									
Total/NA	Prep	9010C			1.13 g	50 mL	268555	01/23/19 12:10	JAS	TAL PIT
Total/NA	Analysis	EPA 9014		1			268692	01/24/19 09:43	JAS	TAL PIT
	Instrument ID: SEAL2									

Client Sample ID: SB915-011819-09
Date Collected: 01/18/19 00:00
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 8260C		1	5 mL	5 mL	268406	01/22/19 10:45	PJJ	TAL PIT
	Instrument ID: CHHP4									

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

BAP = Brian Pino

CBY = Charles Yushinski

JAS = Joshua Schmidt

KA = Kayla Kalamasz

KLG = Kathy Gordon

NAM = Nicole Marfisi

SES = Samantha Strauser

Batch Type: Analysis

AVS = Abbey Smith

DFE = David Eppinger

DLF = Donald Ferguson

JAS = Joshua Schmidt

JBF = Joshua Fritsch

KA = Kayla Kalamasz

KLG = Kathy Gordon

PJJ = Patrick Journet

RJG = Rob Good

SAB = Sharon Bacha

SES = Samantha Strauser

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-01
Date Collected: 01/18/19 13:40
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-1
Matrix: Solid
Percent Solids: 91.5

Method: EPA 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.0	3.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,1,2,2-Tetrachloroethane	ND		6.0	3.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.0	2.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,1,2-Trichloroethane	ND		6.0	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,1-Dichloroethane	ND		6.0	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,1-Dichloroethene	ND		6.0	3.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,2,4-Trimethylbenzene	ND		6.0	1.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,2-Dibromo-3-Chloropropane	ND		6.0	3.7	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,2-Dibromoethane	ND		6.0	3.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,2-Dichlorobenzene	ND		6.0	2.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,2-Dichloroethane	ND		6.0	1.7	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,2-Dichloropropane	ND		6.0	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,3,5-Trimethylbenzene	ND		6.0	2.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,3-Dichlorobenzene	ND		6.0	1.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,4-Dichlorobenzene	ND		6.0	1.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,4-Dioxane	ND		1200	44	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
2-Butanone (MEK)	ND		6.0	3.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
2-Hexanone	ND		6.0	5.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
4-Methyl-2-pentanone (MIBK)	ND		6.0	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Acetone	ND		24	3.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
1,2,4-Trichlorobenzene	ND		6.0	4.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Benzene	ND		6.0	2.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Bromoform	ND		6.0	3.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Bromomethane	ND		6.0	5.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Carbon disulfide	ND		6.0	3.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Carbon tetrachloride	ND		6.0	4.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Chlorobenzene	ND		6.0	1.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Chlorodibromomethane	ND		6.0	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Chloroethane	ND		6.0	3.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Chloroform	ND		6.0	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Chloromethane	ND		6.0	4.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
cis-1,2-Dichloroethene	ND		6.0	1.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
cis-1,3-Dichloropropene	ND		6.0	1.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Cyclohexane	ND		6.0	1.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Dichlorobromomethane	ND		6.0	2.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Dichlorodifluoromethane	ND		6.0	3.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Ethylbenzene	ND		6.0	2.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Isopropylbenzene	ND		6.0	2.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Methyl acetate	ND		30	7.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Methyl tert-butyl ether	ND		6.0	4.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Methylcyclohexane	ND		6.0	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Methylene Chloride	ND		6.0	4.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
n-Butylbenzene	ND		6.0	4.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
N-Propylbenzene	ND		6.0	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
sec-Butylbenzene	ND		6.0	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Styrene	ND		6.0	1.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
tert-Butylbenzene	ND		6.0	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Tetrachloroethene	ND		6.0	2.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Toluene	ND		6.0	2.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1

Client Sample ID: SB915-011819-01

Date Collected: 01/18/19 13:40
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-1

Matrix: Solid
Percent Solids: 91.5

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		6.0	3.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
trans-1,3-Dichloropropene	ND		6.0	2.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Trichloroethene	ND		6.0	1.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Trichlorofluoromethane	ND		6.0	1.7	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Vinyl chloride	ND		6.0	4.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1
Xylenes, Total	ND		12	5.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*	☼			*01/21/19 06:00*	*01/21/19 15:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*69 - 110*	*01/21/19 06:00*	*01/21/19 15:03*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 110*	*01/21/19 06:00*	*01/21/19 15:03*	*1*
Dibromofluoromethane (Surr)	*92*		*74 - 114*	*01/21/19 06:00*	*01/21/19 15:03*	*1*
Toluene-d8 (Surr)	*104*		*83 - 124*	*01/21/19 06:00*	*01/21/19 15:03*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**8.5**		0.1	0.1	%			01/22/19 09:07	1
Percent Solids	**91.5**		0.1	0.1	%			01/22/19 09:07	1

Client Sample ID: SB915-011819-02

Date Collected: 01/18/19 13:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-2

Matrix: Solid
Percent Solids: 92.5

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		360	15	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,2'-oxybis[1-chloropropane]	ND		72	27	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,4,5-Trichlorophenol	ND		360	26	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,4,6-Trichlorophenol	ND		360	20	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,4-Dichlorophenol	ND		72	28	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,4-Dimethylphenol	ND		360	22	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,4-Dinitrophenol	ND		3600	970	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,4-Dinitrotoluene	ND		360	18	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2,6-Dinitrotoluene	ND		360	22	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2-Chloronaphthalene	ND		72	17	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2-Chlorophenol	ND		360	17	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2-Methylnaphthalene	ND		72	17	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2-Methylphenol	ND		360	100	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2-Nitroaniline	ND		1800	160	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
2-Nitrophenol	ND		360	21	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
3,3'-Dichlorobenzidine	ND		360	340	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
3-Nitroaniline	ND		1800	92	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
4,6-Dinitro-2-methylphenol	ND		1800	620	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
4-Bromophenyl phenyl ether	ND		360	25	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
4-Chloro-3-methylphenol	ND		360	17	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
4-Chloroaniline	ND		360	12	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
4-Chlorophenyl phenyl ether	ND		360	22	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
4-Nitroaniline	ND		1800	18	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1

Client Sample ID: SB915-011819-02
Date Collected: 01/18/19 13:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-2
Matrix: Solid
Percent Solids: 92.5

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		1800	250	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Acenaphthene	ND		72	21	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Acenaphthylene	ND		72	16	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Acetophenone	ND		720	20	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Anthracene	ND		72	19	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Atrazine	ND		720	160	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Benzaldehyde	ND	F1 F2	720	45	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Benzo[a]anthracene	ND		72	14	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Benzo[a]pyrene	ND		72	16	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Benzo[b]fluoranthene	ND		72	18	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Benzo[g,h,i]perylene	ND		72	16	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Benzo[k]fluoranthene	ND		72	22	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Bis(2-chloroethoxy)methane	ND		360	17	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Bis(2-chloroethyl)ether	ND		72	13	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Bis(2-ethylhexyl) phthalate	ND		3600	380	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Butyl benzyl phthalate	ND		360	250	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Caprolactam	ND		1800	230	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Carbazole	ND		72	17	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Chrysene	ND		72	14	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Dibenz(a,h)anthracene	ND		72	16	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Dibenzofuran	ND		360	16	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Diethyl phthalate	ND		360	87	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Dimethyl phthalate	ND		360	13	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Di-n-butyl phthalate	ND		360	160	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Di-n-octyl phthalate	ND		360	210	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Fluoranthene	ND		72	19	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Fluorene	ND		72	14	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Hexachlorobenzene	ND		72	26	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Hexachlorobutadiene	ND		72	21	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Hexachlorocyclopentadiene	ND		360	18	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Hexachloroethane	ND		360	19	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Indeno[1,2,3-cd]pyrene	ND		72	15	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Isophorone	ND		360	18	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Methylphenol, 3 & 4	ND		360	110	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Naphthalene	ND		72	14	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Nitrobenzene	ND		720	130	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
N-Nitrosodi-n-propylamine	ND		72	24	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
N-Nitrosodiphenylamine	ND		360	120	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Pentachlorophenol	ND		1800	580	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Phenanthrene	ND		72	19	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Phenol	ND		360	110	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1
Pyrene	ND		72	17	ug/Kg	☼	01/23/19 04:15	01/25/19 17:11	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*150*	*T J*	*ug/Kg*	☼	*1.25*		*01/23/19 04:15*	*01/25/19 17:11*	*1*
Triphenyl phosphate	*170*	*T J N*	*ug/Kg*	☼	*13.02*	*115-86-6*	*01/23/19 04:15*	*01/25/19 17:11*	*1*
Phosphoric acid, (1,1-dimethylethyl)phenyl diphenyl ester	*170*	*T J N*	*ug/Kg*	☼	*15.10*	*56803-37-3*	*01/23/19 04:15*	*01/25/19 17:11*	*1*

Client Sample ID: SB915-011819-02
Date Collected: 01/18/19 13:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-2
Matrix: Solid
Percent Solids: 92.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	66		20 - 111	01/23/19 04:15	01/25/19 17:11	1
2-Fluorobiphenyl	77		47 - 105	01/23/19 04:15	01/25/19 17:11	1
2-Fluorophenol (Surr)	73		35 - 105	01/23/19 04:15	01/25/19 17:11	1
Nitrobenzene-d5 (Surr)	82		47 - 105	01/23/19 04:15	01/25/19 17:11	1
Phenol-d5 (Surr)	76		38 - 105	01/23/19 04:15	01/25/19 17:11	1
Terphenyl-d14 (Surr)	80		42 - 105	01/23/19 04:15	01/25/19 17:11	1

Method: EPA 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.8	0.55	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
alpha-BHC	ND		1.8	0.43	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
beta-BHC	ND		1.8	0.49	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
delta-BHC	ND		1.8	0.56	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
gamma-BHC (Lindane)	ND		1.8	0.60	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
cis-Chlordane	ND		1.8	0.44	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
trans-Chlordane	ND		1.8	0.41	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
4,4'-DDD	ND		1.8	0.76	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
4,4'-DDE	ND		1.8	0.36	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
4,4'-DDT	ND		1.8	0.70	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Dieldrin	ND		1.8	0.44	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Endosulfan I	ND		1.8	0.48	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Endosulfan II	ND		1.8	0.39	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Endosulfan sulfate	ND		1.8	0.46	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Endrin	ND		1.8	0.69	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Endrin aldehyde	ND		1.8	0.63	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Endrin ketone	ND		1.8	0.63	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Heptachlor	ND		1.8	0.55	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Heptachlor epoxide	ND		1.8	0.45	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Methoxychlor	ND		1.8	0.69	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1
Toxaphene	ND		71	48	ug/Kg	☼	01/23/19 05:00	01/24/19 20:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	89		44 - 130	01/23/19 05:00	01/24/19 20:47	1
Tetrachloro-m-xylene	93		44 - 130	01/23/19 05:00	01/24/19 20:47	1
DCB Decachlorobiphenyl (Surr)	95		41 - 150	01/23/19 05:00	01/24/19 20:47	1
DCB Decachlorobiphenyl (Surr)	92		41 - 150	01/23/19 05:00	01/24/19 20:47	1

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		18	5.7	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1221	ND		18	11	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1232	ND		18	10	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1242	ND		18	11	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1248	ND		18	14	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1254	ND		18	12	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1260	ND		18	5.0	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1262	ND		18	12	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1
PCB-1268	ND		18	8.6	ug/Kg	☼	01/23/19 05:00	01/24/19 15:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	103		51 - 116	01/23/19 05:00	01/24/19 15:46	1

Client Sample ID: SB915-011819-02

Date Collected: 01/18/19 13:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-2

Matrix: Solid
Percent Solids: 92.5

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene (Surr)	*99*		*51 - 116*	*01/23/19 05:00*	*01/24/19 15:46*	*1*
DCB Decachlorobiphenyl (Surr)	*77*		*44 - 116*	*01/23/19 05:00*	*01/24/19 15:46*	*1*
DCB Decachlorobiphenyl (Surr)	*77*		*44 - 116*	*01/23/19 05:00*	*01/24/19 15:46*	*1*

Method: EPA 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		86	28	ug/Kg	☼	01/24/19 10:20	01/28/19 13:13	1
2,4,5-T	ND		22	6.8	ug/Kg	☼	01/24/19 10:20	01/28/19 13:13	1
Silvex (2,4,5-TP)	ND		22	7.2	ug/Kg	☼	01/24/19 10:20	01/28/19 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*63*		*20 - 125*	*01/24/19 10:20*	*01/28/19 13:13*	*1*
2,4-Dichlorophenylacetic acid	*65*		*20 - 125*	*01/24/19 10:20*	*01/28/19 13:13*	*1*

Method: EPA 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**12000**		22	4.5	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Antimony	ND		1.1	0.37	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Arsenic	**2.9**		1.1	0.43	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Barium	**46**		22	1.2	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Beryllium	**0.41**	**J**	0.44	0.025	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Cadmium	**0.085**	**J**	0.55	0.040	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Calcium	**44000**		550	29	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Chromium	**23**		0.55	0.15	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Cobalt	**6.8**		5.5	0.32	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Copper	**2.0**	**J**	2.7	0.28	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Iron	**27000**		11	5.5	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Lead	**0.74**	**J**	1.1	0.56	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Magnesium	**32000**		550	36	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Manganese	**460**		1.6	0.18	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Nickel	**30**		4.4	0.27	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Potassium	**1900**		550	60	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Selenium	ND		1.1	0.56	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Silver	ND		0.55	0.11	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Sodium	**110**	**J**	550	28	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Thallium	ND		2.2	0.35	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Vanadium	**21**		5.5	0.76	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1
Zinc	**24**		2.2	1.2	mg/Kg	☼	01/21/19 16:09	01/23/19 08:49	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.035	0.015	mg/Kg	☼	01/23/19 14:40	01/25/19 13:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**7.5**		0.1	0.1	%			01/22/19 09:07	1
Percent Solids	**92.5**		0.1	0.1	%			01/22/19 09:07	1
Cr (VI)	ND		0.42	0.23	mg/Kg	☼	01/24/19 14:02	01/25/19 14:52	1
Cyanide, Total	ND		0.52	0.29	mg/Kg	☼	01/23/19 12:10	01/24/19 09:35	1

Client Sample ID: SB915-011819-03
Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-3
Matrix: Solid
Percent Solids: 81.5

Method: EPA 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		7.2	3.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,1,2,2-Tetrachloroethane	ND		7.2	4.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		7.2	2.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,1,2-Trichloroethane	ND		7.2	3.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,1-Dichloroethane	ND		7.2	2.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,1-Dichloroethene	ND		7.2	4.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,2,4-Trimethylbenzene	ND		7.2	2.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,2-Dibromo-3-Chloropropane	ND		7.2	4.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,2-Dibromoethane	ND		7.2	4.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,2-Dichlorobenzene	ND		7.2	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,2-Dichloroethane	ND		7.2	2.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,2-Dichloropropane	ND		7.2	3.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,3,5-Trimethylbenzene	ND		7.2	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,3-Dichlorobenzene	ND		7.2	2.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,4-Dichlorobenzene	ND		7.2	1.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,4-Dioxane	ND		1400	53	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
2-Butanone (MEK)	ND		7.2	4.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
2-Hexanone	ND		7.2	6.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
4-Methyl-2-pentanone (MIBK)	ND		7.2	2.7	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Acetone	ND		29	4.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
1,2,4-Trichlorobenzene	ND		7.2	5.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Benzene	ND		7.2	2.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Bromoform	ND		7.2	3.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Bromomethane	ND		7.2	6.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Carbon disulfide	ND		7.2	4.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Carbon tetrachloride	ND		7.2	4.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Chlorobenzene	ND		7.2	2.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Chlorodibromomethane	ND		7.2	3.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Chloroethane	ND		7.2	3.7	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Chloroform	ND		7.2	3.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Chloromethane	ND		7.2	5.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
cis-1,2-Dichloroethene	ND		7.2	2.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
cis-1,3-Dichloropropene	ND		7.2	2.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Cyclohexane	ND		7.2	1.8	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Dichlorobromomethane	ND		7.2	3.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Dichlorodifluoromethane	ND		7.2	4.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Ethylbenzene	ND		7.2	3.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Isopropylbenzene	ND		7.2	3.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Methyl acetate	ND		36	8.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Methyl tert-butyl ether	ND		7.2	5.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Methylcyclohexane	ND		7.2	3.0	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Methylene Chloride	ND		7.2	5.6	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
n-Butylbenzene	ND		7.2	5.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
N-Propylbenzene	ND		7.2	3.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
sec-Butylbenzene	ND		7.2	3.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Styrene	ND		7.2	1.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
tert-Butylbenzene	ND		7.2	2.7	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Tetrachloroethene	ND		7.2	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Toluene	ND		7.2	2.4	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1

Client Sample ID: SB915-011819-03

Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-3

Matrix: Solid
Percent Solids: 81.5

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		7.2	3.7	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
trans-1,3-Dichloropropene	ND		7.2	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Trichloroethene	ND		7.2	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Trichlorofluoromethane	ND		7.2	2.1	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Vinyl chloride	ND		7.2	5.3	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1
Xylenes, Total	ND		14	6.2	ug/Kg	☼	01/21/19 06:00	01/21/19 15:26	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*	☼			*01/21/19 06:00*	*01/21/19 15:26*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*69 - 110*	*01/21/19 06:00*	*01/21/19 15:26*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 110*	*01/21/19 06:00*	*01/21/19 15:26*	*1*
Dibromofluoromethane (Surr)	*94*		*74 - 114*	*01/21/19 06:00*	*01/21/19 15:26*	*1*
Toluene-d8 (Surr)	*110*		*83 - 124*	*01/21/19 06:00*	*01/21/19 15:26*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.5**		0.1	0.1	%			01/22/19 09:07	1
Percent Solids	**81.5**		0.1	0.1	%			01/22/19 09:07	1

Client Sample ID: SB915-011819-04

Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-4

Matrix: Solid
Percent Solids: 82.6

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		400	17	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,2'-oxybis[1-chloropropane]	ND		81	30	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,4,5-Trichlorophenol	ND		400	29	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,4,6-Trichlorophenol	ND		400	22	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,4-Dichlorophenol	ND		81	31	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,4-Dimethylphenol	ND		400	25	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,4-Dinitrophenol	ND		4000	1100	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,4-Dinitrotoluene	ND		400	20	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2,6-Dinitrotoluene	ND		400	25	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2-Chloronaphthalene	ND		81	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2-Chlorophenol	ND		400	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2-Methylnaphthalene	ND		81	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2-Methylphenol	ND		400	120	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2-Nitroaniline	ND		2000	180	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
2-Nitrophenol	ND		400	23	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
3,3'-Dichlorobenzidine	ND		400	370	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
3-Nitroaniline	ND		2000	100	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
4,6-Dinitro-2-methylphenol	ND		2000	690	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
4-Bromophenyl phenyl ether	ND		400	28	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
4-Chloro-3-methylphenol	ND		400	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
4-Chloroaniline	ND		400	13	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
4-Chlorophenyl phenyl ether	ND		400	24	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
4-Nitroaniline	ND		2000	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1

Client Sample ID: SB915-011819-04
Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-4
Matrix: Solid
Percent Solids: 82.6

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		2000	280	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Acenaphthene	ND		81	23	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Acenaphthylene	**47**	**J**	81	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Acetophenone	ND		810	22	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Anthracene	**25**	**J**	81	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Atrazine	ND		810	180	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Benzaldehyde	ND		810	50	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Benzo[a]anthracene	**85**		81	15	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Benzo[a]pyrene	**95**		81	17	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Benzo[b]fluoranthene	**130**		81	20	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Benzo[g,h,i]perylene	**61**	**J**	81	17	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Benzo[k]fluoranthene	**44**	**J**	81	24	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Bis(2-chloroethoxy)methane	ND		400	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Bis(2-chloroethyl)ether	ND		81	15	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Bis(2-ethylhexyl) phthalate	ND		4000	430	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Butyl benzyl phthalate	ND		400	280	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Caprolactam	ND		2000	260	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Carbazole	ND		81	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Chrysene	**110**		81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Dibenz(a,h)anthracene	**22**	**J**	81	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Dibenzofuran	ND		400	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Diethyl phthalate	ND		400	97	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Dimethyl phthalate	ND		400	15	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Di-n-butyl phthalate	ND		400	180	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Di-n-octyl phthalate	ND		400	230	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Fluoranthene	**150**		81	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Fluorene	ND		81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Hexachlorobenzene	ND		81	29	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Hexachlorobutadiene	ND		81	23	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Hexachlorocyclopentadiene	ND		400	20	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Hexachloroethane	ND		400	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Indeno[1,2,3-cd]pyrene	**49**	**J**	81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Isophorone	ND		400	20	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Methylphenol, 3 & 4	ND		400	120	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Naphthalene	ND		81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Nitrobenzene	ND		810	150	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
N-Nitrosodi-n-propylamine	ND		81	27	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
N-Nitrosodiphenylamine	ND		400	130	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Pentachlorophenol	ND		2000	640	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Phenanthrene	**46**	**J**	81	22	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Phenol	ND		400	120	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1
Pyrene	**130**		81	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:31	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*410*	*T J*	*ug/Kg*	☼	*15.69*		*01/23/19 04:15*	*01/25/19 18:31*	*1*
Eicosane, 10-methyl-	*270*	*T J N*	*ug/Kg*	☼	*16.10*	*54833-23-7*	*01/23/19 04:15*	*01/25/19 18:31*	*1*
Unknown	*180*	*T J*	*ug/Kg*	☼	*17.15*		*01/23/19 04:15*	*01/25/19 18:31*	*1*
Eicosane	*510*	*T J N*	*ug/Kg*	☼	*17.55*	*112-95-8*	*01/23/19 04:15*	*01/25/19 18:31*	*1*
Dibenzylidene 4,4'-biphenylenediamine	*2600*	*T J N*	*ug/Kg*	☼	*20.03*	*6311-48-4*	*01/23/19 04:15*	*01/25/19 18:31*	*1*

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	*54*		*20 - 111*	*01/23/19 04:15*	*01/25/19 18:31*	*1*
2-Fluorobiphenyl	*65*		*47 - 105*	*01/23/19 04:15*	*01/25/19 18:31*	*1*
2-Fluorophenol (Surr)	*73*		*35 - 105*	*01/23/19 04:15*	*01/25/19 18:31*	*1*
Nitrobenzene-d5 (Surr)	*75*		*47 - 105*	*01/23/19 04:15*	*01/25/19 18:31*	*1*
Phenol-d5 (Surr)	*71*		*38 - 105*	*01/23/19 04:15*	*01/25/19 18:31*	*1*
Terphenyl-d14 (Surr)	*63*		*42 - 105*	*01/23/19 04:15*	*01/25/19 18:31*	*1*

Method: EPA 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0	0.61	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
alpha-BHC	ND		2.0	0.48	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
beta-BHC	ND		2.0	0.54	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
delta-BHC	ND		2.0	0.62	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
gamma-BHC (Lindane)	ND		2.0	0.67	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
cis-Chlordane	ND		2.0	0.49	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
trans-Chlordane	ND		2.0	0.46	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
4,4'-DDD	ND		2.0	0.84	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
4,4'-DDE	**1.1**	**J**	2.0	0.40	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
4,4'-DDT	ND		2.0	0.77	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Dieldrin	ND		2.0	0.49	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Endosulfan I	ND		2.0	0.53	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Endosulfan II	ND		2.0	0.43	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Endosulfan sulfate	ND		2.0	0.51	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Endrin	ND		2.0	0.77	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Endrin aldehyde	ND		2.0	0.70	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Endrin ketone	ND		2.0	0.70	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Heptachlor	ND		2.0	0.62	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Heptachlor epoxide	ND		2.0	0.50	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Methoxychlor	ND		2.0	0.77	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1
Toxaphene	ND		79	53	ug/Kg	☼	01/23/19 05:00	01/24/19 21:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*86*		*44 - 130*	*01/23/19 05:00*	*01/24/19 21:03*	*1*
Tetrachloro-m-xylene	*84*		*44 - 130*	*01/23/19 05:00*	*01/24/19 21:03*	*1*
DCB Decachlorobiphenyl (Surr)	*100*		*41 - 150*	*01/23/19 05:00*	*01/24/19 21:03*	*1*
DCB Decachlorobiphenyl (Surr)	*96*		*41 - 150*	*01/23/19 05:00*	*01/24/19 21:03*	*1*

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		20	6.4	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1221	ND		20	13	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1232	ND		20	12	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1242	ND		20	12	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1248	ND		20	16	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1254	ND		20	13	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1260	ND	F2	20	5.6	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1262	ND		20	14	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1
PCB-1268	ND		20	9.5	ug/Kg	☼	01/23/19 05:00	01/24/19 16:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	*90*		*51 - 116*	*01/23/19 05:00*	*01/24/19 16:04*	*1*
Tetrachloro-m-xylene (Surr)	*86*		*51 - 116*	*01/23/19 05:00*	*01/24/19 16:04*	*1*
DCB Decachlorobiphenyl (Surr)	*76*		*44 - 116*	*01/23/19 05:00*	*01/24/19 16:04*	*1*
DCB Decachlorobiphenyl (Surr)	*77*		*44 - 116*	*01/23/19 05:00*	*01/24/19 16:04*	*1*

Client Sample ID: SB915-011819-04

Date Collected: 01/18/19 11:35
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-4

Matrix: Solid
Percent Solids: 82.6

Method: EPA 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		97	32	ug/Kg	☼	01/24/19 10:20	01/28/19 14:38	1
2,4,5-T	ND		24	7.7	ug/Kg	☼	01/24/19 10:20	01/28/19 14:38	1
Silvex (2,4,5-TP)	ND		24	8.0	ug/Kg	☼	01/24/19 10:20	01/28/19 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*62*		*20 - 125*	*01/24/19 10:20*	*01/28/19 14:38*	*1*
2,4-Dichlorophenylacetic acid	*65*		*20 - 125*	*01/24/19 10:20*	*01/28/19 14:38*	*1*

Method: EPA 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8800**		25	5.2	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Antimony	ND		1.2	0.42	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Arsenic	**4.1**		1.2	0.49	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Barium	**71**		25	1.3	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Beryllium	**0.38**	**J**	0.50	0.029	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Cadmium	**0.29**	**J**	0.62	0.045	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Calcium	**7600**		620	33	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Chromium	**12**		0.62	0.17	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Cobalt	**5.0**	**J**	6.2	0.37	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Copper	**20**		3.1	0.31	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Iron	**15000**		12	6.3	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Lead	**57**		1.2	0.64	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Magnesium	**3200**		620	41	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Manganese	**390**		1.9	0.20	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Nickel	**11**		5.0	0.31	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Potassium	**730**		620	68	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Selenium	**0.78**	**J**	1.2	0.64	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Silver	ND		0.62	0.13	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Sodium	**97**	**J**	620	32	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Thallium	ND		2.5	0.40	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Vanadium	**21**		6.2	0.87	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1
Zinc	**73**		2.5	1.3	mg/Kg	☼	01/21/19 16:09	01/23/19 08:54	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.12**		0.038	0.016	mg/Kg	☼	01/23/19 14:40	01/25/19 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.4**		0.1	0.1	%			01/22/19 11:13	1
Percent Solids	**82.6**		0.1	0.1	%			01/22/19 11:13	1
Cr (VI)	ND		0.48	0.25	mg/Kg	☼	01/24/19 14:02	01/25/19 14:54	1
Cyanide, Total	ND		0.58	0.32	mg/Kg	☼	01/23/19 12:10	01/24/19 09:37	1

Client Sample ID: SB915-011819-05
Date Collected: 01/18/19 11:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-5
Matrix: Solid
Percent Solids: 82.3

Method: EPA 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		7.0	3.5	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,1,2,2-Tetrachloroethane	ND	*	7.0	4.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		7.0	2.7	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,1,2-Trichloroethane	ND		7.0	3.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,1-Dichloroethane	ND		7.0	2.5	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,1-Dichloroethene	ND		7.0	4.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,2,4-Trimethylbenzene	ND		7.0	1.9	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,2-Dibromo-3-Chloropropane	ND		7.0	4.3	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,2-Dibromoethane	ND		7.0	3.8	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,2-Dichlorobenzene	ND	*	7.0	2.8	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,2-Dichloroethane	ND		7.0	2.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,2-Dichloropropane	ND		7.0	3.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,3,5-Trimethylbenzene	ND		7.0	2.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,3-Dichlorobenzene	ND		7.0	2.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,4-Dichlorobenzene	ND		7.0	1.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,4-Dioxane	ND		1400	51	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
2-Butanone (MEK)	ND		7.0	4.1	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
2-Hexanone	ND		7.0	5.9	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
4-Methyl-2-pentanone (MIBK)	ND		7.0	2.6	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Acetone	ND		28	4.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
1,2,4-Trichlorobenzene	ND		7.0	5.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Benzene	ND		7.0	2.8	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Bromoform	ND		7.0	3.7	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Bromomethane	ND		7.0	6.3	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Carbon disulfide	ND		7.0	4.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Carbon tetrachloride	ND		7.0	4.7	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Chlorobenzene	ND		7.0	2.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Chlorodibromomethane	ND		7.0	3.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Chloroethane	ND		7.0	3.6	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Chloroform	ND		7.0	3.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Chloromethane	ND		7.0	5.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
cis-1,2-Dichloroethene	ND		7.0	2.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
cis-1,3-Dichloropropene	ND		7.0	2.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Cyclohexane	ND		7.0	1.7	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Dichlorobromomethane	ND		7.0	3.3	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Dichlorodifluoromethane	ND		7.0	4.1	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Ethylbenzene	ND		7.0	3.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Isopropylbenzene	ND		7.0	3.3	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Methyl acetate	ND		35	8.3	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Methyl tert-butyl ether	ND		7.0	5.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Methylcyclohexane	ND		7.0	3.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Methylene Chloride	ND		7.0	5.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
n-Butylbenzene	ND		7.0	5.3	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
N-Propylbenzene	ND		7.0	3.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
sec-Butylbenzene	ND		7.0	3.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Styrene	ND		7.0	1.9	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
tert-Butylbenzene	ND		7.0	2.6	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Tetrachloroethene	ND		7.0	2.8	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Toluene	ND		7.0	2.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1

Client Sample ID: SB915-011819-05

Date Collected: 01/18/19 11:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-5

Matrix: Solid
Percent Solids: 82.3

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		7.0	3.6	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
trans-1,3-Dichloropropene	ND		7.0	2.4	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Trichloroethene	ND		7.0	2.1	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Trichlorofluoromethane	ND		7.0	2.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Vinyl chloride	ND		7.0	5.2	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1
Xylenes, Total	ND		14	6.0	ug/Kg	☼	01/24/19 06:00	01/24/19 10:25	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*	☼			*01/24/19 06:00*	*01/24/19 10:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*69 - 110*	*01/24/19 06:00*	*01/24/19 10:25*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 110*	*01/24/19 06:00*	*01/24/19 10:25*	*1*
Dibromofluoromethane (Surr)	*94*		*74 - 114*	*01/24/19 06:00*	*01/24/19 10:25*	*1*
Toluene-d8 (Surr)	*101*		*83 - 124*	*01/24/19 06:00*	*01/24/19 10:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.7**		0.1	0.1	%			01/22/19 09:07	1
Percent Solids	**82.3**		0.1	0.1	%			01/22/19 09:07	1

Client Sample ID: SB915-011819-06

Date Collected: 01/18/19 11:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-6

Matrix: Solid
Percent Solids: 79.0

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		410	17	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,2'-oxybis[1-chloropropane]	ND		84	31	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,4,5-Trichlorophenol	ND		410	30	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,4,6-Trichlorophenol	ND		410	23	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,4-Dichlorophenol	ND		84	32	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,4-Dimethylphenol	ND		410	26	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,4-Dinitrophenol	ND		4100	1100	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,4-Dinitrotoluene	ND		410	21	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2,6-Dinitrotoluene	ND		410	26	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2-Chloronaphthalene	ND		84	19	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2-Chlorophenol	ND		410	19	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2-Methylnaphthalene	**23**	**J**	84	20	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2-Methylphenol	ND		410	120	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2-Nitroaniline	ND		2100	190	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
2-Nitrophenol	ND		410	24	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
3,3'-Dichlorobenzidine	ND		410	390	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
3-Nitroaniline	ND		2100	110	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
4,6-Dinitro-2-methylphenol	ND		2100	720	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
4-Bromophenyl phenyl ether	ND		410	29	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
4-Chloro-3-methylphenol	ND		410	20	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
4-Chloroaniline	ND		410	14	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
4-Chlorophenyl phenyl ether	ND		410	25	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
4-Nitroaniline	ND		2100	20	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1

Client Sample ID: SB915-011819-06
Date Collected: 01/18/19 11:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-6
Matrix: Solid
Percent Solids: 79.0

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		2100	290	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Acenaphthene	ND		84	24	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Acenaphthylene	**610**		84	18	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Acetophenone	ND		840	23	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Anthracene	**330**		84	22	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Atrazine	ND		840	180	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Benzaldehyde	ND		840	52	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Benzo[a]anthracene	**760**		84	16	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Benzo[a]pyrene	**810**		84	18	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Benzo[b]fluoranthene	**950**		84	20	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Benzo[g,h,i]perylene	**530**		84	18	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Benzo[k]fluoranthene	**440**		84	25	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Bis(2-chloroethoxy)methane	ND		410	20	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Bis(2-chloroethyl)ether	ND		84	15	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Bis(2-ethylhexyl) phthalate	ND		4100	440	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Butyl benzyl phthalate	ND		410	290	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Caprolactam	ND		2100	270	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Carbazole	**39**	**J**	84	19	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Chrysene	**830**		84	16	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Dibenz(a,h)anthracene	**170**		84	19	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Dibenzofuran	**19**	**J**	410	18	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Diethyl phthalate	ND		410	100	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Dimethyl phthalate	ND		410	15	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Di-n-butyl phthalate	ND		410	180	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Di-n-octyl phthalate	ND		410	240	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Fluoranthene	**1500**		84	22	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Fluorene	**42**	**J**	84	16	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Hexachlorobenzene	ND		84	30	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Hexachlorobutadiene	ND		84	24	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Hexachlorocyclopentadiene	ND		410	21	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Hexachloroethane	ND		410	21	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Indeno[1,2,3-cd]pyrene	**470**		84	17	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Isophorone	ND		410	21	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Methylphenol, 3 & 4	ND		410	120	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Naphthalene	**41**	**J**	84	16	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Nitrobenzene	ND		840	150	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
N-Nitrosodi-n-propylamine	ND		84	28	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
N-Nitrosodiphenylamine	ND		410	140	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Pentachlorophenol	ND		2100	670	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Phenanthrene	**220**		84	22	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Phenol	ND		410	130	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1
Pyrene	**1300**		84	20	ug/Kg	☼	01/23/19 04:15	01/24/19 21:22	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*190*	*T J*	*ug/Kg*	☼	*1.07*		*01/23/19 04:15*	*01/24/19 21:22*	*1*
Unknown	*260*	*T J*	*ug/Kg*	☼	*10.91*		*01/23/19 04:15*	*01/24/19 21:22*	*1*
Unknown	*210*	*T J*	*ug/Kg*	☼	*11.30*		*01/23/19 04:15*	*01/24/19 21:22*	*1*
Phenanthrene, 2,5-dimethyl-	*360*	*T J N*	*ug/Kg*	☼	*11.39*	*3674-66-6*	*01/23/19 04:15*	*01/24/19 21:22*	*1*
Unknown	*210*	*T J*	*ug/Kg*	☼	*11.49*		*01/23/19 04:15*	*01/24/19 21:22*	*1*

Client Sample ID: SB915-011819-06
Date Collected: 01/18/19 11:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-6
Matrix: Solid
Percent Solids: 79.0

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	230	T J	ug/Kg	☼	11.71		01/23/19 04:15	01/24/19 21:22	1
Benzo[kl]xanthene	280	T J N	ug/Kg	☼	11.85	200-23-7	01/23/19 04:15	01/24/19 21:22	1
Fluoranthene, 2-methyl-	240	T J N	ug/Kg	☼	12.17	33543-31-6	01/23/19 04:15	01/24/19 21:22	1
Unknown	240	T J	ug/Kg	☼	13.11		01/23/19 04:15	01/24/19 21:22	1
Unknown	330	T J	ug/Kg	☼	13.59		01/23/19 04:15	01/24/19 21:22	1
1-Eicosene	300	T J N	ug/Kg	☼	14.92	3452-07-1	01/23/19 04:15	01/24/19 21:22	1
Unknown Hydrocarbon	750	T J	ug/Kg	☼	15.78		01/23/19 04:15	01/24/19 21:22	1
Unknown	300	T J	ug/Kg	☼	16.08		01/23/19 04:15	01/24/19 21:22	1
Eicosane	430	T J N	ug/Kg	☼	16.20	112-95-8	01/23/19 04:15	01/24/19 21:22	1
Unknown	350	T J	ug/Kg	☼	16.36		01/23/19 04:15	01/24/19 21:22	1
Benzo[e]pyrene	1000	T J N	ug/Kg	☼	16.42	192-97-2	01/23/19 04:15	01/24/19 21:22	1
Unknown	760	T J	ug/Kg	☼	17.26		01/23/19 04:15	01/24/19 21:22	1
Unknown alkane	540	T J	ug/Kg	☼	17.65		01/23/19 04:15	01/24/19 21:22	1
Unknown	320	T J	ug/Kg	☼	17.90		01/23/19 04:15	01/24/19 21:22	1
Unknown	400	T J	ug/Kg	☼	18.75		01/23/19 04:15	01/24/19 21:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	68		20 - 111	01/23/19 04:15	01/24/19 21:22	1
2-Fluorobiphenyl	76		47 - 105	01/23/19 04:15	01/24/19 21:22	1
2-Fluorophenol (Surr)	73		35 - 105	01/23/19 04:15	01/24/19 21:22	1
Nitrobenzene-d5 (Surr)	84		47 - 105	01/23/19 04:15	01/24/19 21:22	1
Phenol-d5 (Surr)	76		38 - 105	01/23/19 04:15	01/24/19 21:22	1
Terphenyl-d14 (Surr)	75		42 - 105	01/23/19 04:15	01/24/19 21:22	1

Method: EPA 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.1	0.64	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
alpha-BHC	ND		2.1	0.51	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
beta-BHC	ND		2.1	0.56	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
delta-BHC	ND		2.1	0.65	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
gamma-BHC (Lindane)	ND		2.1	0.70	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
cis-Chlordane	ND		2.1	0.52	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
trans-Chlordane	ND		2.1	0.48	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
4,4'-DDD	ND		2.1	0.88	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
4,4'-DDE	ND		2.1	0.42	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
4,4'-DDT	ND		2.1	0.81	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Dieldrin	ND		2.1	0.52	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Endosulfan I	ND		2.1	0.56	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Endosulfan II	ND		2.1	0.45	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Endosulfan sulfate	ND		2.1	0.53	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Endrin	ND		2.1	0.80	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Endrin aldehyde	ND		2.1	0.73	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Endrin ketone	ND		2.1	0.73	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Heptachlor	ND		2.1	0.64	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Heptachlor epoxide	ND		2.1	0.53	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Methoxychlor	ND		2.1	0.80	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1
Toxaphene	ND		83	56	ug/Kg	☼	01/23/19 05:00	01/24/19 21:52	1

Client Sample ID: SB915-011819-06

Date Collected: 01/18/19 11:45
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-6

Matrix: Solid
Percent Solids: 79.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	85		44 - 130	01/23/19 05:00	01/24/19 21:52	1
Tetrachloro-m-xylene	86		44 - 130	01/23/19 05:00	01/24/19 21:52	1
DCB Decachlorobiphenyl (Surr)	104		41 - 150	01/23/19 05:00	01/24/19 21:52	1
DCB Decachlorobiphenyl (Surr)	92		41 - 150	01/23/19 05:00	01/24/19 21:52	1

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		21	6.7	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1221	ND		21	13	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1232	ND		21	12	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1242	ND		21	12	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1248	ND		21	16	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1254	ND		21	14	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1260	ND		21	5.8	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1262	ND		21	14	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1
PCB-1268	ND		21	10	ug/Kg	☼	01/23/19 05:00	01/24/19 17:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene (Surr)	101		51 - 116	01/23/19 05:00	01/24/19 17:01	1
Tetrachloro-m-xylene (Surr)	99		51 - 116	01/23/19 05:00	01/24/19 17:01	1
DCB Decachlorobiphenyl (Surr)	78		44 - 116	01/23/19 05:00	01/24/19 17:01	1
DCB Decachlorobiphenyl (Surr)	81		44 - 116	01/23/19 05:00	01/24/19 17:01	1

Method: EPA 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		100	33	ug/Kg	☼	01/24/19 10:20	01/28/19 14:58	1
2,4,5-T	ND		25	8.0	ug/Kg	☼	01/24/19 10:20	01/28/19 14:58	1
Silvex (2,4,5-TP)	ND		25	8.4	ug/Kg	☼	01/24/19 10:20	01/28/19 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	57		20 - 125	01/24/19 10:20	01/28/19 14:58	1
2,4-Dichlorophenylacetic acid	55		20 - 125	01/24/19 10:20	01/28/19 14:58	1

Method: EPA 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8800**		26	5.3	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Antimony	ND		1.3	0.43	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Arsenic	**3.9**		1.3	0.50	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Barium	**46**		26	1.4	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Beryllium	**0.39**	**J**	0.51	0.029	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Cadmium	**0.24**	**J**	0.64	0.047	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Calcium	**6900**		640	33	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Chromium	**10**		0.64	0.17	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Cobalt	**4.4**	**J**	6.4	0.38	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Copper	**21**		3.2	0.32	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Iron	**14000**		13	6.5	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Lead	**16**		1.3	0.65	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Magnesium	**2800**		640	42	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Manganese	**330**		1.9	0.21	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Nickel	**9.6**		5.1	0.32	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Potassium	**600**	**J**	640	70	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1

Client Sample ID: SB915-011819-06

Lab Sample ID: 180-85914-6
Date Collected: 01/18/19 11:45
Matrix: Solid
Date Received: 01/19/19 09:30
Percent Solids: 79.0

Method: EPA 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		1.3	0.66	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Silver	ND		0.64	0.13	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Sodium	**71**	**J**	640	33	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Thallium	ND		2.6	0.41	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Vanadium	**18**		6.4	0.89	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1
Zinc	**58**		2.6	1.4	mg/Kg	☼	01/21/19 16:09	01/23/19 08:59	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.064**		0.039	0.017	mg/Kg	☼	01/23/19 14:42	01/25/19 13:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21.0**		0.1	0.1	%			01/22/19 09:07	1
Percent Solids	**79.0**		0.1	0.1	%			01/22/19 09:07	1
Cr (VI)	ND		0.50	0.27	mg/Kg	☼	01/24/19 14:02	01/25/19 14:55	1
Cyanide, Total	ND		0.54	0.29	mg/Kg	☼	01/23/19 12:10	01/24/19 09:39	1

Client Sample ID: SB915-011819-07

Lab Sample ID: 180-85914-7
Date Collected: 01/18/19 11:55
Matrix: Solid
Date Received: 01/19/19 09:30
Percent Solids: 82.3

Method: EPA 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.8	3.4	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,1,2,2-Tetrachloroethane	ND		6.8	4.1	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.8	2.6	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,1,2-Trichloroethane	ND		6.8	3.3	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,1-Dichloroethane	ND		6.8	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,1-Dichloroethene	ND		6.8	3.9	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,2,4-Trimethylbenzene	ND		6.8	1.8	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,2-Dibromo-3-Chloropropane	ND		6.8	4.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,2-Dibromoethane	ND		6.8	3.7	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,2-Dichlorobenzene	ND		6.8	2.7	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,2-Dichloroethane	ND		6.8	2.0	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,2-Dichloropropane	ND		6.8	3.4	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,3,5-Trimethylbenzene	ND		6.8	2.4	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,3-Dichlorobenzene	ND		6.8	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,4-Dichlorobenzene	ND		6.8	1.4	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,4-Dioxane	ND		1400	50	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
2-Butanone (MEK)	ND		6.8	4.0	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
2-Hexanone	ND		6.8	5.7	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
4-Methyl-2-pentanone (MIBK)	ND		6.8	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Acetone	ND		27	4.3	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
1,2,4-Trichlorobenzene	ND		6.8	5.1	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Benzene	ND		6.8	2.7	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Bromoform	ND		6.8	3.6	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Bromomethane	ND		6.8	6.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Carbon disulfide	ND		6.8	4.1	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Carbon tetrachloride	ND		6.8	4.5	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-07
Date Collected: 01/18/19 11:55
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-7
Matrix: Solid
Percent Solids: 82.3

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		6.8	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Chlorodibromomethane	ND		6.8	3.3	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Chloroethane	ND		6.8	3.5	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Chloroform	ND		6.8	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Chloromethane	ND		6.8	5.3	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
cis-1,2-Dichloroethene	ND		6.8	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
cis-1,3-Dichloropropene	ND		6.8	2.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Cyclohexane	ND		6.8	1.7	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Dichlorobromomethane	ND		6.8	3.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Dichlorodifluoromethane	ND		6.8	4.0	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Ethylbenzene	ND		6.8	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Isopropylbenzene	ND		6.8	3.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Methyl acetate	ND		34	8.1	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Methyl tert-butyl ether	ND		6.8	5.0	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Methylcyclohexane	ND		6.8	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Methylene Chloride	ND		6.8	5.3	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
n-Butylbenzene	ND		6.8	5.2	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
N-Propylbenzene	ND		6.8	2.9	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
sec-Butylbenzene	ND		6.8	3.3	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Styrene	ND		6.8	1.8	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
tert-Butylbenzene	ND		6.8	2.5	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Tetrachloroethene	ND		6.8	2.7	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Toluene	ND		6.8	2.3	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
trans-1,2-Dichloroethene	ND		6.8	3.5	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
trans-1,3-Dichloropropene	ND		6.8	2.4	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Trichloroethene	ND		6.8	2.1	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Trichlorofluoromethane	ND		6.8	2.0	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Vinyl chloride	ND		6.8	5.0	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1
Xylenes, Total	ND		14	5.9	ug/Kg	☼	01/21/19 06:00	01/21/19 16:13	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*	☼			*01/21/19 06:00*	*01/21/19 16:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*69 - 110*	*01/21/19 06:00*	*01/21/19 16:13*	*1*
4-Bromofluorobenzene (Surr)	*87*		*70 - 110*	*01/21/19 06:00*	*01/21/19 16:13*	*1*
Dibromofluoromethane (Surr)	*90*		*74 - 114*	*01/21/19 06:00*	*01/21/19 16:13*	*1*
Toluene-d8 (Surr)	*113*		*83 - 124*	*01/21/19 06:00*	*01/21/19 16:13*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.7**		0.1	0.1	%			01/22/19 09:07	1
Percent Solids	**82.3**		0.1	0.1	%			01/22/19 09:07	1

Client Sample ID: SB915-011819-08
Date Collected: 01/18/19 11:55
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-8
Matrix: Solid
Percent Solids: 81.2

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		400	17	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,2'-oxybis[1-chloropropane]	ND		81	30	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,4,5-Trichlorophenol	ND		400	29	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,4,6-Trichlorophenol	ND		400	22	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,4-Dichlorophenol	ND		81	31	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,4-Dimethylphenol	ND		400	25	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,4-Dinitrophenol	ND		4000	1100	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,4-Dinitrotoluene	ND		400	20	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2,6-Dinitrotoluene	ND		400	25	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2-Chloronaphthalene	ND		81	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2-Chlorophenol	ND		400	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2-Methylnaphthalene	ND		81	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2-Methylphenol	ND		400	120	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2-Nitroaniline	ND		2100	180	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
2-Nitrophenol	ND		400	23	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
3,3'-Dichlorobenzidine	ND		400	380	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
3-Nitroaniline	ND		2100	100	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
4,6-Dinitro-2-methylphenol	ND		2100	700	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
4-Bromophenyl phenyl ether	ND		400	28	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
4-Chloro-3-methylphenol	ND		400	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
4-Chloroaniline	ND		400	13	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
4-Chlorophenyl phenyl ether	ND		400	25	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
4-Nitroaniline	ND		2100	20	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
4-Nitrophenol	ND		2100	280	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Acenaphthene	ND		81	23	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Acenaphthylene	**50**	**J**	81	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Acetophenone	ND		810	22	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Anthracene	**37**	**J**	81	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Atrazine	ND		810	180	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Benzaldehyde	ND		810	50	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Benzo[a]anthracene	**120**		81	15	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Benzo[a]pyrene	**130**		81	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Benzo[b]fluoranthene	**160**		81	20	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Benzo[g,h,i]perylene	**100**		81	17	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Benzo[k]fluoranthene	**95**		81	24	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Bis(2-chloroethoxy)methane	ND		400	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Bis(2-chloroethyl)ether	ND		81	15	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Bis(2-ethylhexyl) phthalate	ND		4000	430	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Butyl benzyl phthalate	ND		400	280	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Caprolactam	ND		2100	260	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Carbazole	ND		81	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Chrysene	**150**		81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Dibenz(a,h)anthracene	**31**	**J**	81	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Dibenzofuran	ND		400	18	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Diethyl phthalate	ND		400	98	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Dimethyl phthalate	ND		400	15	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Di-n-butyl phthalate	ND		400	180	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Di-n-octyl phthalate	ND		400	240	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Fluoranthene	**220**		81	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1

Client Sample ID: SB915-011819-08
Date Collected: 01/18/19 11:55
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-8
Matrix: Solid
Percent Solids: 81.2

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Hexachlorobenzene	ND		81	29	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Hexachlorobutadiene	ND		81	24	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Hexachlorocyclopentadiene	ND		400	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Hexachloroethane	ND		400	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Indeno[1,2,3-cd]pyrene	**79**	**J**	81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Isophorone	ND		400	21	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Methylphenol, 3 & 4	ND		400	120	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Naphthalene	ND		81	16	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Nitrobenzene	ND		810	150	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
N-Nitrosodi-n-propylamine	ND		81	27	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
N-Nitrosodiphenylamine	ND		400	130	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Pentachlorophenol	ND		2100	650	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Phenanthrene	**81**		81	22	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Phenol	ND		400	120	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1
Pyrene	**210**		81	19	ug/Kg	☼	01/23/19 04:15	01/25/19 18:58	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*230*	*T J*	*ug/Kg*	☼	*1.13*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Heptane	*520*	*T J N*	*ug/Kg*	☼	*1.30*	*142-82-5*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*200*	*T J*	*ug/Kg*	☼	*11.59*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Triphenyl phosphate	*1200*	*T J N*	*ug/Kg*	☼	*13.02*	*115-86-6*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*610*	*T J*	*ug/Kg*	☼	*15.70*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Nonadecane	*450*	*T J N*	*ug/Kg*	☼	*16.11*	*629-92-5*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*200*	*T J*	*ug/Kg*	☼	*16.16*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*160*	*T J*	*ug/Kg*	☼	*16.18*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*180*	*T J*	*ug/Kg*	☼	*16.34*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*240*	*T J*	*ug/Kg*	☼	*17.16*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*730*	*T J*	*ug/Kg*	☼	*17.42*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Hexadecane	*760*	*T J N*	*ug/Kg*	☼	*17.55*	*544-76-3*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*380*	*T J*	*ug/Kg*	☼	*18.64*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*160*	*T J*	*ug/Kg*	☼	*19.02*		*01/23/19 04:15*	*01/25/19 18:58*	*1*
Unknown	*180*	*T J*	*ug/Kg*	☼	*19.57*		*01/23/19 04:15*	*01/25/19 18:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*58*		*20 - 111*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
2-Fluorobiphenyl	*71*		*47 - 105*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
2-Fluorophenol (Surr)	*65*		*35 - 105*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
Nitrobenzene-d5 (Surr)	*81*		*47 - 105*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
Phenol-d5 (Surr)	*72*		*38 - 105*	*01/23/19 04:15*	*01/25/19 18:58*	*1*
Terphenyl-d14 (Surr)	*72*		*42 - 105*	*01/23/19 04:15*	*01/25/19 18:58*	*1*

Method: EPA 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.1	0.63	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
alpha-BHC	ND		2.1	0.50	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
beta-BHC	ND		2.1	0.56	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
delta-BHC	ND		2.1	0.64	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
gamma-BHC (Lindane)	ND		2.1	0.69	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
cis-Chlordane	ND		2.1	0.51	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1

Client Sample ID: SB915-011819-08
Date Collected: 01/18/19 11:55
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-8
Matrix: Solid
Percent Solids: 81.2

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-Chlordane	ND		2.1	0.47	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
4,4'-DDD	ND		2.1	0.87	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
4,4'-DDE	**1.0**	**J**	2.1	0.41	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
4,4'-DDT	**1.9**	**J**	2.1	0.80	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Dieldrin	ND		2.1	0.51	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Endosulfan I	ND		2.1	0.55	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Endosulfan II	ND		2.1	0.45	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Endosulfan sulfate	ND		2.1	0.53	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Endrin	ND		2.1	0.79	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Endrin aldehyde	ND		2.1	0.72	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Endrin ketone	ND		2.1	0.72	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Heptachlor	ND		2.1	0.63	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Heptachlor epoxide	ND		2.1	0.52	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Methoxychlor	ND		2.1	0.79	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1
Toxaphene	ND		81	55	ug/Kg	☼	01/23/19 05:00	01/24/19 22:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*44 - 130*	*01/23/19 05:00*	*01/24/19 22:09*	*1*
Tetrachloro-m-xylene	*87*		*44 - 130*	*01/23/19 05:00*	*01/24/19 22:09*	*1*
DCB Decachlorobiphenyl (Surr)	*97*		*41 - 150*	*01/23/19 05:00*	*01/24/19 22:09*	*1*
DCB Decachlorobiphenyl (Surr)	*101*		*41 - 150*	*01/23/19 05:00*	*01/24/19 22:09*	*1*

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		20	6.6	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1221	ND		20	13	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1232	ND		20	12	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1242	ND		20	12	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1248	ND		20	16	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1254	ND		20	14	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1260	ND		20	5.8	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1262	ND		20	14	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1
PCB-1268	ND		20	9.8	ug/Kg	☼	01/23/19 05:00	01/24/19 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene (Surr)	*90*		*51 - 116*	*01/23/19 05:00*	*01/24/19 17:19*	*1*
Tetrachloro-m-xylene (Surr)	*85*		*51 - 116*	*01/23/19 05:00*	*01/24/19 17:19*	*1*
DCB Decachlorobiphenyl (Surr)	*73*		*44 - 116*	*01/23/19 05:00*	*01/24/19 17:19*	*1*
DCB Decachlorobiphenyl (Surr)	*75*		*44 - 116*	*01/23/19 05:00*	*01/24/19 17:19*	*1*

Method: EPA 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		98	32	ug/Kg	☼	01/24/19 10:20	01/28/19 15:19	1
2,4,5-T	ND		25	7.8	ug/Kg	☼	01/24/19 10:20	01/28/19 15:19	1
Silvex (2,4,5-TP)	ND		25	8.2	ug/Kg	☼	01/24/19 10:20	01/28/19 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*63*		*20 - 125*	*01/24/19 10:20*	*01/28/19 15:19*	*1*
2,4-Dichlorophenylacetic acid	*56*		*20 - 125*	*01/24/19 10:20*	*01/28/19 15:19*	*1*

Client Sample ID: SB915-011819-08

Date Collected: 01/18/19 11:55
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-8

Matrix: Solid
Percent Solids: 81.2

Method: EPA 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	8300		24	5.1	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Antimony	ND		1.2	0.41	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Arsenic	3.5		1.2	0.48	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Barium	64		24	1.3	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Beryllium	0.37	J	0.49	0.028	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Cadmium	0.26	J	0.61	0.044	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Calcium	7100		610	32	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Chromium	11		0.61	0.16	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Cobalt	4.8	J	6.1	0.36	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Copper	19		3.0	0.31	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Iron	13000		12	6.2	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Lead	43		1.2	0.62	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Magnesium	2600		610	40	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Manganese	360		1.8	0.20	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Nickel	9.6		4.9	0.30	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Potassium	740		610	67	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Selenium	ND		1.2	0.63	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Silver	ND		0.61	0.13	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Sodium	120	J	610	32	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Thallium	ND		2.4	0.39	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Vanadium	18		6.1	0.85	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1
Zinc	64		2.4	1.3	mg/Kg	☼	01/21/19 16:09	01/23/19 09:05	1

Method: EPA 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.10		0.041	0.018	mg/Kg	☼	01/23/19 14:42	01/25/19 13:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18.8		0.1	0.1	%			01/22/19 11:13	1
Percent Solids	81.3		0.1	0.1	%			01/22/19 11:13	1
Cr (VI)	ND		0.48	0.26	mg/Kg	☼	01/24/19 14:02	01/25/19 14:56	1
Cyanide, Total	ND		0.54	0.30	mg/Kg	☼	01/23/19 12:10	01/24/19 09:43	1

Client Sample ID: SB915-011819-09

Date Collected: 01/18/19 00:00
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-9

Matrix: Water

Method: EPA 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	2.5	ug/L			01/22/19 10:45	1
1,1,2,2-Tetrachloroethane	ND		5.0	3.0	ug/L			01/22/19 10:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.9	ug/L			01/22/19 10:45	1
1,1,2-Trichloroethane	ND		5.0	2.4	ug/L			01/22/19 10:45	1
1,1-Dichloroethane	ND		5.0	1.8	ug/L			01/22/19 10:45	1
1,1-Dichloroethene	ND		5.0	2.9	ug/L			01/22/19 10:45	1
1,2,4-Trimethylbenzene	ND		5.0	1.3	ug/L			01/22/19 10:45	1
1,2-Dibromo-3-Chloropropane	ND		5.0	3.1	ug/L			01/22/19 10:45	1
1,2-Dichlorobenzene	ND		5.0	2.0	ug/L			01/22/19 10:45	1
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/22/19 10:45	1

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-09
Date Collected: 01/18/19 00:00
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-9
Matrix: Water

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		5.0	2.5	ug/L			01/22/19 10:45	1
1,3,5-Trimethylbenzene	ND		5.0	1.7	ug/L			01/22/19 10:45	1
1,3-Dichlorobenzene	ND		5.0	1.6	ug/L			01/22/19 10:45	1
1,4-Dichlorobenzene	ND		5.0	1.0	ug/L			01/22/19 10:45	1
1,4-Dioxane	ND		1000	37	ug/L			01/22/19 10:45	1
2-Butanone (MEK)	ND		5.0	2.9	ug/L			01/22/19 10:45	1
2-Hexanone	ND		5.0	4.2	ug/L			01/22/19 10:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.9	ug/L			01/22/19 10:45	1
Acetone	ND		20	3.2	ug/L			01/22/19 10:45	1
Benzene	ND		5.0	2.0	ug/L			01/22/19 10:45	1
Bromoform	ND		5.0	2.6	ug/L			01/22/19 10:45	1
Bromomethane	ND		5.0	4.5	ug/L			01/22/19 10:45	1
Carbon disulfide	ND		5.0	3.0	ug/L			01/22/19 10:45	1
Carbon tetrachloride	ND		5.0	3.3	ug/L			01/22/19 10:45	1
Chlorobenzene	ND		5.0	1.6	ug/L			01/22/19 10:45	1
Chlorodibromomethane	ND		5.0	2.4	ug/L			01/22/19 10:45	1
Chloroform	ND		5.0	2.1	ug/L			01/22/19 10:45	1
Chloromethane	ND		5.0	3.9	ug/L			01/22/19 10:45	1
Chloroethane	ND		5.0	2.6	ug/L			01/22/19 10:45	1
cis-1,2-Dichloroethene	ND		5.0	1.6	ug/L			01/22/19 10:45	1
cis-1,3-Dichloropropene	ND		5.0	1.6	ug/L			01/22/19 10:45	1
Cyclohexane	ND		5.0	1.2	ug/L			01/22/19 10:45	1
Dichlorobromomethane	ND		5.0	2.4	ug/L			01/22/19 10:45	1
Dichlorodifluoromethane	ND		5.0	2.9	ug/L			01/22/19 10:45	1
Ethylbenzene	ND		5.0	2.2	ug/L			01/22/19 10:45	1
1,2-Dibromoethane	ND		5.0	2.7	ug/L			01/22/19 10:45	1
Isopropylbenzene	ND		5.0	2.3	ug/L			01/22/19 10:45	1
Methyl acetate	ND		25	5.9	ug/L			01/22/19 10:45	1
Methyl tert-butyl ether	ND		5.0	3.7	ug/L			01/22/19 10:45	1
Methylcyclohexane	ND		5.0	2.1	ug/L			01/22/19 10:45	1
Methylene Chloride	ND		5.0	3.9	ug/L			01/22/19 10:45	1
n-Butylbenzene	ND		5.0	3.8	ug/L			01/22/19 10:45	1
N-Propylbenzene	ND		5.0	2.1	ug/L			01/22/19 10:45	1
sec-Butylbenzene	ND		5.0	2.4	ug/L			01/22/19 10:45	1
Styrene	ND		5.0	1.3	ug/L			01/22/19 10:45	1
tert-Butylbenzene	ND		5.0	1.8	ug/L			01/22/19 10:45	1
Tetrachloroethene	ND		5.0	2.0	ug/L			01/22/19 10:45	1
Toluene	ND		5.0	1.7	ug/L			01/22/19 10:45	1
trans-1,2-Dichloroethene	ND		5.0	2.5	ug/L			01/22/19 10:45	1
trans-1,3-Dichloropropene	ND		5.0	1.7	ug/L			01/22/19 10:45	1
Trichloroethene	ND		5.0	1.5	ug/L			01/22/19 10:45	1
Trichlorofluoromethane	ND		5.0	1.5	ug/L			01/22/19 10:45	1
Xylenes, Total	ND		10	4.3	ug/L			01/22/19 10:45	1
Vinyl chloride	ND		5.0	3.7	ug/L			01/22/19 10:45	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*01/22/19 10:45*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*73 - 143*		*01/22/19 10:45*	*1*

Client: O'Brien & Gere Inc of North America
Project/Site: Honeywell 9-15 Closure Sampling

TestAmerica Job ID: 180-85914-1

Client Sample ID: SB915-011819-09
Date Collected: 01/18/19 00:00
Date Received: 01/19/19 09:30

Lab Sample ID: 180-85914-9
Matrix: Water

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		61 - 123		01/22/19 10:45	1
Dibromofluoromethane (Surr)	90		68 - 128		01/22/19 10:45	1
Toluene-d8 (Surr)	92		75 - 124		01/22/19 10:45	1

Method: EPA 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 180-268318/5
Matrix: Solid
Analysis Batch: 268318

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	2.5	ug/Kg			01/21/19 08:03	1
1,1,2,2-Tetrachloroethane	ND		5.0	3.0	ug/Kg			01/21/19 08:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.9	ug/Kg			01/21/19 08:03	1
1,1,2-Trichloroethane	ND		5.0	2.4	ug/Kg			01/21/19 08:03	1
1,1-Dichloroethane	ND		5.0	1.8	ug/Kg			01/21/19 08:03	1
1,1-Dichloroethene	ND		5.0	2.9	ug/Kg			01/21/19 08:03	1
1,2,4-Trimethylbenzene	ND		5.0	1.3	ug/Kg			01/21/19 08:03	1
1,2-Dibromo-3-Chloropropane	ND		5.0	3.1	ug/Kg			01/21/19 08:03	1
1,2-Dichlorobenzene	ND		5.0	2.0	ug/Kg			01/21/19 08:03	1
1,2-Dichloroethane	ND		5.0	1.5	ug/Kg			01/21/19 08:03	1
1,2-Dichloropropane	ND		5.0	2.5	ug/Kg			01/21/19 08:03	1
1,3,5-Trimethylbenzene	ND		5.0	1.7	ug/Kg			01/21/19 08:03	1
1,3-Dichlorobenzene	ND		5.0	1.6	ug/Kg			01/21/19 08:03	1
1,4-Dichlorobenzene	ND		5.0	1.0	ug/Kg			01/21/19 08:03	1
1,4-Dioxane	ND		1000	37	ug/Kg			01/21/19 08:03	1
2-Butanone (MEK)	ND		5.0	2.9	ug/Kg			01/21/19 08:03	1
2-Hexanone	ND		5.0	4.2	ug/Kg			01/21/19 08:03	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.9	ug/Kg			01/21/19 08:03	1
Acetone	ND		20	3.2	ug/Kg			01/21/19 08:03	1
1,2,4-Trichlorobenzene	ND		5.0	3.7	ug/Kg			01/21/19 08:03	1
Benzene	ND		5.0	2.0	ug/Kg			01/21/19 08:03	1
Bromoform	ND		5.0	2.6	ug/Kg			01/21/19 08:03	1
Bromomethane	ND		5.0	4.5	ug/Kg			01/21/19 08:03	1
Carbon disulfide	ND		5.0	3.0	ug/Kg			01/21/19 08:03	1
Carbon tetrachloride	ND		5.0	3.3	ug/Kg			01/21/19 08:03	1
Chlorobenzene	ND		5.0	1.6	ug/Kg			01/21/19 08:03	1
Chlorodibromomethane	ND		5.0	2.4	ug/Kg			01/21/19 08:03	1
Chloroethane	ND		5.0	2.6	ug/Kg			01/21/19 08:03	1
Chloroform	ND		5.0	2.1	ug/Kg			01/21/19 08:03	1
Chloromethane	ND		5.0	3.9	ug/Kg			01/21/19 08:03	1
cis-1,2-Dichloroethene	ND		5.0	1.6	ug/Kg			01/21/19 08:03	1
cis-1,3-Dichloropropene	ND		5.0	1.6	ug/Kg			01/21/19 08:03	1
Cyclohexane	ND		5.0	1.2	ug/Kg			01/21/19 08:03	1
Dichlorobromomethane	ND		5.0	2.4	ug/Kg			01/21/19 08:03	1
1,2-Dibromoethane	ND		5.0	2.7	ug/Kg			01/21/19 08:03	1
Dichlorodifluoromethane	ND		5.0	2.9	ug/Kg			01/21/19 08:03	1
Ethylbenzene	ND		5.0	2.2	ug/Kg			01/21/19 08:03	1
Isopropylbenzene	ND		5.0	2.3	ug/Kg			01/21/19 08:03	1
Methyl acetate	ND		25	5.9	ug/Kg			01/21/19 08:03	1
Methyl tert-butyl ether	ND		5.0	3.7	ug/Kg			01/21/19 08:03	1
Methylcyclohexane	ND		5.0	2.1	ug/Kg			01/21/19 08:03	1
Methylene Chloride	ND		5.0	3.9	ug/Kg			01/21/19 08:03	1
n-Butylbenzene	ND		5.0	3.8	ug/Kg			01/21/19 08:03	1
N-Propylbenzene	ND		5.0	2.1	ug/Kg			01/21/19 08:03	1
sec-Butylbenzene	ND		5.0	2.4	ug/Kg			01/21/19 08:03	1
Styrene	ND		5.0	1.3	ug/Kg			01/21/19 08:03	1
tert-Butylbenzene	ND		5.0	1.8	ug/Kg			01/21/19 08:03	1
Tetrachloroethene	ND		5.0	2.0	ug/Kg			01/21/19 08:03	1

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 180-268318/5
Matrix: Solid
Analysis Batch: 268318

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		5.0	1.7	ug/Kg			01/21/19 08:03	1
trans-1,2-Dichloroethene	ND		5.0	2.5	ug/Kg			01/21/19 08:03	1
trans-1,3-Dichloropropene	ND		5.0	1.7	ug/Kg			01/21/19 08:03	1
Trichloroethene	ND		5.0	1.5	ug/Kg			01/21/19 08:03	1
Trichlorofluoromethane	ND		5.0	1.5	ug/Kg			01/21/19 08:03	1
Vinyl chloride	ND		5.0	3.7	ug/Kg			01/21/19 08:03	1
Xylenes, Total	ND		10	4.3	ug/Kg			01/21/19 08:03	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*					*01/21/19 08:03*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*69 - 110*		*01/21/19 08:03*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 110*		*01/21/19 08:03*	*1*
Dibromofluoromethane (Surr)	*96*		*74 - 114*		*01/21/19 08:03*	*1*
Toluene-d8 (Surr)	*104*		*83 - 124*		*01/21/19 08:03*	*1*

Lab Sample ID: LCS 180-268318/3
Matrix: Solid
Analysis Batch: 268318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	40.0	38.5		ug/Kg		96	80 - 128
1,1,2,2-Tetrachloroethane	40.0	42.6		ug/Kg		106	67 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	42.1		ug/Kg		105	58 - 149
1,1,2-Trichloroethane	40.0	41.3		ug/Kg		103	75 - 115
1,1-Dichloroethane	40.0	42.0		ug/Kg		105	77 - 124
1,1-Dichloroethene	40.0	43.2		ug/Kg		108	71 - 130
1,2,4-Trimethylbenzene	40.0	43.3		ug/Kg		108	71 - 128
1,2-Dibromo-3-Chloropropane	40.0	38.6		ug/Kg		96	35 - 137
1,2-Dichlorobenzene	40.0	43.3		ug/Kg		108	75 - 115
1,2-Dichloroethane	40.0	33.7		ug/Kg		84	73 - 126
1,2-Dichloropropane	40.0	43.5		ug/Kg		109	76 - 117
1,3,5-Trimethylbenzene	40.0	44.2		ug/Kg		110	69 - 131
1,3-Dichlorobenzene	40.0	44.2		ug/Kg		111	75 - 118
1,4-Dichlorobenzene	40.0	44.1		ug/Kg		110	76 - 116
2-Butanone (MEK)	40.0	39.7		ug/Kg		99	42 - 142
2-Hexanone	40.0	40.2		ug/Kg		100	50 - 137
4-Methyl-2-pentanone (MIBK)	40.0	41.1		ug/Kg		103	53 - 140
Acetone	40.0	38.5		ug/Kg		96	27 - 150
1,2,4-Trichlorobenzene	40.0	40.7		ug/Kg		102	49 - 140
Benzene	40.0	42.8		ug/Kg		107	75 - 121
Bromoform	40.0	44.2		ug/Kg		110	48 - 133
Bromomethane	40.0	35.5		ug/Kg		89	54 - 145
Carbon disulfide	40.0	43.1		ug/Kg		108	61 - 130
Carbon tetrachloride	40.0	36.3		ug/Kg		91	72 - 135
Chlorobenzene	40.0	42.7		ug/Kg		107	78 - 119

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 180-268318/3
Matrix: Solid
Analysis Batch: 268318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorodibromomethane	40.0	40.3		ug/Kg		101	65 - 122
Chloroethane	40.0	38.5		ug/Kg		96	53 - 150
Chloroform	40.0	38.9		ug/Kg		97	78 - 118
Chloromethane	40.0	39.3		ug/Kg		98	56 - 130
cis-1,2-Dichloroethene	40.0	42.9		ug/Kg		107	76 - 120
cis-1,3-Dichloropropene	40.0	39.7		ug/Kg		99	68 - 128
Cyclohexane	40.0	42.3		ug/Kg		106	71 - 139
Dichlorobromomethane	40.0	39.1		ug/Kg		98	75 - 116
1,2-Dibromoethane	40.0	41.8		ug/Kg		104	74 - 114
Dichlorodifluoromethane	40.0	35.7		ug/Kg		89	44 - 150
Ethylbenzene	40.0	43.4		ug/Kg		109	79 - 120
Isopropylbenzene	40.0	42.9		ug/Kg		107	81 - 121
Methyl acetate	80.0	73.0		ug/Kg		91	46 - 138
Methyl tert-butyl ether	40.0	38.2		ug/Kg		96	65 - 128
Methylcyclohexane	40.0	42.4		ug/Kg		106	77 - 127
Methylene Chloride	40.0	41.3		ug/Kg		103	71 - 125
m-Xylene & p-Xylene	40.0	43.3		ug/Kg		108	79 - 119
n-Butylbenzene	40.0	45.7		ug/Kg		114	64 - 140
N-Propylbenzene	40.0	45.4		ug/Kg		113	69 - 128
o-Xylene	40.0	43.7		ug/Kg		109	79 - 119
sec-Butylbenzene	40.0	45.4		ug/Kg		113	69 - 133
Styrene	40.0	44.5		ug/Kg		111	78 - 118
tert-Butylbenzene	40.0	44.3		ug/Kg		111	71 - 129
Tetrachloroethene	40.0	43.3		ug/Kg		108	75 - 125
Toluene	40.0	43.2		ug/Kg		108	79 - 123
trans-1,2-Dichloroethene	40.0	43.3		ug/Kg		108	76 - 126
trans-1,3-Dichloropropene	40.0	40.1		ug/Kg		100	65 - 128
Trichloroethene	40.0	43.0		ug/Kg		107	72 - 122
Trichlorofluoromethane	40.0	40.3		ug/Kg		101	61 - 147
Vinyl chloride	40.0	42.7		ug/Kg		107	66 - 124
Xylenes, Total	80.0	87.1		ug/Kg		109	79 - 119

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*69 - 110*
4-Bromofluorobenzene (Surr)	*97*		*70 - 110*
Dibromofluoromethane (Surr)	*96*		*74 - 114*
Toluene-d8 (Surr)	*105*		*83 - 124*

Lab Sample ID: MB 180-268406/8
Matrix: Water
Analysis Batch: 268406

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	2.5	ug/L			01/22/19 10:17	1
1,1,2,2-Tetrachloroethane	ND		5.0	3.0	ug/L			01/22/19 10:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.9	ug/L			01/22/19 10:17	1
1,1,2-Trichloroethane	ND		5.0	2.4	ug/L			01/22/19 10:17	1
1,1-Dichloroethane	ND		5.0	1.8	ug/L			01/22/19 10:17	1

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 180-268406/8
Matrix: Water
Analysis Batch: 268406

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		5.0	2.9	ug/L			01/22/19 10:17	1
1,2,4-Trimethylbenzene	ND		5.0	1.3	ug/L			01/22/19 10:17	1
1,2-Dibromo-3-Chloropropane	ND		5.0	3.1	ug/L			01/22/19 10:17	1
1,2-Dichlorobenzene	ND		5.0	2.0	ug/L			01/22/19 10:17	1
1,2-Dichloroethane	ND		5.0	1.5	ug/L			01/22/19 10:17	1
1,2-Dichloropropane	ND		5.0	2.5	ug/L			01/22/19 10:17	1
1,3,5-Trimethylbenzene	ND		5.0	1.7	ug/L			01/22/19 10:17	1
1,3-Dichlorobenzene	ND		5.0	1.6	ug/L			01/22/19 10:17	1
1,4-Dichlorobenzene	ND		5.0	1.0	ug/L			01/22/19 10:17	1
1,4-Dioxane	ND		1000	37	ug/L			01/22/19 10:17	1
2-Butanone (MEK)	ND		5.0	2.9	ug/L			01/22/19 10:17	1
2-Hexanone	ND		5.0	4.2	ug/L			01/22/19 10:17	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.9	ug/L			01/22/19 10:17	1
Acetone	ND		20	3.2	ug/L			01/22/19 10:17	1
Benzene	ND		5.0	2.0	ug/L			01/22/19 10:17	1
Bromoform	ND		5.0	2.6	ug/L			01/22/19 10:17	1
Bromomethane	ND		5.0	4.5	ug/L			01/22/19 10:17	1
Carbon disulfide	ND		5.0	3.0	ug/L			01/22/19 10:17	1
Carbon tetrachloride	ND		5.0	3.3	ug/L			01/22/19 10:17	1
Chlorobenzene	ND		5.0	1.6	ug/L			01/22/19 10:17	1
Chlorodibromomethane	ND		5.0	2.4	ug/L			01/22/19 10:17	1
Chloroethane	ND		5.0	2.6	ug/L			01/22/19 10:17	1
Chloroform	ND		5.0	2.1	ug/L			01/22/19 10:17	1
Chloromethane	ND		5.0	3.9	ug/L			01/22/19 10:17	1
cis-1,2-Dichloroethene	ND		5.0	1.6	ug/L			01/22/19 10:17	1
cis-1,3-Dichloropropene	ND		5.0	1.6	ug/L			01/22/19 10:17	1
Cyclohexane	ND		5.0	1.2	ug/L			01/22/19 10:17	1
Dichlorobromomethane	ND		5.0	2.4	ug/L			01/22/19 10:17	1
1,2-Dibromoethane	ND		5.0	2.7	ug/L			01/22/19 10:17	1
Dichlorodifluoromethane	ND		5.0	2.9	ug/L			01/22/19 10:17	1
Ethylbenzene	ND		5.0	2.2	ug/L			01/22/19 10:17	1
Isopropylbenzene	ND		5.0	2.3	ug/L			01/22/19 10:17	1
Methyl acetate	ND		25	5.9	ug/L			01/22/19 10:17	1
Methyl tert-butyl ether	ND		5.0	3.7	ug/L			01/22/19 10:17	1
Methylcyclohexane	ND		5.0	2.1	ug/L			01/22/19 10:17	1
Methylene Chloride	ND		5.0	3.9	ug/L			01/22/19 10:17	1
n-Butylbenzene	ND		5.0	3.8	ug/L			01/22/19 10:17	1
N-Propylbenzene	ND		5.0	2.1	ug/L			01/22/19 10:17	1
sec-Butylbenzene	ND		5.0	2.4	ug/L			01/22/19 10:17	1
Styrene	ND		5.0	1.3	ug/L			01/22/19 10:17	1
tert-Butylbenzene	ND		5.0	1.8	ug/L			01/22/19 10:17	1
Tetrachloroethene	ND		5.0	2.0	ug/L			01/22/19 10:17	1
Toluene	ND		5.0	1.7	ug/L			01/22/19 10:17	1
trans-1,2-Dichloroethene	ND		5.0	2.5	ug/L			01/22/19 10:17	1
trans-1,3-Dichloropropene	ND		5.0	1.7	ug/L			01/22/19 10:17	1
Trichloroethene	ND		5.0	1.5	ug/L			01/22/19 10:17	1
Trichlorofluoromethane	ND		5.0	1.5	ug/L			01/22/19 10:17	1
Vinyl chloride	ND		5.0	3.7	ug/L			01/22/19 10:17	1

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 180-268406/8
Matrix: Water
Analysis Batch: 268406

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		10	4.3	ug/L			01/22/19 10:17	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*01/22/19 10:17*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*73 - 143*		*01/22/19 10:17*	*1*
4-Bromofluorobenzene (Surr)	*101*		*61 - 123*		*01/22/19 10:17*	*1*
Dibromofluoromethane (Surr)	*94*		*68 - 128*		*01/22/19 10:17*	*1*
Toluene-d8 (Surr)	*93*		*75 - 124*		*01/22/19 10:17*	*1*

Lab Sample ID: LCS 180-268406/17
Matrix: Water
Analysis Batch: 268406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	40.0	42.6		ug/L		106	69 - 128
1,1,2,2-Tetrachloroethane	40.0	33.6		ug/L		84	51 - 142
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	36.7		ug/L		92	56 - 135
1,1,2-Trichloroethane	40.0	38.8		ug/L		97	71 - 119
1,1-Dichloroethane	40.0	39.3		ug/L		98	71 - 124
1,1-Dichloroethene	40.0	33.9		ug/L		85	57 - 135
1,2,4-Trimethylbenzene	40.0	46.2		ug/L		115	63 - 120
1,2-Dibromo-3-Chloropropane	40.0	25.9		ug/L		65	28 - 141
1,2-Dichlorobenzene	40.0	37.0		ug/L		92	63 - 124
1,2-Dichloroethane	40.0	41.8		ug/L		105	69 - 127
1,2-Dichloropropane	40.0	39.9		ug/L		100	65 - 125
1,3,5-Trimethylbenzene	40.0	46.2		ug/L		116	63 - 121
1,3-Dichlorobenzene	40.0	41.5		ug/L		104	71 - 117
1,4-Dichlorobenzene	40.0	40.2		ug/L		100	72 - 116
2-Butanone (MEK)	40.0	33.7		ug/L		84	36 - 150
2-Hexanone	40.0	29.0		ug/L		73	43 - 150
4-Methyl-2-pentanone (MIBK)	40.0	28.5		ug/L		71	47 - 148
Acetone	40.0	44.1		ug/L		110	14 - 150
Benzene	40.0	37.9		ug/L		95	66 - 124
Bromoform	40.0	35.7		ug/L		89	58 - 134
Bromomethane	40.0	34.4		ug/L		86	10 - 150
Carbon disulfide	40.0	35.9		ug/L		90	49 - 138
Carbon tetrachloride	40.0	42.5		ug/L		106	69 - 130
Chlorobenzene	40.0	38.9		ug/L		97	72 - 122
Chlorodibromomethane	40.0	41.8		ug/L		105	66 - 129
Chloroethane	40.0	33.3		ug/L		83	10 - 150
Chloroform	40.0	39.7		ug/L		99	69 - 119
Chloromethane	40.0	31.3		ug/L		78	38 - 148
cis-1,2-Dichloroethene	40.0	39.7		ug/L		99	68 - 121
cis-1,3-Dichloropropene	40.0	41.5		ug/L		104	59 - 129
Cyclohexane	40.0	36.7		ug/L		92	59 - 139

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 180-268406/17
Matrix: Water
Analysis Batch: 268406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorobromomethane	40.0	43.3		ug/L		108	65 - 127
1,2-Dibromoethane	40.0	37.9		ug/L		95	71 - 119
Dichlorodifluoromethane	40.0	25.5		ug/L		64	28 - 148
Ethylbenzene	40.0	39.0		ug/L		98	73 - 120
Isopropylbenzene	40.0	41.4		ug/L		103	71 - 123
Methyl acetate	80.0	79.8		ug/L		100	45 - 150
Methyl tert-butyl ether	40.0	42.2		ug/L		105	64 - 126
Methylcyclohexane	40.0	40.2		ug/L		101	68 - 121
Methylene Chloride	40.0	34.7		ug/L		87	55 - 134
m-Xylene & p-Xylene	40.0	40.3		ug/L		101	74 - 120
n-Butylbenzene	40.0	45.2		ug/L		113	53 - 127
N-Propylbenzene	40.0	45.4		ug/L		114	65 - 122
o-Xylene	40.0	39.8		ug/L		100	72 - 122
sec-Butylbenzene	40.0	45.8		ug/L		115	59 - 125
Styrene	40.0	40.0		ug/L		100	65 - 133
tert-Butylbenzene	40.0	46.5		ug/L		116	62 - 123
Tetrachloroethene	40.0	38.3		ug/L		96	73 - 129
Toluene	40.0	39.1		ug/L		98	68 - 127
trans-1,2-Dichloroethene	40.0	38.0		ug/L		95	69 - 127
trans-1,3-Dichloropropene	40.0	40.4		ug/L		101	57 - 124
Trichloroethene	40.0	38.9		ug/L		97	75 - 122
Trichlorofluoromethane	40.0	42.4		ug/L		106	13 - 150
Vinyl chloride	40.0	33.9		ug/L		85	57 - 132
Xylenes, Total	80.0	80.1		ug/L		100	74 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*73 - 143*
4-Bromofluorobenzene (Surr)	*97*		*61 - 123*
Dibromofluoromethane (Surr)	*104*		*68 - 128*
Toluene-d8 (Surr)	*98*		*75 - 124*

Lab Sample ID: MB 180-268637/7
Matrix: Solid
Analysis Batch: 268637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	2.5	ug/Kg			01/24/19 10:02	1
1,1,2,2-Tetrachloroethane	ND		5.0	3.0	ug/Kg			01/24/19 10:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.9	ug/Kg			01/24/19 10:02	1
1,1,2-Trichloroethane	ND		5.0	2.4	ug/Kg			01/24/19 10:02	1
1,1-Dichloroethane	ND		5.0	1.8	ug/Kg			01/24/19 10:02	1
1,1-Dichloroethene	ND		5.0	2.9	ug/Kg			01/24/19 10:02	1
1,2,4-Trimethylbenzene	ND		5.0	1.3	ug/Kg			01/24/19 10:02	1
1,2-Dibromo-3-Chloropropane	ND		5.0	3.1	ug/Kg			01/24/19 10:02	1
1,2-Dichlorobenzene	ND		5.0	2.0	ug/Kg			01/24/19 10:02	1
1,2-Dichloroethane	ND		5.0	1.5	ug/Kg			01/24/19 10:02	1
1,2-Dichloropropane	ND		5.0	2.5	ug/Kg			01/24/19 10:02	1
1,3,5-Trimethylbenzene	ND		5.0	1.7	ug/Kg			01/24/19 10:02	1

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 180-268637/7
Matrix: Solid
Analysis Batch: 268637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		5.0	1.6	ug/Kg			01/24/19 10:02	1
1,4-Dichlorobenzene	ND		5.0	1.0	ug/Kg			01/24/19 10:02	1
1,4-Dioxane	ND		1000	37	ug/Kg			01/24/19 10:02	1
2-Butanone (MEK)	ND		5.0	2.9	ug/Kg			01/24/19 10:02	1
2-Hexanone	ND		5.0	4.2	ug/Kg			01/24/19 10:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	1.9	ug/Kg			01/24/19 10:02	1
Acetone	ND		20	3.2	ug/Kg			01/24/19 10:02	1
1,2,4-Trichlorobenzene	ND		5.0	3.7	ug/Kg			01/24/19 10:02	1
Benzene	ND		5.0	2.0	ug/Kg			01/24/19 10:02	1
Bromoform	ND		5.0	2.6	ug/Kg			01/24/19 10:02	1
Bromomethane	ND		5.0	4.5	ug/Kg			01/24/19 10:02	1
Carbon disulfide	ND		5.0	3.0	ug/Kg			01/24/19 10:02	1
Carbon tetrachloride	ND		5.0	3.3	ug/Kg			01/24/19 10:02	1
Chlorobenzene	ND		5.0	1.6	ug/Kg			01/24/19 10:02	1
Chlorodibromomethane	ND		5.0	2.4	ug/Kg			01/24/19 10:02	1
Chloroethane	ND		5.0	2.6	ug/Kg			01/24/19 10:02	1
Chloroform	ND		5.0	2.1	ug/Kg			01/24/19 10:02	1
Chloromethane	ND		5.0	3.9	ug/Kg			01/24/19 10:02	1
cis-1,2-Dichloroethene	ND		5.0	1.6	ug/Kg			01/24/19 10:02	1
cis-1,3-Dichloropropene	ND		5.0	1.6	ug/Kg			01/24/19 10:02	1
Cyclohexane	ND		5.0	1.2	ug/Kg			01/24/19 10:02	1
Dichlorobromomethane	ND		5.0	2.4	ug/Kg			01/24/19 10:02	1
1,2-Dibromoethane	ND		5.0	2.7	ug/Kg			01/24/19 10:02	1
Dichlorodifluoromethane	ND		5.0	2.9	ug/Kg			01/24/19 10:02	1
Ethylbenzene	ND		5.0	2.2	ug/Kg			01/24/19 10:02	1
Isopropylbenzene	ND		5.0	2.3	ug/Kg			01/24/19 10:02	1
Methyl acetate	ND		25	5.9	ug/Kg			01/24/19 10:02	1
Methyl tert-butyl ether	ND		5.0	3.7	ug/Kg			01/24/19 10:02	1
Methylcyclohexane	ND		5.0	2.1	ug/Kg			01/24/19 10:02	1
Methylene Chloride	ND		5.0	3.9	ug/Kg			01/24/19 10:02	1
n-Butylbenzene	ND		5.0	3.8	ug/Kg			01/24/19 10:02	1
N-Propylbenzene	ND		5.0	2.1	ug/Kg			01/24/19 10:02	1
sec-Butylbenzene	ND		5.0	2.4	ug/Kg			01/24/19 10:02	1
Styrene	ND		5.0	1.3	ug/Kg			01/24/19 10:02	1
tert-Butylbenzene	ND		5.0	1.8	ug/Kg			01/24/19 10:02	1
Tetrachloroethene	ND		5.0	2.0	ug/Kg			01/24/19 10:02	1
Toluene	ND		5.0	1.7	ug/Kg			01/24/19 10:02	1
trans-1,2-Dichloroethene	ND		5.0	2.5	ug/Kg			01/24/19 10:02	1
trans-1,3-Dichloropropene	ND		5.0	1.7	ug/Kg			01/24/19 10:02	1
Trichloroethene	ND		5.0	1.5	ug/Kg			01/24/19 10:02	1
Trichlorofluoromethane	ND		5.0	1.5	ug/Kg			01/24/19 10:02	1
Vinyl chloride	ND		5.0	3.7	ug/Kg			01/24/19 10:02	1
Xylenes, Total	ND		10	4.3	ug/Kg			01/24/19 10:02	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*					*01/24/19 10:02*	*1*

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 180-268637/7
Matrix: Solid
Analysis Batch: 268637

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		69 - 110		01/24/19 10:02	1
4-Bromofluorobenzene (Surr)	96		70 - 110		01/24/19 10:02	1
Dibromofluoromethane (Surr)	93		74 - 114		01/24/19 10:02	1
Toluene-d8 (Surr)	102		83 - 124		01/24/19 10:02	1

Lab Sample ID: LCS 180-268637/4
Matrix: Solid
Analysis Batch: 268637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	40.0	37.1		ug/Kg		93	80 - 128
1,1,2,2-Tetrachloroethane	40.0	51.0	*	ug/Kg		128	67 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	40.8		ug/Kg		102	58 - 149
1,1,2-Trichloroethane	40.0	45.4		ug/Kg		114	75 - 115
1,1-Dichloroethane	40.0	40.8		ug/Kg		102	77 - 124
1,1-Dichloroethene	40.0	40.7		ug/Kg		102	71 - 130
1,2,4-Trimethylbenzene	40.0	45.1		ug/Kg		113	71 - 128
1,2-Dibromo-3-Chloropropane	40.0	43.6		ug/Kg		109	35 - 137
1,2-Dichlorobenzene	40.0	46.5	*	ug/Kg		116	75 - 115
1,2-Dichloroethane	40.0	35.6		ug/Kg		89	73 - 126
1,2-Dichloropropane	40.0	44.7		ug/Kg		112	76 - 117
1,3,5-Trimethylbenzene	40.0	45.0		ug/Kg		113	69 - 131
1,3-Dichlorobenzene	40.0	45.7		ug/Kg		114	75 - 118
1,4-Dichlorobenzene	40.0	45.7		ug/Kg		114	76 - 116
2-Butanone (MEK)	40.0	44.8		ug/Kg		112	42 - 142
2-Hexanone	40.0	47.5		ug/Kg		119	50 - 137
4-Methyl-2-pentanone (MIBK)	40.0	50.3		ug/Kg		126	53 - 140
Acetone	40.0	41.3		ug/Kg		103	27 - 150
1,2,4-Trichlorobenzene	40.0	46.8		ug/Kg		117	49 - 140
Benzene	40.0	42.1		ug/Kg		105	75 - 121
Bromoform	40.0	44.9		ug/Kg		112	48 - 133
Bromomethane	40.0	31.5		ug/Kg		79	54 - 145
Carbon disulfide	40.0	38.1		ug/Kg		95	61 - 130
Carbon tetrachloride	40.0	34.0		ug/Kg		85	72 - 135
Chlorobenzene	40.0	45.7		ug/Kg		114	78 - 119
Chlorodibromomethane	40.0	40.1		ug/Kg		100	65 - 122
Chloroethane	40.0	31.2		ug/Kg		78	53 - 150
Chloroform	40.0	39.4		ug/Kg		99	78 - 118
Chloromethane	40.0	38.5		ug/Kg		96	56 - 130
cis-1,2-Dichloroethene	40.0	41.4		ug/Kg		104	76 - 120
cis-1,3-Dichloropropene	40.0	40.7		ug/Kg		102	68 - 128
Cyclohexane	40.0	41.4		ug/Kg		104	71 - 139
Dichlorobromomethane	40.0	39.4		ug/Kg		98	75 - 116
1,2-Dibromoethane	40.0	45.5		ug/Kg		114	74 - 114
Dichlorodifluoromethane	40.0	34.2		ug/Kg		85	44 - 150
Ethylbenzene	40.0	45.2		ug/Kg		113	79 - 120
Isopropylbenzene	40.0	45.1		ug/Kg		113	81 - 121

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 180-268637/4
Matrix: Solid
Analysis Batch: 268637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	80.0	86.3		ug/Kg		108	46 - 138
Methyl tert-butyl ether	40.0	40.3		ug/Kg		101	65 - 128
Methylcyclohexane	40.0	42.7		ug/Kg		107	77 - 127
Methylene Chloride	40.0	43.0		ug/Kg		107	71 - 125
m-Xylene & p-Xylene	40.0	45.0		ug/Kg		113	79 - 119
n-Butylbenzene	40.0	47.0		ug/Kg		118	64 - 140
N-Propylbenzene	40.0	45.8		ug/Kg		115	69 - 128
o-Xylene	40.0	45.7		ug/Kg		114	79 - 119
sec-Butylbenzene	40.0	46.6		ug/Kg		116	69 - 133
Styrene	40.0	46.5		ug/Kg		116	78 - 118
tert-Butylbenzene	40.0	46.1		ug/Kg		115	71 - 129
Tetrachloroethene	40.0	43.3		ug/Kg		108	75 - 125
Toluene	40.0	43.5		ug/Kg		109	79 - 123
trans-1,2-Dichloroethene	40.0	40.5		ug/Kg		101	76 - 126
trans-1,3-Dichloropropene	40.0	42.2		ug/Kg		106	65 - 128
Trichloroethene	40.0	42.6		ug/Kg		106	72 - 122
Trichlorofluoromethane	40.0	30.2		ug/Kg		75	61 - 147
Vinyl chloride	40.0	39.3		ug/Kg		98	66 - 124
Xylenes, Total	80.0	90.7		ug/Kg		113	79 - 119

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*69 - 110*
4-Bromofluorobenzene (Surr)	*105*		*70 - 110*
Dibromofluoromethane (Surr)	*105*		*74 - 114*
Toluene-d8 (Surr)	*110*		*83 - 124*

Lab Sample ID: LCSD 180-268637/15
Matrix: Solid
Analysis Batch: 268637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	40.0	33.4		ug/Kg		83	80 - 128	10	20
1,1,2,2-Tetrachloroethane	40.0	46.9		ug/Kg		117	67 - 120	8	20
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	36.8		ug/Kg		92	58 - 149	10	20
1,1,2-Trichloroethane	40.0	42.9		ug/Kg		107	75 - 115	6	20
1,1-Dichloroethane	40.0	36.8		ug/Kg		92	77 - 124	10	20
1,1-Dichloroethene	40.0	37.3		ug/Kg		93	71 - 130	9	20
1,2,4-Trimethylbenzene	40.0	42.6		ug/Kg		106	71 - 128	6	20
1,2-Dibromo-3-Chloropropane	40.0	38.9		ug/Kg		97	35 - 137	12	20
1,2-Dichlorobenzene	40.0	43.3		ug/Kg		108	75 - 115	7	20
1,2-Dichloroethane	40.0	32.8		ug/Kg		82	73 - 126	8	20
1,2-Dichloropropane	40.0	41.6		ug/Kg		104	76 - 117	7	20
1,3,5-Trimethylbenzene	40.0	42.3		ug/Kg		106	69 - 131	6	20
1,3-Dichlorobenzene	40.0	42.6		ug/Kg		107	75 - 118	7	20
1,4-Dichlorobenzene	40.0	42.7		ug/Kg		107	76 - 116	7	20
2-Butanone (MEK)	40.0	39.6		ug/Kg		99	42 - 142	12	20
2-Hexanone	40.0	43.4		ug/Kg		109	50 - 137	9	20

Method: EPA 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 180-268637/15
Matrix: Solid
Analysis Batch: 268637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone (MIBK)			40.0	44.9		ug/Kg		112	53 - 140	11	20
Acetone			40.0	35.2		ug/Kg		88	27 - 150	16	20
1,2,4-Trichlorobenzene			40.0	43.0		ug/Kg		108	49 - 140	8	20
Benzene			40.0	39.2		ug/Kg		98	75 - 121	7	20
Bromoform			40.0	40.1		ug/Kg		100	48 - 133	11	20
Bromomethane			40.0	28.4		ug/Kg		71	54 - 145	11	20
Carbon disulfide			40.0	34.2		ug/Kg		86	61 - 130	11	20
Carbon tetrachloride			40.0	31.5		ug/Kg		79	72 - 135	8	20
Chlorobenzene			40.0	42.8		ug/Kg		107	78 - 119	7	20
Chlorodibromomethane			40.0	37.4		ug/Kg		93	65 - 122	7	20
Chloroethane			40.0	28.4		ug/Kg		71	53 - 150	9	20
Chloroform			40.0	36.0		ug/Kg		90	78 - 118	9	20
Chloromethane			40.0	34.2		ug/Kg		85	56 - 130	12	20
cis-1,2-Dichloroethene			40.0	38.3		ug/Kg		96	76 - 120	8	20
cis-1,3-Dichloropropene			40.0	38.4		ug/Kg		96	68 - 128	6	20
Cyclohexane			40.0	37.5		ug/Kg		94	71 - 139	10	20
Dichlorobromomethane			40.0	35.7		ug/Kg		89	75 - 116	10	20
1,2-Dibromoethane			40.0	42.3		ug/Kg		106	74 - 114	7	20
Dichlorodifluoromethane			40.0	31.3		ug/Kg		78	44 - 150	9	20
Ethylbenzene			40.0	42.5		ug/Kg		106	79 - 120	6	20
Isopropylbenzene			40.0	42.5		ug/Kg		106	81 - 121	6	20
Methyl acetate			80.0	73.9		ug/Kg		92	46 - 138	15	20
Methyl tert-butyl ether			40.0	35.6		ug/Kg		89	65 - 128	13	20
Methylcyclohexane			40.0	39.4		ug/Kg		98	77 - 127	8	20
Methylene Chloride			40.0	37.8		ug/Kg		95	71 - 125	13	20
m-Xylene & p-Xylene			40.0	42.1		ug/Kg		105	79 - 119	7	20
n-Butylbenzene			40.0	43.6		ug/Kg		109	64 - 140	8	20
N-Propylbenzene			40.0	43.4		ug/Kg		108	69 - 128	5	20
o-Xylene			40.0	42.7		ug/Kg		107	79 - 119	7	20
sec-Butylbenzene			40.0	43.0		ug/Kg		108	69 - 133	8	20
Styrene			40.0	44.1		ug/Kg		110	78 - 118	5	20
tert-Butylbenzene			40.0	42.3		ug/Kg		106	71 - 129	9	20
Tetrachloroethene			40.0	40.7		ug/Kg		102	75 - 125	6	20
Toluene			40.0	40.7		ug/Kg		102	79 - 123	7	20
trans-1,2-Dichloroethene			40.0	37.6		ug/Kg		94	76 - 126	7	20
trans-1,3-Dichloropropene			40.0	38.4		ug/Kg		96	65 - 128	9	20
Trichloroethene			40.0	38.7		ug/Kg		97	72 - 122	10	20
Trichlorofluoromethane			40.0	26.9		ug/Kg		67	61 - 147	12	20
Vinyl chloride			40.0	36.2		ug/Kg		91	66 - 124	8	20
Xylenes, Total			80.0	84.8		ug/Kg		106	79 - 119	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*88*		*69 - 110*
4-Bromofluorobenzene (Surr)	*104*		*70 - 110*
Dibromofluoromethane (Surr)	*100*		*74 - 114*
Toluene-d8 (Surr)	*109*		*83 - 124*

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-268506/1-A
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268506

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		330	14	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,2'-oxybis[1-chloropropane]	ND		67	25	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,4,5-Trichlorophenol	ND		330	24	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,4,6-Trichlorophenol	ND		330	18	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,4-Dichlorophenol	ND		67	26	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,4-Dimethylphenol	ND		330	21	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,4-Dinitrophenol	ND		3300	900	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,4-Dinitrotoluene	ND		330	17	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2,6-Dinitrotoluene	ND		330	21	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2-Chloronaphthalene	ND		67	15	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2-Chlorophenol	ND		330	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2-Methylnaphthalene	ND		67	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2-Methylphenol	ND		330	96	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2-Nitroaniline	ND		1700	150	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
2-Nitrophenol	ND		330	19	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
3,3'-Dichlorobenzidine	ND		330	310	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
3-Nitroaniline	ND		1700	85	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
4,6-Dinitro-2-methylphenol	ND		1700	580	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
4-Bromophenyl phenyl ether	ND		330	23	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
4-Chloro-3-methylphenol	ND		330	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
4-Chloroaniline	ND		330	11	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
4-Chlorophenyl phenyl ether	ND		330	20	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
4-Nitroaniline	ND		1700	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
4-Nitrophenol	ND		1700	230	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Acenaphthene	ND		67	19	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Acenaphthylene	ND		67	15	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Acetophenone	ND		670	18	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Anthracene	ND		67	17	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Atrazine	ND		670	150	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Benzaldehyde	ND		670	41	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Benzo[a]anthracene	ND		67	13	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Benzo[a]pyrene	ND		67	15	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Benzo[b]fluoranthene	ND		67	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Benzo[g,h,i]perylene	ND		67	14	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Benzo[k]fluoranthene	ND		67	20	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Bis(2-chloroethoxy)methane	ND		330	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Bis(2-chloroethyl)ether	ND		67	12	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Bis(2-ethylhexyl) phthalate	ND		3300	360	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Butyl benzyl phthalate	ND		330	230	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Caprolactam	ND		1700	220	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Carbazole	ND		67	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Chrysene	ND		67	13	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Dibenz(a,h)anthracene	ND		67	15	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Dibenzofuran	ND		330	15	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Diethyl phthalate	ND		330	81	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Dimethyl phthalate	ND		330	12	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Di-n-butyl phthalate	ND		330	150	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Di-n-octyl phthalate	ND		330	190	ug/Kg		01/23/19 04:15	01/25/19 13:08	1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-268506/1-A
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268506

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		67	18	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Fluorene	ND		67	13	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Hexachlorobenzene	ND		67	24	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Hexachlorobutadiene	ND		67	20	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Hexachlorocyclopentadiene	ND		330	17	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Hexachloroethane	ND		330	17	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Indeno[1,2,3-cd]pyrene	ND		67	14	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Isophorone	ND		330	17	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Methylphenol, 3 & 4	ND		330	98	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Naphthalene	ND		67	13	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Nitrobenzene	ND		670	120	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
N-Nitrosodi-n-propylamine	ND		67	23	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
N-Nitrosodiphenylamine	ND		330	110	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Pentachlorophenol	ND		1700	540	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Phenanthrene	ND		67	18	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Phenol	ND		330	100	ug/Kg		01/23/19 04:15	01/25/19 13:08	1
Pyrene	ND		67	16	ug/Kg		01/23/19 04:15	01/25/19 13:08	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Dibenzylidene 4,4'-biphenylenediamine	*3190*	*T J N*	*ug/Kg*		*19.96*	*6311-48-4*	*01/23/19 04:15*	*01/25/19 13:08*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*68*		*20 - 111*	*01/23/19 04:15*	*01/25/19 13:08*	*1*
2-Fluorobiphenyl	*80*		*47 - 105*	*01/23/19 04:15*	*01/25/19 13:08*	*1*
2-Fluorophenol (Surr)	*81*		*35 - 105*	*01/23/19 04:15*	*01/25/19 13:08*	*1*
Nitrobenzene-d5 (Surr)	*85*		*47 - 105*	*01/23/19 04:15*	*01/25/19 13:08*	*1*
Phenol-d5 (Surr)	*80*		*38 - 105*	*01/23/19 04:15*	*01/25/19 13:08*	*1*
Terphenyl-d14 (Surr)	*85*		*42 - 105*	*01/23/19 04:15*	*01/25/19 13:08*	*1*

Lab Sample ID: LCS 180-268506/2-A
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268506

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	6670	5510		ug/Kg		83	45 - 102
2,2'-oxybis[1-chloropropane]	6670	6780		ug/Kg		102	29 - 115
2,4,5-Trichlorophenol	6670	4920		ug/Kg		74	45 - 105
2,4,6-Trichlorophenol	6670	4820		ug/Kg		72	45 - 109
2,4-Dichlorophenol	6670	5130		ug/Kg		77	48 - 105
2,4-Dimethylphenol	6670	5060		ug/Kg		76	45 - 102
2,4-Dinitrophenol	13300	9470		ug/Kg		71	29 - 114
2,4-Dinitrotoluene	6670	6060		ug/Kg		91	48 - 111
2,6-Dinitrotoluene	6670	6290		ug/Kg		94	48 - 109
2-Chloronaphthalene	6670	5350		ug/Kg		80	45 - 100
2-Chlorophenol	6670	5310		ug/Kg		80	49 - 103
2-Methylnaphthalene	6670	5360		ug/Kg		80	49 - 100
2-Methylphenol	6670	5160		ug/Kg		77	48 - 103

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-268506/2-A
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268506

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Nitroaniline	6670	5980		ug/Kg		90	40 - 117
2-Nitrophenol	6670	6310		ug/Kg		95	50 - 111
3,3'-Dichlorobenzidine	6670	4210		ug/Kg		63	44 - 102
3-Nitroaniline	6670	5970		ug/Kg		90	48 - 109
4,6-Dinitro-2-methylphenol	13300	11200		ug/Kg		84	34 - 126
4-Bromophenyl phenyl ether	6670	5280		ug/Kg		79	44 - 109
4-Chloro-3-methylphenol	6670	5020		ug/Kg		75	49 - 105
4-Chloroaniline	6670	5380		ug/Kg		81	48 - 100
4-Chlorophenyl phenyl ether	6670	5030		ug/Kg		75	45 - 104
4-Nitroaniline	6670	6390		ug/Kg		96	45 - 109
4-Nitrophenol	13300	8720		ug/Kg		65	32 - 126
Acenaphthene	6670	5830		ug/Kg		87	45 - 101
Acenaphthylene	6670	6020		ug/Kg		90	47 - 102
Acetophenone	6670	4880		ug/Kg		73	42 - 100
Anthracene	6670	5960		ug/Kg		89	47 - 105
Atrazine	6670	4440		ug/Kg		67	10 - 122
Benzaldehyde	6670	719		ug/Kg		11	10 - 119
Benzo[a]anthracene	6670	5380		ug/Kg		81	45 - 105
Benzo[a]pyrene	6670	6180		ug/Kg		93	48 - 100
Benzo[b]fluoranthene	6670	5200		ug/Kg		78	42 - 102
Benzo[g,h,i]perylene	6670	5650		ug/Kg		85	46 - 104
Benzo[k]fluoranthene	6670	6190		ug/Kg		93	48 - 100
Bis(2-chloroethoxy)methane	6670	4820		ug/Kg		72	47 - 100
Bis(2-chloroethyl)ether	6670	4920		ug/Kg		74	46 - 101
Bis(2-ethylhexyl) phthalate	6670	5800		ug/Kg		87	41 - 119
Butyl benzyl phthalate	6670	5610		ug/Kg		84	41 - 121
Caprolactam	6670	5620		ug/Kg		84	50 - 112
Carbazole	6670	6010		ug/Kg		90	48 - 100
Chrysene	6670	5260		ug/Kg		79	46 - 100
Dibenz(a,h)anthracene	6670	5710		ug/Kg		86	46 - 107
Dibenzofuran	6670	5550		ug/Kg		83	47 - 100
Diethyl phthalate	6670	5620		ug/Kg		84	45 - 105
Dimethyl phthalate	6670	5340		ug/Kg		80	46 - 106
Di-n-butyl phthalate	6670	6490		ug/Kg		97	50 - 109
Di-n-octyl phthalate	6670	5710		ug/Kg		86	35 - 124
Fluoranthene	6670	5690		ug/Kg		85	49 - 104
Fluorene	6670	5670		ug/Kg		85	46 - 103
Hexachlorobenzene	6670	5140		ug/Kg		77	41 - 111
Hexachlorobutadiene	6670	4200		ug/Kg		63	36 - 113
Hexachlorocyclopentadiene	6670	5080		ug/Kg		76	30 - 120
Hexachloroethane	6670	5150		ug/Kg		77	47 - 101
Indeno[1,2,3-cd]pyrene	6670	5630		ug/Kg		84	46 - 107
Isophorone	6670	5140		ug/Kg		77	45 - 100
Methylphenol, 3 & 4	6670	5200		ug/Kg		78	47 - 103
Naphthalene	6670	4940		ug/Kg		74	49 - 100
Nitrobenzene	6670	5380		ug/Kg		81	44 - 103
N-Nitrosodi-n-propylamine	6670	6300		ug/Kg		94	43 - 108
N-Nitrosodiphenylamine	6670	5940		ug/Kg		89	46 - 105

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-268506/2-A
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268506

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	13300	9440		ug/Kg		71	35 - 110
Phenanthrene	6670	5890		ug/Kg		88	46 - 103
Phenol	6670	5270		ug/Kg		79	47 - 102
Pyrene	6670	5000		ug/Kg		75	43 - 107

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*69*		*20 - 111*
2-Fluorobiphenyl	*71*		*47 - 105*
2-Fluorophenol (Surr)	*76*		*35 - 105*
Nitrobenzene-d5 (Surr)	*82*		*47 - 105*
Phenol-d5 (Surr)	*77*		*38 - 105*
Terphenyl-d14 (Surr)	*76*		*42 - 105*

Lab Sample ID: 180-85914-2 MS
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: SB915-011819-02
Prep Type: Total/NA
Prep Batch: 268506

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	ND		7110	5590		ug/Kg	☼	79	45 - 102
2,2'-oxybis[1-chloropropane]	ND		7110	7070		ug/Kg	☼	99	29 - 115
2,4,5-Trichlorophenol	ND		7110	5000		ug/Kg	☼	70	45 - 105
2,4,6-Trichlorophenol	ND		7110	5050		ug/Kg	☼	71	45 - 109
2,4-Dichlorophenol	ND		7110	5190		ug/Kg	☼	73	48 - 105
2,4-Dimethylphenol	ND		7110	4970		ug/Kg	☼	70	45 - 102
2,4-Dinitrophenol	ND		14200	7740		ug/Kg	☼	54	29 - 114
2,4-Dinitrotoluene	ND		7110	6140		ug/Kg	☼	86	48 - 111
2,6-Dinitrotoluene	ND		7110	6420		ug/Kg	☼	90	48 - 109
2-Chloronaphthalene	ND		7110	5500		ug/Kg	☼	77	45 - 100
2-Chlorophenol	ND		7110	5610		ug/Kg	☼	79	49 - 103
2-Methylnaphthalene	ND		7110	5530		ug/Kg	☼	78	49 - 100
2-Methylphenol	ND		7110	5300		ug/Kg	☼	75	48 - 103
2-Nitroaniline	ND		7110	6020		ug/Kg	☼	85	40 - 117
2-Nitrophenol	ND		7110	6220		ug/Kg	☼	87	50 - 111
3,3'-Dichlorobenzidine	ND		7110	4370		ug/Kg	☼	61	44 - 102
3-Nitroaniline	ND		7110	6010		ug/Kg	☼	84	48 - 109
4,6-Dinitro-2-methylphenol	ND		14200	10500		ug/Kg	☼	74	34 - 126
4-Bromophenyl phenyl ether	ND		7110	5320		ug/Kg	☼	75	44 - 109
4-Chloro-3-methylphenol	ND		7110	4920		ug/Kg	☼	69	49 - 105
4-Chloroaniline	ND		7110	5400		ug/Kg	☼	76	48 - 100
4-Chlorophenyl phenyl ether	ND		7110	4960		ug/Kg	☼	70	45 - 104
4-Nitroaniline	ND		7110	6220		ug/Kg	☼	87	45 - 109
4-Nitrophenol	ND		14200	8410		ug/Kg	☼	59	32 - 126
Acenaphthene	ND		7110	5750		ug/Kg	☼	81	45 - 101
Acenaphthylene	ND		7110	6060		ug/Kg	☼	85	47 - 102
Acetophenone	ND		7110	5200		ug/Kg	☼	73	42 - 100
Anthracene	ND		7110	6210		ug/Kg	☼	87	47 - 105
Atrazine	ND		7110	4500		ug/Kg	☼	63	10 - 122
Benzaldehyde	ND	F1 F2	7110	652	J F1	ug/Kg	☼	9	10 - 119

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-85914-2 MS
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: SB915-011819-02
Prep Type: Total/NA
Prep Batch: 268506

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	ND		7110	5280		ug/Kg	☼	74	45 - 105
Benzo[a]pyrene	ND		7110	6170		ug/Kg	☼	87	48 - 100
Benzo[b]fluoranthene	ND		7110	5400		ug/Kg	☼	76	42 - 102
Benzo[g,h,i]perylene	ND		7110	5790		ug/Kg	☼	81	46 - 104
Benzo[k]fluoranthene	ND		7110	6090		ug/Kg	☼	86	48 - 100
Bis(2-chloroethoxy)methane	ND		7110	4880		ug/Kg	☼	69	47 - 100
Bis(2-chloroethyl)ether	ND		7110	5140		ug/Kg	☼	72	46 - 101
Bis(2-ethylhexyl) phthalate	ND		7110	5800		ug/Kg	☼	81	41 - 119
Butyl benzyl phthalate	ND		7110	5830		ug/Kg	☼	82	41 - 121
Caprolactam	ND		7110	4760		ug/Kg	☼	67	50 - 112
Carbazole	ND		7110	6230		ug/Kg	☼	88	48 - 100
Chrysene	ND		7110	5270		ug/Kg	☼	74	46 - 100
Dibenz(a,h)anthracene	ND		7110	5790		ug/Kg	☼	81	46 - 107
Dibenzofuran	ND		7110	5580		ug/Kg	☼	78	47 - 100
Diethyl phthalate	ND		7110	5760		ug/Kg	☼	81	45 - 105
Dimethyl phthalate	ND		7110	5470		ug/Kg	☼	77	46 - 106
Di-n-butyl phthalate	ND		7110	6530		ug/Kg	☼	92	50 - 109
Di-n-octyl phthalate	ND		7110	5920		ug/Kg	☼	83	35 - 124
Fluoranthene	ND		7110	5770		ug/Kg	☼	81	49 - 104
Fluorene	ND		7110	5760		ug/Kg	☼	81	46 - 103
Hexachlorobenzene	ND		7110	5340		ug/Kg	☼	75	41 - 111
Hexachlorobutadiene	ND		7110	4230		ug/Kg	☼	59	36 - 113
Hexachlorocyclopentadiene	ND		7110	5060		ug/Kg	☼	71	30 - 120
Hexachloroethane	ND		7110	5390		ug/Kg	☼	76	47 - 101
Indeno[1,2,3-cd]pyrene	ND		7110	5760		ug/Kg	☼	81	46 - 107
Isophorone	ND		7110	5250		ug/Kg	☼	74	45 - 100
Methylphenol, 3 & 4	ND		7110	5390		ug/Kg	☼	76	47 - 103
Naphthalene	ND		7110	5020		ug/Kg	☼	71	49 - 100
Nitrobenzene	ND		7110	5460		ug/Kg	☼	77	44 - 103
N-Nitrosodi-n-propylamine	ND		7110	6680		ug/Kg	☼	94	43 - 108
N-Nitrosodiphenylamine	ND		7110	5850		ug/Kg	☼	82	46 - 105
Pentachlorophenol	ND		14200	8470		ug/Kg	☼	60	35 - 110
Phenanthrene	ND		7110	5770		ug/Kg	☼	81	46 - 103
Phenol	ND		7110	5420		ug/Kg	☼	76	47 - 102
Pyrene	ND		7110	5040		ug/Kg	☼	71	43 - 107

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*61*		*20 - 111*
2-Fluorobiphenyl	*65*		*47 - 105*
2-Fluorophenol (Surr)	*69*		*35 - 105*
Nitrobenzene-d5 (Surr)	*74*		*47 - 105*
Phenol-d5 (Surr)	*72*		*38 - 105*
Terphenyl-d14 (Surr)	*67*		*42 - 105*

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-85914-2 MSD
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: SB915-011819-02
Prep Type: Total/NA
Prep Batch: 268506

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1'-Biphenyl	ND		7070	6370		ug/Kg	☼	90	45 - 102	13	20
2,2'-oxybis[1-chloropropane]	ND		7070	7450		ug/Kg	☼	106	29 - 115	5	15
2,4,5-Trichlorophenol	ND		7070	5540		ug/Kg	☼	78	45 - 105	10	21
2,4,6-Trichlorophenol	ND		7070	5450		ug/Kg	☼	77	45 - 109	8	19
2,4-Dichlorophenol	ND		7070	5740		ug/Kg	☼	81	48 - 105	10	19
2,4-Dimethylphenol	ND		7070	5430		ug/Kg	☼	77	45 - 102	9	17
2,4-Dinitrophenol	ND		14100	8050		ug/Kg	☼	57	29 - 114	4	18
2,4-Dinitrotoluene	ND		7070	6860		ug/Kg	☼	97	48 - 111	11	20
2,6-Dinitrotoluene	ND		7070	7040		ug/Kg	☼	100	48 - 109	9	18
2-Chloronaphthalene	ND		7070	5990		ug/Kg	☼	85	45 - 100	9	19
2-Chlorophenol	ND		7070	5870		ug/Kg	☼	83	49 - 103	4	17
2-Methylnaphthalene	ND		7070	6010		ug/Kg	☼	85	49 - 100	8	19
2-Methylphenol	ND		7070	5520		ug/Kg	☼	78	48 - 103	4	17
2-Nitroaniline	ND		7070	6820		ug/Kg	☼	97	40 - 117	13	19
2-Nitrophenol	ND		7070	7050		ug/Kg	☼	100	50 - 111	12	19
3,3'-Dichlorobenzidine	ND		7070	4810		ug/Kg	☼	68	44 - 102	10	16
3-Nitroaniline	ND		7070	6530		ug/Kg	☼	92	48 - 109	8	17
4,6-Dinitro-2-methylphenol	ND		14100	11000		ug/Kg	☼	78	34 - 126	5	15
4-Bromophenyl phenyl ether	ND		7070	5630		ug/Kg	☼	80	44 - 109	6	16
4-Chloro-3-methylphenol	ND		7070	5330		ug/Kg	☼	75	49 - 105	8	23
4-Chloroaniline	ND		7070	5960		ug/Kg	☼	84	48 - 100	10	19
4-Chlorophenyl phenyl ether	ND		7070	5670		ug/Kg	☼	80	45 - 104	13	19
4-Nitroaniline	ND		7070	6860		ug/Kg	☼	97	45 - 109	10	19
4-Nitrophenol	ND		14100	9670		ug/Kg	☼	68	32 - 126	14	21
Acenaphthene	ND		7070	6370		ug/Kg	☼	90	45 - 101	10	18
Acenaphthylene	ND		7070	6690		ug/Kg	☼	95	47 - 102	10	18
Acetophenone	ND		7070	5350		ug/Kg	☼	76	42 - 100	3	17
Anthracene	ND		7070	6580		ug/Kg	☼	93	47 - 105	6	16
Atrazine	ND		7070	4810		ug/Kg	☼	68	10 - 122	7	15
Benzaldehyde	ND	F1 F2	7070	453	J F1 F2	ug/Kg	☼	6	10 - 119	36	20
Benzo[a]anthracene	ND		7070	5940		ug/Kg	☼	84	45 - 105	12	17
Benzo[a]pyrene	ND		7070	6830		ug/Kg	☼	97	48 - 100	10	17
Benzo[b]fluoranthene	ND		7070	5770		ug/Kg	☼	82	42 - 102	7	18
Benzo[g,h,i]perylene	ND		7070	6420		ug/Kg	☼	91	46 - 104	10	16
Benzo[k]fluoranthene	ND		7070	6820		ug/Kg	☼	96	48 - 100	11	19
Bis(2-chloroethoxy)methane	ND		7070	5280		ug/Kg	☼	75	47 - 100	8	18
Bis(2-chloroethyl)ether	ND		7070	5260		ug/Kg	☼	74	46 - 101	2	15
Bis(2-ethylhexyl) phthalate	ND		7070	6580		ug/Kg	☼	93	41 - 119	13	18
Butyl benzyl phthalate	ND		7070	6370		ug/Kg	☼	90	41 - 121	9	16
Caprolactam	ND		7070	4820		ug/Kg	☼	68	50 - 112	1	21
Carbazole	ND		7070	6390		ug/Kg	☼	90	48 - 100	3	16
Chrysene	ND		7070	5720		ug/Kg	☼	81	46 - 100	8	20
Dibenz(a,h)anthracene	ND		7070	6340		ug/Kg	☼	90	46 - 107	9	16
Dibenzofuran	ND		7070	6280		ug/Kg	☼	89	47 - 100	12	18
Diethyl phthalate	ND		7070	6220		ug/Kg	☼	88	45 - 105	8	20
Dimethyl phthalate	ND		7070	6000		ug/Kg	☼	85	46 - 106	9	19
Di-n-butyl phthalate	ND		7070	6830		ug/Kg	☼	97	50 - 109	4	15
Di-n-octyl phthalate	ND		7070	6650		ug/Kg	☼	94	35 - 124	12	18

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-85914-2 MSD
Matrix: Solid
Analysis Batch: 268786

Client Sample ID: SB915-011819-02
Prep Type: Total/NA
Prep Batch: 268506

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoranthene	ND		7070	6060		ug/Kg	☼	86	49 - 104	5	17
Fluorene	ND		7070	6400		ug/Kg	☼	91	46 - 103	10	17
Hexachlorobenzene	ND		7070	5630		ug/Kg	☼	80	41 - 111	5	18
Hexachlorobutadiene	ND		7070	4780		ug/Kg	☼	68	36 - 113	12	17
Hexachlorocyclopentadiene	ND		7070	5570		ug/Kg	☼	79	30 - 120	10	20
Hexachloroethane	ND		7070	5550		ug/Kg	☼	79	47 - 101	3	17
Indeno[1,2,3-cd]pyrene	ND		7070	6410		ug/Kg	☼	91	46 - 107	11	18
Isophorone	ND		7070	5730		ug/Kg	☼	81	45 - 100	9	18
Methylphenol, 3 & 4	ND		7070	5590		ug/Kg	☼	79	47 - 103	4	15
Naphthalene	ND		7070	5550		ug/Kg	☼	79	49 - 100	10	19
Nitrobenzene	ND		7070	6050		ug/Kg	☼	86	44 - 103	10	19
N-Nitrosodi-n-propylamine	ND		7070	6770		ug/Kg	☼	96	43 - 108	1	16
N-Nitrosodiphenylamine	ND		7070	6190		ug/Kg	☼	88	46 - 105	6	17
Pentachlorophenol	ND		14100	9160		ug/Kg	☼	65	35 - 110	8	16
Phenanthrene	ND		7070	6340		ug/Kg	☼	90	46 - 103	9	18
Phenol	ND		7070	5660		ug/Kg	☼	80	47 - 102	4	17
Pyrene	ND		7070	5700		ug/Kg	☼	81	43 - 107	12	17

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*68*		*20 - 111*
2-Fluorobiphenyl	*76*		*47 - 105*
2-Fluorophenol (Surr)	*76*		*35 - 105*
Nitrobenzene-d5 (Surr)	*88*		*47 - 105*
Phenol-d5 (Surr)	*79*		*38 - 105*
Terphenyl-d14 (Surr)	*81*		*42 - 105*

Method: EPA 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 180-268511/1-A
Matrix: Solid
Analysis Batch: 268690

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268511

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.7	0.52	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
alpha-BHC	ND		1.7	0.41	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
beta-BHC	ND		1.7	0.46	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
delta-BHC	ND		1.7	0.53	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
gamma-BHC (Lindane)	ND		1.7	0.57	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
cis-Chlordane	ND		1.7	0.42	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
trans-Chlordane	ND		1.7	0.39	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
4,4'-DDD	ND		1.7	0.71	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
4,4'-DDE	ND		1.7	0.34	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
4,4'-DDT	ND		1.7	0.66	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Dieldrin	ND		1.7	0.42	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Endosulfan I	ND		1.7	0.45	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Endosulfan II	ND		1.7	0.37	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Endosulfan sulfate	ND		1.7	0.43	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Endrin	ND		1.7	0.65	ug/Kg		01/23/19 05:00	01/24/19 20:14	1

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 180-268511/1-A
Matrix: Solid
Analysis Batch: 268690

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268511

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin aldehyde	ND		1.7	0.60	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Endrin ketone	ND		1.7	0.60	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Heptachlor	ND		1.7	0.52	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Heptachlor epoxide	ND		1.7	0.43	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Methoxychlor	ND		1.7	0.65	ug/Kg		01/23/19 05:00	01/24/19 20:14	1
Toxaphene	ND		67	45	ug/Kg		01/23/19 05:00	01/24/19 20:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*85*		*44 - 130*	*01/23/19 05:00*	*01/24/19 20:14*	*1*
Tetrachloro-m-xylene	*89*		*44 - 130*	*01/23/19 05:00*	*01/24/19 20:14*	*1*
DCB Decachlorobiphenyl (Surr)	*94*		*41 - 150*	*01/23/19 05:00*	*01/24/19 20:14*	*1*
DCB Decachlorobiphenyl (Surr)	*93*		*41 - 150*	*01/23/19 05:00*	*01/24/19 20:14*	*1*

Lab Sample ID: LCS 180-268511/2-A
Matrix: Solid
Analysis Batch: 268690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268511

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	33.3	33.5		ug/Kg		101	55 - 139
alpha-BHC	33.3	30.4		ug/Kg		91	55 - 124
beta-BHC	33.3	33.8		ug/Kg		101	60 - 124
delta-BHC	33.3	19.6		ug/Kg		59	10 - 100
gamma-BHC (Lindane)	33.3	31.2		ug/Kg		94	56 - 125
cis-Chlordane	33.3	33.6		ug/Kg		101	56 - 133
trans-Chlordane	33.3	34.5		ug/Kg		103	55 - 134
4,4'-DDD	33.3	38.2		ug/Kg		115	62 - 137
4,4'-DDE	33.3	32.8		ug/Kg		98	62 - 141
4,4'-DDT	33.3	36.8		ug/Kg		110	54 - 130
Dieldrin	33.3	31.9		ug/Kg		96	66 - 134
Endosulfan I	33.3	33.7		ug/Kg		101	65 - 132
Endosulfan II	33.3	31.6		ug/Kg		95	67 - 136
Endosulfan sulfate	33.3	29.5		ug/Kg		88	48 - 126
Endrin	33.3	39.6		ug/Kg		119	63 - 138
Endrin aldehyde	33.3	41.0		ug/Kg		123	74 - 149
Endrin ketone	33.3	37.7		ug/Kg		113	68 - 136
Heptachlor	33.3	37.3		ug/Kg		112	62 - 132
Heptachlor epoxide	33.3	35.2		ug/Kg		106	63 - 132
Methoxychlor	33.3	40.6		ug/Kg		122	51 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*89*		*44 - 130*
Tetrachloro-m-xylene	*89*		*44 - 130*
DCB Decachlorobiphenyl (Surr)	*98*		*41 - 150*
DCB Decachlorobiphenyl (Surr)	*93*		*41 - 150*

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 180-85914-4 MS
Matrix: Solid
Analysis Batch: 268690

Client Sample ID: SB915-011819-04
Prep Type: Total/NA
Prep Batch: 268511

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	ND		39.1	38.7		ug/Kg	☼	99	55 - 139
alpha-BHC	ND		39.1	35.3		ug/Kg	☼	90	55 - 124
beta-BHC	ND		39.1	35.1		ug/Kg	☼	90	60 - 124
delta-BHC	ND		39.1	19.6		ug/Kg	☼	50	10 - 100
gamma-BHC (Lindane)	ND		39.1	37.0		ug/Kg	☼	95	56 - 125
cis-Chlordane	ND		39.1	39.1		ug/Kg	☼	100	56 - 133
trans-Chlordane	ND		39.1	38.2		ug/Kg	☼	98	55 - 134
trans-Chlordane	ND		39.1	38.5		ug/Kg	☼	99	55 - 134
4,4'-DDD	ND		39.1	42.4		ug/Kg	☼	109	62 - 137
4,4'-DDE	1.1	J	39.1	35.9		ug/Kg	☼	89	62 - 141
4,4'-DDT	ND		39.1	40.1		ug/Kg	☼	103	54 - 130
Dieldrin	ND		39.1	35.3		ug/Kg	☼	90	66 - 134
Endosulfan I	ND		39.1	38.8		ug/Kg	☼	99	65 - 132
Endosulfan II	ND		39.1	32.7		ug/Kg	☼	84	67 - 136
Endosulfan sulfate	ND		39.1	29.4		ug/Kg	☼	75	48 - 126
Endrin	ND		39.1	42.9		ug/Kg	☼	110	63 - 138
Endrin aldehyde	ND		39.1	40.5		ug/Kg	☼	104	74 - 149
Endrin ketone	ND		39.1	40.3		ug/Kg	☼	103	68 - 136
Heptachlor	ND		39.1	44.3		ug/Kg	☼	113	62 - 132
Heptachlor epoxide	ND		39.1	40.6		ug/Kg	☼	104	63 - 132
Methoxychlor	ND		39.1	44.6		ug/Kg	☼	114	51 - 137

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*86*		*44 - 130*
Tetrachloro-m-xylene	*83*		*44 - 130*
DCB Decachlorobiphenyl (Surr)	*89*		*41 - 150*
DCB Decachlorobiphenyl (Surr)	*90*		*41 - 150*

Lab Sample ID: 180-85914-4 MSD
Matrix: Solid
Analysis Batch: 268690

Client Sample ID: SB915-011819-04
Prep Type: Total/NA
Prep Batch: 268511

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	ND		40.1	38.1		ug/Kg	☼	95	55 - 139	1	15
alpha-BHC	ND		40.1	36.1		ug/Kg	☼	90	55 - 124	2	15
beta-BHC	ND		40.1	36.6		ug/Kg	☼	91	60 - 124	4	16
delta-BHC	ND		40.1	20.3		ug/Kg	☼	51	10 - 100	3	16
gamma-BHC (Lindane)	ND		40.1	37.3		ug/Kg	☼	93	56 - 125	1	15
cis-Chlordane	ND		40.1	40.5		ug/Kg	☼	101	56 - 133	3	17
trans-Chlordane	ND		40.1	39.7		ug/Kg	☼	99	55 - 134	3	20
trans-Chlordane	ND		40.1	39.7		ug/Kg	☼	99	55 - 134	3	20
4,4'-DDD	ND		40.1	45.0		ug/Kg	☼	112	62 - 137	6	16
4,4'-DDE	1.1	J	40.1	38.1		ug/Kg	☼	92	62 - 141	6	15
4,4'-DDT	ND		40.1	44.5		ug/Kg	☼	111	54 - 130	10	15
Dieldrin	ND		40.1	37.5		ug/Kg	☼	94	66 - 134	6	15
Endosulfan I	ND		40.1	39.3		ug/Kg	☼	98	65 - 132	1	15
Endosulfan II	ND		40.1	35.2		ug/Kg	☼	88	67 - 136	7	17
Endosulfan sulfate	ND		40.1	32.7		ug/Kg	☼	82	48 - 126	11	15

Method: EPA 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 180-85914-4 MSD
Matrix: Solid
Analysis Batch: 268690

Client Sample ID: SB915-011819-04
Prep Type: Total/NA
Prep Batch: 268511

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Endrin	ND		40.1	44.4		ug/Kg	☼	111	63 - 138	3	15
Endrin aldehyde	ND		40.1	44.2		ug/Kg	☼	110	74 - 149	9	16
Endrin ketone	ND		40.1	41.1		ug/Kg	☼	102	68 - 136	2	15
Heptachlor	ND		40.1	44.9		ug/Kg	☼	112	62 - 132	1	15
Heptachlor epoxide	ND		40.1	40.5		ug/Kg	☼	101	63 - 132	0	15
Methoxychlor	ND		40.1	47.9		ug/Kg	☼	119	51 - 137	7	18

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*81*		*44 - 130*
Tetrachloro-m-xylene	*78*		*44 - 130*
DCB Decachlorobiphenyl (Surr)	*88*		*41 - 150*
DCB Decachlorobiphenyl (Surr)	*88*		*41 - 150*

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 180-268511/1-A
Matrix: Solid
Analysis Batch: 268695

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268511

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		17	5.4	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1221	ND		17	11	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1232	ND		17	9.9	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1242	ND		17	10	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1248	ND		17	13	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1254	ND		17	11	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1260	ND		17	4.7	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1262	ND		17	12	ug/Kg		01/23/19 05:00	01/24/19 15:08	1
PCB-1268	ND		17	8.1	ug/Kg		01/23/19 05:00	01/24/19 15:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene (Surr)	*89*		*51 - 116*	*01/23/19 05:00*	*01/24/19 15:08*	*1*
Tetrachloro-m-xylene (Surr)	*88*		*51 - 116*	*01/23/19 05:00*	*01/24/19 15:08*	*1*
DCB Decachlorobiphenyl (Surr)	*76*		*44 - 116*	*01/23/19 05:00*	*01/24/19 15:08*	*1*
DCB Decachlorobiphenyl (Surr)	*75*		*44 - 116*	*01/23/19 05:00*	*01/24/19 15:08*	*1*

Lab Sample ID: LCS 180-268511/5-A
Matrix: Solid
Analysis Batch: 268695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268511

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			1330	1160		ug/Kg		87	57 - 114		
PCB-1260			1330	961		ug/Kg		72	55 - 112		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene (Surr)	*91*		*51 - 116*
Tetrachloro-m-xylene (Surr)	*92*		*51 - 116*

Method: EPA 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 180-268511/5-A
Matrix: Solid
Analysis Batch: 268695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268511

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	77		44 - 116
DCB Decachlorobiphenyl (Surr)	77		44 - 116

Lab Sample ID: 180-85914-4 MS
Matrix: Solid
Analysis Batch: 268695

Client Sample ID: SB915-011819-04
Prep Type: Total/NA
Prep Batch: 268511

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	ND		1610	1410		ug/Kg	☼	87	57 - 114
PCB-1260	ND	F2	1610	955		ug/Kg	☼	59	55 - 112

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene (Surr)	89		51 - 116
Tetrachloro-m-xylene (Surr)	83		51 - 116
DCB Decachlorobiphenyl (Surr)	68		44 - 116
DCB Decachlorobiphenyl (Surr)	70		44 - 116

Lab Sample ID: 180-85914-4 MSD
Matrix: Solid
Analysis Batch: 268695

Client Sample ID: SB915-011819-04
Prep Type: Total/NA
Prep Batch: 268511

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	ND		1610	1490		ug/Kg	☼	92	57 - 114	6	34
PCB-1260	ND	F2	1610	1140	F2	ug/Kg	☼	71	55 - 112	18	16

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene (Surr)	90		51 - 116
Tetrachloro-m-xylene (Surr)	87		51 - 116
DCB Decachlorobiphenyl (Surr)	79		44 - 116
DCB Decachlorobiphenyl (Surr)	78		44 - 116

Method: EPA 8151A - Herbicides (GC)

Lab Sample ID: MB 180-268720/1-A
Matrix: Solid
Analysis Batch: 268875

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268720

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	ND		80	26	ug/Kg		01/24/19 10:20	01/28/19 12:30	1
2,4,5-T	ND		20	6.3	ug/Kg		01/24/19 10:20	01/28/19 12:30	1
Silvex (2,4,5-TP)	ND		20	6.6	ug/Kg		01/24/19 10:20	01/28/19 12:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	61		20 - 125	01/24/19 10:20	01/28/19 12:30	1
2,4-Dichlorophenylacetic acid	61		20 - 125	01/24/19 10:20	01/28/19 12:30	1

Method: EPA 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 180-268720/2-A
Matrix: Solid
Analysis Batch: 268875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	400	352		ug/Kg		88	10 - 100
2,4,5-T	100	56.8		ug/Kg		57	12 - 100
Silvex (2,4,5-TP)	100	56.6		ug/Kg		57	23 - 103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*60*		*20 - 125*
2,4-Dichlorophenylacetic acid	*59*		*20 - 125*

Lab Sample ID: 180-85914-2 MS
Matrix: Solid
Analysis Batch: 268875

Client Sample ID: SB915-011819-02
Prep Type: Total/NA
Prep Batch: 268720

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-D	ND		432	381		ug/Kg	☼	88	10 - 100
2,4,5-T	ND		108	68.0		ug/Kg	☼	63	12 - 100
Silvex (2,4,5-TP)	ND		108	76.3		ug/Kg	☼	71	23 - 103

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*79*		*20 - 125*
2,4-Dichlorophenylacetic acid	*74*		*20 - 125*

Lab Sample ID: 180-85914-2 MSD
Matrix: Solid
Analysis Batch: 268875

Client Sample ID: SB915-011819-02
Prep Type: Total/NA
Prep Batch: 268720

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-D	ND		432	407		ug/Kg	☼	94	10 - 100	7	40
2,4,5-T	ND		108	65.0		ug/Kg	☼	60	12 - 100	4	40
Silvex (2,4,5-TP)	ND		108	61.7		ug/Kg	☼	57	23 - 103	21	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*62*		*20 - 125*
2,4-Dichlorophenylacetic acid	*57*		*20 - 125*

Method: EPA 6010C - Metals (ICP)

Lab Sample ID: MB 180-268387/1-A
Matrix: Solid
Analysis Batch: 268567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268387

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		20	4.2	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Antimony	ND		1.0	0.34	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Arsenic	ND		1.0	0.39	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Barium	ND		20	1.1	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Beryllium	ND		0.40	0.023	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Cadmium	ND		0.50	0.036	mg/Kg		01/21/19 16:09	01/23/19 07:33	1

Method: EPA 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 180-268387/1-A
Matrix: Solid
Analysis Batch: 268567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268387

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		500	26	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Chromium	ND		0.50	0.14	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Cobalt	ND		5.0	0.29	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Copper	ND		2.5	0.25	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Iron	ND		10	5.1	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Lead	ND		1.0	0.51	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Magnesium	ND		500	33	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Manganese	ND		1.5	0.16	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Nickel	ND		4.0	0.25	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Potassium	ND		500	55	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Selenium	ND		1.0	0.52	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Silver	ND		0.50	0.11	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Sodium	ND		500	26	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Thallium	ND		2.0	0.32	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Vanadium	ND		5.0	0.70	mg/Kg		01/21/19 16:09	01/23/19 07:33	1
Zinc	ND		2.0	1.1	mg/Kg		01/21/19 16:09	01/23/19 07:33	1

Lab Sample ID: LCS 180-268387/2-A
Matrix: Solid
Analysis Batch: 268567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268387

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	200	198		mg/Kg		99	80 - 120
Antimony	50.0	48.6		mg/Kg		97	80 - 120
Arsenic	50.0	48.5		mg/Kg		97	80 - 120
Barium	200	196		mg/Kg		98	80 - 120
Beryllium	5.00	5.00		mg/Kg		100	80 - 120
Cadmium	5.00	5.15		mg/Kg		103	80 - 120
Calcium	5000	4800		mg/Kg		96	80 - 120
Chromium	20.0	19.7		mg/Kg		98	80 - 120
Cobalt	50.0	49.0		mg/Kg		98	80 - 120
Copper	25.0	24.8		mg/Kg		99	80 - 120
Iron	100	102		mg/Kg		102	80 - 120
Lead	50.0	47.9		mg/Kg		96	80 - 120
Magnesium	5000	4720		mg/Kg		94	80 - 120
Manganese	50.0	48.8		mg/Kg		98	80 - 120
Nickel	50.0	48.6		mg/Kg		97	80 - 120
Potassium	5000	4790		mg/Kg		96	80 - 120
Selenium	50.0	49.8		mg/Kg		100	80 - 120
Silver	5.00	4.57		mg/Kg		91	80 - 120
Sodium	5000	4880		mg/Kg		98	80 - 120
Thallium	50.0	47.2		mg/Kg		94	80 - 120
Vanadium	50.0	49.5		mg/Kg		99	80 - 120
Zinc	50.0	49.2		mg/Kg		98	80 - 120

Method: EPA 7471B - Mercury (CVAA)

Lab Sample ID: MB 180-268615/1-A
Matrix: Solid
Analysis Batch: 268809

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268615

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.033	0.014	mg/Kg		01/23/19 14:40	01/25/19 12:10	1

Lab Sample ID: LCS 180-268615/2-A
Matrix: Solid
Analysis Batch: 268809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268615

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.417	0.447		mg/Kg		107	80 - 120

Lab Sample ID: MB 180-268617/1-A
Matrix: Solid
Analysis Batch: 268809

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268617

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.033	0.014	mg/Kg		01/23/19 14:42	01/25/19 13:12	1

Lab Sample ID: LCS 180-268617/2-A
Matrix: Solid
Analysis Batch: 268809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268617

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.417	0.435		mg/Kg		104	80 - 120

Method: 2540G - SM 2540G

Lab Sample ID: 180-85914-7 DU
Matrix: Solid
Analysis Batch: 268429

Client Sample ID: SB915-011819-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	17.7		18.4		%		4	10
Percent Solids	82.3		81.6		%		0.8	10

Method: EPA 7196A - Chromium, Hexavalent

Lab Sample ID: MB 180-268721/1-A
Matrix: Solid
Analysis Batch: 268806

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268721

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.40	0.21	mg/Kg		01/24/19 14:02	01/25/19 14:34	1

Lab Sample ID: LCSI 180-268721/3-A
Matrix: Solid
Analysis Batch: 268806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268721

Analyte	Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	708	622		mg/Kg		88	80 - 120

Method: EPA 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: LCSS 180-268721/2-A
Matrix: Solid
Analysis Batch: 268806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268721

Analyte	Spike Added	LCSS Result	LCSS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	20.0	19.0		mg/Kg		95	80 - 120

Method: EPA 9014 - Cyanide

Lab Sample ID: MB 180-268555/4-A
Matrix: Solid
Analysis Batch: 268692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268555

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.50	0.27	mg/Kg		01/23/19 12:10	01/24/19 09:28	1

Lab Sample ID: HLCS 180-268555/2-A
Matrix: Solid
Analysis Batch: 268692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268555

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.251		mg/Kg		101	90 - 110

Lab Sample ID: LCS 180-268555/3-A
Matrix: Solid
Analysis Batch: 268692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268555

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	41.7	26.7		mg/Kg		64	26 - 139

Lab Sample ID: LLCS 180-268555/1-A
Matrix: Solid
Analysis Batch: 268692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268555

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0500	0.0512		mg/Kg		102	90 - 110

GC/MS VOA

Analysis Batch: 268318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-1	SB915-011819-01	Total/NA	Solid	EPA 8260C	268324
180-85914-3	SB915-011819-03	Total/NA	Solid	EPA 8260C	268324
180-85914-7	SB915-011819-07	Total/NA	Solid	EPA 8260C	268324
MB 180-268318/5	Method Blank	Total/NA	Solid	EPA 8260C	
LCS 180-268318/3	Lab Control Sample	Total/NA	Solid	EPA 8260C	

Prep Batch: 268324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-1	SB915-011819-01	Total/NA	Solid	5035	
180-85914-3	SB915-011819-03	Total/NA	Solid	5035	
180-85914-7	SB915-011819-07	Total/NA	Solid	5035	

Analysis Batch: 268406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-9	SB915-011819-09	Total/NA	Water	EPA 8260C	
MB 180-268406/8	Method Blank	Total/NA	Water	EPA 8260C	
LCS 180-268406/17	Lab Control Sample	Total/NA	Water	EPA 8260C	

Analysis Batch: 268637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-5	SB915-011819-05	Total/NA	Solid	EPA 8260C	268654
MB 180-268637/7	Method Blank	Total/NA	Solid	EPA 8260C	
LCS 180-268637/4	Lab Control Sample	Total/NA	Solid	EPA 8260C	
LCSD 180-268637/15	Lab Control Sample Dup	Total/NA	Solid	EPA 8260C	

Prep Batch: 268654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-5	SB915-011819-05	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 268506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	3541	
180-85914-4	SB915-011819-04	Total/NA	Solid	3541	
180-85914-6	SB915-011819-06	Total/NA	Solid	3541	
180-85914-8	SB915-011819-08	Total/NA	Solid	3541	
MB 180-268506/1-A	Method Blank	Total/NA	Solid	3541	
LCS 180-268506/2-A	Lab Control Sample	Total/NA	Solid	3541	
180-85914-2 MS	SB915-011819-02	Total/NA	Solid	3541	
180-85914-2 MSD	SB915-011819-02	Total/NA	Solid	3541	

Analysis Batch: 268685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 8270D	268506

Analysis Batch: 268786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 8270D	268506
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 8270D	268506

GC/MS Semi VOA (Continued)

Analysis Batch: 268786 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 8270D	268506
MB 180-268506/1-A	Method Blank	Total/NA	Solid	EPA 8270D	268506
LCS 180-268506/2-A	Lab Control Sample	Total/NA	Solid	EPA 8270D	268506
180-85914-2 MS	SB915-011819-02	Total/NA	Solid	EPA 8270D	268506
180-85914-2 MSD	SB915-011819-02	Total/NA	Solid	EPA 8270D	268506

GC Semi VOA

Prep Batch: 268511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	3541	
180-85914-4	SB915-011819-04	Total/NA	Solid	3541	
180-85914-6	SB915-011819-06	Total/NA	Solid	3541	
180-85914-8	SB915-011819-08	Total/NA	Solid	3541	
MB 180-268511/1-A	Method Blank	Total/NA	Solid	3541	
LCS 180-268511/2-A	Lab Control Sample	Total/NA	Solid	3541	
LCS 180-268511/5-A	Lab Control Sample	Total/NA	Solid	3541	
180-85914-4 MS	SB915-011819-04	Total/NA	Solid	3541	
180-85914-4 MS	SB915-011819-04	Total/NA	Solid	3541	
180-85914-4 MSD	SB915-011819-04	Total/NA	Solid	3541	
180-85914-4 MSD	SB915-011819-04	Total/NA	Solid	3541	

Analysis Batch: 268690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 8081B	268511
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 8081B	268511
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 8081B	268511
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 8081B	268511
MB 180-268511/1-A	Method Blank	Total/NA	Solid	EPA 8081B	268511
LCS 180-268511/2-A	Lab Control Sample	Total/NA	Solid	EPA 8081B	268511
180-85914-4 MS	SB915-011819-04	Total/NA	Solid	EPA 8081B	268511
180-85914-4 MSD	SB915-011819-04	Total/NA	Solid	EPA 8081B	268511

Analysis Batch: 268695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 8082A	268511
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 8082A	268511
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 8082A	268511
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 8082A	268511
MB 180-268511/1-A	Method Blank	Total/NA	Solid	EPA 8082A	268511
LCS 180-268511/5-A	Lab Control Sample	Total/NA	Solid	EPA 8082A	268511
180-85914-4 MS	SB915-011819-04	Total/NA	Solid	EPA 8082A	268511
180-85914-4 MSD	SB915-011819-04	Total/NA	Solid	EPA 8082A	268511

Prep Batch: 268720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	8151A	
180-85914-4	SB915-011819-04	Total/NA	Solid	8151A	
180-85914-6	SB915-011819-06	Total/NA	Solid	8151A	
180-85914-8	SB915-011819-08	Total/NA	Solid	8151A	

GC Semi VOA (Continued)

Prep Batch: 268720 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-268720/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 180-268720/2-A	Lab Control Sample	Total/NA	Solid	8151A	
180-85914-2 MS	SB915-011819-02	Total/NA	Solid	8151A	
180-85914-2 MSD	SB915-011819-02	Total/NA	Solid	8151A	

Analysis Batch: 268875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 8151A	268720
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 8151A	268720
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 8151A	268720
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 8151A	268720
MB 180-268720/1-A	Method Blank	Total/NA	Solid	EPA 8151A	268720
LCS 180-268720/2-A	Lab Control Sample	Total/NA	Solid	EPA 8151A	268720
180-85914-2 MS	SB915-011819-02	Total/NA	Solid	EPA 8151A	268720
180-85914-2 MSD	SB915-011819-02	Total/NA	Solid	EPA 8151A	268720

Metals

Prep Batch: 268387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	3050B	
180-85914-4	SB915-011819-04	Total/NA	Solid	3050B	
180-85914-6	SB915-011819-06	Total/NA	Solid	3050B	
180-85914-8	SB915-011819-08	Total/NA	Solid	3050B	
MB 180-268387/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 180-268387/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 268567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 6010C	268387
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 6010C	268387
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 6010C	268387
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 6010C	268387
MB 180-268387/1-A	Method Blank	Total/NA	Solid	EPA 6010C	268387
LCS 180-268387/2-A	Lab Control Sample	Total/NA	Solid	EPA 6010C	268387

Prep Batch: 268615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	7471B	
180-85914-4	SB915-011819-04	Total/NA	Solid	7471B	
MB 180-268615/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 180-268615/2-A	Lab Control Sample	Total/NA	Solid	7471B	

Prep Batch: 268617

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-6	SB915-011819-06	Total/NA	Solid	7471B	
180-85914-8	SB915-011819-08	Total/NA	Solid	7471B	
MB 180-268617/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 180-268617/2-A	Lab Control Sample	Total/NA	Solid	7471B	

Metals (Continued)

Analysis Batch: 268809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 7471B	268615
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 7471B	268615
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 7471B	268617
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 7471B	268617
MB 180-268615/1-A	Method Blank	Total/NA	Solid	EPA 7471B	268615
MB 180-268617/1-A	Method Blank	Total/NA	Solid	EPA 7471B	268617
LCS 180-268615/2-A	Lab Control Sample	Total/NA	Solid	EPA 7471B	268615
LCS 180-268617/2-A	Lab Control Sample	Total/NA	Solid	EPA 7471B	268617

General Chemistry

Analysis Batch: 268429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-1	SB915-011819-01	Total/NA	Solid	2540G	
180-85914-2	SB915-011819-02	Total/NA	Solid	2540G	
180-85914-3	SB915-011819-03	Total/NA	Solid	2540G	
180-85914-4	SB915-011819-04	Total/NA	Solid	2540G	
180-85914-5	SB915-011819-05	Total/NA	Solid	2540G	
180-85914-6	SB915-011819-06	Total/NA	Solid	2540G	
180-85914-7	SB915-011819-07	Total/NA	Solid	2540G	
180-85914-8	SB915-011819-08	Total/NA	Solid	2540G	
180-85914-7 DU	SB915-011819-07	Total/NA	Solid	2540G	

Prep Batch: 268555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	9010C	
180-85914-4	SB915-011819-04	Total/NA	Solid	9010C	
180-85914-6	SB915-011819-06	Total/NA	Solid	9010C	
180-85914-8	SB915-011819-08	Total/NA	Solid	9010C	
MB 180-268555/4-A	Method Blank	Total/NA	Solid	9010C	
HLCS 180-268555/2-A	Lab Control Sample	Total/NA	Solid	9010C	
LCS 180-268555/3-A	Lab Control Sample	Total/NA	Solid	9010C	
LLCS 180-268555/1-A	Lab Control Sample	Total/NA	Solid	9010C	

Analysis Batch: 268692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 9014	268555
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 9014	268555
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 9014	268555
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 9014	268555
MB 180-268555/4-A	Method Blank	Total/NA	Solid	EPA 9014	268555
HLCS 180-268555/2-A	Lab Control Sample	Total/NA	Solid	EPA 9014	268555
LCS 180-268555/3-A	Lab Control Sample	Total/NA	Solid	EPA 9014	268555
LLCS 180-268555/1-A	Lab Control Sample	Total/NA	Solid	EPA 9014	268555

Prep Batch: 268721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	3060A	
180-85914-4	SB915-011819-04	Total/NA	Solid	3060A	
180-85914-6	SB915-011819-06	Total/NA	Solid	3060A	

General Chemistry (Continued)

Prep Batch: 268721 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-8	SB915-011819-08	Total/NA	Solid	3060A	
MB 180-268721/1-A	Method Blank	Total/NA	Solid	3060A	
LCSI 180-268721/3-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSS 180-268721/2-A	Lab Control Sample	Total/NA	Solid	3060A	

Analysis Batch: 268806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-85914-2	SB915-011819-02	Total/NA	Solid	EPA 7196A	268721
180-85914-4	SB915-011819-04	Total/NA	Solid	EPA 7196A	268721
180-85914-6	SB915-011819-06	Total/NA	Solid	EPA 7196A	268721
180-85914-8	SB915-011819-08	Total/NA	Solid	EPA 7196A	268721
MB 180-268721/1-A	Method Blank	Total/NA	Solid	EPA 7196A	268721
LCSI 180-268721/3-A	Lab Control Sample	Total/NA	Solid	EPA 7196A	268721
LCSS 180-268721/2-A	Lab Control Sample	Total/NA	Solid	EPA 7196A	268721

Test America Pittsburgh

301 Alpha Drive
Pittsburgh, PA 15238
(p) 412-963-7058

Chain Of Custody / Analysis Request

AESI Ref: 38609.59845
COC #: SB915- 011819
Lab Use Only
Lab Proj #
Lab ID

Privileged & Confidential
EDD To: Michael Miller, Chuck Sharpe
Site Name: Wastebeds 1-8 OU1 FS Mulch
Location of Site: Syracuse, New York

Client Contact: (name, co., address)
John.McAuliffe@Honeywell.com
Honeywell International
101 Columbia Road
Morristown, NJ 07962

Hardcopy Report To: Chuck Sharpe
Invoice To: John McAuliffe

Sampler: MS
P O # 4500138645
Analysis Turnaround Time:
Standard - Y
Rush Charges Authorized for - N
2 weeks -
1 week - N
Next Day -

Job No.

	Sample Identification				Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Grab/Composite	Field Filtered Sample ?	TCLP VOCs	TCLP SVOCs	TCLP Pesticides and Herbicides	TCLP Metals (including 7470 Hg)	Reactive Sulfide and Reactive Cyanide	Ignitability/ flash point/ pH/Corrosivity	Part 375 VOCs	Part 375 SVOCs	Part 375 Pesticides	Part 375 Herbicides	Part 375 PCBs	Part 375 Metals including Hexavalent Chromium and Mercury	Total Cyanide	Lab Sample Numbers
	Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID							Preservative															
											Units															
1	SB915 - Brickyard -01			SB915- 011819 -01	1/18/19	1:40	S-SS	Soil	REG	4									X							
2	SB915 - Brickyard -01			SB915- 011819 -02	1/18/19	1:45	S-SS	Soil	REG	1										X	X	X	X	X	X	
3	SB915 - LindseyTS -01			SB915- 011819 -03	1/18/19	11:35	S-SS	Soil	REG	4									X							
4	SB915 - LindseyTS -01			SB915- 011819 -04	1/18/19	11:35	S-SS	Soil	REG	1										X	X	X	X	X	X	
5	SB915 - LindseyTS -02			SB915- 011819 -05	1/18/19	11:45	S-SS	Soil	REG	4									X							
6	SB915 - LindseyTS -02			SB915- 011819 -06	1/18/19	11:45	S-SS	Soil	REG	1										X	X	X	X	X	X	
7	SB915 - LindseyTS -03			SB915- 011819 -07	1/18/19	11:55	S-SS	Soil	REG	4									X							
8	SB915 - LindseyTS -03			SB915- 011819 -08	1/18/19	11:55	S-SS	Soil	REG	1										X	X	X	X	X	X	
9	SB915-TB-011819			SB915- 011819 -09	1/18/19	—	QC	water	TB										X							
10				SB915- -10																						
11	1-18-19 RE			SB915- -11																						
12				SB915- -12																						

Lab Sample Numbers

180-85914 Chain of Custody

Special Instructions: Part 375 Pesticides to include Sylvex.

Relinquished by	Company	O'Brien & Gere	Received by	Company	OBG	Condition	Custody Seals Intact
	Date/Time 2:15	1/18/19		Date/Time	1/18/19 215	Cooler Temp.	
Relinquished by	Company		Received by	Company	Syr	Condition	Custody Seals Intact
	Date/Time	1/18/19 646		Date/Time 4-18-19	16:40	Cooler Temp.	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Reling. RELinq'd, 1-18-19, 19:00;

Denis Watson TAP IT 1-19-19 9:30
4651 0893 4159
2.0

Syracuse #225

1/31/2019

TestAmeric

THE LEADER IN ENVIRONMENTAL TES

ORIGIN ID:SYRA (315) 431-0171
SYR SERVICE CENTER
TESTAMERICA
118 BOSS RD

SYRACUSE, NY 13211
UNITED STATES US

SHIP DATE: 18JAN19
ACTWGT: 21.45 LB
CAD: 251798/CAFE321

BILL RECIPIENT

TO SAMPLE RECEIVING
TESTAMERICA – PITTSBURGH
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058

180-85914 Waybill

FedEx
Express

TRK# 0201 4651 0843 4159

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO AGCA

15238
PA-US PIT

Uncorrected temp 2.0 °C
Thermometer ID 10
CF 0 Initials TB

PT-WI-SR-001 effective 11/8/18

Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 180-85914-1

Login Number: 85914
List Number: 1
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Honeywell International Inc.

OBGNYS: Waste Beds 1-8 Clean Fill

SGS Job Number: JC79739

Sampling Date: 12/13/18

Report to:

O'Brien & Gere Engineers, Inc.
333 West Washington Street P.O. Box 4873
Syracuse, NY 13202
Charles.Sharpe@obg.com; michael.miller@obg.com

ATTN: Charles Sharpe

Total number of pages in report: 95

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Brian McGuire
General Manager

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SGS North America Inc.

Sample Summary

Honeywell International Inc.

Job No: JC79739

OBGNYS: Waste Beds 1-8 Clean Fill

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC79739-1	12/13/18	10:58	MS	12/14/18	SO	Soil	WB18-121318-01
JC79739-2	12/13/18	11:00	MS	12/14/18	SO	Soil	WB18-121318-02
JC79739-3	12/13/18	11:00	MS	12/14/18	AQ	Trip Blank Soil	WB18-121318-03

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Honeywell International Inc.	**Job No**	JC79739
Site:	OBGNYS: Waste Beds 1-8 Clean Fill	**Report Date**	12/28/2018 10:05:15 A

On 12/14/2018, 2 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC79739 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Please refer to certification exceptions summary for additional certification information.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VA9469

- All samples were analyzed within the recommended method holding time.
- Sample(s) JC79736-4MS, JC79736-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike / Matrix Spike Duplicate Recovery(s) for Trichloroethene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- JC79739-3 for sec-Butylbenzene: Associated CCV outside of control limits high, sample was ND.
- JC79739-3 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JC79739-3 for Vinyl chloride: Associated CCV outside of control limits high, sample was ND.

Matrix: SO **Batch ID:** VY7925

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79747-1MS, JC79747-2DUP were used as the QC samples indicated.
- RPD(s) for Duplicate for Acetone are outside control limits for sample JC79747-2DUP. High RPD due to possible sample nonhomogeneity.

MS Semi-volatiles By Method SW846 8270D

Matrix: SO **Batch ID:** OP17327

- All samples were extracted within the recommended method holding time.
- Sample(s) JC79739-2MS, JC79739-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- JC79739-2 for Hexachlorobenzene: Associated CCV outside of control limits high, sample was ND.
- JC79739-2 for Fluoranthene: Associated CCV outside of control limits high.

GC/LC Semi-volatiles By Method SW846 8081B

Matrix: SO **Batch ID:** OP17352

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79748-2MS, JC79748-2MSD were used as the QC samples indicated.
- JC79739-2 for Aldrin: Associated CCV outside of control limits high, sample was ND.
- JC79739-2 for Endosulfan-I: Associated CCV outside of control limits high, sample was ND.
- JC79739-2 for 4,4'-DDE: Associated CCV outside of control limits low.
- JC79739-2 for alpha-BHC: Associated CCV outside of control limits high, sample was ND.
- OP17352-BS1 for 4,4'-DDE: Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.
- JC79739-2 for 4,4'-DDT: Associated CCV outside of control limits high, sample was ND.

GC/LC Semi-volatiles By Method SW846 8082A

Matrix: SO **Batch ID:** OP17351

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79739-2MS, JC79739-2MSD, OP17351-MSMSD were used as the QC samples indicated.

GC/LC Semi-volatiles By Method SW846 8151A

Matrix: SO **Batch ID:** OP17386

- All samples were extracted within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79739-2MS, JC79739-2MSD were used as the QC samples indicated.

Metals Analysis By Method SW846 6010D

Matrix: SO **Batch ID:** MP11388

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79671-3MS, JC79671-3MSD, JC79671-3SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic, Cadmium, Silver are outside control limits for sample MP11388-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Metals Analysis By Method SW846 7471B

Matrix: SO **Batch ID:** MP11468

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79827-1MS, JC79827-1MSD were used as the QC samples for metals.

General Chemistry By Method ASTM D1498-76M

Matrix: SO **Batch ID:** GN89871

- Sample(s) JC79747-2DUP were used as the QC samples for Redox Potential Vs H2.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO **Batch ID:** GN89645

- Sample(s) JC79560-2DUP were used as the QC samples for Solids, Percent.

General Chemistry By Method SW846 3060A/7196A

Matrix: SO **Batch ID:** GP18217

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79739-2DUP, JC79739-2MS were used as the QC samples for Chromium, Hexavalent.
- Matrix Spike Recovery(s) for Chromium, Hexavalent are outside control limits. Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (87.7%) on this sample.

General Chemistry By Method SW846 6010/7196A M

Matrix: SO **Batch ID:** R175341

- The data for SW846 6010/7196A M meets quality control requirements.
- JC79739-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

General Chemistry By Method SW846 9012B/LACHAT

Matrix: SO **Batch ID:** GP18163

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC79951-2MS, JC79951-2DUP were used as the QC samples for Cyanide.
- RPD(s) for Duplicate for Cyanide are outside control limits for sample GP18163-D1. High RPD due to possible sample nonhomogeneity.

General Chemistry By Method SW846 9045D

Matrix: SO **Batch ID:** GN89872

- Sample(s) JC79747-2DUP were used as the QC samples for pH.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

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Summary of Hits

Job Number: JC79739
Account: Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill
Collected: 12/13/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC79739-1	**WB18-121318-01**					
Acetone		5.8 J	10	5.2	ug/kg	SW846 8260C
JC79739-2	**WB18-121318-02**					
Acenaphthylene		108	39	20	ug/kg	SW846 8270D
Anthracene		75.7	39	24	ug/kg	SW846 8270D
Benzo(a)anthracene		298	39	11	ug/kg	SW846 8270D
Benzo(a)pyrene		285	39	18	ug/kg	SW846 8270D
Benzo(b)fluoranthene		373	39	17	ug/kg	SW846 8270D
Benzo(g,h,i)perylene		187	39	19	ug/kg	SW846 8270D
Benzo(k)fluoranthene		135	39	18	ug/kg	SW846 8270D
Chrysene		323	39	12	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene		55.0	39	17	ug/kg	SW846 8270D
Fluoranthene [a]		527	39	17	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene		207	39	18	ug/kg	SW846 8270D
Naphthalene		17.3 J	39	11	ug/kg	SW846 8270D
Phenanthrene		112	39	13	ug/kg	SW846 8270D
Pyrene		525	39	12	ug/kg	SW846 8270D
Arsenic		4.4	2.5	0.35	mg/kg	SW846 6010D
Barium		64.7	25	2.4	mg/kg	SW846 6010D
Beryllium		0.45	0.25	0.10	mg/kg	SW846 6010D
Cadmium		0.24 J	0.63	0.088	mg/kg	SW846 6010D
Chromium		13.1	1.3	0.47	mg/kg	SW846 6010D
Copper		20.8	3.2	1.1	mg/kg	SW846 6010D
Lead		41.5	2.5	0.52	mg/kg	SW846 6010D
Manganese		405	1.9	0.52	mg/kg	SW846 6010D
Mercury		0.077	0.037	0.016	mg/kg	SW846 7471B
Nickel		12.1	5.0	0.44	mg/kg	SW846 6010D
Silver		0.24 J	0.63	0.21	mg/kg	SW846 6010D
Zinc		81.3	6.3	2.9	mg/kg	SW846 6010D
Chromium, Hexavalent		0.94	0.49	0.39	mg/kg	SW846 3060A/7196A
Chromium, Trivalent [b]		12.2	1.8	0.86	mg/kg	SW846 6010/7196A M
Cyanide		0.29	0.20	0.099	mg/kg	SW846 9012B/LACHAT
Redox Potential Vs H2		318			mv	ASTM D1498-76M
pH		7.44			su	SW846 9045D
JC79739-3	**WB18-121318-03**					

No hits reported in this sample.

(a) Associated CCV outside of control limits high.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	WB18-121318-01		
Lab Sample ID:	JC79739-1	**Date Sampled:**	12/13/18
Matrix:	SO - Soil	**Date Received:**	12/14/18
Method:	SW846 8260C	**Percent Solids:**	81.7
Project:	OBGNYS: Waste Beds 1-8 Clean Fill		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y183062.D	1	12/15/18 15:22	PS	n/a	n/a	VY7925
Run #2							

	Initial Weight
Run #1	5.9 g
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.8	10	5.2	ug/kg	J
71-43-2	Benzene	ND	0.52	0.39	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	3.9	ug/kg	
104-51-8	n-Butylbenzene	ND	2.1	0.42	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.1	0.38	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.1	0.36	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.1	0.57	ug/kg	
108-90-7	Chlorobenzene	ND	2.1	0.37	ug/kg	
67-66-3	Chloroform	ND	2.1	0.39	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.37	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.36	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.40	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.49	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.68	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.99	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.69	ug/kg	
123-91-1	1,4-Dioxane	ND	130	38	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.57	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.37	ug/kg	
75-09-2	Methylene chloride	ND	5.2	2.6	ug/kg	
103-65-1	n-Propylbenzene	ND	2.1	0.32	ug/kg	
127-18-4	Tetrachloroethene	ND	2.1	0.48	ug/kg	
108-88-3	Toluene	ND	1.0	0.39	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.1	0.44	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.79	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.66	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.37	ug/kg	
75-01-4	Vinyl chloride	ND	2.1	0.49	ug/kg	
	m,p-Xylene	ND	1.0	0.77	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.60	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.60	ug/kg	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-121318-01		
Lab Sample ID:	JC79739-1	**Date Sampled:**	12/13/18
Matrix:	SO - Soil	**Date Received:**	12/14/18
Method:	SW846 8260C	**Percent Solids:**	81.7
Project:	OBGNYS: Waste Beds 1-8 Clean Fill		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		75-127%
17060-07-0	1,2-Dichloroethane-D4	106%		75-130%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	102%		79-127%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-121318-02		
Lab Sample ID:	JC79739-2	**Date Sampled:**	12/13/18
Matrix:	SO - Soil	**Date Received:**	12/14/18
Method:	SW846 8270D SW846 3546	**Percent Solids:**	81.7
Project:	OBGNYS: Waste Beds 1-8 Clean Fill		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5P56090.D	1	12/20/18 15:27	NA	12/14/18 15:35	OP17327	E5P2657
Run #2							

	Initial Weight	Final Volume
Run #1	31.4 g	1.0 ml
Run #2		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	78	25	ug/kg	
	3&4-Methylphenol	ND	78	32	ug/kg	
87-86-5	Pentachlorophenol	ND	160	37	ug/kg	
108-95-2	Phenol	ND	78	20	ug/kg	
83-32-9	Acenaphthene	ND	39	13	ug/kg	
208-96-8	Acenaphthylene	108	39	20	ug/kg	
120-12-7	Anthracene	75.7	39	24	ug/kg	
56-55-3	Benzo(a)anthracene	298	39	11	ug/kg	
50-32-8	Benzo(a)pyrene	285	39	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	373	39	17	ug/kg	
191-24-2	Benzo(g,h,i)perylene	187	39	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	135	39	18	ug/kg	
218-01-9	Chrysene	323	39	12	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	55.0	39	17	ug/kg	
132-64-9	Dibenzofuran	ND	78	16	ug/kg	
206-44-0	Fluoranthene [a]	527	39	17	ug/kg	
86-73-7	Fluorene	ND	39	18	ug/kg	
118-74-1	Hexachlorobenzene [b]	ND	78	9.9	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	207	39	18	ug/kg	
91-20-3	Naphthalene	17.3	39	11	ug/kg	J
85-01-8	Phenanthrene	112	39	13	ug/kg	
129-00-0	Pyrene	525	39	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	54%		23-115%
4165-62-2	Phenol-d5	50%		27-114%
118-79-6	2,4,6-Tribromophenol	81%		19-152%
4165-60-0	Nitrobenzene-d5	57%		26-134%
321-60-8	2-Fluorobiphenyl	61%		39-124%
1718-51-0	Terphenyl-d14	78%		36-134%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-121318-02		
Lab Sample ID:	JC79739-2	**Date Sampled:**	12/13/18
Matrix:	SO - Soil	**Date Received:**	12/14/18
Method:	SW846 8270D SW846 3546	**Percent Solids:**	81.7
Project:	OBGNYS: Waste Beds 1-8 Clean Fill		

ABN Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) Associated CCV outside of control limits high.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-121318-02
Lab Sample ID: JC79739-2
Matrix: SO - Soil
Method: SW846 8151A SW846 3546
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Date Sampled: 12/13/18
Date Received: 12/14/18
Percent Solids: 81.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OA137154.D	1	12/18/18 14:02	VDT	12/18/18 08:20	OP17386	GOA4721
Run #2							

	Initial Weight	Final Volume
Run #1	15.7 g	5.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	3.9	3.3	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
19719-28-9	2,4-DCAA	24%		10-159%
19719-28-9	2,4-DCAA	20%		10-159%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-121318-02		
Lab Sample ID:	JC79739-2	**Date Sampled:**	12/13/18
Matrix:	SO - Soil	**Date Received:**	12/14/18
Method:	SW846 8081B SW846 3546	**Percent Solids:**	81.7
Project:	OBGNYS: Waste Beds 1-8 Clean Fill		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4G955310.D	1	12/17/18 16:31	MH	12/16/18 07:05	OP17352	G4G2623
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

Pesticides, Soil Cleanup Objectives

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin [a]	ND	0.78	0.65	ug/kg	
319-84-6	alpha-BHC [a]	ND	0.78	0.64	ug/kg	
319-85-7	beta-BHC	ND	0.78	0.71	ug/kg	
319-86-8	delta-BHC	ND	0.78	0.75	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.78	0.58	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.78	0.63	ug/kg	
60-57-1	Dieldrin	ND	0.78	0.54	ug/kg	
72-54-8	4,4'-DDD	ND	0.78	0.72	ug/kg	
72-55-9	4,4'-DDE [b]	ND	0.78	0.69	ug/kg	
50-29-3	4,4'-DDT [a]	ND	0.78	0.70	ug/kg	
72-20-8	Endrin	ND	0.78	0.61	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.78	0.61	ug/kg	
959-98-8	Endosulfan-I [a]	ND	0.78	0.45	ug/kg	
33213-65-9	Endosulfan-II	ND	0.78	0.49	ug/kg	
76-44-8	Heptachlor	ND	0.78	0.68	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	69%		25-135%
877-09-8	Tetrachloro-m-xylene	62%		25-135%
2051-24-3	Decachlorobiphenyl	58%		10-156%
2051-24-3	Decachlorobiphenyl	61%		10-156%

(a) Associated CCV outside of control limits high, sample was ND.
(b) Associated CCV outside of control limits low.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-121318-02
Lab Sample ID: JC79739-2
Matrix: SO - Soil
Method: SW846 8082A SW846 3546
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Date Sampled: 12/13/18
Date Received: 12/14/18
Percent Solids: 81.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2G174107.D	1	12/17/18 11:43	SK	12/16/18 07:05	OP17351	G2G4533
Run #2							

	Initial Weight	Final Volume
Run #1	15.6 g	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	39	16	ug/kg	
11104-28-2	Aroclor 1221	ND	39	16	ug/kg	
11141-16-5	Aroclor 1232	ND	39	11	ug/kg	
53469-21-9	Aroclor 1242	ND	39	6.2	ug/kg	
12672-29-6	Aroclor 1248	ND	39	23	ug/kg	
11097-69-1	Aroclor 1254	ND	39	9.7	ug/kg	
11096-82-5	Aroclor 1260	ND	39	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	70%		31-146%
877-09-8	Tetrachloro-m-xylene	73%		31-146%
2051-24-3	Decachlorobiphenyl	66%		17-164%
2051-24-3	Decachlorobiphenyl	75%		17-164%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: WB18-121318-02
Lab Sample ID: JC79739-2
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Date Sampled: 12/13/18
Date Received: 12/14/18
Percent Solids: 81.7

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.4	2.5	0.35	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Barium	64.7	25	2.4	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Beryllium	0.45	0.25	0.10	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Cadmium	0.24 J	0.63	0.088	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Chromium	13.1	1.3	0.47	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Copper	20.8	3.2	1.1	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Lead	41.5	2.5	0.52	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Manganese	405	1.9	0.52	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Mercury	0.077	0.037	0.016	mg/kg	1	12/18/18	12/18/18	EAL	SW846 7471B [2]	SW846 7471B [4]
Nickel	12.1	5.0	0.44	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Selenium	0.82 U	2.5	0.82	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Silver	0.24 J	0.63	0.21	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]
Zinc	81.3	6.3	2.9	mg/kg	1	12/14/18	12/17/18	GT	SW846 6010D [1]	SW846 3050B [3]

(1) Instrument QC Batch: MA45859
(2) Instrument QC Batch: MA45860
(3) Prep QC Batch: MP11388
(4) Prep QC Batch: MP11468

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: WB18-121318-02
Lab Sample ID: JC79739-2
Matrix: SO - Soil
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Date Sampled: 12/13/18
Date Received: 12/14/18
Percent Solids: 81.7

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.94	0.49	0.39	mg/kg	1	12/26/18 17:00	DC	SW846 3060A/7196A
Chromium, Trivalent [a]	12.2	1.8	0.86	mg/kg	1	12/26/18 17:00	DC	SW846 6010/7196A M
Cyanide	0.29	0.20	0.099	mg/kg	1	12/20/18 16:10	BM	SW846 9012B/LACHAT
Redox Potential Vs H2	318			mv	1	12/24/18 10:30	EB	ASTM D1498-76M
Solids, Percent	81.7			%	1	12/18/18 13:00	BG	SM2540 G 18TH ED MOD
pH	7.44			su	1	12/24/18 10:42	EB	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit
MDL = Method Detection Limit
ND = Not detected
J = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID:	WB18-121318-03		
Lab Sample ID:	JC79739-3	**Date Sampled:**	12/13/18
Matrix:	AQ - Trip Blank Soil	**Date Received:**	12/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	OBGNYS: Waste Beds 1-8 Clean Fill		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A246735.D	1	12/22/18 04:49	BK	n/a	n/a	VA9469
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Soil Cleanup Objectives Priority List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.52	ug/l	
135-98-8	sec-Butylbenzene [a]	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
123-91-1	1,4-Dioxane [a]	ND	130	69	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
75-01-4	Vinyl chloride [a]	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	WB18-121318-03		
Lab Sample ID:	JC79739-3	**Date Sampled:**	12/13/18
Matrix:	AQ - Trip Blank Soil	**Date Received:**	12/14/18
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	OBGNYS: Waste Beds 1-8 Clean Fill		

VOA Soil Cleanup Objectives Priority List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		80-120%
17060-07-0	1,2-Dichloroethane-D4	108%		81-124%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		**SW846 6010/7196A M**	SO	SGS is not certified for this parameter.[a]
Redox Potential Vs H2		**ASTM D1498-76M**	SO	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SO
SLL
STB

Prem-SW-121018-20

Accutest Laboratories
2235 Route 130
Dayton, NJ 08810
(p) 732-329-0200

Chain Of Custody / Analysis Request

AESI Ref: 38609.59845
COC #: WB18-121318
Lab Use Only
Lab Proj #
Lab ID

Privileged & Confidential
EDD To: Michael Miller, Chuck Sharpe
Sampler: MS
PO # 4400025679
Analysis Turnaround Time:
Standard - Y
Rush Charges Authorized for - N
2 weeks -
1 week - N
Next Day -

Site Name: WB 1-8 Clean Fill
Location of Site: Syracuse, New York

Client Contact: (name, co., address)
John.McAuliffe@Honeywell.com
Honeywell International
101 Columbia Road
Morristown, NJ 07962

Hardcopy Report To: Brad Kubiak
Invoice To: John McAuliffe

Job No. JC79739

Sample Identification											Preservative																		
	Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Grab/Composite	Field Filtered Sample?	TCLP VOCs	TCLP SVOCs	TCLP Pesticides and Herbicides	TCLP Metals (including 7470 Hg)	Reactive Sulfide and Reactive Cyanide	Ignitability/ flash point/ pH/Corrosivity	Part 375 VOCs	Part 375 SVOCs	Part 375 Pesticides	Part 375 Herbicides	Part 375 PCBs	Part 375 Metals including Hexavalent Chromium and Mercury	Total Cyanide	Lab Sample Numbers
	Units										G	C																	
1	WB18-LindsayTS-01	0	1	WB18-121318-01	12/13/2018	10:58	Soil	Soil	Reg	4	G								X							89
2	WB18-LindsayTS-02	0	1	WB18-121318-02	12/13/2018	11:00	Soil	Soil	Reg	1	C									X	X	X	X	X	X	1416
3	WB18-LindsayTB-03	0	0	WB18-121318-03	12/13/18		Water	Water	QC	1									X							4904
4																										V1208
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

INITIAL ASESSMENT 3A JDL
LABEL VERIFICATION

Special Instructions: Part 375 Pesticides to include Sylvex.

Relinquished by	Company	O'Brien & Gere	Received by	SGS Company	12/13/18	Condition		Custody Seals Intact	
	Date/Time	12/13 12:45		Date/Time	13:00	Cooler Temp.			
Relinquished by	SGS Company	12/13/18	Received by	Fed Ex		Condition		Custody Seals Intact	
	Date/Time	17:00				Cooler Temp.	2.8°C IP		

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Relinquish Fed Ex 12/14/18 1000 Rec

SGS Sample Receipt Summary

Job Number: JC79739 **Client:** O'BRIEN & GERE **Project:** OBGNYS: R35046 #77,WASTE BEDS 1-8,DITC

Date / Time Received: 12/14/2018 10:00:00 AM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (2.5);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 216017 pH 12+: 208717 Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JC79739

Requested Date:	12/17/2018	**Received Date:**	12/14/2018
Account Name:	Honeywell International Inc. OMM	**Due Date:**	12/28/2018
Project Description:	OBGNYS: R35046 #77,Waste Beds 1-8,Ditch TOP	**Deliverable:**	COMMBN
C/O Initiated By:	RP **PM:** RP	**TAT (Days):**	7

==========

Sample #: JC79739-all

Dept:

TAT: 7

Change:
Please move to project HWINJM81879

==========

Above Changes Per: Rocus Peters **Date/Time:** 12/17/2018 2:45:01 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JC79739: Chain of Custody
Page 3 of 3

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY7925-MB	Y183055.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/kg	
71-43-2	Benzene	ND	0.50	0.38	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	3.7	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	0.41	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	0.37	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	0.35	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.55	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.35	ug/kg	
67-66-3	Chloroform	ND	2.0	0.37	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.31	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.36	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.34	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.39	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.47	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.66	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.96	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.67	ug/kg	
123-91-1	1,4-Dioxane	ND	130	37	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.55	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.35	ug/kg	
75-09-2	Methylene chloride	ND	5.0	2.5	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	0.31	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.46	ug/kg	
108-88-3	Toluene	ND	1.0	0.38	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.43	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.76	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.64	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.36	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.47	ug/kg	
	m,p-Xylene	ND	1.0	0.75	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.58	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.58	ug/kg	

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY7925-MB	Y183055.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	98%	75-127%
17060-07-0	1,2-Dichloroethane-D4	99%	75-130%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	102%	79-127%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA9469-MB	A246718.D	1	12/21/18	BK	n/a	n/a	VA9469

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	6.0	ug/l	
71-43-2	Benzene	ND	0.50	0.43	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	6.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.52	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	0.62	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.69	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.55	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.56	ug/l	
67-66-3	Chloroform	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.53	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.54	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.51	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.57	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.60	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.59	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.51	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.54	ug/l	
123-91-1	1,4-Dioxane	ND	130	69	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.60	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.51	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.60	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.90	ug/l	
108-88-3	Toluene	ND	1.0	0.53	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.54	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.53	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	1.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.79	ug/l	
	m,p-Xylene	ND	1.0	0.78	ug/l	
95-47-6	o-Xylene	ND	1.0	0.59	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.59	ug/l	

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA9469-MB	A246718.D	1	12/21/18	BK	n/a	n/a	VA9469

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-3

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	91%	80-120%
17060-07-0	1,2-Dichloroethane-D4	103%	81-124%
2037-26-5	Toluene-D8	102%	80-120%
460-00-4	4-Bromofluorobenzene	97%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY7925-BS	Y183053.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	209	105	48-149
71-43-2	Benzene	50	49.2	98	74-117
78-93-3	2-Butanone (MEK)	200	220	110	65-143
104-51-8	n-Butylbenzene	50	53.9	108	74-123
135-98-8	sec-Butylbenzene	50	56.4	113	74-123
98-06-6	tert-Butylbenzene	50	57.5	115	73-124
56-23-5	Carbon tetrachloride	50	57.2	114	69-136
108-90-7	Chlorobenzene	50	51.5	103	79-117
67-66-3	Chloroform	50	50.4	101	76-119
95-50-1	1,2-Dichlorobenzene	50	52.2	104	77-117
541-73-1	1,3-Dichlorobenzene	50	53.0	106	75-117
106-46-7	1,4-Dichlorobenzene	50	51.5	103	76-115
75-34-3	1,1-Dichloroethane	50	53.3	107	75-124
107-06-2	1,2-Dichloroethane	50	47.8	96	74-124
75-35-4	1,1-Dichloroethene	50	54.7	109	64-129
156-59-2	cis-1,2-Dichloroethene	50	53.9	108	74-118
156-60-5	trans-1,2-Dichloroethene	50	53.6	107	71-125
123-91-1	1,4-Dioxane	1250	1170	94	64-128
100-41-4	Ethylbenzene	50	55.1	110	75-118
1634-04-4	Methyl Tert Butyl Ether	50	54.0	108	75-123
75-09-2	Methylene chloride	50	53.0	106	73-120
103-65-1	n-Propylbenzene	50	54.0	108	75-120
127-18-4	Tetrachloroethene	50	51.9	104	69-128
108-88-3	Toluene	50	52.5	105	74-117
71-55-6	1,1,1-Trichloroethane	50	54.3	109	73-131
79-01-6	Trichloroethene	50	52.8	106	80-120
95-63-6	1,2,4-Trimethylbenzene	50	54.5	109	76-119
108-67-8	1,3,5-Trimethylbenzene	50	55.3	111	74-119
75-01-4	Vinyl chloride	50	64.3	129	55-145
	m,p-Xylene	100	108	108	75-120
95-47-6	o-Xylene	50	55.6	111	75-119
1330-20-7	Xylene (total)	150	164	109	76-119

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY7925-BS	Y183053.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	75-127%
17060-07-0	1,2-Dichloroethane-D4	99%	75-130%
2037-26-5	Toluene-D8	102%	80-120%
460-00-4	4-Bromofluorobenzene	99%	79-127%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA9469-BS	A246716.D	1	12/21/18	BK	n/a	n/a	VA9469

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	200	177	89	42-150
71-43-2	Benzene	50	49.6	99	80-120
78-93-3	2-Butanone (MEK)	200	176	88	64-137
104-51-8	n-Butylbenzene	50	52.2	104	81-123
135-98-8	sec-Butylbenzene	50	56.8	114	84-121
98-06-6	tert-Butylbenzene	50	53.7	107	83-122
56-23-5	Carbon tetrachloride	50	53.2	106	75-135
108-90-7	Chlorobenzene	50	50.2	100	84-117
67-66-3	Chloroform	50	45.4	91	80-119
95-50-1	1,2-Dichlorobenzene	50	48.3	97	84-119
541-73-1	1,3-Dichlorobenzene	50	50.0	100	81-117
106-46-7	1,4-Dichlorobenzene	50	49.3	99	82-117
75-34-3	1,1-Dichloroethane	50	48.9	98	79-120
107-06-2	1,2-Dichloroethane	50	51.0	102	78-126
75-35-4	1,1-Dichloroethene	50	53.4	107	69-126
156-59-2	cis-1,2-Dichloroethene	50	46.4	93	80-120
156-60-5	trans-1,2-Dichloroethene	50	48.6	97	76-120
123-91-1	1,4-Dioxane	1250	1380	110	52-147
100-41-4	Ethylbenzene	50	51.4	103	80-120
1634-04-4	Methyl Tert Butyl Ether	50	54.4	109	80-119
75-09-2	Methylene chloride	50	52.9	106	77-120
103-65-1	n-Propylbenzene	50	53.9	108	82-119
127-18-4	Tetrachloroethene	50	49.7	99	70-131
108-88-3	Toluene	50	51.2	102	80-120
71-55-6	1,1,1-Trichloroethane	50	52.5	105	81-128
79-01-6	Trichloroethene	50	48.9	98	80-120
95-63-6	1,2,4-Trimethylbenzene	50	54.8	110	84-120
108-67-8	1,3,5-Trimethylbenzene	50	55.3	111	83-119
75-01-4	Vinyl chloride	50	55.3	111	51-135
	m,p-Xylene	100	99.9	100	80-120
95-47-6	o-Xylene	50	50.8	102	80-120
1330-20-7	Xylene (total)	150	151	101	80-120

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA9469-BS	A246716.D	1	12/21/18	BK	n/a	n/a	VA9469

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	81-124%
2037-26-5	Toluene-D8	102%	80-120%
460-00-4	4-Bromofluorobenzene	106%	80-120%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC79747-1MS	Y183064.D	1	12/15/18	PS	n/a	n/a	VY7925
JC79747-1	Y183057.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Compound	JC79747-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
67-64-1	Acetone	14.7		222	205	86	10-157
71-43-2	Benzene	ND		55.4	53.8	97	58-125
78-93-3	2-Butanone (MEK)	7.2	J	222	219	96	29-146
104-51-8	n-Butylbenzene	ND		55.4	55.4	100	23-149
135-98-8	sec-Butylbenzene	ND		55.4	57.0	103	33-147
98-06-6	tert-Butylbenzene	ND		55.4	57.7	104	39-145
56-23-5	Carbon tetrachloride	ND		55.4	60.9	110	51-143
108-90-7	Chlorobenzene	ND		55.4	54.5	98	54-130
67-66-3	Chloroform	ND		55.4	53.0	96	61-125
95-50-1	1,2-Dichlorobenzene	ND		55.4	54.6	99	41-134
541-73-1	1,3-Dichlorobenzene	ND		55.4	53.6	97	41-135
106-46-7	1,4-Dichlorobenzene	ND		55.4	53.2	96	41-133
75-34-3	1,1-Dichloroethane	ND		55.4	56.9	103	61-131
107-06-2	1,2-Dichloroethane	ND		55.4	52.1	94	56-126
75-35-4	1,1-Dichloroethene	ND		55.4	57.9	105	53-132
156-59-2	cis-1,2-Dichloroethene	ND		55.4	55.7	101	57-125
156-60-5	trans-1,2-Dichloroethene	ND		55.4	57.6	104	56-130
123-91-1	1,4-Dioxane	ND		1380	1190	86	53-140
100-41-4	Ethylbenzene	ND		55.4	58.3	105	49-132
1634-04-4	Methyl Tert Butyl Ether	ND		55.4	54.8	99	58-123
75-09-2	Methylene chloride	ND		55.4	50.9	92	57-123
103-65-1	n-Propylbenzene	ND		55.4	55.7	101	41-139
127-18-4	Tetrachloroethene	ND		55.4	54.4	98	39-154
108-88-3	Toluene	1.4		55.4	54.7	96	54-127
71-55-6	1,1,1-Trichloroethane	ND		55.4	57.5	104	57-138
79-01-6	Trichloroethene	ND		55.4	57.6	104	52-140
95-63-6	1,2,4-Trimethylbenzene	ND		55.4	56.0	101	39-142
108-67-8	1,3,5-Trimethylbenzene	ND		55.4	56.1	101	40-140
75-01-4	Vinyl chloride	ND		55.4	61.5	111	43-146
	m,p-Xylene	ND		111	113	102	45-137
95-47-6	o-Xylene	ND		55.4	59.2	107	48-135
1330-20-7	Xylene (total)	ND		166	172	103	46-137

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC79747-1MS	Y183064.D	1	12/15/18	PS	n/a	n/a	VY7925
JC79747-1	Y183057.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Surrogate Recoveries	MS	JC79747-1	Limits
1868-53-7	Dibromofluoromethane	98%	101%	75-127%
17060-07-0	1,2-Dichloroethane-D4	100%	104%	75-130%
2037-26-5	Toluene-D8	98%	100%	80-120%
460-00-4	4-Bromofluorobenzene	99%	100%	79-127%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC79736-4MS	A246723.D	5	12/21/18	BK	n/a	n/a	VA9469
JC79736-4MSD	A246724.D	5	12/21/18	BK	n/a	n/a	VA9469
JC79736-4 [a]	A246722.D	5	12/21/18	BK	n/a	n/a	VA9469

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-3

CAS No.	Compound	JC79736-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		1000	806	81	1000	834	83	3	34-149/17
71-43-2	Benzene	ND		250	241	96	250	251	100	4	54-136/10
78-93-3	2-Butanone (MEK)	ND		1000	849	85	1000	884	88	4	54-142/15
104-51-8	n-Butylbenzene	ND		250	251	100	250	256	102	2	73-133/12
135-98-8	sec-Butylbenzene	ND		250	274	110	250	282	113	3	76-132/12
98-06-6	tert-Butylbenzene	ND		250	258	103	250	266	106	3	76-131/12
56-23-5	Carbon tetrachloride	ND		250	264	106	250	268	107	2	70-143/12
108-90-7	Chlorobenzene	ND		250	249	100	250	255	102	2	78-123/10
67-66-3	Chloroform	ND		250	224	90	250	233	93	4	76-123/11
95-50-1	1,2-Dichlorobenzene	ND		250	235	94	250	243	97	3	77-123/11
541-73-1	1,3-Dichlorobenzene	ND		250	243	97	250	250	100	3	76-122/11
106-46-7	1,4-Dichlorobenzene	ND		250	241	96	250	246	98	2	76-122/11
75-34-3	1,1-Dichloroethane	ND		250	235	94	250	248	99	5	73-126/11
107-06-2	1,2-Dichloroethane	ND		250	253	101	250	262	105	3	72-131/11
75-35-4	1,1-Dichloroethene	ND		250	246	98	250	266	106	8	63-136/14
156-59-2	cis-1,2-Dichloroethene	200		250	401	80	250	424	90	6	60-136/11
156-60-5	trans-1,2-Dichloroethene	ND		250	230	92	250	240	96	4	70-126/11
123-91-1	1,4-Dioxane	ND		6250	6900	110	6250	7000	112	1	49-146/26
100-41-4	Ethylbenzene	ND		250	255	102	250	262	105	3	51-140/20
1634-04-4	Methyl Tert Butyl Ether	ND		250	258	103	250	266	106	3	72-123/11
75-09-2	Methylene chloride	ND		250	244	98	250	258	103	6	73-125/13
103-65-1	n-Propylbenzene	ND		250	263	105	250	269	108	2	68-133/11
127-18-4	Tetrachloroethene	26.8		250	271	98	250	279	101	3	61-139/11
108-88-3	Toluene	ND		250	250	100	250	259	104	4	60-135/10
71-55-6	1,1,1-Trichloroethane	ND		250	258	103	250	265	106	3	74-138/12
79-01-6	Trichloroethene	2920	E	250	2820	-40* [b]	250	2910	-4* [b]	3	62-141/10
95-63-6	1,2,4-Trimethylbenzene	ND		250	264	106	250	272	109	3	54-143/10
108-67-8	1,3,5-Trimethylbenzene	ND		250	267	107	250	276	110	3	67-133/11
75-01-4	Vinyl chloride	ND		250	288	115	250	281	112	2	43-146/15
	m,p-Xylene	ND		500	498	100	500	505	101	1	50-144/20
95-47-6	o-Xylene	ND		250	250	100	250	257	103	3	63-134/10
1330-20-7	Xylene (total)	ND		750	748	100	750	762	102	2	56-139/20

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC79736-4MS	A246723.D	5	12/21/18	BK	n/a	n/a	VA9469
JC79736-4MSD	A246724.D	5	12/21/18	BK	n/a	n/a	VA9469
JC79736-4 [a]	A246722.D	5	12/21/18	BK	n/a	n/a	VA9469

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-3

CAS No.	Surrogate Recoveries	MS	MSD	JC79736-4	Limits
1868-53-7	Dibromofluoromethane	94%	94%	93%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	106%	106%	81-124%
2037-26-5	Toluene-D8	103%	104%	101%	80-120%
460-00-4	4-Bromofluorobenzene	103%	104%	98%	80-120%

(a) Diluted due to high concentration of target compound.
(b) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC79747-2DUP	Y183066.D	1	12/15/18	PS	n/a	n/a	VY7925
JC79747-2	Y183058.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Compound	JC79747-2 ug/kg	Q	DUP ug/kg	Q	RPD	Limits
67-64-1	Acetone	18.6		7.4	J	86* [a]	40
71-43-2	Benzene	ND		ND		nc	30
78-93-3	2-Butanone (MEK)	8.3	J	6.8	J	20	30
104-51-8	n-Butylbenzene	ND		ND		nc	30
135-98-8	sec-Butylbenzene	ND		ND		nc	30
98-06-6	tert-Butylbenzene	ND		ND		nc	30
56-23-5	Carbon tetrachloride	ND		ND		nc	30
108-90-7	Chlorobenzene	ND		ND		nc	30
67-66-3	Chloroform	ND		ND		nc	30
95-50-1	1,2-Dichlorobenzene	ND		ND		nc	30
541-73-1	1,3-Dichlorobenzene	ND		ND		nc	30
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	30
75-34-3	1,1-Dichloroethane	ND		ND		nc	30
107-06-2	1,2-Dichloroethane	ND		ND		nc	30
75-35-4	1,1-Dichloroethene	ND		ND		nc	30
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	30
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	30
123-91-1	1,4-Dioxane	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	30
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	30
75-09-2	Methylene chloride	ND		ND		nc	36
103-65-1	n-Propylbenzene	ND		ND		nc	30
127-18-4	Tetrachloroethene	ND		ND		nc	30
108-88-3	Toluene	2.8		2.3		20	24
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	30
79-01-6	Trichloroethene	ND		ND		nc	30
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	30
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	30
75-01-4	Vinyl chloride	ND		ND		nc	30
	m,p-Xylene	ND		ND		nc	32
95-47-6	o-Xylene	ND		ND		nc	30
1330-20-7	Xylene (total)	ND		ND		nc	33

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC79747-2DUP	Y183066.D	1	12/15/18	PS	n/a	n/a	VY7925
JC79747-2	Y183058.D	1	12/15/18	PS	n/a	n/a	VY7925

The QC reported here applies to the following samples: **Method:** SW846 8260C

JC79739-1

CAS No.	Surrogate Recoveries	DUP	JC79747-2	Limits
1868-53-7	Dibromofluoromethane	101%	101%	75-127%
17060-07-0	1,2-Dichloroethane-D4	107%	103%	75-130%
2037-26-5	Toluene-D8	101%	98%	80-120%
460-00-4	4-Bromofluorobenzene	98%	98%	79-127%

(a) High RPD due to possible sample nonhomogeneity.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	VA9383-BFB	**Injection Date:**	10/22/18
Lab File ID:	A244989.D	**Injection Time:**	13:52
Instrument ID:	GCMSA		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.95 - 40.0% of mass 95	14311	18.7		Pass
75	30.0 - 60.0% of mass 95	37509	49.0		Pass
95	Base peak, 100% relative abundance	76482	100.0		Pass
96	5.0 - 9.0% of mass 95	5574	7.29		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	62314	81.5		Pass
175	5.0 - 9.0% of mass 174	4714	6.16	(7.56) [a]	Pass
176	95.0 - 101.0% of mass 174	62026	81.1	(99.5) [a]	Pass
177	5.0 - 9.0% of mass 176	3910	5.11	(6.30) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA9383-IC9383	A244990.D	10/22/18	15:04	01:12	Initial cal 0.2
VA9383-IC9383	A244991.D	10/22/18	15:33	01:41	Initial cal 0.5
VA9383-IC9383	A244992.D	10/22/18	16:02	02:10	Initial cal 1
VA9383-IC9383	A244993.D	10/22/18	16:31	02:39	Initial cal 2
VA9383-IC9383	A244994.D	10/22/18	17:00	03:08	Initial cal 4
VA9383-IC9383	A244995.D	10/22/18	17:29	03:37	Initial cal 8
VA9383-IC9383	A244996.D	10/22/18	17:57	04:05	Initial cal 20
VA9383-ICC9383	A244997.D	10/22/18	18:26	04:34	Initial cal 50
VA9383-IC9383	A244998.D	10/22/18	18:55	05:03	Initial cal 100
VA9383-IC9383	A244999.D	10/22/18	19:24	05:32	Initial cal 200
VA9383-ICV9383	A245002.D	10/22/18	20:50	06:58	Initial cal verification 50
VA9383-ICV9383	A245003.D	10/22/18	21:19	07:27	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	VA9383-BFB2	**Injection Date:**	10/23/18
Lab File ID:	A245005.D	**Injection Time:**	13:14
Instrument ID:	GCMSA		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.95 - 40.0% of mass 95	15629	17.6		Pass
75	30.0 - 60.0% of mass 95	41397	46.6		Pass
95	Base peak, 100% relative abundance	88864	100.0		Pass
96	5.0 - 9.0% of mass 95	5709	6.42		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	73432	82.6		Pass
175	5.0 - 9.0% of mass 174	5689	6.40	(7.75) [a]	Pass
176	95.0 - 101.0% of mass 174	71840	80.8	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	4817	5.42	(6.71) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA9383-ICV9383	A245006.D	10/23/18	13:43	00:29	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	VA9469-BFB	**Injection Date:**	12/21/18
Lab File ID:	A246715.D	**Injection Time:**	18:29
Instrument ID:	GCMSA		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.95 - 40.0% of mass 95	14521	20.4		Pass
75	30.0 - 60.0% of mass 95	34701	48.8		Pass
95	Base peak, 100% relative abundance	71067	100.0		Pass
96	5.0 - 9.0% of mass 95	5123	7.21		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	58637	82.5		Pass
175	5.0 - 9.0% of mass 174	4914	6.91	(8.38) [a]	Pass
176	95.0 - 101.0% of mass 174	57819	81.4	(98.6) [a]	Pass
177	5.0 - 9.0% of mass 176	4028	5.67	(6.97) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VA9469-CC9383	A246715.D	12/21/18	18:29	00:00	Continuing cal 50
VA9469-BS	A246716.D	12/21/18	19:35	01:06	Blank Spike
VA9469-MB	A246718.D	12/21/18	20:33	02:04	Method Blank
ZZZZZZ	A246719.D	12/21/18	21:03	02:34	(unrelated sample)
ZZZZZZ	A246720.D	12/21/18	21:32	03:03	(unrelated sample)
ZZZZZZ	A246721.D	12/21/18	22:00	03:31	(unrelated sample)
JC79736-4	A246722.D	12/21/18	22:29	04:00	(used for QC only; not part of job JC79739)
JC79736-4MS	A246723.D	12/21/18	22:59	04:30	Matrix Spike
JC79736-4MSD	A246724.D	12/21/18	23:28	04:59	Matrix Spike Duplicate
ZZZZZZ	A246726.D	12/22/18	00:26	05:57	(unrelated sample)
ZZZZZZ	A246727.D	12/22/18	00:56	06:27	(unrelated sample)
ZZZZZZ	A246728.D	12/22/18	01:25	06:56	(unrelated sample)
ZZZZZZ	A246729.D	12/22/18	01:54	07:25	(unrelated sample)
ZZZZZZ	A246730.D	12/22/18	02:23	07:54	(unrelated sample)
ZZZZZZ	A246731.D	12/22/18	02:52	08:23	(unrelated sample)
ZZZZZZ	A246732.D	12/22/18	03:22	08:53	(unrelated sample)
ZZZZZZ	A246733.D	12/22/18	03:51	09:22	(unrelated sample)
ZZZZZZ	A246734.D	12/22/18	04:20	09:51	(unrelated sample)
JC79739-3	A246735.D	12/22/18	04:49	10:20	WB18-121318-03

Instrument Performance Check (BFB)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	VY7924-BFB	**Injection Date:**	12/13/18
Lab File ID:	Y183035.D	**Injection Time:**	16:53
Instrument ID:	GCMSY		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	19733	17.7		Pass
75	30.0 - 60.0% of mass 95	54538	48.8		Pass
95	Base peak, 100% relative abundance	111712	100.0		Pass
96	5.0 - 9.0% of mass 95	7640	6.84		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	120013	107.4		Pass
175	5.0 - 9.0% of mass 174	10049	9.00	(8.37) [a]	Pass
176	95.0 - 101.0% of mass 174	117530	105.2	(97.9) [a]	Pass
177	5.0 - 9.0% of mass 176	8825	7.90	(7.51) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VY7924-IC7924	Y183036.D	12/13/18	17:39	00:46	Initial cal 0.5
VY7924-IC7924	Y183037.D	12/13/18	18:09	01:16	Initial cal 1
VY7924-IC7924	Y183038.D	12/13/18	18:38	01:45	Initial cal 2
VY7924-IC7924	Y183039.D	12/13/18	19:07	02:14	Initial cal 4
VY7924-IC7924	Y183040.D	12/13/18	19:36	02:43	Initial cal 8
VY7924-IC7924	Y183041.D	12/13/18	20:06	03:13	Initial cal 20
VY7924-ICC7924	Y183042.D	12/13/18	20:35	03:42	Initial cal 50
VY7924-IC7924	Y183043.D	12/13/18	21:04	04:11	Initial cal 100
VY7924-IC7924	Y183044.D	12/13/18	21:33	04:40	Initial cal 200
VY7924-ICV7924	Y183047.D	12/13/18	23:02	06:09	Initial cal verification 50
VY7924-ICV7924	Y183048.D	12/13/18	23:31	06:38	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample: VY7925-BFB
Lab File ID: Y183052.D
Instrument ID: GCMSY
Injection Date: 12/15/18
Injection Time: 09:55

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	22123	18.3		Pass
75	30.0 - 60.0% of mass 95	59130	48.9		Pass
95	Base peak, 100% relative abundance	120864	100.0		Pass
96	5.0 - 9.0% of mass 95	7506	6.21		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	132565	109.7		Pass
175	5.0 - 9.0% of mass 174	11572	9.57	(8.73) [a]	Pass
176	95.0 - 101.0% of mass 174	130219	107.7	(98.2) [a]	Pass
177	5.0 - 9.0% of mass 176	8377	6.93	(6.43) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VY7925-CC7924	Y183052.D	12/15/18	09:55	00:00	Continuing cal 50
VY7925-BS	Y183053.D	12/15/18	10:34	00:39	Blank Spike
VY7925-MB	Y183055.D	12/15/18	11:49	01:54	Method Blank
ZZZZZZ	Y183055A.D	12/15/18	11:49	01:54	(unrelated sample)
ZZZZZZ	Y183056.D	12/15/18	12:25	02:30	(unrelated sample)
JC79747-1	Y183057.D	12/15/18	12:55	03:00	(used for QC only; not part of job JC79739)
JC79747-2	Y183058.D	12/15/18	13:24	03:29	(used for QC only; not part of job JC79739)
ZZZZZZ	Y183059.D	12/15/18	13:54	03:59	(unrelated sample)
ZZZZZZ	Y183060.D	12/15/18	14:23	04:28	(unrelated sample)
ZZZZZZ	Y183061.D	12/15/18	14:53	04:58	(unrelated sample)
JC79739-1	Y183062.D	12/15/18	15:22	05:27	WB18-121318-01
ZZZZZZ	Y183063.D	12/15/18	15:52	05:57	(unrelated sample)
JC79747-1MS	Y183064.D	12/15/18	16:21	06:26	Matrix Spike
JC79747-2DUP	Y183066.D	12/15/18	17:19	07:24	Duplicate
ZZZZZZ	Y183067.D	12/15/18	17:49	07:54	(unrelated sample)
ZZZZZZ	Y183068.D	12/15/18	18:18	08:23	(unrelated sample)

Surrogate Recovery Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Method: SW846 8260C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC79739-3	A246735.D	91	108	100	100
JC79736-4MS	A246723.D	94	104	103	103
JC79736-4MSD	A246724.D	94	106	104	104
VA9469-BS	A246716.D	95	101	102	106
VA9469-MB	A246718.D	91	103	102	97

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	81-124%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

Surrogate Recovery Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Method: SW846 8260C **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC79739-1	Y183062.D	107	106	98	102
JC79747-1MS	Y183064.D	98	100	98	99
JC79747-2DUP	Y183066.D	101	107	101	98
VY7925-BS	Y183053.D	100	99	102	99
VY7925-MB	Y183055.D	98	99	99	102

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	75-127%
S2 = 1,2-Dichloroethane-D4	75-130%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	79-127%

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (DFTPP)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17327-MB1	3E105962.D	1	12/17/18	NA	12/14/18	OP17327	E3E4724

The QC reported here applies to the following samples: **Method:** SW846 8270D

JC79739-2

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	67	21	ug/kg	
	3&4-Methylphenol	ND	67	27	ug/kg	
87-86-5	Pentachlorophenol	ND	130	31	ug/kg	
108-95-2	Phenol	ND	67	17	ug/kg	
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
132-64-9	Dibenzofuran	ND	67	14	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
118-74-1	Hexachlorobenzene	ND	67	8.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	54%	23-115%
4165-62-2	Phenol-d5	52%	27-114%
118-79-6	2,4,6-Tribromophenol	44%	19-152%
4165-60-0	Nitrobenzene-d5	65%	26-134%
321-60-8	2-Fluorobiphenyl	65%	39-124%
1718-51-0	Terphenyl-d14	83%	36-134%

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17327-MB1	3E105962.D	1	12/17/18	NA	12/14/18	OP17327	E3E4724

The QC reported here applies to the following samples: **Method:**

JC79739-2

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	2.39	250	ug/kg	J
	system artifact	3.20	4400	ug/kg	J
	Internal standard added for SIM test	6.77	140	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17327-MB1	5P56089.D	1	12/20/18	NA	12/14/18	OP17327	E5P2657

The QC reported here applies to the following samples: **Method:** SW846 8270D

JC79739-2

CAS No.	Compound	Result	RL	MDL	Units	Q
95-48-7	2-Methylphenol	ND	67	21	ug/kg	
	3&4-Methylphenol	ND	67	27	ug/kg	
87-86-5	Pentachlorophenol	ND	130	31	ug/kg	
108-95-2	Phenol	ND	67	17	ug/kg	
83-32-9	Acenaphthene	ND	33	11	ug/kg	
208-96-8	Acenaphthylene	ND	33	17	ug/kg	
120-12-7	Anthracene	ND	33	20	ug/kg	
56-55-3	Benzo(a)anthracene	ND	33	9.4	ug/kg	
50-32-8	Benzo(a)pyrene	ND	33	15	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	33	15	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	33	17	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	33	16	ug/kg	
218-01-9	Chrysene	ND	33	10	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	33	15	ug/kg	
132-64-9	Dibenzofuran	ND	67	14	ug/kg	
206-44-0	Fluoranthene	ND	33	15	ug/kg	
86-73-7	Fluorene	ND	33	15	ug/kg	
118-74-1	Hexachlorobenzene	ND	67	8.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	33	16	ug/kg	
91-20-3	Naphthalene	ND	33	9.4	ug/kg	
85-01-8	Phenanthrene	ND	33	11	ug/kg	
129-00-0	Pyrene	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	64%	23-115%
4165-62-2	Phenol-d5	64%	27-114%
118-79-6	2,4,6-Tribromophenol	83%	19-152%
4165-60-0	Nitrobenzene-d5	70%	26-134%
321-60-8	2-Fluorobiphenyl	74%	39-124%
1718-51-0	Terphenyl-d14	92%	36-134%

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17327-MB1	5P56089.D	1	12/20/18	NA	12/14/18	OP17327	E5P2657

The QC reported here applies to the following samples: **Method:**

JC79739-2

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	2.67	4400	ug/kg	J
	Internal standard added for SIM test	4.65	140	ug/kg	J
	Internal standard added for SIM test	6.46	160	ug/kg	J
	Internal standard added for SIM test	7.91	150	ug/kg	J
	Internal standard added for SIM test	10.31	140	ug/kg	J
	Internal standard added for SIM test	14.25	130	ug/kg	J
	Total TIC, Semi-Volatile		0	ug/kg	

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17327-BS1	3E105963.D	1	12/17/18	NA	12/14/18	OP17327	E3E4724

The QC reported here applies to the following samples: **Method:** SW846 8270D

JC79739-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
95-48-7	2-Methylphenol	1670	1240	74	40-126
	3&4-Methylphenol	1670	1240	74	40-127
87-86-5	Pentachlorophenol	1670	821	49	15-149
108-95-2	Phenol	1670	1160	70	50-109
83-32-9	Acenaphthene	1670	1300	78	53-119
208-96-8	Acenaphthylene	1670	1330	80	41-125
120-12-7	Anthracene	1670	1380	83	51-120
56-55-3	Benzo(a)anthracene	1670	1370	82	54-118
50-32-8	Benzo(a)pyrene	1670	1350	81	55-121
205-99-2	Benzo(b)fluoranthene	1670	1320	79	57-116
191-24-2	Benzo(g,h,i)perylene	1670	1330	80	40-124
207-08-9	Benzo(k)fluoranthene	1670	1410	85	59-116
218-01-9	Chrysene	1670	1380	83	51-115
53-70-3	Dibenzo(a,h)anthracene	1670	1230	74	48-121
132-64-9	Dibenzofuran	1670	1240	74	51-119
206-44-0	Fluoranthene	1670	1300	78	58-117
86-73-7	Fluorene	1670	1270	76	56-114
118-74-1	Hexachlorobenzene	1670	891	53	50-128
193-39-5	Indeno(1,2,3-cd)pyrene	1670	1280	77	49-124
91-20-3	Naphthalene	1670	1260	76	44-116
85-01-8	Phenanthrene	1670	1370	82	53-119
129-00-0	Pyrene	1670	1450	87	54-124

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	65%	23-115%
4165-62-2	Phenol-d5	63%	27-114%
118-79-6	2,4,6-Tribromophenol	49%	19-152%
4165-60-0	Nitrobenzene-d5	72%	26-134%
321-60-8	2-Fluorobiphenyl	71%	39-124%
1718-51-0	Terphenyl-d14	83%	36-134%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17327-MS	3E105974.D	1	12/17/18	NA	12/14/18	OP17327	E3E4724
OP17327-MSD	3E105975.D	1	12/17/18	NA	12/14/18	OP17327	E3E4724
JC79739-2	5P56090.D	1	12/20/18	NA	12/14/18	OP17327	E5P2657

The QC reported here applies to the following samples: **Method:** SW846 8270D

JC79739-2

CAS No.	Compound	JC79739-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
95-48-7	2-Methylphenol	ND		1980	1240	63	2020	1240	61	0	10-138/33
	3&4-Methylphenol	ND		1980	1290	65	2020	1270	63	2	10-143/33
87-86-5	Pentachlorophenol	ND		1980	965	49	2020	875	43	10	10-148/39
108-95-2	Phenol	ND		1980	1130	57	2020	1160	57	3	24-114/32
83-32-9	Acenaphthene	ND		1980	1490	75	2020	1500	74	1	21-136/34
208-96-8	Acenaphthylene	108		1980	1660	78	2020	1650	76	1	10-143/36
120-12-7	Anthracene	75.7		1980	1720	83	2020	1730	82	1	10-147/39
56-55-3	Benzo(a)anthracene	298		1980	1920	82	2020	1890	79	2	10-151/41
50-32-8	Benzo(a)pyrene	285		1980	1800	76	2020	1770	74	2	10-149/40
205-99-2	Benzo(b)fluoranthene	373		1980	1810	73	2020	1800	71	1	10-147/42
191-24-2	Benzo(g,h,i)perylene	187		1980	1750	79	2020	1650	72	6	10-150/41
207-08-9	Benzo(k)fluoranthene	135		1980	1710	80	2020	1670	76	2	12-142/41
218-01-9	Chrysene	323		1980	1960	83	2020	1950	81	1	10-151/41
53-70-3	Dibenzo(a,h)anthracene	55.0		1980	1560	76	2020	1510	72	3	10-152/38
132-64-9	Dibenzofuran	ND		1980	1470	74	2020	1450	72	1	17-141/36
206-44-0	Fluoranthene	527		1980	1700	59	2020	1760	61	3	10-151/44
86-73-7	Fluorene	ND		1980	1450	73	2020	1450	72	0	19-133/36
118-74-1	Hexachlorobenzene	ND		1980	1040	53	2020	1020	51	2	18-142/37
193-39-5	Indeno(1,2,3-cd)pyrene	207		1980	2000	91	2020	1660	72	19	10-148/41
91-20-3	Naphthalene	17.3	J	1980	1360	68	2020	1400	68	3	10-136/36
85-01-8	Phenanthrene	112		1980	1720	81	2020	1710	79	1	11-145/45
129-00-0	Pyrene	525		1980	2470	98	2020	2370	91	4	11-155/44

CAS No.	Surrogate Recoveries	MS	MSD	JC79739-2	Limits
367-12-4	2-Fluorophenol	61%	62%	54%	23-115%
4165-62-2	Phenol-d5	61%	60%	50%	27-114%
118-79-6	2,4,6-Tribromophenol	53%	53%	81%	19-152%
4165-60-0	Nitrobenzene-d5	71%	70%	57%	26-134%
321-60-8	2-Fluorobiphenyl	75%	71%	61%	39-124%
1718-51-0	Terphenyl-d14	92%	86%	78%	36-134%

* = Outside of Control Limits.

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	E3E4702-DFTPP	**Injection Date:**	11/29/18
Lab File ID:	3E105567.D	**Injection Time:**	23:18
Instrument ID:	GCMS3E		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	60614	35.0		Pass
68	Less than 2.0% of mass 69	729	0.42	(0.92) [a]	Pass
69	Mass 69 relative abundance	79062	45.6		Pass
70	Less than 2.0% of mass 69	244	0.14	(0.31) [a]	Pass
127	40.0 - 60.0% of mass 198	101574	58.6		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	173424	100.0		Pass
199	5.0 - 9.0% of mass 198	11618	6.70		Pass
275	10.0 - 30.0% of mass 198	49146	28.3		Pass
365	1.0 - 100.0% of mass 198	8284	4.78		Pass
441	Present, but less than mass 443	24817	14.3	(77.0) [b]	Pass
442	40.0 - 100.0% of mass 198	166957	96.3		Pass
443	17.0 - 23.0% of mass 442	32249	18.6	(19.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3E4702-IC4702	3E105568.D	11/29/18	23:58	00:40	Initial cal 100
E3E4702-IC4702	3E105569.D	11/30/18	00:23	01:05	Initial cal 80
E3E4702-ICC4702	3E105570.D	11/30/18	00:48	01:30	Initial cal 50
E3E4702-IC4702	3E105571.D	11/30/18	01:13	01:55	Initial cal 25
E3E4702-IC4702	3E105572.D	11/30/18	01:38	02:20	Initial cal 10
E3E4702-IC4702	3E105573.D	11/30/18	02:03	02:45	Initial cal 5
E3E4702-IC4702	3E105574.D	11/30/18	02:28	03:10	Initial cal 2
E3E4702-IC4702	3E105575.D	11/30/18	02:52	03:34	Initial cal 1
E3E4702-ICV4702	3E105577.D	11/30/18	03:42	04:24	Initial cal verification 50
E3E4702-ICV4702	3E105580.D	11/30/18	04:57	05:39	Initial cal verification 50
E3E4702-ICV4702	3E105581.D	11/30/18	05:22	06:04	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	E3E4704-DFTPP	**Injection Date:**	11/30/18
Lab File ID:	3E105594.D	**Injection Time:**	14:01
Instrument ID:	GCMS3E		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	32048	36.0		Pass
68	Less than 2.0% of mass 69	696	0.78	(1.66) [a]	Pass
69	Mass 69 relative abundance	42032	47.2		Pass
70	Less than 2.0% of mass 69	5	0.01	(0.01) [a]	Pass
127	40.0 - 60.0% of mass 198	51989	58.4		Pass
197	Less than 1.0% of mass 198	202	0.23		Pass
198	Base peak, 100% relative abundance	89090	100.0		Pass
199	5.0 - 9.0% of mass 198	5975	6.71		Pass
275	10.0 - 30.0% of mass 198	24146	27.1		Pass
365	1.0 - 100.0% of mass 198	4080	4.58		Pass
441	Present, but less than mass 443	11939	13.4	(73.8) [b]	Pass
442	40.0 - 100.0% of mass 198	80080	89.9		Pass
443	17.0 - 23.0% of mass 442	16173	18.2	(20.2) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3E4704-ICV4702	3E105595.D	11/30/18	14:14	00:13	Initial cal verification 50
E3E4704-ICV4702	3E105596.D	11/30/18	14:39	00:38	Initial cal verification 50
E3E4704-ICV4702	3E105597.D	11/30/18	15:04	01:03	Initial cal verification 50
E3E4704-CC4702	3E105598.D	11/30/18	15:29	01:28	Continuing cal 50
E3E4704-CC4703	3E105599.D	11/30/18	15:54	01:53	Continuing cal 50
OP16889-MB1	3E105600.D	11/30/18	16:34	02:33	Method Blank
OP16889-BS1	3E105601.D	11/30/18	16:59	02:58	Blank Spike
OP16889-BSD	3E105602.D	11/30/18	17:24	03:23	Blank Spike Duplicate
ZZZZZZ	3E105603.D	11/30/18	17:49	03:48	(unrelated sample)
JC78344-1	3E105604.D	11/30/18	18:14	04:13	(used for QC only; not part of job JC79739)
OP16889-MS	3E105605.D	11/30/18	18:39	04:38	Matrix Spike
OP16889-MSD	3E105606.D	11/30/18	19:04	05:03	Matrix Spike Duplicate

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	E3E4705-DFTPP	**Injection Date:**	11/30/18
Lab File ID:	3E105607.D	**Injection Time:**	22:20
Instrument ID:	GCMS3E		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	58523	38.8		Pass
68	Less than 2.0% of mass 69	172	0.11	(0.23) [a]	Pass
69	Mass 69 relative abundance	74691	49.6		Pass
70	Less than 2.0% of mass 69	394	0.26	(0.53) [a]	Pass
127	40.0 - 60.0% of mass 198	88930	59.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	150712	100.0		Pass
199	5.0 - 9.0% of mass 198	10486	6.96		Pass
275	10.0 - 30.0% of mass 198	43096	28.6		Pass
365	1.0 - 100.0% of mass 198	7597	5.04		Pass
441	Present, but less than mass 443	19810	13.1	(77.9) [b]	Pass
442	40.0 - 100.0% of mass 198	131978	87.6		Pass
443	17.0 - 23.0% of mass 442	25426	16.9	(19.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3E4705-IC4705	3E105608.D	11/30/18	23:00	00:40	Initial cal 100
E3E4705-IC4705	3E105609.D	11/30/18	23:24	01:04	Initial cal 80
E3E4705-ICC4705	3E105610.D	11/30/18	23:49	01:29	Initial cal 50
E3E4705-IC4705	3E105611.D	12/01/18	00:14	01:54	Initial cal 25
E3E4705-IC4705	3E105612.D	12/01/18	00:39	02:19	Initial cal 10
E3E4705-IC4705	3E105613.D	12/01/18	01:03	02:43	Initial cal 5
E3E4705-IC4705	3E105614.D	12/01/18	01:28	03:08	Initial cal 2
E3E4705-IC4705	3E105615.D	12/01/18	01:53	03:33	Initial cal 1
E3E4705-ICV4705	3E105616.D	12/01/18	02:18	03:58	Initial cal verification 50
E3E4705-ICV4705	3E105617.D	12/01/18	02:42	04:22	Initial cal verification 50
E3E4705-ICV4705	3E105618.D	12/01/18	03:07	04:47	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample: E3E4724-DFTPP
Lab File ID: 3E105955.D
Instrument ID: GCMS3E
Injection Date: 12/17/18
Injection Time: 09:13

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	73762	31.9		Pass
68	Less than 2.0% of mass 69	1006	0.43	(1.09) [a]	Pass
69	Mass 69 relative abundance	91977	39.8		Pass
70	Less than 2.0% of mass 69	446	0.19	(0.48) [a]	Pass
127	40.0 - 60.0% of mass 198	128117	55.4		Pass
197	Less than 1.0% of mass 198	502	0.22		Pass
198	Base peak, 100% relative abundance	231298	100.0		Pass
199	5.0 - 9.0% of mass 198	14888	6.44		Pass
275	10.0 - 30.0% of mass 198	65962	28.5		Pass
365	1.0 - 100.0% of mass 198	9893	4.28		Pass
441	Present, but less than mass 443	28002	12.1	(85.6) [b]	Pass
442	40.0 - 100.0% of mass 198	168048	72.7		Pass
443	17.0 - 23.0% of mass 442	32722	14.1	(19.5) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E3E4724-CC4702	3E105956.D	12/17/18	09:26	00:13	Continuing cal 25
E3E4724-CC4705	3E105957.D	12/17/18	09:51	00:38	Continuing cal 25
OP17328-MB1	3E105959.D	12/17/18	10:42	01:29	Method Blank
OP17328-BS1	3E105960.D	12/17/18	11:07	01:54	Blank Spike
OP17328-BSD	3E105961.D	12/17/18	11:33	02:20	Blank Spike Duplicate
OP17327-MB1	3E105962.D	12/17/18	11:58	02:45	Method Blank
OP17327-BS1	3E105963.D	12/17/18	12:24	03:11	Blank Spike
OP17149-BS13	3E105964.D	12/17/18	12:49	03:36	Blank Spike
ZZZZZZ	3E105965.D	12/17/18	13:14	04:01	(unrelated sample)
ZZZZZZ	3E105966.D	12/17/18	13:40	04:27	(unrelated sample)
ZZZZZZ	3E105967.D	12/17/18	14:05	04:52	(unrelated sample)
ZZZZZZ	3E105968.D	12/17/18	14:31	05:18	(unrelated sample)
ZZZZZZ	3E105970.D	12/17/18	15:21	06:08	(unrelated sample)
ZZZZZZ	3E105971.D	12/17/18	15:47	06:34	(unrelated sample)
ZZZZZZ	3E105972.D	12/17/18	16:12	06:59	(unrelated sample)
ZZZZZZ	3E105973.D	12/17/18	16:38	07:25	(unrelated sample)
OP17327-MS	3E105974.D	12/17/18	17:03	07:50	Matrix Spike
OP17327-MSD	3E105975.D	12/17/18	17:28	08:15	Matrix Spike Duplicate
ZZZZZZ	3E105976.D	12/17/18	17:54	08:41	(unrelated sample)

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	E5P2625-DFTPP	**Injection Date:**	11/27/18
Lab File ID:	5P55393.D	**Injection Time:**	16:23
Instrument ID:	GCMS5P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	30323	39.4		Pass
68	Less than 2.0% of mass 69	83	0.11	(0.19) [a]	Pass
69	Mass 69 relative abundance	42668	55.4		Pass
70	Less than 2.0% of mass 69	183	0.24	(0.43) [a]	Pass
127	40.0 - 60.0% of mass 198	43043	55.9		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	77045	100.0		Pass
199	5.0 - 9.0% of mass 198	5153	6.69		Pass
275	10.0 - 30.0% of mass 198	17268	22.4		Pass
365	1.0 - 100.0% of mass 198	1828	2.37		Pass
441	Present, but less than mass 443	4818	6.25	(80.9) [b]	Pass
442	40.0 - 100.0% of mass 198	31293	40.6		Pass
443	17.0 - 23.0% of mass 442	5957	7.73	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P2625-IC2625	5P55394.D	11/27/18	16:35	00:12	Initial cal 100
E5P2625-IC2625	5P55395.D	11/27/18	17:00	00:37	Initial cal 80
E5P2625-ICC2625	5P55396.D	11/27/18	17:25	01:02	Initial cal 50
E5P2625-IC2625	5P55397.D	11/27/18	17:49	01:26	Initial cal 25
E5P2625-IC2625	5P55398.D	11/27/18	18:14	01:51	Initial cal 10
E5P2625-IC2625	5P55399.D	11/27/18	18:38	02:15	Initial cal 5
E5P2625-IC2625	5P55400.D	11/27/18	19:02	02:39	Initial cal 2
E5P2625-IC2625	5P55401.D	11/27/18	19:27	03:04	Initial cal 1
E5P2625-ICV2625	5P55402.D	11/27/18	19:55	03:32	Initial cal verification 50
E5P2625-ICV2625	5P55403.D	11/27/18	20:19	03:56	Initial cal verification 50
E5P2625-ICV2625	5P55404.D	11/27/18	20:44	04:21	Initial cal verification 50
E5P2625-ICV2625	5P55405.D	11/27/18	21:08	04:45	Initial cal verification 50
E5P2625-ICV2625	5P55406.D	11/27/18	21:33	05:10	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample: E5P2626-DFTPP
Lab File ID: 5P55411.D
Instrument ID: GCMS5P
Injection Date: 11/28/18
Injection Time: 05:31

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	38101	35.8		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	51728	48.6		Pass
70	Less than 2.0% of mass 69	206	0.19	(0.40) [a]	Pass
127	40.0 - 60.0% of mass 198	53834	50.5		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	106522	100.0		Pass
199	5.0 - 9.0% of mass 198	6804	6.39		Pass
275	10.0 - 30.0% of mass 198	26706	25.1		Pass
365	1.0 - 100.0% of mass 198	2820	2.65		Pass
441	Present, but less than mass 443	8476	7.96	(77.8) [b]	Pass
442	40.0 - 100.0% of mass 198	54866	51.5		Pass
443	17.0 - 23.0% of mass 442	10892	10.2	(19.9) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P2626-IC2626	5P55412.D	11/28/18	06:03	00:32	Initial cal 100
E5P2626-IC2626	5P55413.D	11/28/18	06:28	00:57	Initial cal 80
E5P2626-ICC2626	5P55414.D	11/28/18	06:52	01:21	Initial cal 50
E5P2626-IC2626	5P55415.D	11/28/18	07:17	01:46	Initial cal 25
E5P2626-IC2626	5P55416.D	11/28/18	07:41	02:10	Initial cal 10
E5P2626-IC2626	5P55417.D	11/28/18	08:06	02:35	Initial cal 5
E5P2626-IC2626	5P55418.D	11/28/18	08:30	02:59	Initial cal 2
E5P2626-IC2626	5P55419.D	11/28/18	08:55	03:24	Initial cal 1
E5P2626-ICV2626	5P55420.D	11/28/18	09:19	03:48	Initial cal verification 50
E5P2626-ICV2626	5P55421.D	11/28/18	09:43	04:12	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	E5P2631-DFTPP	**Injection Date:**	11/30/18
Lab File ID:	5P55501.D	**Injection Time:**	04:47
Instrument ID:	GCMS5P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	32140	33.8		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	44341	46.6		Pass
70	Less than 2.0% of mass 69	98	0.10	(0.22) [a]	Pass
127	40.0 - 60.0% of mass 198	48547	51.0		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	95162	100.0		Pass
199	5.0 - 9.0% of mass 198	6403	6.73		Pass
275	10.0 - 30.0% of mass 198	24409	25.6		Pass
365	1.0 - 100.0% of mass 198	2922	3.07		Pass
441	Present, but less than mass 443	7752	8.15	(81.5) [b]	Pass
442	40.0 - 100.0% of mass 198	50037	52.6		Pass
443	17.0 - 23.0% of mass 442	9511	9.99	(19.0) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P2631-ICV2626	5P55502.D	11/30/18	05:10	00:23	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample:	E5P2636-DFTPP	**Injection Date:**	12/04/18
Lab File ID:	5P55616.D	**Injection Time:**	01:22
Instrument ID:	GCMS5P		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	39089	34.9		Pass
68	Less than 2.0% of mass 69	170	0.15	(0.32) [a]	Pass
69	Mass 69 relative abundance	52537	46.9		Pass
70	Less than 2.0% of mass 69	347	0.31	(0.66) [a]	Pass
127	40.0 - 60.0% of mass 198	57719	51.6		Pass
197	Less than 1.0% of mass 198	595	0.53		Pass
198	Base peak, 100% relative abundance	111930	100.0		Pass
199	5.0 - 9.0% of mass 198	7538	6.73		Pass
275	10.0 - 30.0% of mass 198	28208	25.2		Pass
365	1.0 - 100.0% of mass 198	3198	2.86		Pass
441	Present, but less than mass 443	9334	8.34	(81.9) [b]	Pass
442	40.0 - 100.0% of mass 198	56282	50.3		Pass
443	17.0 - 23.0% of mass 442	11398	10.2	(20.3) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P2636-IC2636	5P55617.D	12/04/18	01:41	00:19	Initial cal 100
E5P2636-IC2636	5P55618.D	12/04/18	02:05	00:43	Initial cal 80
E5P2636-ICC2636	5P55619.D	12/04/18	02:30	01:08	Initial cal 50
E5P2636-IC2636	5P55620.D	12/04/18	02:54	01:32	Initial cal 25
E5P2636-IC2636	5P55621.D	12/04/18	03:19	01:57	Initial cal 10
E5P2636-IC2636	5P55622.D	12/04/18	03:44	02:22	Initial cal 5
E5P2636-IC2636	5P55623.D	12/04/18	04:08	02:46	Initial cal 2
E5P2636-IC2636	5P55624.D	12/04/18	04:33	03:11	Initial cal 1
E5P2636-ICV2636	5P55625.D	12/04/18	04:57	03:35	Initial cal verification 50

Instrument Performance Check (DFTPP)

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample: E5P2657-DFTPP
Lab File ID: 5P56074.D
Instrument ID: GCMS5P
Injection Date: 12/20/18
Injection Time: 09:05

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
51	30.0 - 60.0% of mass 198	27470	33.4		Pass
68	Less than 2.0% of mass 69	0	0.00	(0.00) [a]	Pass
69	Mass 69 relative abundance	36309	44.1		Pass
70	Less than 2.0% of mass 69	203	0.25	(0.56) [a]	Pass
127	40.0 - 60.0% of mass 198	42943	52.2		Pass
197	Less than 1.0% of mass 198	0	0.00		Pass
198	Base peak, 100% relative abundance	82296	100.0		Pass
199	5.0 - 9.0% of mass 198	5495	6.68		Pass
275	10.0 - 30.0% of mass 198	20937	25.4		Pass
365	1.0 - 100.0% of mass 198	2348	2.85		Pass
441	Present, but less than mass 443	7191	8.74	(78.8) [b]	Pass
442	40.0 - 100.0% of mass 198	47853	58.1		Pass
443	17.0 - 23.0% of mass 442	9129	11.1	(19.1) [c]	Pass

(a) Value is % of mass 69
(b) Value is % of mass 443
(c) Value is % of mass 442

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
E5P2657-CC2625	5P56075.D	12/20/18	09:18	00:13	Continuing cal 25
E5P2657-CC2626	5P56076.D	12/20/18	09:42	00:37	Continuing cal 25
E5P2657-CC2636	5P56077.D	12/20/18	10:07	01:02	Continuing cal 25
OP16555-MB1	5P56078.D	12/20/18	10:31	01:26	Method Blank
ZZZZZZ	5P56079.D	12/20/18	10:56	01:51	(unrelated sample)
ZZZZZZ	5P56080.D	12/20/18	11:20	02:15	(unrelated sample)
OP17240-MB1	5P56081.D	12/20/18	11:45	02:40	Method Blank
ZZZZZZ	5P56082.D	12/20/18	12:10	03:05	(unrelated sample)
ZZZZZZ	5P56083.D	12/20/18	12:35	03:30	(unrelated sample)
OP16544-MB2	5P56084.D	12/20/18	12:59	03:54	Method Blank
ZZZZZZ	5P56085.D	12/20/18	13:24	04:19	(unrelated sample)
ZZZZZZ	5P56086.D	12/20/18	13:48	04:43	(unrelated sample)
ZZZZZZ	5P56087.D	12/20/18	14:12	05:07	(unrelated sample)
ZZZZZZ	5P56088.D	12/20/18	14:37	05:32	(unrelated sample)
OP17327-MB1	5P56089.D	12/20/18	15:02	05:57	Method Blank
JC79739-2	5P56090.D	12/20/18	15:27	06:22	WB18-121318-02
ZZZZZZ	5P56093.D	12/20/18	16:31	07:26	(unrelated sample)
ZZZZZZ	5P56094.D	12/20/18	16:56	07:51	(unrelated sample)

Surrogate Recovery Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Method: SW846 8270D **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JC79739-2	5P56090.D	54	50	81	57	61	78
OP17327-BS1	3E105963.D	65	63	49	72	71	83
OP17327-MB1	3E105962.D	54	52	44	65	65	83
OP17327-MB1	5P56089.D	64	64	83	70	74	92
OP17327-MS	3E105974.D	61	61	53	71	75	92
OP17327-MSD	3E105975.D	62	60	53	70	71	86

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	23-115%
S2 = Phenol-d5	27-114%
S3 = 2,4,6-Tribromophenol	19-152%
S4 = Nitrobenzene-d5	26-134%
S5 = 2-Fluorobiphenyl	39-124%
S6 = Terphenyl-d14	36-134%

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17386-MB1	OA137151.D	1	12/18/18	VDT	12/18/18	OP17386	GOA4721

The QC reported here applies to the following samples: **Method:** SW846 8151A

JC79739-2

CAS No.	Compound	Result	RL	MDL	Units	Q
93-72-1	2,4,5-TP (Silvex)	ND	3.3	2.9	ug/kg	

CAS No.	Surrogate Recoveries		Limits
19719-28-9	2,4-DCAA	81%	10-159%
19719-28-9	2,4-DCAA	85%	10-159%

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17352-MB1	4G955299.D	1	12/17/18	MH	12/16/18	OP17352	G4G2623

The QC reported here applies to the following samples: **Method:** SW846 8081B

JC79739-2

CAS No.	Compound	Result	RL	MDL	Units	Q
309-00-2	Aldrin	ND	0.67	0.55	ug/kg	
319-84-6	alpha-BHC	ND	0.67	0.54	ug/kg	
319-85-7	beta-BHC	ND	0.67	0.60	ug/kg	
319-86-8	delta-BHC	ND	0.67	0.64	ug/kg	
58-89-9	gamma-BHC (Lindane)	ND	0.67	0.49	ug/kg	
5103-71-9	alpha-Chlordane	ND	0.67	0.54	ug/kg	
60-57-1	Dieldrin	ND	0.67	0.46	ug/kg	
72-54-8	4,4'-DDD	ND	0.67	0.61	ug/kg	
72-55-9	4,4'-DDE	ND	0.67	0.58	ug/kg	
50-29-3	4,4'-DDT	ND	0.67	0.59	ug/kg	
72-20-8	Endrin	ND	0.67	0.52	ug/kg	
1031-07-8	Endosulfan sulfate	ND	0.67	0.52	ug/kg	
959-98-8	Endosulfan-I	ND	0.67	0.38	ug/kg	
33213-65-9	Endosulfan-II	ND	0.67	0.42	ug/kg	
76-44-8	Heptachlor	ND	0.67	0.57	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	76%	25-135%
877-09-8	Tetrachloro-m-xylene	68%	25-135%
2051-24-3	Decachlorobiphenyl	106%	10-156%
2051-24-3	Decachlorobiphenyl	73%	10-156%

Method Blank Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17351-MB1	2G174105A.D	1	12/17/18	SK	12/16/18	OP17351	G2G4533

The QC reported here applies to the following samples: **Method:** SW846 8082A

JC79739-2

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	33	13	ug/kg	
11104-28-2	Aroclor 1221	ND	33	14	ug/kg	
11141-16-5	Aroclor 1232	ND	33	8.9	ug/kg	
53469-21-9	Aroclor 1242	ND	33	5.3	ug/kg	
12672-29-6	Aroclor 1248	ND	33	20	ug/kg	
11097-69-1	Aroclor 1254	ND	33	8.2	ug/kg	
11096-82-5	Aroclor 1260	ND	33	11	ug/kg	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	73%	31-146%
877-09-8	Tetrachloro-m-xylene	80%	31-146%
2051-24-3	Decachlorobiphenyl	78%	17-164%
2051-24-3	Decachlorobiphenyl	86%	17-164%

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17386-BS1	OA137152.D	1	12/18/18	VDT	12/18/18	OP17386	GOA4721

The QC reported here applies to the following samples: **Method:** SW846 8151A

JC79739-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
93-72-1	2,4,5-TP (Silvex)	26.7	22.7	85	49-139

CAS No.	Surrogate Recoveries	BSP	Limits
19719-28-9	2,4-DCAA	96%	10-159%
19719-28-9	2,4-DCAA	101%	10-159%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17352-BS1	4G955300.D	1	12/17/18	MH	12/16/18	OP17352	G4G2623

The QC reported here applies to the following samples: **Method:** SW846 8081B

JC79739-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
309-00-2	Aldrin	16.7	13.8	83	46-120
319-84-6	alpha-BHC	16.7	12.6	76	45-116
319-85-7	beta-BHC	16.7	12.6	76	42-121
319-86-8	delta-BHC	16.7	11.1	67	42-121
58-89-9	gamma-BHC (Lindane)	16.7	12.3	74	46-118
5103-71-9	alpha-Chlordane	16.7	13.7	82	49-119
60-57-1	Dieldrin	16.7	14.2	85	48-126
72-54-8	4,4'-DDD	16.7	12.8	77	47-120
72-55-9	4,4'-DDE	16.7	12.6	76 [a]	48-121
50-29-3	4,4'-DDT	16.7	13.5	81	45-135
72-20-8	Endrin	16.7	14.4	86	51-137
1031-07-8	Endosulfan sulfate	16.7	13.8	83	48-128
959-98-8	Endosulfan-I	16.7	13.3	80	47-118
33213-65-9	Endosulfan-II	16.7	12.4	74	49-121
76-44-8	Heptachlor	16.7	12.9	77	48-120

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	77%	25-135%
877-09-8	Tetrachloro-m-xylene	71%	25-135%
2051-24-3	Decachlorobiphenyl	101%	10-156%
2051-24-3	Decachlorobiphenyl	68%	10-156%

(a) Reported from the 2nd signal. The %D of the CCV on the 1st signal exceeds the method criteria of 20%, so it being used for confirmation only.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17351-BS1	2G174106.D	1	12/17/18	SK	12/16/18	OP17351	G2G4533

The QC reported here applies to the following samples: **Method:** SW846 8082A

JC79739-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
12674-11-2	Aroclor 1016	133	128	96	67-157
11104-28-2	Aroclor 1221		ND		70-130
11141-16-5	Aroclor 1232		ND		70-130
53469-21-9	Aroclor 1242		ND		70-130
12672-29-6	Aroclor 1248		ND		70-130
11097-69-1	Aroclor 1254		ND		70-130
11096-82-5	Aroclor 1260	133	125	94	63-155

CAS No.	Surrogate Recoveries	BSP	Limits
877-09-8	Tetrachloro-m-xylene	77%	31-146%
877-09-8	Tetrachloro-m-xylene	82%	31-146%
2051-24-3	Decachlorobiphenyl	81%	17-164%
2051-24-3	Decachlorobiphenyl	91%	17-164%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17386-MS	OA137155.D	1	12/18/18	VDT	12/18/18	OP17386	GOA4721
OP17386-MSD	OA137156.D	1	12/18/18	VDT	12/18/18	OP17386	GOA4721
JC79739-2	OA137154.D	1	12/18/18	VDT	12/18/18	OP17386	GOA4721

The QC reported here applies to the following samples: **Method:** SW846 8151A

JC79739-2

CAS No.	Compound	JC79739-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
93-72-1	2,4,5-TP (Silvex)	ND		31	20.6	66	29	19.6	68	5	10-159/51

CAS No.	Surrogate Recoveries	MS	MSD	JC79739-2	Limits
19719-28-9	2,4-DCAA	45%	45%	24%	10-159%
19719-28-9	2,4-DCAA	53%	54%	20%	10-159%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17352-MS	4G955308.D	1	12/17/18	MH	12/16/18	OP17352	G4G2623
OP17352-MSD	4G955309.D	1	12/17/18	MH	12/16/18	OP17352	G4G2623
JC79748-2	4G955307.D	1	12/17/18	MH	12/16/18	OP17352	G4G2623

The QC reported here applies to the following samples: **Method:** SW846 8081B

JC79739-2

CAS No.	Compound	JC79748-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
309-00-2	Aldrin	ND		17.7	11.7	66	17.5	13.8	79	16	23-143/44
319-84-6	alpha-BHC	ND		17.7	11.8	67	17.5	14.3	82	19	18-152/47
319-85-7	beta-BHC	ND		17.7	10.4	59	17.5	13.5	77	26	7-143/48
319-86-8	delta-BHC	ND		17.7	11.0	62	17.5	13.9	80	23	13-155/49
58-89-9	gamma-BHC (Lindane)	ND		17.7	11.7	66	17.5	14.2	81	19	23-138/49
5103-71-9	alpha-Chlordane	ND		17.7	13.1	74	17.5	15.4	88	16	16-149/46
60-57-1	Dieldrin	ND		17.7	11.9	67	17.5	13.9	80	16	14-154/46
72-54-8	4,4'-DDD	ND		17.7	11.6	66	17.5	13.5	77	15	18-149/51
72-55-9	4,4'-DDE	ND		17.7	9.7	55	17.5	11.5	66	17	10-154/49
50-29-3	4,4'-DDT	ND		17.7	15.1	85	17.5	18.6	106	21	10-170/50
72-20-8	Endrin	ND		17.7	11.7	66	17.5	14.0	80	18	18-173/49
1031-07-8	Endosulfan sulfate	ND		17.7	10.2	58	17.5	11.5	66	12	19-132/50
959-98-8	Endosulfan-I	ND		17.7	10.6	60	17.5	12.8	73	19	18-143/46
33213-65-9	Endosulfan-II	ND		17.7	9.8	55	17.5	11.7	67	18	21-132/46
76-44-8	Heptachlor	ND		17.7	12.9	73	17.5	15.2	87	16	22-146/46

CAS No.	Surrogate Recoveries	MS	MSD	JC79748-2	Limits
877-09-8	Tetrachloro-m-xylene	61%	76%	76%	25-135%
877-09-8	Tetrachloro-m-xylene	53%	65%	66%	25-135%
2051-24-3	Decachlorobiphenyl	51%	59%	77%	10-156%
2051-24-3	Decachlorobiphenyl	55%	67%	79%	10-156%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP17351-MS	2G174108.D	1	12/17/18	SK	12/16/18	OP17351	G2G4533
OP17351-MSD	2G174109.D	1	12/17/18	SK	12/16/18	OP17351	G2G4533
JC79739-2	2G174107.D	1	12/17/18	SK	12/16/18	OP17351	G2G4533

The QC reported here applies to the following samples: **Method:** SW846 8082A

JC79739-2

CAS No.	Compound	JC79739-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	ND		152	153	101	159	158	99	3	36-191/60
11104-28-2	Aroclor 1221	ND			ND			ND		nc	70-130/50
11141-16-5	Aroclor 1232	ND			ND			ND		nc	70-130/1
53469-21-9	Aroclor 1242	ND			ND			ND		nc	70-130/6
12672-29-6	Aroclor 1248	ND			ND			ND		nc	70-130/33
11097-69-1	Aroclor 1254	ND			ND			ND		nc	70-130/38
11096-82-5	Aroclor 1260	ND		152	159	105	159	158	99	1	15-200/68

CAS No.	Surrogate Recoveries	MS	MSD	JC79739-2	Limits
877-09-8	Tetrachloro-m-xylene	83%	80%	70%	31-146%
877-09-8	Tetrachloro-m-xylene	84%	83%	73%	31-146%
2051-24-3	Decachlorobiphenyl	85%	81%	66%	17-164%
2051-24-3	Decachlorobiphenyl	86%	77%	75%	17-164%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Method: SW846 8151A **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JC79739-2	OA137154.D	24	20
OP17386-BS1	OA137152.D	96	101
OP17386-MB1	OA137151.D	81	85
OP17386-MS	OA137155.D	45	53
OP17386-MSD	OA137156.D	45	54

Surrogate Compounds	Recovery Limits
S1 = 2,4-DCAA	10-159%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

Surrogate Recovery Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Method: SW846 8081B **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
JC79739-2	4G955310.D	69	62	58	61
OP17352-BS1	4G955300.D	77	71	101	68
OP17352-MB1	4G955299.D	76	68	106	73
OP17352-MS	4G955308.D	61	53	51	55
OP17352-MSD	4G955309.D	76	65	59	67

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	25-135%
S2 = Decachlorobiphenyl	10-156%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Surrogate Recovery Summary

Job Number: JC79739
Account: HWINJM Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Method: SW846 8082A **Matrix:** SO

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
JC79739-2	2G174107.D	70	73	66	75
OP17351-BS1	2G174106.D	77	82	81	91
OP17351-MB1	2G174105A.D	73	80	78	86
OP17351-MS	2G174108.D	83	84	85	86
OP17351-MSD	2G174109.D	80	83	81	77

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	31-146%
S2 = Decachlorobiphenyl	17-164%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	RL	IDL	MDL	MB raw	final
Aluminum	51	1.4	8.1		
Antimony	2.0	.02	.41		
Arsenic	2.0	.091	.28	0.0	<2.0
Barium	20	.03	1.9	0.040	<20
Beryllium	0.20	.01	.081	0.0	<0.20
Bismuth	2.0	.26	.53		
Boron	10	.17	1.5		
Cadmium	0.51	.03	.071	0.020	<0.51
Calcium	510	.38	45		
Chromium	1.0	.04	.37	0.12	<1.0
Cobalt	5.1	.02	.28		
Copper	2.5	.061	.85	0.34	<2.5
Iron	51	.34	19		
Lead	2.0	.12	.41	0.040	<2.0
Lithium	5.1	.26	.93		
Magnesium	510	2.3	14		
Manganese	1.5	.01	.41	0.030	<1.5
Molybdenum	2.0	.03	.32		
Nickel	4.0	.061	.35	0.040	<4.0
Phosphorus	20	.3	3.3		
Potassium	1000	5.8	32		
Selenium	2.0	.19	.66	-0.071	<2.0
Silicon	20	.15	11		
Silver	0.51	.071	.17	-0.020	<0.51
Sodium	1000	1.6	79		
Strontium	5.1	.01	.18		
Sulfur	10	.26	9.5		
Thallium	1.0	.071	.59		
Tin	20	.081	3.9		
Titanium	1.0	.04	.34		
Tungsten	5.1	.11	1.8		
Vanadium	5.1	.03	.19		
Zinc	5.1	.01	2.3	0.34	<5.1

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.04	.23		

Associated samples MP11388: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	JC79671-3 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	2.7	274	268	101.2	75-125
Barium	30.1	318	268	107.4	75-125
Beryllium	0.57	281	268	104.6	75-125
Bismuth					
Boron					
Cadmium	0.21	280	268	104.4	75-125
Calcium	anr				
Chromium	12.9	295	268	105.2	75-125
Cobalt	anr				
Copper	37.4	317	268	104.3	75-125
Iron	anr				
Lead	14.6	294	268	104.2	75-125
Lithium					
Magnesium	anr				
Manganese	94.3	368	268	102.1	75-125
Molybdenum					
Nickel	9.6	290	268	104.6	75-125
Phosphorus					
Potassium	anr				
Selenium	0.0	272	268	101.4	75-125
Silicon					
Silver	0.33	33.0	33.5	97.5	75-125
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	42.2	322	268	104.4	75-125

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	JC79671-3 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP11388: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	JC79671-3 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	2.7	253	250	100.2	8.0	20
Barium	30.1	297	250	106.8	6.8	20
Beryllium	0.57	260	250	103.8	7.8	20
Bismuth						
Boron						
Cadmium	0.21	258	250	103.2	8.2	20
Calcium	anr					
Chromium	12.9	271	250	103.3	8.5	20
Cobalt	anr					
Copper	37.4	297	250	103.9	6.5	20
Iron	anr					
Lead	14.6	273	250	103.4	7.4	20
Lithium						
Magnesium	anr					
Manganese	94.3	354	250	103.9	3.9	20
Molybdenum						
Nickel	9.6	269	250	103.8	7.5	20
Phosphorus						
Potassium	anr					
Selenium	0.0	250	250	100.0	8.4	20
Silicon						
Silver	0.33	30.4	31.2	96.3	8.2	20
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	42.2	302	250	104.0	6.4	20

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	JC79671-3 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP11388: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	194	192	100.9	80-120
Barium	200	192	104.0	80-120
Beryllium	199	192	103.5	80-120
Bismuth				
Boron				
Cadmium	200	192	104.0	80-120
Calcium	anr			
Chromium	203	192	105.6	80-120
Cobalt	anr			
Copper	197	192	102.4	80-120
Iron	anr			
Lead	199	192	103.5	80-120
Lithium				
Magnesium	anr			
Manganese	202	192	105.0	80-120
Molybdenum				
Nickel	197	192	102.4	80-120
Phosphorus				
Potassium	anr			
Selenium	195	192	101.4	80-120
Silicon				
Silver	23.3	24	96.9	80-120
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	201	192	104.5	80-120

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 12/14/18

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP11388: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/14/18

Metal	JC79671-3 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	20.2	22.9	13.4 (a)	0-10
Barium	227	239	5.2	0-10
Beryllium	4.30	4.40	2.3	0-10
Bismuth				
Boron				
Cadmium	1.60	0.00	100.0(a)	0-10
Calcium	anr			
Chromium	96.9	99.9	3.1	0-10
Cobalt	anr			
Copper	282	291	3.3	0-10
Iron	anr			
Lead	110	115	4.5	0-10
Lithium				
Magnesium	anr			
Manganese	710	737	3.8	0-10
Molybdenum				
Nickel	72.3	72.2	0.1	0-10
Phosphorus				
Potassium	anr			
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	2.50	3.60	44.0 (a)	0-10
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	318	334	5.0	0-10

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11388
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 12/14/18

Metal	JC79671-3 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP11388: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11468
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 12/18/18

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.033	.01	.015	0.0055	<0.033

Associated samples MP11468: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11468
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 12/18/18

Metal	JC79827-1 Original	MS	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.014	0.37	0.38	93.6	80-120

Associated samples MP11468: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11468 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 12/18/18

Metal	JC79827-1 Original	MSD	Spikelot HGPWS1	% Rec	MSD RPD	QC Limit
Mercury	0.014	0.39	0.377	99.6	5.3	20

Associated samples MP11468: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

QC Batch ID: MP11468
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 12/18/18

Metal	BSP Result	Spikelot HGPWS1	% Rec	QC Limits
Mercury	0.33	0.333	99.0	80-120

Associated samples MP11468: JC79739-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP18217/GN89961	0.40	0.0	mg/kg	785.149	742	94.5	80-120%
Chromium, Hexavalent	GP18217/GN89961			mg/kg	40	38.8	97.0	80-120%
Cyanide	GP18163/GN89773	0.24	0.16	mg/kg	2	2.14	107.0	90-110%

Associated Samples:
Batch GP18163: JC79739-2
Batch GP18217: JC79739-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP18217/GN89961	JC79739-2	mg/kg	0.94	0.99	5.2	0-20%
Cyanide	GP18163/GN89773	JC79951-2	mg/kg	0.0	0.44	200.0*(a)	0-49%
Redox Potential Vs H2	GN89871	JC79747-2	mv	346	336	2.9	0-15%
Solids, Percent	GN89645	JC79560-2	%	82.2	79.3	3.6	0-5%
pH	GN89872	JC79747-2	su	7.41	7.47	0.8	0-5%

Associated Samples:
Batch GN89645: JC79739-1, JC79739-2
Batch GN89871: JC79739-2
Batch GN89872: JC79739-2
Batch GP18163: JC79739-2
Batch GP18217: JC79739-2
(*) Outside of QC limits
(a) High RPD due to possible sample nonhomogeneity.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC79739
Account: HWINJM - Honeywell International Inc.
Project: OBGNYS: Waste Beds 1-8 Clean Fill

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP18217/GN89961	JC79739-2	mg/kg	0.94	1130	1170	103.8(a)	75-125%
Chromium, Hexavalent	GP18217/GN89961	JC79739-2	mg/kg	0.94	48.8	15.4	29.7N(b)	75-125%
Cyanide	GP18163/GN89773	JC79951-2	mg/kg	0.0	2.29	2.0	87.2	75-125%

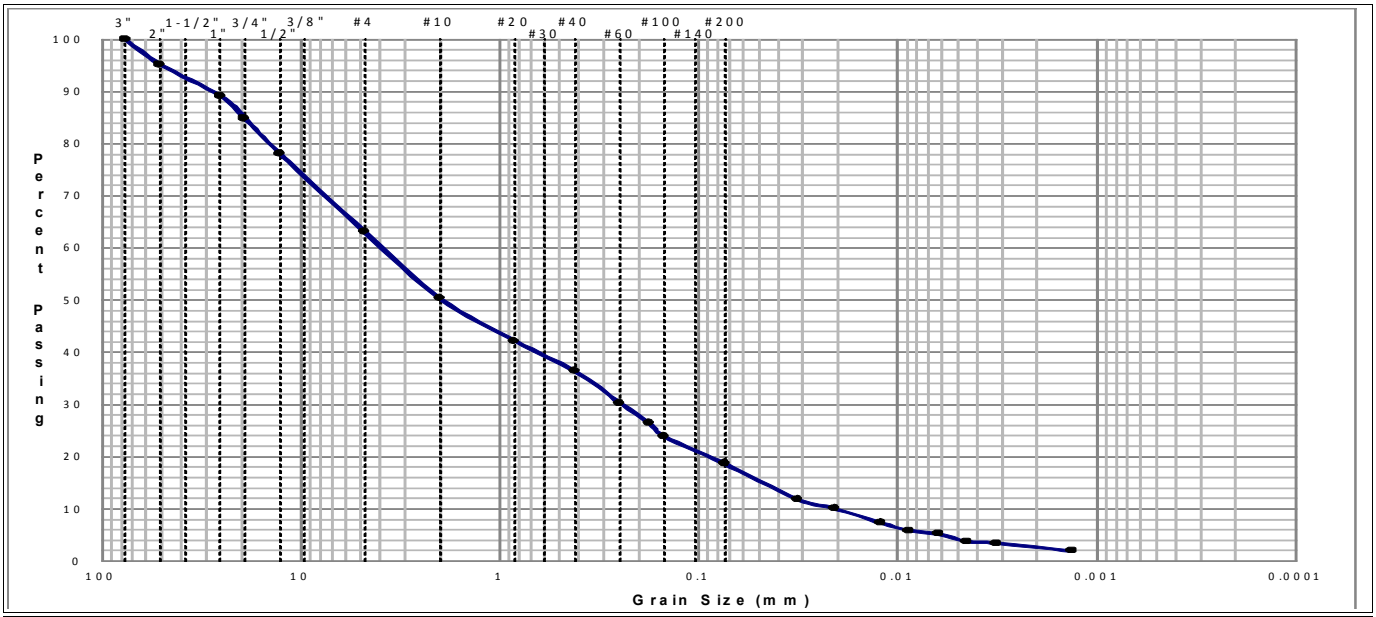
Associated Samples:
Batch GP18163: JC79739-2
Batch GP18217: JC79739-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.
(b) Soluble XCR matrix spike recovery indicates possible matrix interference. Good post spike recovery (87.7%) on this sample.

ATLANTIC TESTING LABORATORIES

PARTICLE SIZE ANALYSIS REPORT No.: ST3860SL-010-07-18

WBE certified company

Client:	O'Brien & Gere Engineers, Inc.	Sample Date:	July 17, 2018
Project:	Soil Analysis	Sampled By:	CLIENT
	Syracuse, New York	Service Order No.:	7704
		Sample No.:	ST3860S-010
Location:	WB18-LindseyTH-01		



	% Gravel			% Sand			% Fines	
% +3"	Coarse	Medium	Fine	Coarse	Medium	Fine	Silt	Clay
0	15	11	11	13	14	18	14.2	2.6

SIEVE SIZE	PERCENT FINER	SPEC.*		OUT OF SPEC. (X)
		LOW	HIGH	
3 in	100			
2 in	95			
1.00 in	89			
3/4 in	85			
1/2 in	78			
No. 4	63			
No. 10	50			
No. 20	42			
No. 40	36			
No. 60	30			
No. 80	26			
No. 100	24			
No. 200	19			

* (no specification provided)

Soil Description

Brown Silty Sand with Gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85} = 19.2545 D_{60} = 3.8616 D_{50} = 1.9298

D_{30} = 0.2422 D_{15} = 0.0469 D_{10} = 0.0202

C_u = 190.6051 C_c = 0.7500

Classification

USCS= AASHTO=

Remarks

Delivered by Client on 07-17-2018

ASTM D 422 with Hydrometer

Reviewed by: Cody Lafler Date: Aug 09, 2018

ATLANTIC TESTING LABORATORIES

Syracuse
6085 Court Street Road
Syracuse, NY 13206
315-699-5281 (T)
315-699-3374 (F)

WBE certified company

August 09, 2018

O'Brien & Gere Engineers, Inc.
333 West Washington Street
PO Box 4873
Syracuse, NY 13221
Attn: Michael Miller

Re: Soil Laboratory Testing
Soil Analysis
Syracuse, New York
ATL Report No.: ST3860SL-010-07-18

Dear Michael,

On July 17, 2018, one sample of Soil material from WB18-LindseyTH-01 was delivered to our Syracuse, New York facility for testing. A pH of Soils in accordance with ASTM D 4972, and Moisture, Ash, and Organic Matter of Peat and Other Organic Soils in accordance with ASTM D 2974 were performed on this sample. The results follow:

pH of SOILS
ASTM D 4972 / ASTM D 2974

ATL Sample No.	pH	Project Specification	Test Method	Sieved Fraction	Soaking Procedure
ST3860S-010-1	7.4		A	#10	Distilled Water

PERCENT ORGANICS, ASH CONTENT, AND MOISTURE CONTENT
ASTM D 2974

ATL Sample No.	Organics (%)	Project Specification	Oven Drying Temperature (ºC)	Ash (%)	Project Specification	Moisture (%)	Test Method A	Furnace Temperature (ºC)
T3860S-010-	3.1	--	60	--	--	--	Oven-Dried	440

Please contact our office should you have any questions or if we may be of further service.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Cody D. Laxton
Engineering Assistant
claxnvest@gmail.com

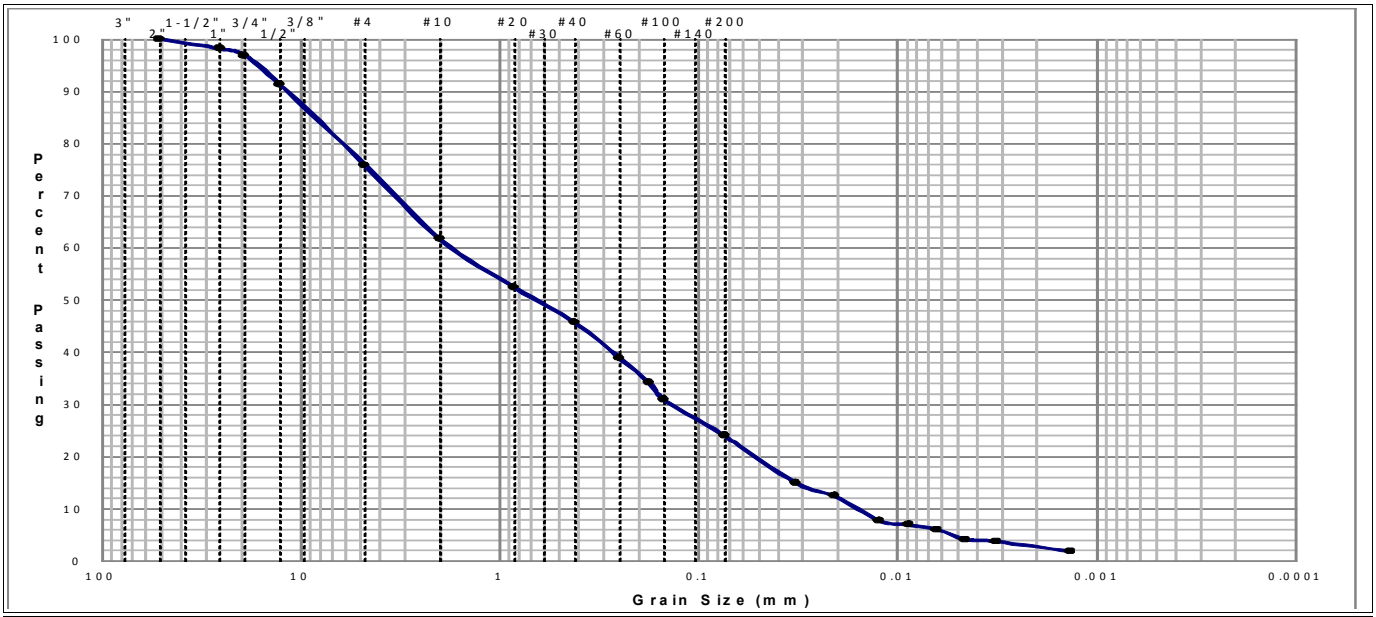
CDL/CDL

ATLANTIC TESTING LABORATORIES

PARTICLE SIZE ANALYSIS REPORT No.: ST3860SL-011-07-18

WBE certified company

Client:	O'Brien & Gere Engineers, Inc.	Sample Date:	July 17, 2018
Project:	Soil Analysis	Sampled By:	CLIENT
	Syracuse, New York	Service Order No.:	7705
		Sample No.:	ST3860S-011
Location:	WB18-LindseyTH-02		



	% Gravel			% Sand			% Fines	
% +3"	Coarse	Medium	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	10	11	14	16	22	16.8	2.7

SIEVE SIZE	PERCENT FINER	SPEC.*		OUT OF SPEC. (X)
		LOW	HIGH	
2 in	100			
1.00 in	98			
3/4 in	97			
1/2 in	91			
No. 4	76			
No. 10	62			
No. 20	52			
No. 40	46			
No. 60	39			
No. 80	34			
No. 100	31			
No. 200	24			

* (no specification provided)

Soil Description

Brown Silty Sand with Gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85} = 8.4961 D_{60} = 1.7088 D_{50} = 0.6539

D_{30} = 0.1355 D_{15} = 0.0324 D_{10} = 0.0157

C_u = 108.2229 C_c = 0.6810

Classification

USCS= AASHTO=

Remarks

Delivered by Client on 07-17-2018

ASTM D 422 with Hydrometer

Reviewed by: Cody Lafler

Date: Aug 09, 2018

ATLANTIC TESTING LABORATORIES

Syracuse
6085 Court Street Road
Syracuse, NY 13206
315-699-5281 (T)
315-699-3374 (F)

WBE certified company

August 09, 2018

O'Brien & Gere Engineers, Inc.
333 West Washington Street
PO Box 4873
Syracuse, NY 13221
Attn: Michael Miller

Re: Soil Laboratory Testing
Soil Analysis
Syracuse, New York
ATL Report No.: ST3860SL-011-07-18

Dear Michael,

On July 17, 2018, one sample of Soil material from WB18-LindseyTH-02 was delivered to our Syracuse, New York facility for testing. A pH of Soils in accordance with ASTM D 4972, and Moisture, Ash, and Organic Matter of Peat and Other Organic Soils in accordance with ASTM D 2974 were performed on this sample. The results follow:

pH of SOILS
ASTM D 4972 / ASTM D 2974

ATL Sample No.	pH	Project Specification	Test Method	Sieved Fraction	Soaking Procedure
ST3860S-011-1	6.9		A	#10	Distilled Water

PERCENT ORGANICS, ASH CONTENT, AND MOISTURE CONTENT
ASTM D 2974

ATL Sample No.	Organics (%)	Project Specification	Oven Drying Temperature (ºC)	Ash (%)	Project Specification	Moisture (%)	Test Method A	Furnace Temperature (ºC)
T3860S-011-	3.8	--	60	--	--	--	Oven-Dried	440

Please contact our office should you have any questions or if we may be of further service.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Cody D. Laxton
Engineering Assistant
claxnvest@gmail.com

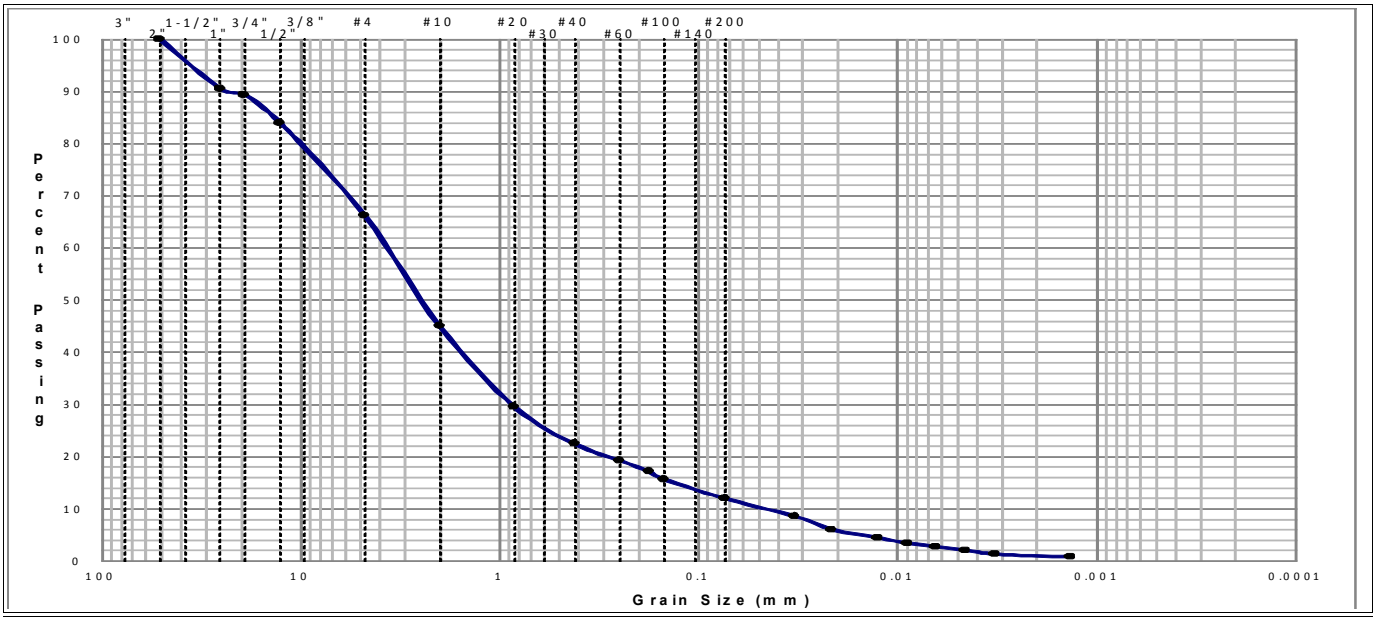
CDL/CDL

ATLANTIC TESTING LABORATORIES

PARTICLE SIZE ANALYSIS REPORT No.: ST3860SL-012-07-18

WBE certified company

Client:	O'Brien & Gere Engineers, Inc.	Sample Date:	July 17, 2018
Project:	Soil Analysis	Sampled By:	CLIENT
	Syracuse, New York	Service Order No.:	7706
		Sample No.:	ST3860S-012
Location:	WB18-LindseyTH-03		



	% Gravel			% Sand			% Fines	
% +3"	Coarse	Medium	Fine	Coarse	Medium	Fine	Silt	Clay
0	11	12	13	21	23	11	8.2	1.1

SIEVE SIZE	PERCENT FINER	SPEC.* LOW	SPEC.* HIGH	OUT OF SPEC. (X)
2 in	100			
1.00 in	91			
3/4 in	89			
1/2 in	84			
No. 4	66			
No. 10	45			
No. 20	30			
No. 40	22			
No. 60	19			
No. 80	17			
No. 100	16			
No. 200	12			

* (no specification provided)

Soil Description

Brown Poorly-Graded Sand with Silt and Gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85} = 13.7038 D_{60} = 3.6930 D_{50} = 2.4528

D_{30} = 0.8631 D_{15} = 0.1306 D_{10} = 0.0457

C_u = 80.7414 C_c = 4.4107

Classification

USCS= AASHTO=

Remarks

Delivered by Client on 07-17-2018

ASTM D 422 with Hydrometer

Reviewed by: Cody Lafler

Date: Aug 09, 2018

ATLANTIC TESTING LABORATORIES

Syracuse
6085 Court Street Road
Syracuse, NY 13206
315-699-5281 (T)
315-699-3374 (F)

WBE certified company

August 09, 2018

O'Brien & Gere Engineers, Inc.
333 West Washington Street
PO Box 4873
Syracuse, NY 13221
Attn: Michael Miller

Re: Soil Laboratory Testing
Soil Analysis
Syracuse, New York
ATL Report No.: ST3860SL-012-07-18

Dear Michael,

On July 17, 2018, one sample of Soil material from WB18-LindseyTH-03 was delivered to our Syracuse, New York facility for testing. A pH of Soils in accordance with ASTM D 4972, and Moisture, Ash, and Organic Matter of Peat and Other Organic Soils in accordance with ASTM D 2974 were performed on this sample. The results follow:

pH of SOILS
ASTM D 4972 / ASTM D 2974

ATL Sample No.	pH	Project Specification	Test Method	Sieved Fraction	Soaking Procedure
ST3860S-012-1	6.2		A	#10	Distilled Water

PERCENT ORGANICS, ASH CONTENT, AND MOISTURE CONTENT
ASTM D 2974

ATL Sample No.	Organics (%)	Project Specification	Oven Drying Temperature (ºC)	Ash (%)	Project Specification	Moisture (%)	Test Method A	Furnace Temperature (ºC)
T3860S-012-	2.8	--	60	--	--	--	Oven-Dried	440

Please contact our office should you have any questions or if we may be of further service.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Cody D. Laxton
Engineering Assistant
claxnvest@gmail.com

CDL/CDL

ATLANTIC TESTING LABORATORIES

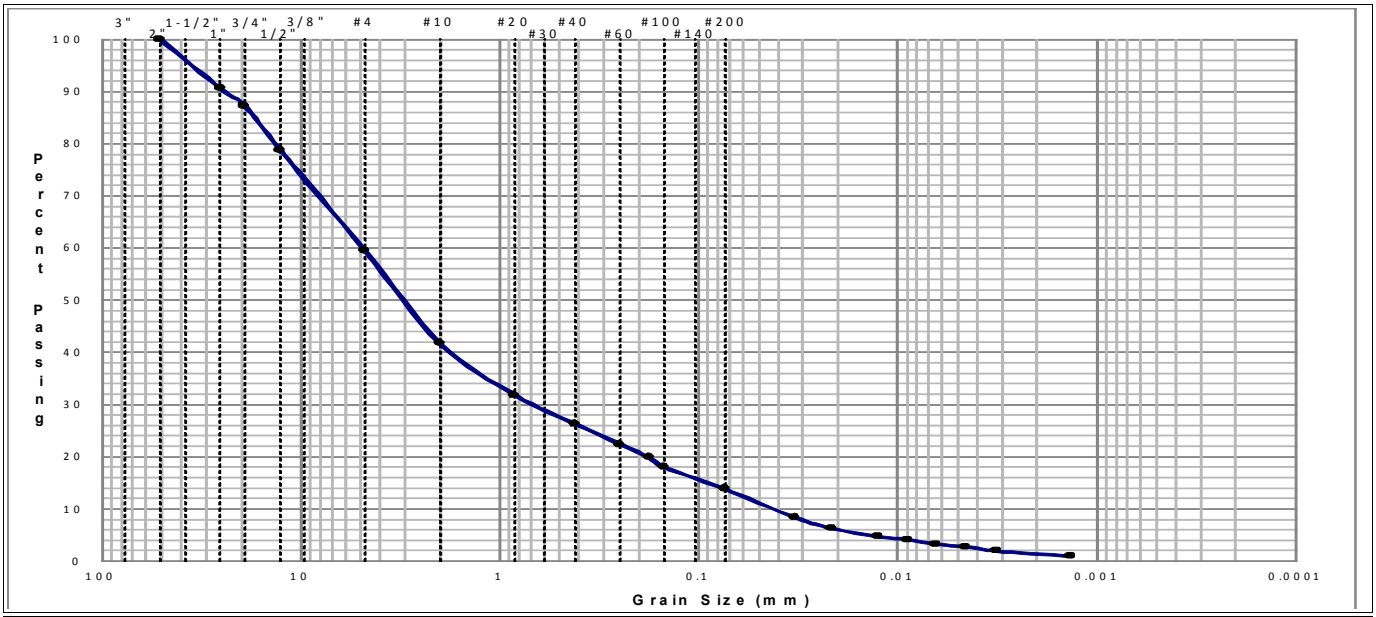
PARTICLE SIZE ANALYSIS REPORT No.: ST3860SL-013-07-18

WBE certified company

Client: O'Brien & Gere Engineers, Inc.
Project: Soil Analysis
Syracuse, New York

Location: WB18-LindseyTH-04

Sample Date: July 17, 2018
Sampled By: CLIENT
Service Order No.: 7707
Sample No.: ST3860S-013



	% Gravel			% Sand			% Fines	
% +3"	Coarse	Medium	Fine	Coarse	Medium	Fine	Silt	Clay
0	13	14	14	18	15	13	9.0	1.4

SIEVE SIZE	PERCENT FINER	SPEC.* LOW	SPEC.* HIGH	OUT OF SPEC. (X)
2 in	100			
1.00 in	91			
3/4 in	87			
1/2 in	79			
No. 4	60			
No. 10	42			
No. 20	32			
No. 40	26			
No. 60	22			
No. 80	20			
No. 100	18			
No. 200	14			

* (no specification provided)

Soil Description

Brown Silty Sand with Gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85} = 17.0998 D_{60} = 4.8721 D_{50} = 2.9880
D_{30} = 0.6635 D_{15} = 0.0892 D_{10} = 0.0415
C_u = 117.2680 C_c = 2.1750

Classification

USCS= AASHTO=

Remarks

Delivered by Client on 07-17-2018
ASTM D 422 with Hydrometer

Reviewed by: Cody Lafler

Date: Aug 09, 2018

ATLANTIC TESTING LABORATORIES

Syracuse
6085 Court Street Road
Syracuse, NY 13206
315-699-5281 (T)
315-699-3374 (F)

WBE certified company

August 09, 2018

O'Brien & Gere Engineers, Inc.
333 West Washington Street
PO Box 4873
Syracuse, NY 13221
Attn: Michael Miller

Re: Soil Laboratory Testing
Soil Analysis
Syracuse, New York
ATL Report No.: ST3860SL-013-07-18

Dear Michael,

On July 17, 2018, one sample of Soil material from WB18-LindseyTH-04 was delivered to our Syracuse, New York facility for testing. A pH of Soils in accordance with ASTM D 4972, and Moisture, Ash, and Organic Matter of Peat and Other Organic Soils in accordance with ASTM D 2974 were performed on this sample. The results follow:

pH of SOILS
ASTM D 4972 / ASTM D 2974

ATL Sample No.	pH	Project Specification	Test Method	Sieved Fraction	Soaking Procedure
ST3860S-013-1	6.7		A	#10	Distilled Water

PERCENT ORGANICS, ASH CONTENT, AND MOISTURE CONTENT
ASTM D 2974

ATL Sample No.	Organics (%)	Project Specification	Oven Drying Temperature (ºC)	Ash (%)	Project Specification	Moisture (%)	Test Method A	Furnace Temperature (ºC)
T3860S-013-	3.6	--	60	--	--	--	Oven-Dried	440

Please contact our office should you have any questions or if we may be of further service.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Cody D. Laxton
Engineering Assistant
claxnvest@gmail.com

CDL/CDL

ATLANTIC TESTING LABORATORIES

Syracuse
6085 Court Street Road
Syracuse, NY 13206
315-699-5281 (T)
315-699-3374 (F)

WBE certified company

August 09, 2018

O'Brien & Gere Engineers, Inc.
333 West Washington Street
PO Box 4873
Syracuse, NY 13221
Attn: Michael Miller

Re: Soil Laboratory Testing
Soil Analysis
Syracuse, New York
ATL Report No.: ST3860SL-014-07-18

Dear Michael,

On July 17, 2018, one sample of Soil material from WB18-LindseyTH-05 was delivered to our Syracuse, New York facility for testing. A pH of Soils in accordance with ASTM D 4972, and Moisture, Ash, and Organic Matter of Peat and Other Organic Soils in accordance with ASTM D 2974 were performed on this sample. The results follow:

pH of SOILS
ASTM D 4972 / ASTM D 2974

ATL Sample No.	pH	Project Specification	Test Method	Sieved Fraction	Soaking Procedure
ST3860S-014-1	7.1		A	#10	Distilled Water

PERCENT ORGANICS, ASH CONTENT, AND MOISTURE CONTENT
ASTM D 2974

ATL Sample No.	Organics (%)	Project Specification	Oven Drying Temperature (ºC)	Ash (%)	Project Specification	Moisture (%)	Test Method A	Furnace Temperature (ºC)
T3860S-014-	3.4	--	60	--	--	--	Oven-Dried	440

Please contact our office should you have any questions or if we may be of further service.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Cody D. Laxton
Engineering Assistant
claxnvest@gmail.com

CDL/CDL

ATLANTIC TESTING LABORATORIES

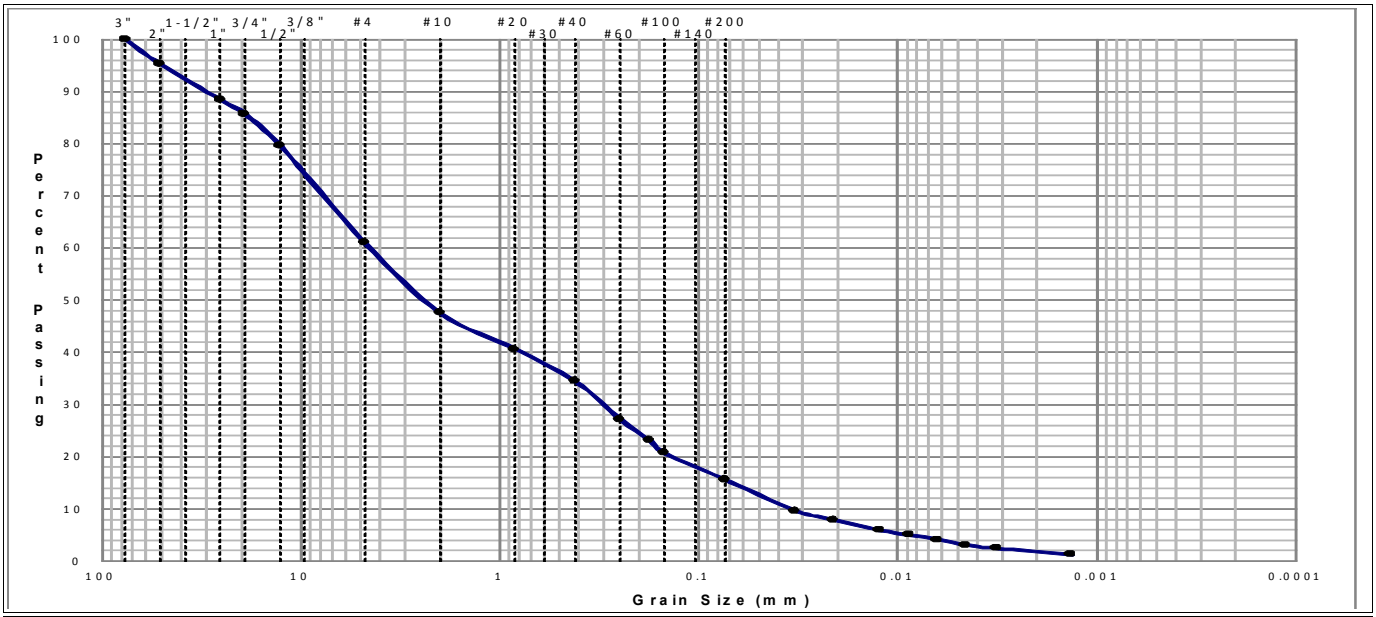
PARTICLE SIZE ANALYSIS REPORT No.: ST3860SL-014-07-18

WBE certified company

Client: O'Brien & Gere Engineers, Inc.
Project: Soil Analysis
Syracuse, New York

Location: WB18-LindseyTH-05

Sample Date: July 17, 2018
Sampled By: CLIENT
Service Order No.: 7703
Sample No.: ST3860S-014



	% Gravel			% Sand			% Fines	
% +3"	Coarse	Medium	Fine	Coarse	Medium	Fine	Silt	Clay
0	14	12	13	13	13	19	11.2	1.8

SIEVE SIZE	PERCENT FINER	SPEC.* LOW	SPEC.* HIGH	OUT OF SPEC. (X)
3 in	100			
2 in	95			
1.00 in	88			
3/4 in	86			
1/2 in	80			
No. 4	61			
No. 10	48			
No. 20	41			
No. 40	35			
No. 60	27			
No. 80	23			
No. 100	21			
No. 200	16			

* (no specification provided)

Soil Description

Brown Silty Sand with Gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85} = 18.1783 D_{60} = 4.4586 D_{50} = 2.3383
D_{30} = 0.3028 D_{15} = 0.0672 D_{10} = 0.0340
C_u = 131.0465 C_c = 0.6045

Classification

USCS= AASHTO=

Remarks

Delivered by Client on 07-17-2018
ASTM D 422 with Hydrometer

Reviewed by: Cody Lofton

Date: Aug 09, 2018

SYRACUSE
SAND & GRAVEL
LLC

Syracuse Sand & Gravel LLC
1902 County Route 57, Fulton NY 13069

To Whom it May Concern

Panther Lake Mine ID#70353. The materials are guaranteed to come from an uncontaminated and virgin source. The materials do not come from a hazardous waste site, nor do they come from a previously contaminated location.

.

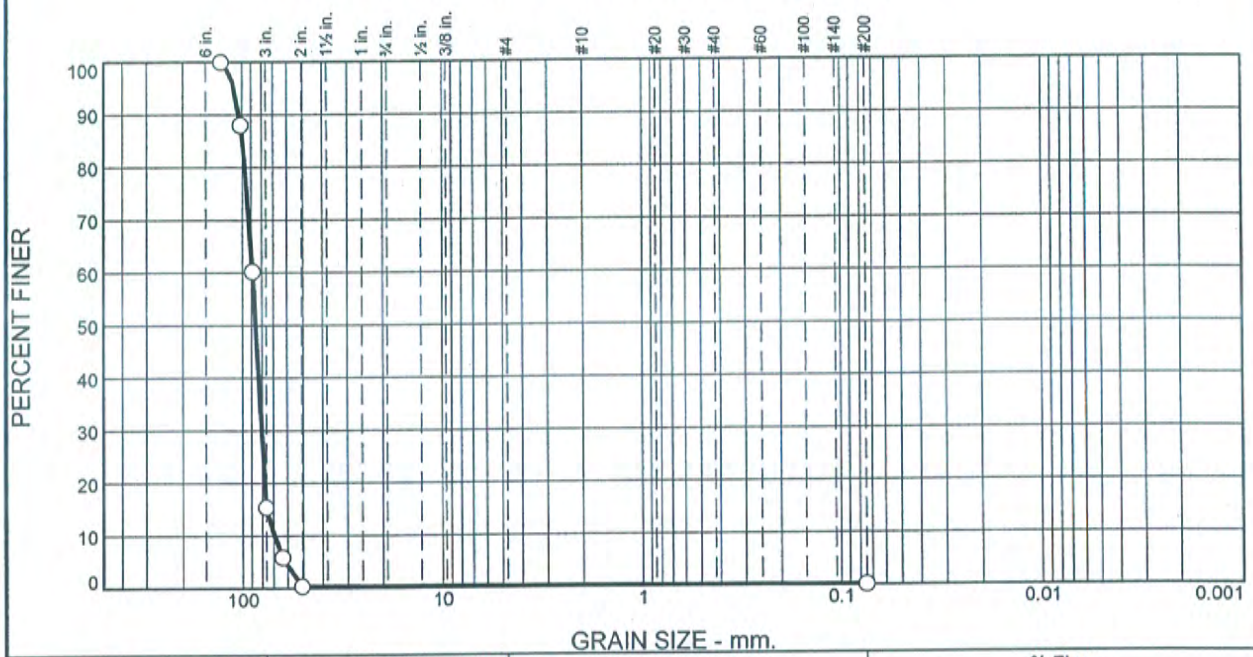
Thank You.

Michael Relf
VP

ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
85	15	0	0	0	0	0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC (X)
5	100		
4	88		
3 1/2	60		
3	15		
2 1/2	6		
2	0		
#200	0.1		

* (no specification provided)

Soil Description

Brown Cobbles

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 99.4695 D_{60}= 88.8144 D_{50}= 85.9663
D_{30}= 80.7108 D_{15}= 75.7011 D_{10}= 69.4211
C_u= 1.28 C_c= 1.06

Classification

USCS= --- AASHTO= ---

Remarks

ASTM D422 without hydrometer
Delivered by Client on 11-30-17

Sample No.: ST3860S27 **Source of Sample:** Wastebeds 1 - 8
Location: WB18-STOCKPILE-TJ-01 **Elev./Depth:** 0-1 ft.

ATLANTIC TESTING LABORATORIES, LIMITED
Syracuse, New York

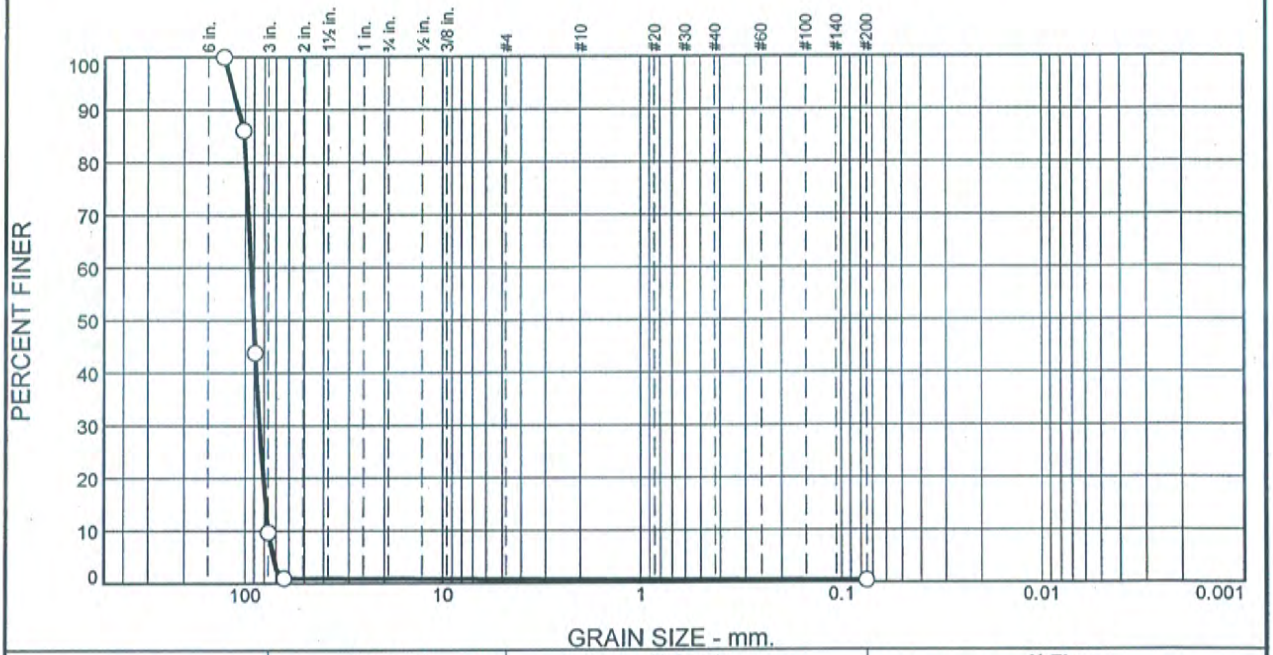
Client: O'Brien & Gere
Project: Laboratory Soil Analysis
Report No: ST3860SL-27-11-17 **Date:** 12-06-17

Reviewed by: _____ Date: 12/12/17

ATLANTIC TESTING LABORATORIES

WBE certified company

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
90	9	0	0	0	1	0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC (X)
5	100		
4	86		
3 1/2	44		
3	10		
2 1/2	1		
#200	0.4		

* (no specification provided)

Soil Description

Brown Cobbles

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 101.1391 D_{60}= 93.2931 D_{50}= 90.5865
D_{30}= 84.6942 D_{15}= 78.9654 D_{10}= 76.3688
C_u= 1.22 C_c= 1.01

Classification

USCS= --- AASHTO= ---

Remarks

ASTM D422 without hydrometer
Delivered by Client on 11-30-17

Sample No.: ST3860S28 **Source of Sample:** Wastebeds 1 - 8
Location: WB18-STOCKPILE-TJ-02 **Elev./Depth:** 0-1 ft.

ATLANTIC TESTING LABORATORIES, LIMITED
Syracuse, New York

Client: O'Brien & Gere
Project: Laboratory Soil Analysis
Report No: ST3860SL-28-11-17 **Date:** 12-06-17

Reviewed by: _____ Date: 12/12/17

APPENDIX H
SEED AND VEGETATION INFORMATION

LAWN SEED MIXTURE

LOT # WO311771

PURE SEED		GERMINATION
33.36 %	BORSAL CREEPING RED FESCUE	90 %
	ORIGIN: CD	
39.20 %	AST5112 TALL FESCUE	90 %
	ORIGIN: OR	
7.86 %	PERENNIAL RYEGRASS*	90 %
	ORIGIN: NZ	
5.88 %	WHITE CLOVER*	90 %
	ORIGIN: OR	
5.87 %	RED TOP	90 %
	ORIGIN: CD	

*VARIETY NOT STATED

TEST DATE 3/2018

OTHER INGREDIENTS

0.21 %	OTHER CROP SEED
1.48 %	INERT MATTER
0.12 %	WEED SEED

NET WEIGHT: 50LBS

SELL BY DATE: 6/19 NY,NH,OH,PA,VT,NJ,DE,MD,VA,NC

[illegible] STATES

Seedway, LLC
1734 Railroad Place PO Box 250
Hall, NY 14463

Slope Stabilization Mix

Item	Botanical Name	Purity	Germ	Hard	Dorm	Production Origin	Genetic Origin
Grain Rye, Variety Not Stated	*Secale cereale, Variety Not St*	34.72%	75.0%			PA	
Indiangrass, NY4 Ecotype	*Sorghastrum nutans, NY4 Ecotyp*	15.89%	6.0%		89.0%	PA	
Switchgrass, 'Shawnee'	*Panicum virgatum, 'Shawnee'*	14.11%	17.0%		79.0%	PA	
Big Bluestem, 'Niagara'	*Andropogon gerardii, 'Niagara'*	11.15%	48.0%		47.0%	PA	
Canada Wildrye	*Elymus canadensis*	7.76%	74.0%		19.0%	MN	
Little Bluestem, 'Camper'	*Schizachyrium scoparium, 'Camp*	4.26%	83.0%		12.0%	NE	
Sideoats Grama, 'Butte'	*Bouteloua curtipendula, 'Butte*	2.56%	70.0%		11.0%	MN	
Partridge Pea, PA Ecotype	*Chamaecrista fasciculata, PA E*	1.03%	34.0%	62.0%		PA	
Blackeyed Susan, Coastal Plain NC Ecotype	*Rudbeckia hirta, Coastal Plain*	1.03%	71.0%		27.0%	NC	
Purple Coneflower	*Echinacea purpurea*	1.02%	93.0%		2.0%	OR	
Oxeye Sunflower, PA Ecotype	*Heliopsis helianthoides, PA Ec*	1.02%	84.0%		6.0%	PA	
Maximilian's Sunflower	*Helianthus maximiliani*	1.02%	30.0%		62.0%	ND	
Common Milkweed	*Asclepias syriaca*	0.98%	93.0%		1.0%	CN	

Other Crop: 0.13%
Inert Matter: 3.28%
Weed Seed: 0.04%

Net Weight: 50 LB
Lot Number: SEED002713
Date Tested: July 2018

AMS 1039

APPENDIX I
COMPOST NUTRIENT ANALYSIS

US COMPOSTING COUNCIL

Seal of Testing Assurance

OCRRA
100 Elwood Davis Road
North Syracuse NY 13212
Tel: 315-295-0734
Fax: 315-453-2872

Product Name: Amboy 1/4" Premium Compost

Lab ID: C09207

Report Date: 12/09/2016

Compost Technical Data Sheet

Compost Parameters	***Reported as** (units of measure)*	***Test Results***	***Test Results***
Plant Nutrients:	*%, weight basis*	*% wet weight basis*	*% dry weight basis*
Nitrogen	Total N	1.13	1.87
Phosphorus	P_2O_5	0.45	0.74
Potassium	K_2O	0.56	0.92
Calcium	Ca	2.46	4.07
Magnesium	Mg	0.33	0.55
Moisture Content	%, wet weight basis	39.40	
Organic Matter Content	%, dry weight basis	52.37	
pH	unitless	6.23	
Soluble Salts *(electrical conductivity)*	dS/m (mmhos/cm)	7.70	
Particle Size	< 9.5 mm	100.00	
Stability Indicator *(respirometry)* CO_2 Evolution	mg CO_2-C/G TS/day, AND mg CO_2-C/G OM/day	6.12 10.31	
Maturity Indicator *(bioassay)* Percent Emergence, AND Percent Seedling Vigor	% of control %	100.00 100.00	
Select Pathogens	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.32(a)	PASS: Salmonella < 3 MPN per 4·g of dry solids	
Trace Metals	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3	PASS: As, Cd, Cu, Pb, Hg, Mo, Ni, Se, and Zn are less than limits specifed by US EPA Class A Standard 40 CFR § 503.13, Tables 1 and 3	

Participants in the US Composting Council's Seal of Testing Assurance Program have shown the commitment to test their compost products on a prescribed basis and provide this data, along with compost end use instructions, as a means to better serve the needs of their compost customers.

US COMPOSTING COUNCIL

Seal of Testing Assurance

OCRRA
100 Elwood Davis Road
North Syracuse NY 13212
Tel: 315-295-0734
Fax: 315-453-2872

Product Name: Amboy 1/4" Premium Compost

Lab ID: C09207

Report Date: 12/09/2016

Compost Technical Data Sheet

Compost Parameters	***Reported as** (units of measure)*	***Test Results***
Plant Nutrients:		Not reported
Moisture Content	%, wet weight basis	39.40
Organic Matter Content	%, dry weight basis	52.37
pH	unitless	6.23
Soluble Salts *(electrical conductivity)*	dS/m (mmhos/cm)	7.70
Particle Size	< 9.5 mm	100.00
Stability Indicator *(respirometry)* CO_2 Evolution	mg CO_2-C/G TS/day, AND mg CO_2-C/G OM/day	6.12 10.31
Maturity Indicator *(bioassay)* Percent Emergence, AND Percent Seedling Vigor	% of control %	100.00 100.00
Select Pathogens	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.32(a)	PASS: Salmonella < 3 MPN per 4·g of dry solids
Trace Metals	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3	PASS: As, Cd, Cu, Pb, Hg, Mo, Ni, Se, and Zn are less than limits specifed by US EPA Class A Standard 40 CFR § 503.13, Tables 1 and 3

Participants in the US Composting Council's Seal of Testing Assurance Program have shown the commitment to test their compost products on a prescribed basis and provide this data, along with compost end use instructions, as a means to better serve the needs of their compost customers.

US COMPOSTING COUNCIL

Seal of Testing Assurance

OCRRA
100 Elwood Davis Road
North Syracuse NY 13212
Tel: 315-295-0734
Fax: 315-453-2872

Product Name: Jamesville 1/2" Screened Compost

Lab ID: C09209

Report Date: 12/09/2016

Compost Technical Data Sheet

Compost Parameters	***Reported as** (units of measure)*	***Test Results***	***Test Results***
Plant Nutrients:	*%, weight basis*	*% wet weight basis*	*% dry weight basis*
Nitrogen	Total N	0.74	1.25
Phosphorus	P_2O_5	0.23	0.39
Potassium	K_2O	0.36	0.60
Calcium	Ca	4.62	7.78
Magnesium	Mg	0.71	1.19
Moisture Content	%, wet weight basis	40.60	
Organic Matter Content	%, dry weight basis	35.42	
pH	unitless	7.94	
Soluble Salts *(electrical conductivity)*	dS/m (mmhos/cm)	2.14	
Particle Size	< 9.5 mm	100.00	
Stability Indicator *(respirometry)* CO_2 Evolution	mg CO_2-C/G TS/day, AND mg CO_2-C/G OM/day	0.58 1.73	
Maturity Indicator *(bioassay)* Percent Emergence, AND Percent Seedling Vigor	% of control %	100.00 100.00	
Select Pathogens	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.32(a)	PASS: Salmonella < 3 MPN per 4·g of dry solids	
Trace Metals	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3	PASS: As, Cd, Cu, Pb, Hg, Mo, Ni, Se, and Zn are less than limits specifed by US EPA Class A Standard 40 CFR § 503.13, Tables 1 and 3	

Participants in the US Composting Council's Seal of Testing Assurance Program have shown the commitment to test their compost products on a prescribed basis and provide this data, along with compost end use instructions, as a means to better serve the needs of their compost customers.

US COMPOSTING COUNCIL

Seal of Testing Assurance

OCRRA
100 Elwood Davis Road
North Syracuse NY 13212
Tel: 315-295-0734
Fax: 315-453-2872

Product Name: Jamesville 1/2" Screened Compost

Lab ID: C09209

Report Date: 12/09/2016

Compost Technical Data Sheet

Compost Parameters	***Reported as*** *(units of measure)*	***Test Results***
Plant Nutrients:		Not reported
Moisture Content	%, wet weight basis	40.60
Organic Matter Content	%, dry weight basis	35.42
pH	unitless	7.94
Soluble Salts *(electrical conductivity)*	dS/m (mmhos/cm)	2.14
Particle Size	< 9.5 mm	100.00
Stability Indicator *(respirometry)* CO_2 Evolution	mg CO_2-C/G TS/day, AND mg CO_2-C/G OM/day	0.58 1.73
Maturity Indicator *(bioassay)* Percent Emergence, AND Percent Seedling Vigor	% of control %	100.00 100.00
Select Pathogens	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.32(a)	PASS: Salmonella < 3 MPN per 4·g of dry solids
Trace Metals	PASS/FAIL: per US EPA Class A standard, 40 CFR § 503.13, Tables 1 and 3	PASS: As, Cd, Cu, Pb, Hg, Mo, Ni, Se, and Zn are less than limits specifed by US EPA Class A Standard 40 CFR § 503.13, Tables 1 and 3

Participants in the US Composting Council's Seal of Testing Assurance Program have shown the commitment to test their compost products on a prescribed basis and provide this data, along with compost end use instructions, as a means to better serve the needs of their compost customers.

APPENDIX J
EROSION CONTROL BLANKET

443 Bricker Road Bernville, PA 19506
1.800.582.4005
+1.610.488.8496 Fax +1.610.488.8494
www.eastcoasterosion.com

EASTCOAST erosion blankets

Material and Performance Specification

ECC-2B Double Net Coconut Biodegradable Rolled Erosion Control Product

Description: The ECC-2B is made with uniformly distributed 100% coconut fiber and two organic jute nets securely sewn together with biodegradable thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation.
The ECC-2B has functional longevity of approximately 24 months, but will vary depending on soil and climatic conditions, and is suitable for slopes 1:1 and medium to high flow channels.. The ECC-2B meets Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.

Materials:

Netting – *Top and Bottom*	**Matrix**	**Thread**
Organic Leno Weave Jute 100% Biodegradable 0.5" x 1.0" Opening	100% Coconut Fiber 0.55 lbs/yd^2 298.4 g/m^2	Biodegradable 1.50" stitch spacing

Roll Sizes:

	Standard	**Mega**
Width:	7.5 ft (2.3 m)	15.0 ft (4.6 m)
Length:	120.0 ft (36.6 m)	120.0 ft (36.6 m)
Weight ±10%:	75.0 lbs (34.0 kg)	150.0 lbs (68.0 kg)
Area:	100 yd^2 (83.6 m^2)	200 yd^2 (167.2 m^2)
#/Pallet:	16	16

Index Value Properties*:

Property	Test Method	Typical
Mass/Unit Area	ASTM D6475	12 oz/yd^2 (406.9 g/m^2)
Thickness	ASTM D6525	.31 in (7.9 mm)
Tensile Strength-MD	ASTM D6818	240 lb/ft (3.5 kN/m)
Elongation-MD	ASTM D6818	10.9 %
Tensile Strength-TD	ASTM D6818	164 lb/ft (2.4 kN/m)
Elongation-TD	ASTM D6818	16.0 %
Light Penetration	ASTM D6567	10 %
Water Absorption	ASTM D1117	225 %
* May differ depending upon raw material variations		

Bench-Scale Testing* (NTPEP*):**

Test Method	Parameters	Results
ECTC Method 2 Rainfall	50mm (2in) / hr-30 min	SLR**=14.24
	100mm (4in) / hr-30 min	SLR**=18.58
	150mm (6in) / hr-30 min	SLR**=24.25
ECTC Method 3 Shear Resistance	Shear at .50 in soil loss	2.72 lb/ft^2
ECTC Method 4 Germination	Top soil; Fescue; 21 day incubation	414% improvement

*Bench scale tests should not be used for design purposes.

**Soil Loss Ratio=Soil Loss Bare Soil/Soil Loss with RECP=1/C-Factor

***The preceding test data excerpts were reproduced with the permission of AASHTO, however, this does not constitute endorsement or approval of the product, material or device by AASHTO

Slope Performance Design Values*:

Property	Test Method	Value	
Manning's N	Calculated	0.015	
C-Factors	ASTM D6459		
Slope Length (L)	**≤ 3:1**	**3:1-2:1**	**≥ 2:1**
< 50 ft (15 m)	0.040	0.053	0.102
50 ft – 100 ft	0.060	0.084	0.120
>100 ft (30 m)	0.094	0.114	0.134
*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory			

Channel Performance Design Values*:

Property	Test Method	Value
Unvegetated Shear Stress	ASTM D 6460	2.25 lbs/ft^2 (108 Pa)
Unvegetated Velocity	ASTM D 6460	9.0 ft/s (2.7 m/s)
Vegetated Shear Stress	NA	NA
Vegetated Velocity	NA	NA
*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory		

Proud Member of: IECA Corporate Member, ECTC Erosion Control Technology Council, ASTM International, Member NAHB

Product Participant of: QDOR Performance Verified **and** Proudly Made in the USA

All Value Properties, Test Results and Design Values were derived from independent laboratory testing. East Coast Erosion Blankets, LLC will not be held liable for any type of damage or losses, directly, or indirectly for failure of this product. Current revision supersedes all previous versions.

Revised 03052010

APPENDIX K
GEO CELL

ENVIROGRID™

Cellular Confinement Systems - Geocell

EGA20

Envirogrid EGA 20 standard sections are manufactured from 58 strips of HDPE, resulting in a section length of 29 cells and 10 cells wide. Each strip is the appropriate width and 142 inches (3.6m) in length. Weld spacing is 14.0 in ± .12 in (355 ± 3mm). Cell density is 35 cells per meter squared. Cell walls are textured and if perforations are required 16% ± 3% of the cell wall is removed.

GEO products

8615 Golden Spike Lane
Houston, TX USA 77086
Phone: (281) 820-5493
Fax: (281 820-5499
www.geoproducts.org

Material Properties	Test Method	Unit	Test Value
Polymer Density	ASTM D 1505	g/cm^3 (lb/ft^3)	0.935-0.965 (58.4-60.2)
Environmental Stress Crack Resistance	ASTM D 5397	hours	> 400
Environmental Stress Crack Resistance	ASTM D 1693	hours	6000
Carbon Black Content	ASTM D 1603	% by weight	1.5% minimum
Nominal Sheet Thickness [1] before texturing	ASTM D 5199	mm (mil)	1.27 (50) -5%, +10%
Nominal Sheet Thickness [1] after texturing	ASTM D 5199	mm (mil)	1.52 (60) -5%, +10%

Polyethylene strip shall be textured with a multitude of rhomboidal (diamond shape) indentations. The rhomboidal indentations shall have a surface density of 22 to 31 per cm2 (140 to 200 per in2).

Physical Properties	Unit	Test Value			
Nominal - Expanded Cell Size (width x length)	mm (in)	259 (10.2) x 224 (8.8)			
Nominal - Expanded Cell Area	cm^2 (in^2)	289 (44.8)			
Nominal - Expanded Panel Size (width x length)	m (ft)	2.56 (8.4) x 6.52 (21.4)			
Nominal - Expanded Panel Area	m^2 (ft^2)	16.7 (180)			
Cell Depth	mm (in)	75 (3)	100 (4)	150 (6)	200 (8)
Seam Peel Strength	N (lbf)	1065 (240)	1420 (320)	2130 (480)	2840 (640)
Seam Hang Strength	A 102mm (4in) weld joint supporting a load of 72.5 kg (160 lbs) for 30 days minimum or a 102mm (4in) weld joint supporting a load of 72.5 kg (160 lbs) for 7 days minimum while undergoing temperature change from 23°C (74°F) to 54°C (130°F) on a 1 hour cycle.				

[1] The Nominal Sheet Thickness is an average thickness of the sheet, taken from the mean of 10 readings.

NSF Registered to ISO 9001

11/12

This information is provided for reference purposes only and is not intended as a warranty or guarantee. Geo Products, LLC assumes no liability in connection with the use of this information. Check with Geo Products, LLC for current, standard minimum quality assurance procedures.

GatorSTRAP®

WOVEN POLYESTER STRAPPING

- **GatorSTRAP®** is more cost effective than steel strapping.
- **GatorSTRAP®** has no sharp edges to cause injuries or tire damage.
- **GatorSTRAP®** is as strong as steel but weighs 75% less.
- **GatorSTRAP®** is easily applied and can be retensioned when necessary.
- **GatorSTRAP®** can be customized with your company name, logo or message.

GatorSTRAP®

"ONCE IT GRABS, IT NEVER LETS GO!"

Woven with pride in the U.S.A.

12/18

GatorSTRAP® Heavy Duty Woven Polyester Strapping

ITEM ID	WIDTH	COIL LENGTH	COILS/BOX	COILS/ PALLET	BREAK STRENGTH*
2015(#)	5/8"	2,000 ft.	2	54	1,500 lbs.
2075	3/4"	1,650 ft.	2	54	1,800 lbs.
2070	3/4"	1,650 ft.	2	54	2,400 lbs.
2025-AAR Grade 3	3/4"	1,650 ft.	2	54	2,700 lbs.
2030	1"	2,500 ft.	1	27	3,100 lbs.
2035	1 1/4"	600 ft.	4	48	3,285 lbs.
2035-2250	1 1/4"	2,250 ft.	1	27	3,285 lbs.
2040-AAR Grade 4	1 1/4"	600 ft.	4	48	3,800 lbs.
2060	1 1/2"	600 ft.	4	48	4,700 lbs.
2055-AAR Grade 5	1 1/2"	600 ft.	4	48	5,400 lbs.
2055-1500-AAR	1 1/2"	1,500 ft.	1	27	5,400 lbs.

(#) AAR available upon request.

*All breaks are nominal +/– 5%.

GatorSTRAP® Extra Grip Phosphate Coated Wire Buckles

ITEM ID	WIDTH	USE ON STRAP	GAUGE	QTY/BOX
3005	16mm	5/8"	0.138	1000
3020	19mm	3/4"	0.157	1000
3025	19mm	3/4"	0.177	500
3030	25mm	1.0" & 1 1/4"	0.197	500
3033	25mm	1.0" & 1 1/4"	0.238	400
3035	32mm	1 1/4" & 1 1/2"	0.275	250

GatorSTRAP® Tensioning Tools

ITEM ID	DESCRIPTION	WIDTH
4011	Manual	All
4026	Small Economy	5/8" to 3/4"
4040	Small Heavy Duty	5/8" to 3/4"
4050	Large Economy	5/8" to 1 1/2"
4051	Large Economy w/Pusher Nose	5/8" to 1 1/2"
4055	Large Heavy Duty	5/8" to 1 1/2"
4060	Super Heavy Duty	5/8" to 1 1/2"
4080	32mm Pneumatic	up to 1 1/4"
4085	50mm Pneumatic	up to 2"
4090	Heavy Duty Battery	5/8" to 2"
4095	Medium Duty Battery	5/8" to 2"

4040

4060

4090

4080

GatorSTRAP® Accessories

ITEM ID	DESCRIPTION
6040	Safety Strap Cutter
6055	Pallet Strap Threading Tool
6071	Rolling Strap Dispenser
6075	Forklift Mounted Strap Dispenser
6080	Driver Kit

6071

Rolling Strap Dispenser

6075

Forklift Mounted Strap Dispenser

GatorSTRAP® Driver and Starter Kits

6080

Available for all products.

CAROLINA STRAPPING AND BUCKLES COMPANY®

2740 West Franklin Boulevard | Gastonia, NC 28052 | Ph. 704.349.0000 | Fax 704.349.0010

www.CarolinaStrapping.com

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APPENDIX L
GEO CUSHION – GEOTEXTILE

Nicholas LaPlant

From: Patrick Johnson
Sent: Friday, January 05, 2018 12:43 PM
To: Jeffrey Marsh; Nicholas LaPlant
Cc: Christopher Killoren; Carolyn Smith
Subject: 67268 WB1-8 Add4 Ditch A Submittal: Geotextile Cushion 02292
Attachments: Geocushion - Mirafi 1120N.PDF; Geotextile - Mirafi HP570.pdf

Subject: WB 1-8 Add. 4 Ditch A Submittal: Geotextile Cushion

Project: 67268.Add.4.Ditch.A

Design Package: 66093.WB 1-8_IFC_08-23-17; 02292 – Geotextile Cushion

Due Date: 5 Jan 2018

Subcontractor Comment(s): Chenango Submittal: Please find the attached submittal information regarding the geotextile.

Additional Comment(s): Attached Documents:

- Geocushion - Mirafi 1120N.
- Geotextile - Mirafi HP570.

Patrick Johnson
OBG | Construction Manager
315-391-7508 | patrick.johnson@obg.com
www.obg.com

TENCATE
Mirafi®

TENCATE GEOSYNTHETICS
Americas

Mirafi® 1120N

Mirafi® 1120N is a needlepunched nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Mirafi® 1120N is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids.

TenCate Geosynthetics Americas Laboratories are Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP).

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	300 (1335)	300 (1335)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	115 (512)	115 (512)
CBR Puncture Strength	ASTM D6241	lbs (N)	800 (3560)	
			Maximum Opening Size	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	100 (0.15)	
			Minimum Roll Value	
Permittivity	ASTM D4491	sec^{-1}	0.8	
Flow Rate	ASTM D4491	$gal/min/ft^2$ ($l/min/m^2$)	65 (2648)	
			Minimum Test Value	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	

Physical Properties	Unit	Roll Size
Roll Dimensions (width x length)	ft (m)	15 x 300 (4.57 x 91.4)
Roll Area	yd^2 (m^2)	500 (418)

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FGS000357
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GAI-LAP-25-97

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Americas

Mirafi® HP570

Mirafi® HP570 geotextile is composed of high-tenacity polypropylene yarns, which are woven into a network such that the yarns retain their relative position. Mirafi® HP570 geotextile is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

TenCate Geosynthetics Americas is accredited by a2La (The American Association for Laboratory Accreditation) and Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP). NTPEP Listed

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Tensile Strength (at ultimate)	ASTM D4595	lbs/ft (kN/m)	4800 (70.0)	4800 (70.0)
Tensile Strength (at 2% strain)	ASTM D4595	lbs/ft (kN/m)	960 (14.0)	1320 (19.3)
Tensile Strength (at 5% strain)	ASTM D4595	lbs/ft (kN/m)	2400 (35.0)	2700 (39.4)
Tensile Strength (at 10% strain)	ASTM D4595	lbs/ft (kN/m)	4800 (70.0)	---
			Minimum Roll Value	
Flow Rate	ASTM D4491	gal/min/ft^2 (l/min/m^2)	30 (1222)	
Permittivity	ASTM D4491	sec^{-1}	0.40	
			Maximum Opening Size	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	30 (0.60)	
			Typical Test Value	
Pore Size O_{95}[1]	ASTM D6767	microns	465	
Pore Size O_{50}[1]	ASTM D6767	microns	632	
			Minimum Test Value	
Factory Sewn Seam	ASTM D4884	lbs/ft (kN/m)	3000 (43.8)	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	80	

[1] Based on Third Party Testing

Physical Properties	Unit	Roll Size
Roll Dimensions (length x width)	ft (m)	15 x 300 (4.5 x 91)
Roll Area	yd^2 (m^2)	500 (418)

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Testing Lab 1291.01 & 1291.02

APPENDIX M
HDPE GEOMEMBRANE LINER

Nicholas LaPlant

From: Patrick Johnson
Sent: Friday, January 05, 2018 12:47 PM
To: Jeffrey Marsh; Nicholas LaPlant
Cc: Christopher Killoren; Carolyn Smith
Subject: 67268 WB1-8 Add4 Ditch A Submittal: Geomembrane Submittal
Attachments: Geomembrane - Agru HDPE Liner.pdf; Full Resume.pdf; GTX Submittal Package.pdf; Proposed Panel Layout.pdf; Quality Control Manual.pdf; Liner Submittal.pdf

Subject: WB 1-8 Add. 4 Ditch A Submittal: Geomembrane Submittal

Project: 67268.Add.4.Ditch.A

Design Package: 66093.WB 1-8_IFC_08-23-17; 02293 – HDPE Geomembrane

Due Date: 5 Jan 2018

Subcontractor Comment(s): Chenango Submittal: Please find the attached submittal information regarding the HDPE Geomembrane.

Additional Comment(s): Attached Documents:

- Liner Submittal
- GTX Submittal Package
- Agru Manufacturing Quality Control
- Agru Installation Manual
- Chenango Corporate Resume
- Chenango Proposed Geomembrane Layout
- Geomembrane - Agru HDPE Liner (Product Cut Sheet)

Patrick Johnson
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CHENANGO CONTRACTING, INC

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December 12, 2017

Patrick T. Johnson
Construction Manager
O'BRIEN & GERE
333 West Washington Street | P.O. Box 4873
Syracuse, NY 13221- 4873

Subject: Honeywell Wastebeds 1-8 Integrated IRM
Geomembrane Submittal

Dear Mr. Johnson:

In regards to Specification Section 02293 please find attached information regarding the Geomembrane (Agru America 40-mil HDPE Microspike) and the Geomembrane Installer (Chenango Contracting) for the Honeywell Wastebeds 1-8 Integrated IRM Project. Specifically, we have addressed the requirements of Section 1.3 Submittals.

A.1 Resin Supplier Submittals

Resin certificates will be issued with the Roll certificates, to be submitted upon manufacturing. A.1: Roll Certificates are acceptable provided they provide the information specified in A.1.a - A.1.e. Rolls which fail to conform to the project specifications shall not be installed and shall be removed from the site at no additional cost.

A.2 Manufacturer Submittals

Please find attached Project Manual from Agru America. Actual roll certificates will be issued upon manufacturing. A.2: Roll Certificates are acceptable provided they provide the information specified in A.2.a; A.2.d; A.2.e; and A.2.f as these sections were not addressed in this submittal. Rolls which fail to conform to the project specifications shall not be installed and shall be removed from the site at no additional cost.

A.3 Fabricator Submittals

This is not applicable to this project.

A.4 Installer Submittals

a. We abide by the project specifications and the attached Agru America Installation Manual in regards to Installation Quality Control. A.4.a: This is acceptable.

b. Samples can be forwarded under separate cover by request. We will abide by the project specifications in regards to seam strengths. A.5.b: This sample will not be required.
c. Resumes are found in the attached Chenango Contracting Resume Package. A.4.c: This information satisfies the submittal requirement for A.4.c and A.4.h and A.4.i.
A.4.d: This is acceptable. d. Proposed Panel Layout Drawings are attached for review.
e. Daily trial welds will be performed and documented.
f. Field as-built drawings will be maintained on site. A.4.f: Weekly as-built updates shall be provided to OBG.
g. We have additional equipment available to our field crews so that this occurrence is not a hindrance to our progress.
h. Please refer to the attached Chenango Contracting Resume Package.
i. Our QC Forms (logs) are found in the previously submitted Chenango Contracting Resume.
j. This will be issued upon completion.
k. Please find attached sample installation warranty. A.4.k: No sample warranty was attached.

A.5 Contractor Submittals

Not applicable, third-party inspection to be performed by others.

A.6 CQC Geosynthetic Laboratory

GeoTesting Express will be providing destructive seam testing for this project. Please find their qualifications package is attached for review. A.6: The submitted information satisfies the submittal requirements detailed in section A.6 and in A.7.b.

We hope you find this information complete and in accordance with the requirements of the project specifications. If you have any questions please do not hesitate to contact me.

Sincerely,
CHENANGO CONTRACTING, INC.

Nicholas S. Brechko

Attachment
Agru America Project Manual
Agru America Installation Manual
Chenango Contracting Resume Package
Proposed Panel Layout Drawing
GeoTesting Submittal Package

High Density Polyethylene
MicroSpike® Liner

Product Data

Property	Test Method	Frequency	Minimum Average Values				
Thickness (nominal), mil (mm)	ASTM D5994	Per Roll	30 (0.75)	40 (1.0)	60 (1.5)	80 (2.0)	100 (2.5)
Thickness (min avg), mil (mm)			29 (0.71)	38 (0.95)	57 (1.43)	76 (1.9)	95 (2.38)
Thickness (min 8 of 10), mil (mm)			27 (0.68)	36 (0.90)	54 (1.35)	72 (1.8)	90 (2.25)
Thickness (lowest individual), mil (mm)			26 (0.64)	34 (0.85)	51 (1.28)	68 (1.7)	85 (2.13)
Asperity Height mils, (mm)	ASTM D7466	2nd Roll	20 (0.51)	20 (0.51)	20 (0.51)	18 (0.46)	18 (0.46)
Density, g/cc, minimum	ASTM D792, Method B	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (both directions)	ASTM D6693, Type IV						
Strength @ Yield, lb/in width (N/mm)	2 in/minute	20,000 lb	66 (11.6)	88 (15.4)	132 (23.1)	176 (30.8)	220 (38.5)
Elongation @ Yield, % (GL=1.3in)			13	13	13	13	13
Strength @ Break, lb/in width (N/mm)			66 (11.6)	88 (15.4)	132 (23.1.)	176 (30.8)	220 (38.5)
Elongation @ Break, % (GL=2.0in)			350	350	350	350	350
Tear Resistance, lbs. (N)	ASTM D1004	45,000 lb	23 (102)	30 (133)	45 (200)	60 (267)	72 (320)
Puncture Resistance, lbs. (N)	ASTM D4833	45,000 lb	60 (267)	90 (400)	120 (534)	150 (667)	180 (801)
Carbon Black Content, % (range)	ASTM D4218	20,000 lb	2 - 3	2 - 3	2 - 3	2 - 3	2 - 3
Carbon Black Dispersion (Category)	ASTM D5596	45,000 lb	Only near spherical agglomerates: 10 views in Cat. 1 or 2				
Stress Crack Resistance (SP-NCTL), hrs.	ASTM D5397 Appendix	200,000 lb	500	500	500	500	500
Oxidative Induction Time, minutes	ASTM D3895, 200°C, 1 atm O_2	200,000 lb	≥140	≥140	≥140	≥140	≥140

Agru America's geomembranes are certified to pass Low Temp. Brittleness via ASTM D746 (-80°C), Dimensional Stability via ASTM D1204 (±2% @ 100°C). Oven Aging and UV Resistance are tested per GRI GM 13. These product specifications meet or exceed GRI's GM13.

Supply Information (Standard Roll Dimensions)

Thickness mil	Thickness mm	Width ft	Width m		Length ft	Length m	Area (approx.) ft²	Area (approx.) m²
30	0.75	23	7	Double-Sided	980	299	22,540	2,094
				Single-Sided	1000	305	23,000	2,137
40	1.0	23	7	Double-Sided	750	229	17,250	1,603
				Single-Sided	790	241	18,170	1,688
60	1.5	23	7	Double-Sided	540	165	12,420	1,154
				Single-Sided	550	168	12,650	1,175
80	2.0	23	7	Double-Sided	410	125	9,430	876
				Single-Sided	420	128	9,660	897
100	2.5	23	7	Double-Sided	335	102	7,705	716
				Single-Sided	340	104	7,820	726

Note:

Average roll weight is 3,900 lbs (1,770 kg). All rolls are supplied with two slings. Rolls are wound on a 6" core. Special length available upon request. Roll length and width have a tolerance of ±1%. The weight and length values may change due to project specifications (i.e. average or absolute minimum thickness) or shipping requirments (i.e. international containerized shipments).

All information, recommendations and suggestions appearing in this literature concerning the use of our products are based upon tests and data believed to be reliable; however, it is the users responsibility to determine the suitability for their own use of the products described herein. Since the actual use by others is beyond our control, no guarantee or warranty of any kind, expressed or implied, is made by Agru America as to the effects of such use or the results to be obtained, nor does Agru America assume any liability in connection herewith. Any statement made herein may not be absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations. Nothing herein is to be construed as permission or as a recommendation to infringe any patent.

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CORPORATE RESUME

Chenango Contracting, Inc. was founded in 1992 in Binghamton, New York, by Rod Parker and Charles Rhoades. Both Principles are active in the corporation and are actively involved in day-to-day management of operations. Both principals have extensive construction backgrounds with involvement in general and heavy/highway projects ranging to 160 million dollars.

Our main business focus is the installation of Geomembrane liners and related products. Through the skill and dedication of our employees we have steadily grown to be one of the largest geosynthetic installers in the Northeast. We believe that we are uniquely positioned to be small enough to care that every project is given individual attention and is properly executed, yet we are large enough to handle large complex projects. Since inception we have installed over 500 million square feet of geosynthetic products including HDPE, LLDPE, PVC, Polypropylene, XR-5, Hypalon, and specialty liners, geocomposites, geonets, geotextiles, geogrids and geosynthetic clay liners. We provide lining systems for new landfill construction, landfill closures, containments, water reservoirs, wastewater treatment, ponds, and specialty construction such as floating cover and vapor barriers.

We have earned a reputation for quality in our installations. We track welding performance for all of our technicians. Our technicians are rewarded for superior weld quality. We routinely beat published industry averages for defects when our liners are tested by electrical leak location methods. Our QA/QC documentation reports regularly earn us praise from Engineers. Our QA/QC program is administered by Carl Burdick, PE who personally reviews all documentation reports.

Training is a key factor in our success. Many of our technicians have attended training programs at the manufacturer's plant or at our facility under the manufacturer's guidance. All of our regular employees have OSHA 40-hr HAZWOPER training and current 8-hr updates. We have several technicians and supervisors with IAGI welding certifications. We conduct safety training for our employees and supervisors. All of our supervisors and foremen have 10-hour OSHA supervisors training. We have a low EMR rate as a result of our safety program and we conduct drug screenings to maintain a drug free workplace and to comply with most Corporate and Federal Standards.

We are a production-oriented company. Our goal is to complete our tasks as quickly and efficiently as possible with no mistakes. We value repeat business, and we want to work again with companies that match our corporate philosophy.

We are a financially sound company and we pride ourselves in our ability and our desire to promptly pay suppliers. We have an ample line of credit with M&T Bank and we can provide performance and payment bonds on most projects.

CHENANGO CONTRACTING, INC

29 Arbutus Rd.
Johnson City, NY 13790
T: (607) 729-8500
F: (607) 729-2415
www.chenangocontracting.com

GEOSYNTHETICS EXPERIENCE RESUME

2015

PROJECT:	BROOME COUNTY LANDFILL CELL 3, Binghamton NY
CONTACT:	Jon Van Deusen, ZMK Construction (607) 687-0981
MATERIALS:	60 mil HDS W/B/60 mil HDT W/B/Geocomposite/Geotextile/GCL/Raincap
SIZE:	556,865/265,057/593,600/994,500/339,450/276,000 SF
INSTALLED:	9/2015
PROJECT:	CHENANGO COUNTY LANDFILL CELL 4, Norwich NY
CONTACT:	Eric Hale, Marcy Excavation Co., Inc. (315) 724-4062
MATERIALS/SIZE:	60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
INSTALLED:	9/2015
PROJECT:	IRONTON LANDFILL, Ironton OH
CONTACT:	Rich Badis, Terra Contracting Services, LLC (866) 354-8963
MATERIALS/SIZE:	40 mil LLDPE Textured 703,825/GCL 703,825 SF
INSTALLED:	10/2015
PROJECT:	CHEVRON BAYONNE REMEDIATION, Bayonne NJ
CONTACT:	Ben Mills, Parsons Environment & Infrastructure Group Inc. (512) 719-6048
MATERIALS/SIZE:	40 mil HDPE Smooth 295,779/Geotextile 567,000 SF
INSTALLED:	7/2015
PROJECT:	MAPLEWOOD RAINCAPS, Jetersville VA
CONTACT:	Ryan Kamp, Chesapeake Lining (410) 335-5886
MATERIALS/SIZE:	40 mil HDPE 191,813/Raincap 191,322 SF
INSTALLED:	1/2015
PROJECT:	LACKAWANNA RAINCAP, Lackawanna NY
CONTACT:	Jeff Leavell, Zoladz Construction Co., Inc. (716) 937-6575
MATERIALS/SIZE:	40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
INSTALLED:	11/2015
PROJECT:	BERGEN-BONDUELLE POND, Bergen NY
CONTACT:	Jim Newcomb, Bonduelle (585) 734-2176
MATERIALS/SIZE:	80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
INSTALLED:	5/2015
PROJECT:	CLEARFIELD BASINS, Clearfield PA
CONTACT:	Dennis Merrow, E.M. Brown, Inc. (814) 765-7519
MATERIALS/SIZE:	40 mil HDPE Textured 139,187/Geotextile 42,900 SF
INSTALLED:	11/2015
PROJECT:	ROUTE 281 PONDS, Cortland NY
CONTACT:	Steve Lang, Economy Paving Co., Inc. (607) 756-2819
MATERIALS/SIZE:	45 mil EPDM 126,482 SF
INSTALLED:	11/2015

PROJECT:	SAVONA POND RE-LINING, Savona NY
CONTACT:	Barry Moon, Crestwood Equity Partners (607) 776-4201
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 180,194 SF
INSTALLED:	5/2015

PROJECT:	BERGEN FARM POND, Odesssa NY
CONTACT:	Steve Morse, All Seasons Excavation, LLC (315) 497-1808
MATERIALS/SIZE:	60 mil HDPE 120,952/Geotextile 120,952 SF
INSTALLED:	10/2015

PROJECT:	ALLEN FARM POND, Scipio Center NY
CONTACT:	Tony Legnetto, Paul F. Vitale, Inc. (315) 253-9797
MATERIALS/SIZE:	60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
INSTALLED:	11/2015

PROJECT:	BECK FARM POND, Freeville NY
CONTACT:	Dave McMasters, Upstream Construction (607) 343-9870
MATERIALS/SIZE:	60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
INSTALLED:	9/2015

PROJECT:	BOEING ABSOLUTE BARRIER, Ridley Park PA
CONTACT:	Harry Laspee, A.P. Construction, Inc. (856) 227-2030
MATERIALS/SIZE:	Absolute Barrier 43,680 SF
INSTALLED:	11/2015

PROEJCT:	CAMP SMITH FIRING RANGE, Cortlandt Manor NY
CONTACT:	Bruce McCandless, Coyle Industries, Inc. (845) 227-7234
MATERIALS/SIZE:	40 mil LLDPE Textured 34,798/Geotextile 29,539 SF
INSTALLED:	6/2015

PROJECT:	SIDNEY WWTP, Sidney NY
CONTACT:	Jon Van Deusen, ZMK Construction (607) 687-0981
MATERIALS/SIZE:	40 mil HDPE Smooth 22,532 SF
INSTALLED:	11/2015

PROJECT:	WILLIAMS POND, Brooklyn Township PA
CONTACT:	David Remley, Linde Corporation (570) 299-5745
MATERIALS/SIZE:	40 mil HDPE Textured 4,133/Geotextile 8,266 SF
INSTALLED:	6/2015

PROJECT:	MORRISVILLE WWTP, Morrisville NY
CONTACT:	Russ Huta, Marcy Excavation Co., Inc. (315) 724-4062
MATERIALS/SIZE:	36 mil Reinforced Polypropylene 10,000 SF
INSTALLED:	6/2015

PROJECT:	SYRACUSE UNIVERSITY COE BASIN, Syracuse NY
CONTACT:	Nick Harmer, CBD Construction LLC (315) 295-1900
MATERIALS/SIZE:	40 mil HDPE 6,875/Geotextile 6,875 SF
INSTALLED:	11/2015

PROJECT:	DESALES UNIVERSITY BASIN, Center Valley PA
CONTACT:	Chris Clark, Clark Companies (607) 746-2727
MATERIALS/SIZE:	40 mil HDPE 14,500 SF
INSTALLED:	10/2015

PROJECT:	NATIONAL GRID 5-MILE ROAD TRANSFORMER PAD, Humphrey NY
CONTACT:	Sam Millspaugh, Sam & Son Company (585) 589-6702
MATERIALS/SIZE:	XR5 (8130) 5,897/Geotextile 4,400 SF
INSTALLED:	7/2015

PROJECT: SUGARLOAF CI AGENT, Chester NY
CONTACT: Dan Mulqueen, Michels Corporation (262) 814-3012
MATERIALS/SIZE: Polyvinyl System 3,040 SF
INSTALLED: 9/2015

PROJECT: CONWAY TRANSFORMER PAD, Conway NH
CONTACT: Peter, G. Greene Construction Co., Inc. (617) 782-1100
MATERIALS/SIZE: XR5 1,550/Geotextile 3,100 SF
INSTALLED: 10/2015

PROJECT: SUSQUEHANNA COUNTY WATER IMPOUNDMENT, PA
MATERIALS/SIZE: 40 mil PE 191,511/Geotextile 191,511 SF

PROJECT: HONEYWELL SCA CAP, Syracuse NY
CONTACT: Paul Roth, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE: 40 mil LLDPE Text. 1,396,802/Smooth 1,304,877/Geocomposite 2,253,075 SF
INSTALLED: 2016 Install

PROJECT: HOLCIM CATSKILL LANDFILL CAP NO. 2, Catskill NY
CONTACT: Todd Farmen, Arcadis (US) Inc. (585) 662-4028
MATERIALS/SIZE: Super Grip Net/Closure Turf 275,000 SF/Geocomposite
INSTALLED: 2016 Install

PROJECT: BRISTOL BEACH STATE PARK LANDFILL CAP, Bear Mountain NY
CONTACT: Kathleen, Merritt Construction (845) 246-2138
MATERIALS/SIZE: 40 mil LLDPE Textured 20,000/Geotextile 20,000 SF
INSTALLED: 2016 Install

PROJECT: ALFRED STATE BASIN, Wellsville NY
CONTACT: Mike Neilson, Paragon Environmental (315) 345-6584
MATERIALS/SIZE: 45 mil EPDM 13,000 SF
INSTALLED: 2016 Install

PROJECT: ONEIDA-HERKIMER BASINS, Albany NY
CONTACT: Andy Jones, Henderson Bros. Contracting (315) 668-6160
MATERIALS/SIZE: 45 mil Reinforced Polypropylene 4,400 SF
INSTALLED: 2016 Install

PROJECT: SOUTH OTSELIC PONDS, South Otselic NY
CONTACT: Ken Weider, Marcy Excavation Co., Inc. (315) 724-4062
MATERIALS/SIZE: TBD
INSTALLED: 2016 Install

PROJECT: RIVERS MOHAWK CASINO, Schenectady NY
CONTACT: Patrick McCarthy, Rifenburg Contracting Corp. (518) 279-3967
MATERIALS/SIZE: 20 mil Vapor Block Plus/Geotextile 190,000 SF
INSTALLED: 2016 Install

PROJECT: FORT COVINGTON WTP SAND FILTER BED, Fort Covington NY
CONTACT: Justin Blanchard, Danko Construction Corp. (315) 769-5508
MATERIALS/SIZE: 45 mil Polypropylene 2,700 SF
INSTALLED: 2016 Install

2014

PROJECT: HOLCIM CATSKILL LANDFILL CAP, Catskill NY
CONTACT: Todd Farmen, Arcadis (US) Inc. (585) 662-4028
MATERIALS/SIZE: Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
INSTALLED: In Progress

PROJECT:	SOMERSET LANDFILL CELL AREA II, Barker NY
CONTACT:	Tom Santarsiero, Tug Hill Environmental (716) 204-8211
MATERIALS/SIZE:	60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
INSTALLED:	10/2014

PROJECT:	FRANKLIN COUNTY LANDFILL CELL NO. 5, Constable NY
CONTACT:	Tom Lagiewicz, Jr., Zoladz Construction Co., Inc. (716) 937-6575
MATERIALS/SIZE:	60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
INSTALLED:	7/2015

PROJECT:	HONEYWELL RAINCAP, Solvay NY
CONTACT:	Matt Warren, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE:	12-mil Duraskrim B/B 303,600 SF
INSTALLED:	11/2014

PROJECT:	GROWS LANDFILL RAINCAPS, Morrisville PA
CONTACT:	Ryan Kamp, Chesapeake Lining (410) 335-5886
MATERIALS/SIZE:	Raincap No. 1 - 369,473 SF/Raincap No. 2 – 500,000 SF
INSTALLED:	4/2014 and 2/13/2015

PROJECT:	CORTLAND COUNTY LANDFILL CAP, McGraw NY
CONTACT:	Al Gorick, Gorick Construction Co., Inc. (607) 775-1765
MATERIALS/SIZE:	40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
INSTALLED:	7/2014

PROJECT:	HONEYWELL OU1 CAP, Solvay NY
CONTACT:	Matt Warren, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE:	40 mil LLT 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
INSTALLED:	8/2015

PROJECT:	KILBUCK WETLANDS LINER, Sewickley PA
CONTACT:	Greg Cortese, Alex Paris Contracting, Inc. (724) 947-2235
MATERIALS/SIZE:	60 mil HDPE Textured 126,106/Geotextile 136,106 SF
INSTALLED:	8/2014

PROJECT:	NORFOLK WWTP, Norfolk NY
CONTACT:	Justin Blanchard, Danko Construction (315) 769-5508
MATERIALS/SIZE:	60 mil HDPE Smooth 69,748 SF
INSTALLED:	10/2014

PROJECT:	TCI VAPOR BARRIER, Coeymans NY
CONTACT:	Kiel Sadowsky, BCI Construction (518) 426-3200
MATERIALS/SIZE:	40 mil HDPE Smooth 35,007 SF
INSTALLED:	6/2014

PROJECT:	COLD BROOK WWTF LAGOONS, Wilmington VT
CONTACT:	Robert Woodruff, WM Schultz Construction (518) 885-0060
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
INSTALLED:	11/2014

PROJECT:	BROAD BROOK WATER FILTRATION PLANT LAGOON, Cheshire CT
CONTACT:	Brian Martin, Carlin Contracting (860) 443-8337
MATERIALS/SIZE:	80 mil HDPE Smooth 31,000/Geotextile 31,000 SF
INSTALLED:	9/2014

PROJECT:	SYRACUSE UNIVERSITY UG BASINS, Syracuse NY
CONTACT:	Rich Ranieri, Ballard Sports (315) 468-6225
MATERIALS/SIZE:	40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
INSTALLED:	9/2014

PROJECT:	WICKHAM HILL STORAGE BASIN, East Harford CT
CONTACT:	Jim Murray, E.T. & L Corp. (978) 897-4353
MATERIALS/SIZE:	40 mil HDPE Textured 38,000 SF
INSTALLED:	12/2014

PROJECT:	LITTLE LEAGUE ESPN COMPOUND-UG BASIN, Williamsport PA
CONTACT:	Chris Stein, Glenn O' Hawbaker (570) 368-3590
MATERIALS/SIZE:	40 mil LLDPE Smooth 16,966/Geotextile 33,932 SF
INSTALLED:	6/2014

PROJECT:	GE HUDSON FALLS WTP RAILCAR PIT, Hudson Falls NY
CONTACT:	Paul Mazurkiewicz, OBG (315) 956-6100
MATERIALS/SIZE:	40 mil HDPE Textured 2,400/Geocomposite 850 SF
INSTALLED:	10/2014

PROJECT:	FONF STORMWATER PONDS, Niagara Falls NY
CONTACT:	Jeff Salvatore, Mark Cerrone, Inc. (716) 282-5244
MATERIALS/SIZE:	40 mil HDPE SS Textured 230,000 SF
INSTALLED:	10/2014

PROJECT:	NEW HOPE FARM POND, Homer NY
CONTACT:	Dave McMasters, Upstream Construction (607) 343-9870
MATERIALS/SIZE:	60 mil HDPE 106,000/Geotextile 115,000 SF
INSTALLED:	11/2014

PROJECT:	HOLMES FARM PONDS, New Woodstock, NY
CONTACT:	Carl Bartlett, Madison County SWCD (315) 824-9076
MATERIALS/SIZE:	60 mil HD Smooth/Geotextile, Pond #1- 93,530/103,000/Pond #2-68,000/71,000 SF
INSTALLED:	8/2014 and 11/2014

PROJECT:	BEAR MOUNTAIN POND, NY
CONTACT:	Steve Mgrditchian, ELQ Industries (914) 654-1060
MATERIALS/SIZE:	40 mil HDPE Textured 68,003 SF
INSTALLED:	11/2014

PROJECT:	JORDAN FARM POND, Canton NY
CONTACT:	Dave Goldie, Goldie Trucking & Excavating (315) 323-4013
MATERIALS/SIZE:	60 mil HDPE Smooth 72,692/Geotextile 72,692 SF
INSTALLED:	8/2014

PROJECT:	HILTON FARM POND, Canandaigua NY
CONTACT:	Dick Hilton, Hilton Farms (518) 424-0861
MATERIALS/SIZE:	60 mil HDPE Smooth 72,880/Geotextile 87,000 SF
INSTALLED:	11/2014

PROJECT:	NOVELIS XR5 POND, Oswego NY
CONTACT:	Todd Farmen, Arcadis (US) Inc. (585) 662-4028
MATERIALS/SIZE:	XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
INSTALLED:	12/2014

PROJECT:	EM BROWN POND, Snow Shoe PA
CONTACT:	Dennis Merrow, EM Brown, Inc. (814) 765-7510
MATERIALS/SIZE:	40 mil LLDPE Textured 13,600 SF
INSTALLED:	6/2014

PROJECT:	UPSTATE SHREDDING-JAMESTOWN POND, Jamestown NY
CONTACT:	John Kupiec, DDS Constructors (607) 238-1100
MATERIALS/SIZE:	60 mil HDPE Textured 13,120 SF
INSTALLED:	7/2014

PROJECT: DANSVILLE STORMWATER POND, Dansville NY
CONTACT: Colby Phillips, Northstar Environmental Group (800) 449-7504
MATERIALS/SIZE: XR5 (8130) 3,000 SF
INSTALLED: 10/2014

PROJECT: SYNERGY FARM POND, Wyoming NY
CONTACT: Wayne Taylor, RW Taylor Trucking & Exc. (585) 584-3491
MATERIALS/SIZE: 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
INSTALLED: 7/2015

PROJECT: ROBERT MOSES PARKWAY POND, Niagara Falls, NY
CONTACT: Jeff Salvatore, Mark Cerrone, Inc. (716) 282-5244
MATERIALS/SIZE: 45 mil EPDM 45,900 SF
INSTALLED: In Progress

PROJECT: ERIE BLVD.-WEST BRIDGE OVER ONONDAGA CREEK, Syracuse NY
CONTACT: Tom Capalongo, Economy Paving Co., Inc. (607) 756-2819
MATERIALS/SIZE: 30 mil PVC 26,500 SF
INSTALLED: 10/14

PROJECT: GRAND ISLAND WWTP, Grand Island NY
CONTACT: Josh Prezioso, NFP & Sons (716) 695-2926
MATERIALS/SIZE: 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF
INSTALLED: 8/2014

PROJECT: MEXICO WWTP REED BED/SLUDGE DRYING BED, Mexico NY
CONTACT: Andy Jones, Henderson Bros Contracting, Inc. (315) 668-6160
MATERIALS/SIZE: XR-3 (8228) 6,600 SF
INSTALLED: 8/2015

PROJECT: MASSENA TRANSFORMER PAD #3, Massena NY
CONTACT: Sam Millspaugh, Sam and Son Co., Inc. (585) 589-6702
MATERIALS/SIZE: XR5 (8130) 31,238/Geotextile 9,028 SF
INSTALLED: 10/2015

PROJECT: BUFFALO AOC DEWATERING PAD, Buffalo NY
CONTACT: Khristine Beck, EQM, Inc. (513) 825-7500
MATERIALS/SIZE: 40 mil LLDPE Textured 26,950 SF
INSTALLED: 9/2014

PROJECT: SYRACUSE VAPOR BARRIER, Syracuse NY
CONTACT: Graham Nelson, McGinnis Nelson Construction (315) 382-5296
MATERIALS/SIZE: 60 mil HDPE 10,000 SF
INSTALLED: 10/2014

PROJECT: WAREHAM BIORETENTION BASIN, Wareham MA
CONTACT: Jim Borges, G. Lopes Construction (508) 824-4834
MATERIALS/SIZE: 40 mil 35,000 SF
INSTALLED: 5/2015

PROJECT: SUSQUEHANNA COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE: 40 mil PE 516,892/Geotextile 486,994 SF

PROJECT: LYCOMING COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE: 40 mil PE 140,214 SF

PROJECT: BRADFORD COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE: 40 mil PE 74,406/Geotextile 74,406 SF

2013

PROJECT:	BETHLEHEM VAPOR BARRIER, Bethlehem PA
CONTACT:	Chad Shoemaker, Liberty Excavators (717) 761-8461
MATERIALS/SIZE:	20 mil PVC 707,200/Geotextile 1,417,500 SF
INSTALLED:	4/2014

PROJECT:	DELAWARE COUNTY SWA-ROLLING HILLS LANDFILL CAP, Boyertown PA
CONTACT:	Wendy Marburger, Delaware County SWA (610) 367-2373
MATERIALS/SIZE:	40 mil LLDPE Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF
INSTALLED:	10/2013

PROJECT:	LOWER MT. WASHINGTON VALLEY SECURE SW LANDFILL CELL, Conway NH
CONTACT:	Claude Pigeon, Couture Construction Corp. (603) 752-4622
MATERIALS/SIZE:	60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
INSTALLED:	9/2013

PROJECT:	MONMOUTH LANDFILL CAP, Tinton Falls NJ
CONTACT:	Matthew Rutkowski, Monmouth County (732) 431-7370
MATERIALS/SIZE:	60 mil LLDPE Text. 220,685/Geotextile 220,000 SF
INSTALLED:	8/2013

PROJECT:	USNYPP CAYUGA LANDFILL CAP, Lansing NY
CONTACT:	Phil Hale, Marcy Excavation Co., Inc. (315) 724-4062
MATERIALS/SIZE:	40 mil LLDPE Textured 173,988/Geocomposite 151,200 SF
INSTALLED:	5/2013

PROJECT:	NORTHEAST INDUSTRIAL PARK CAP, Guilderland NY
CONTACT:	Dan Welsch, H2H Associates, LLC (518) 270-1620
MATERIALS/SIZE:	40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF
INSTALLED:	8/2013

PROJECT:	HONEYWELL RAINCAP, Syracuse NY
CONTACT:	Matt Warren, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE:	Duraskrim R12BV 245,000 SF
INSTALLED:	1/2014

PROJECT:	HIGH ACRES LANDFILL CELL, Fairport NY
CONTACT:	Phil Hale, Marcy Excavation (315) 724-4062
MATERIALS/SIZE:	Geocomposite 255,000 SF
INSTALLED:	8/2013

PROJECT:	MILLSEAT LANDFILL, Bergen NY
CONTACT:	Denny Pooler, Pooler Enterprises, Inc. (585) 924-5200
MATERIALS/SIZE:	Geocomposite 240,000 SF
INSTALLED:	9/2013

PROJECT:	MINNEWASKA LANDFILL CLOSURE, Rochester NY
CONTACT:	Paul Colucci, P.E. Colucci Excavating, Inc. (845) 255-5602
MATERIALS/SIZE:	40 mil LLDPE Textured 65,320/Geocomposite 75,600 SF
INSTALLED:	10/2013

PROJECT:	LANCHESTER LANDFILL CAP, Narvon PA
CONTACT:	Rich Badis, Sevenson Environmental Services (610) 388-0721
MATERIALS/SIZE:	50 mil LL Textured 295,000/Closure Turf 295,000 SF
INSTALLED:	4/2014

PROJECT:	LANCHESTER LANDFILL CELL, Narvon PA
CONTACT:	Rich Badis, Sevenson Environmental Services (610) 388-0721
MATERIALS:	60 mil HDPE Textured/Geotextile/Geocomposite/GCL/Geonet
SIZE:	1,904,860/945,000/899,640/900,000/34,800 SF
INSTALLED:	10/2014

PROJECT:	TRIPLE R FARM POND, Randolph NY
CONTACT:	Robert Spinler, Triple R Farm, LLC (716) 485-3985
MATERIALS/SIZE:	60 mil HDPE Smooth 62,100/Geotextile 82,800 SF
INSTALLED:	9/2013

PROJECT:	PINE-TON FARM POND, Russell PA
CONTACT:	Dustin Wilcox, Pine-Ton Farms (814) 688-1791
MATERIALS/SIZE:	60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
INSTALLED:	11/2013

PROJECT:	HONEYWELL DEWATERING PAD, Syracuse NY
CONTACT:	Matt Warren, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE:	30 mil HDPE Smooth 38,200/Geocomposite 32,625/Geotextile 30,000 SF
INSTALLED:	6/2013

PROJECT:	THE COUNTRY CLUB OF ROCHESTER POND, Rochester NY
CONTACT:	Rick Holfoth, Rochester Country Club (585) 381-1844
MATERIALS/SIZE:	60 mil HDPE Smooth 34,804/Geotextile 24,000/Geocomposite 18,000 SF
INSTALLED:	4/2013

PROJECT:	HOUSEKNECHT FARM POND, Columbia Cross Roads PA
CONTACT:	Tim Leonard, Timothy D. Leonard General Excavating (570) 596-3855
MATERIALS/SIZE:	60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF
INSTALLED:	5/2013

PROJECT:	KITTANSETT CLUB POND, Marion MA
CONTACT:	Cheryl Duncan, Arne Excavating (508) 748-2060
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 38,820 SF
INSTALLED:	3/2013

PROJECT:	HONEYWELL CONTAMINATED SOIL PAD LINER, Syracuse NY
CONTACT:	Matt Warren, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE:	Duraskrim 12WB 31,500 SF
INSTALLED:	4/2013

PROJECT:	BATTENFIELD SECONDARY CONTAINMENT, North Tonawanda NY
CONTACT:	Tom Woelfle, DDS Constructors (585) 359-7540
MATERIALS/SIZE:	XR-5 (8130) 25,000/Geotextile 22,500 SF
INSTALLED:	7/2013

PROJECT:	MASSENA TRANSFORMER PAD #2, Massena NY
CONTACT:	Ed Zielinski, Northline Utilities, LLC (518) 647-8198
MATERIALS/SIZE:	XR-5 (8130) 10,222/Geotextile 8,000 SF
INSTALLED:	In Progress

PROJECT:	CORNING-TIOGA AVE. PASSIVE PARK, Corning NY
CONTACT:	Alen Trpevski, Ontario Specialty Contracting, Inc. (716) 856-3333
MATERIALS/SIZE:	GCL 41,850 SF
INSTALLED:	5/2013

PROJECT:	NRG BEVERLY, Beverly MA
CONTACT:	Paul Bertolino, Charter Environmental (857) 246-6800
MATERIALS/SIZE:	40 mil HDPE Smooth 117,300 SF
INSTALLED:	6/2013

PROJECT:	WILSON HIGH SCHOOL DETENTION BASIN, West Lawn PA
CONTACT:	Tim Catella, Clark Companies (607) 746-2727
MATERIALS/SIZE:	40 mil PVC 58,190/Geotextile 127,500 SF
INSTALLED:	6/2013

PROJECT:	ROSAMOND GIFFORD ZOO, Syracuse NY
CONTACT:	Michael Ramos, Bette & Cring, LLC (315) 782-0074
MATERIALS/SIZE:	60 mil HDPE Textured 23,000/Geotextile 25,500 SF
INSTALLED:	7/2013

PROJECT:	BINGHAMTON UNIVERSITY WF POND, Vestal NY
CONTACT:	Brion Salatino, LeChase Construction Services, LLC (607) 772-2500
MATERIALS/SIZE:	60 mil Reinforced Polypropylene 13,200 SF
INSTALLED:	1/2014

PROJECT:	BERNE WWTP, Berne NY
CONTACT:	John Saia, Jr., J.Squared Construction Corp. (518) 872-9471
MATERIALS/SIZE:	40 mil HDPE Smooth 19,575 SF
INSTALLED:	9/2013

PROJECT:	DTE ENERGY POND, New Milford PA
CONTACT:	John Ferguson, RB Robinson Contracting, Inc. (607) 659-5153
MATERIALS/SIZE:	GCL 5,075 SF
INSTALLED:	10/2013

PROJECT:	CAYUGA WWTP REED BED SLUDGE TREATMENT SYSTEM, Ithaca NY
CONTACT:	Jim Winnich, Wind Sun Construction (585) 248-9533
MATERIALS/SIZE:	40 mil HDPE 23,000 SF
INSTALLED:	10/2014

PROJECT:	SOMERS HIGHWAY GARAGE STORMWATER POND, Somers NY
CONTACT:	Richard Pugni, R. Pugni & Sons (914) 495-3449
MATERIALS/SIZE:	40 mil LLDPE Textured 34,788/Geotextile 32,400 SF
INSTALLED:	7/2014

PROJECT:	HONEYWELL WASTEBEDS 1-8, Syracuse NY
CONTACT:	Chris Killoren, O'Brien & Gere (315) 956-6100
MATERIALS/SIZE:	40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
INSTALLED:	In Progress

PROJECT:	DUPONT NEWBURGH-STAUFFER LANDFILL CAP, Newburgh NY
CONTACT:	Rob Gray, Abscope Environmental, Inc. (315) 697-8437
MATERIALS/SIZE:	40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
INSTALLED:	7/2015

PROJECT:	JAMES BAIRD STATE PARK GOLF POND, Pleasant Valley NY
CONTACT:	Kevin Ture, Schultz Construction (518) 885-0060
MATERIALS/SIZE:	45 mil EPDM 107,500/Geotextile 94,500 SF
INSTALLED:	6/2014

PROJECT:	BRADFORD COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 205,711/Geotextile 193,636 SF

PROJECT:	SUSQUEHANNA COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 313,179/60 mil PE 60,240/Geotextile 206,490 SF

PROJECT:	LYCOMING COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 580,719/Geotextile 285,010/Geonet 152,250 SF

PROJECT:	WYOMING COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 208,786/Geotextile 189,900 SF

PROJECT:	SULLIVAN COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 208,786/Geotextile 495,000 SF

2012

PROJECT:	AMESBURY-TITCOMB LANDFILL CAP, Amesbury MA
CONTACT:	Mike Kunce, Charter Environmental (857) 246-6800
MATERIALS/SIZE:	40 mil LLDPE 665,000 SF
INSTALLED:	10/2012

PROJECT:	AMENIA TOWN LANDFILL CAP, Amenia NY
CONTACT:	Rich Badis, Sevenson Environmental (610) 388-0721
MATERIALS/SIZE:	40 mil LLDPE 391,920/Geocomposite 751,100 SF
INSTALLED:	11/2013

PROJECT:	CLINTON COUNTY-WAYNE TOWNSHIP LF FLOATING COVER, McElhattan PA
CONTACT:	Jake Metzger, Patrick Constructors, Inc. (585) 393-9900
MATERIALS/SIZE:	60 mil HDPE Smooth 49,000/Polypro Reinforced 45 mil 40,000 SF
INSTALLED:	4/2013

PROJECT:	BROOME COUNTY LANDFILL RAINCAP, Binghamton NY
CONTACT:	Al Gorick, Gorick Construction Co., Inc. (607) 775-1765
MATERIALS/SIZE:	Raincap 8 mil BBR 185,000/Geotextile 185,000 SF
INSTALLED:	9/2012

PROJECT:	HONEYWELL RAINCAP #2, Solvay NY
CONTACT:	Matt Warren, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE:	Raincap Duraskrim 12 mil 218,760 SF
INSTALLED:	11/2012

PROJECT:	GEDNEY WAY LANDFILL CLOSURE, White Plains NY
CONTACT:	Tony Silva, Etre Associates (914) 654-1060
MATERIALS/SIZE:	40 mil HDPE Textured 278,304/Geocomposite 87,750 SF
INSTALLED:	5/2013

PROJECT:	LACKAWANNA CAP TAR PIT LINER, Lackawanna NY
CONTACT:	Jeff Leavell, Zoladz Construction Co., Inc. (716) 937-6575
MATERIALS/SIZE:	40 mil LLDPE Textured/GCL/Geocomposite 120,000 SF each
INSTALLED:	11/2012

PROJECT:	CLAYTON LANDFILL CLOSURE, Staatsburg NY
CONTACT:	Hans Taylor, Taylor Recycling Facility, LLC (845) 457-4021
MATERIALS/SIZE:	40 mil LLDPE Textured 38,200/Geocomposite 42,000 SF
INSTALLED:	9/2012

PROJECT:	MAYWOOD REMEDIATION CONCRETE PAD LINING, Maywood NJ
CONTACT:	Aida Castano, Shaw Environmental, Inc. (201) 226-6613
MATERIALS/SIZE:	40 mil LLDPE Textured 62,000/Geotextile 62,000/GCL 2,400 SF
INSTALLED:	1/2013

PROJECT:	MASSENA SOIL PAD LINING, Massena NY
CONTACT:	Robert Montague, D.A. Collins Construction Co. (518) 664-9855
MATERIALS/SIZE:	40 mil HDPE 45,000/Geotextile 90,000 SF
INSTALLED:	5/2012

PROJECT:	FIVE POINTS LANDFILL POND, Mansfield NY
CONTACT:	CW Gregory, Blue Heron Construction (315) 689-6482
MATERIALS/SIZE:	60 mil HDPE Smooth 33,000/Geotextile 33,000 SF
INSTALLED:	7/2012

PROJECT:	WAYLAND PONDS BASIN LINERS, Wayland MA
CONTACT:	Jim Borges, G. Lopes Construction (508) 824-4834
MATERIALS/SIZE:	40 mil LLDPE Smooth 31,500 SF
INSTALLED:	9/2012

PROJECT:	HONEYWELL MIXING PAD, Syracuse NY
CONTACT:	Matt Warren, Parsons (315) 451-9560
MATERIALS/SIZE:	30 mil HDPE Textured/Geotextile/Geocomposite 48,000 SF each
INSTALLED:	6/2012

PROJECT:	STEWART ANG PONDS, Newburgh NY
CONTACT:	Jay Matey, Profex, Inc. (845) 565-8845
MATERIALS/SIZE:	60 mil HDPE Textured 25,900 SF
INSTALLED:	10/2012

PROJECT:	SNOOK'S DAM POND LINER, Manilus NY
CONTACT:	Wade Tupper, Snooks Pond Development, LLC (315) 447-0889
MATERIALS/SIZE:	60 mil HDPE Textured 6,000 SF
INSTALLED:	9/2012

PROJECT:	NEWPORT NAVAL STATION GCL POND LINER, Newport RI
CONTACT:	David Butterfield, Catalano Construction, Inc. (401) 658-3999
MATERIALS/SIZE:	GCL 37,200 SF
INSTALLED:	6/2013

PROJECT:	NEWPORT NAVAL STATION XR5 PONDS, Newport RI
CONTACT:	David Butterfield, Catalano Construction, Inc. (401) 658-3999
MATERIALS/SIZE:	XR5 (8130) 32,000 SF
INSTALLED:	8/2013

PROJECT:	ALCOA POND LAGOON LINER, Massena NY
CONTACT:	Scott McRoberts, Perras Excavating, Inc. (315) 769-5900
MATERIALS/SIZE:	60 mil HDPE Textured 13,100 SF
INSTALLED:	9/2012

PROJECT:	HAMILTON MANURE STORAGE LAGOON LINER, Hamilton NY
CONTACT:	Ed Carhart, White Eagle Farms (315) 796-5051
MATERIALS/SIZE:	60 mil HDPE Smooth 120,100/Geotextile 188,900 SF
INSTALLED:	9/2012

PROJECT:	DERUYTER SILAGE POND LAGOON LINER, DeRuyter NY
CONTACT:	Cedric Barnes Jr., Gate House Farms (315) 852-9829
MATERIALS/SIZE:	60 mil HDPE Smooth 12,000/Geotextile 12,000 SF
INSTALLED:	9/2012

PROJECT:	ALCOA WETLANDS BED LINER, Massena NY
CONTACT:	Scott McRoberts, Perras Excavating, Inc. (315) 769-5900
MATERIALS/SIZE:	GCL 9,500 SF
INSTALLED:	10/2012

PROJECT:	SYRACUSE-HARBOR BROOK CSO WETLANDS LINER, Syracuse NY
CONTACT:	Jason Greene, JJ Lane Construction, Inc. (315) 478-0971
MATERIALS/SIZE:	40 mil HDPE Textured 20,000 SF
INSTALLED:	5/2013

PROJECT:	WEITSMAN POND LINER, Binghamton NY
CONTACT:	Dan Purtell, Fahs Construction (607) 724-1835
MATERIALS/SIZE:	60 mil HDPE Textured 5,500 SF
INSTALLED:	9/2012

PROJECT:	HONEYWELL ISR/IRM, Syracuse NY
CONTACT:	Tom Abrams, Parsons (315) 552-9670
MATERIALS/SIZE:	60 mil HDPE Textured/Geocomposite/Geotextile 67,000 SF each
INSTALLED:	5/2012

PROJECT: HONEYWELL FLOATING COVER, Syracuse NY
CONTACT: Tom Drachenburg, Parsons (315) 552-9688
MATERIALS/SIZE: Polypropylene 75,000 SF
INSTALLED: 10/2012

PROJECT: DAVIDSON-SONESTOWN WWT SAND FILTER LINER, Muncy Valley PA
CONTACT: Mark Mance, Sikora Brothers Paving, Inc. (570) 256-3740
MATERIALS/SIZE: 60 mil HDPE Smooth 20,000/Geotextile 40,000 SF
INSTALLED: 9/2012

PROJECT: NYSEG HOMER-FORMER MGP SITE, Homer NY
CONTACT: Darin Payne, GEO-CON (412) 856-7700
MATERIALS/SIZE: 30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF
INSTALLED: 8/2012

PROJECT: NRG HUNTLEY SECONDARY CONTAINMENT, Tonawanda NY
CONTACT: David Brumsted, The Pike Company (585) 241-0444
MATERIALS/SIZE: XR5 8130 Reinforced 30 mil 5,800 SF
INSTALLED: 12/2012

PROJECT: TUXEDO LANDFILL CAP REPAIRS, Tuxedo Park NY
CONTACT: Dustin Winn, Abscope Environmental Inc. (315) 697-8437
MATERIALS/SIZE: Geocomposite 22,400 SF
INSTALLED: 10/12

PROJECT: BUCKEYE TERMINAL LINER REPAIRS, Vestal NY
CONTACT: Jason Hupp, Buckeye Terminals, LP (610) 904-4956
MATERIALS/SIZE: Polysulphide 18,900 SF
INSTALLED: 4/2012

PROJECT: FT. DRUM CONVERSION LINER REPAIRS, Fort Drum NY
CONTACT: Joanna Pyun, Cianbro Corporation (860) 539-6843
MATERIALS/SIZE: 100 mil HDPE Smooth 16,900 SF
INSTALLED: 1/2013

PROJECT: HONEYWELL TRIB 5A CULVERT LINING, Geddes NY
CONTACT: Chris Killoren, O'Brien & Gere (315) 437-6100
MATERIALS/SIZE: 40 mil LLDPE Textured 2,100/Geotextile 4,000 SF
INSTALLED: 6/2012

PROJECT: UPPER HARBOR BROOK IRM DITCH LINING, Syracuse NY
CONTACT: Dave Edwards, O'Brien & Gere (315) 956-6100
MATERIALS/SIZE: 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF
INSTALLED: 9/2013

PROJECT: BRADFORD COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE: 40 mil PE 517,500/Geotextile 517,500 SF

PROJECT: SUSQUEHANNA COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE: 40 mil PE 136,600/Geotextile 136,600 SF

PROJECT: LYCOMING COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE: 40 mil PE 208,786/60 mil PE 420,500/Geotextile 411,700/Geocomposite 176,700 SF

2011
PROJECT: LYCOMING COUNTY LANDFILL CELL, Montgomery PA
CONTACT: Scott Minnucci, KC Construction Co. (215) 443-5553
MATERIALS: 100 mil HDPE Textured/GCL/Geocomposite/Geotextile/Geonet
SIZE: 1,400,960/692,850/704,700/836,341/704,700 SF
INSTALLED: 12/2011

PROJECT:	BROOME COUNTY LANDFILL CAP, Binghamton NY
CONTACT:	Al Gorick, Gorick Construction Co., Inc. (607) 775-1765
MATERIALS/SIZE:	40 mil LL-T 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
INSTALLED:	9/2011

PROJECT:	BROOME COUNTY LANDFILL CELL, Binghamton NY
CONTACT:	Al Gorick, Gorick Construction Co., Inc. (607) 775-1765
MATERIALS:	60 mil HDPE Textured/60 mil HDPE Smooth/Geotextile/Geocomposite/GCL
SIZE:	397,800/327,600/356,700/765,000/356,700 SF
INSTALLED:	9/2012

PROJECT:	HONEYWELL RAINCAP, Solvay NY
CONTACT:	Matt Warren, Parsons Engineering of New York (315) 451-9560
MATERIALS/SIZE:	Raincap Duraskrim 12 mil 244,000 SF
INSTALLED:	2/2012

PROJECT:	KNOX POND-GUROSIK COAL COMPANY RECLAMATION, Brookville PA
CONTACT:	Dennis Merrow, E.M. Brown, Inc. (814) 765-7510
MATERIALS/SIZE:	40 mil LLDPE Smooth 104,364 SF/Geotextile 202,500 SF
INSTALLED:	9/2011

PROJECT:	BENNINGTON VAOT POND, Bennington VT
CONTACT:	Chris Davidson, J.A. McDonald, Inc. (802) 626-5201
MATERIALS/SIZE:	60 mil HDPE Textured 58,800 SF
INSTALLED:	12/2011

PROJECT:	HONEYWELL CWTP LINER, Solvay NY
CONTACT:	Ben Mcallister, Parsons, (315) 451-9560
MATERIALS/SIZE:	40 mil HDPE Smooth 104,393 SF/Geotextile 124,200 SF/Geocomposite 17,400 SF
INSTALLED:	2/2011

PROJECT:	BROOKHAVEN NATIONAL LAB-GRR ENGINEERED CAP, Ridge NY
CONTACT:	John Szymanski, Envirotrac LTD (631) 924-3001
MATERIALS/SIZE:	40 mil HDPE 139,800 SF
INSTALLED:	5/2011

PROJECT:	POULTNEY STREET REMEDIATION, Whitehall NY
CONTACT:	John Szymanski, Envirotrac LTD (631) 924-3001
MATERIALS/SIZE:	40 mil Textured 8,925 SF/GCL 30,225 SF
INSTALLED:	4/2011

PROJECT:	PPL MONTOUR S.E.S. SEDIMENTATION BASIN LINER, Washingtonville PA
CONTACT:	Ronald Smith, O'Neil Excavating (570) 683-6523
MATERIALS/SIZE:	XR5 10,000 SF
INSTALLED:	12/2011

PROJECT:	STEELWINDS TRANSFORMER PAD LINING, Lackawanna NY
CONTACT:	Mike Nowicki, O'Connel Electric (585) 924-2176
MATERIALS/SIZE:	XR5 (8138) 6,000 SF
INSTALLED:	10/2011

PROJECT:	BRADFORD COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 2,792,000/60 mil PE 118,399/Geotextile 3,440,000/Geocomposite 23,680 SF

PROJECT:	SUSQUEHANNA COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 835,248/Geotextile 915,413 SF

PROJECT:	WYOMING COUNTY WATER IMPOUNDMENTS, PA
MATERIALS/SIZE:	40 mil PE 417,514/60 mil 276,000/Geotextile 841,400 SF

PROJECT:	PRESTON COUNTY WATER IMPOUNDMENTS, W.V.
MATERIALS/SIZE:	40 mil PE 372,600/60 mil PE 23,000/Geotextile 303,750/Geocomposite 97,875 SF

2010 Projects finished at a later date

PROJECT:	BROOKFIELD AVE. LANDFILL CLOSURE, Staten Island NY
CONTACT:	Scott Tankel, Brookfield Construction Associates (732) 574-1300
MATERIALS:	40 mil LLDPE Textured BW/60 mil LLDPE Smooth BW/GCL/Geocomposite
SIZE:	5,906,250/630,000/920,700/12,000,000 SF
INSTALLED:	11/2012

PROJECT:	WESTCHESTER COUNTY-SPROUTBROOK LANDFILL CLOSURE, Peekskill NY
CONTACT:	Joe Bilotta, Bilotta Construction (914) 737-8756
MATERIALS/SIZE:	40 mil LLDPE Textured 1,824,580 SF/Geocomposite 1,625,250 SF
INSTALLED:	12/2011

PROJECT:	SALINA LANDFILL CLOSURE, Syracuse NY
CONTACT:	Jerry Plewniak, Modern Environmental Group, Inc. (716) 754-8226
MATERIALS:	60 mil LLDPE Textured/GCL/Geocomposite/Geotextile
SIZE:	1,685,880/337,125/360,180/2,353,500 SF
INSTALLED:	10/2013

PROJECT:	HONEYWELL SCA SECONDARY CONTAINMENT, Syracuse NY
CONTACT:	Mark Hoffman, Parsons Engineering of New York, Inc. (315) 451-9560
MATERIALS/SIZE:	60 mil HDPE Textured 4,001,400 SF/Geotextile 4,000,000 SF
INSTALLED:	10/2012

PROJECT:	HONEYWELL JERSEY CITY SA5 Cap, Jersey City NJ
CONTACT:	Mike Muth, Sevenson Environmental, Inc. (716) 284-0431
MATERIALS/SIZE:	40 mil LLDPE/Geotextile/Geocomposite 150,000 SF each
INSTALLED:	6/2011

THIS IS A 5 YEAR PROJECT LISTING – OUR COMPLETE PROJECT LISTING WHICH INCLUDES PROJECTS COMPLETED SINCE 1993 IS AVAILABLE UPON REQUEST.

TOTAL GEOSYNTHETICS INSTALLED TO DATE: OVER 500 MILLION SF.

CHENANGO CONTRACTING, INC

29 Arbutus Rd.
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F: (607) 729-2415
www.chenangocontracting.com

SAYCHAY BOUTSADY

GEOSYNTHETICS EXPERIENCE RESUME

Position: Supervisor

2015:

PROJECT:	SIDNEY WWTP
MATERIALS/SIZE:	40 mil HDPE Smooth 22,532 SF

2014:

PROJECT:	HOLCIM CATSKILL LANDFIL CAP
MATERIALS/SIZE:	Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
PROJECT:	SOMERSET LANDFILL CELL AREA II
MATERIALS/SIZE:	60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
PROJECT:	FONF STORMWATER PONDS
MATERIALS/SIZE:	40 mil HDPE SS Textured 230,000 SF
PROJECT:	GROWS LANDFILL RAINCAP NO. 2
MATERIALS/SIZE:	Raincap 500,000 SF
PROJECT:	BEAR MOUNTAIN POND
MATERIALS/SIZE:	40 mil HDPE Textured 68,003 SF
PROJECT:	SYRACUSE UNIVERSITY UG BASINS
MATERIALS/SIZE:	40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
PROJECT:	BUFFALO AOC DEWATERING PAD
MATERIALS/SIZE:	40 mil LLDPE Textured 26,950 SF
PROJECT:	CAYUGA WWTP REED BED SLUDGE TREATMENT SYSTEM
MATERIALS/SIZE:	40 mil HDPE 23,000 SF
PROJECT:	ERIE BLVD.-WEST BRIDGE OVER ONONDAGA CREEK
MATERIALS/SIZE:	30 mil PVC 26,500 SF
PROJECT:	SYRACUSE VAPOR BARRIER
MATERIALS/SIZE:	60 mil HDPE 10,000 SF
PROJECT:	PA IMPOUNDMENTS
MATERIALS/SIZE:	40 mil PE 154,110/Geotextile 150,262 SF

2013:

PROJECT:	LANCHESTER LANDFILL CAP
MATERIALS/SIZE:	50 mil LL Textured 295,000/Closure Turf 295,000 SF
PROJECT:	BETHLEHEM VAPOR BARRIER
MATERIALS/SIZE:	20 mil PVC 707,200/Geotextile 1,417,500 SF

PROJECT: DTE ENERGY
MATERIALS/SIZE: GCL 5,075 SF

PROJECT: THE COUNTRY CLUB OF ROCHESTER POND
MATERIALS/SIZE: 60 mil HDPE Smooth 34,804/Geotextile 24,000/Geocomposite 18,000 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 297,065/Geocomposite 75,000/Geotextile 123,750/Geonet 78,300 SF

2012:
PROJECT: AMENIA TOWN LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE 391,920/Geocomposite 751,100 SF

PROJECT: SALINA LANDFILL CLOSURE
MATERIALS: 60 mil LLDPE Textured/GCL/Geocomposite/Geotextile
SIZE: 1,685,880/337,125/360,180/2,353,500 SF

PROJECT: BROOME COUNTY LANDFILL RAINCAP
MATERIALS/SIZE: Raincap 8 mil BBR 185,000/Geotextile 185,000 SF

PROJECT: TUXEDO LANDFILL CAP REPAIRS
MATERIALS/SIZE: Geocomposite 22,400 SF

PROJECT: HONEYWELL RAINCAP
MATERIALS/SIZE: Duraskrim 12 mil 244,000 SF

PROJECT: HONEYWELL RAINCAP #2
MATERIALS/SIZE: Duraskrim 12 mil 218,760 SF

PROJECT: CLAYTON LANDFILL CLOSURE
MATERIALS/SIZE: 40 mil LLDPE Textured 38,200/Geocomposite 42,000 SF

PROJECT: FT. DRUM CONVERSION LINER REPAIRS
MATERIALS/SIZE: 100 mil HDPE Smooth 16,900 SF

PROJECT: WEITSMAN POND LINER
MATERIALS/SIZE: 60 mil HDPE Textured 5,500 SF

PROJECT: ALCOA WETLANDS BED LINER
MATERIALS/SIZE: GCL 9,500 SF

2011:
PROJECT: BROOME COUNTY LANDFILL CAP
MATERIALS: 40 mil LLDPE Textured/Geotextile/Geocomposite/GCL
SIZE: 783,840/874,800/783,000/118,575 SF

PROJECT: BROOME COUNTY LANDFILL CELL
MATERIALS: 60 mil HDPE Textured/60 mil HDPE Smooth/Geotextile/Geocomposite/GCL
SIZE: 397,800/327,600/356,700/765,000/356,700 SF

PROJECT: HONEYWELL JERSEY CITY SA5 CAP
MATERIALS/SIZE: 40 mil LLDPE 150,000/Geotextile 150,000 SF

PROJECT: BENNINGTON VAOT POND
MATERIALS/SIZE: 60 mil HDPE Textured 58,800 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 PE 640,603/60 PE 118,399/Geotextile 1,889,919/Geocomposite 23,680 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST. SAYCHAY IS ALSO A SUPERVISOR FOR THE ATHLETIC TURF DIVISION.

Certifications:
OSHA 40 hour HAZWOP with 8 hour refresher
OSHA 10 hour Construction Safety & Health
ASTM F1936-10 Synthetic Turf Testing
Rough Terrain Forklift
First Aid/CPR

CHENANGO CONTRACTING, INC

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MARTIN BYSTRAK

GEOSYNTHETICS EXPERIENCE RESUME

Position: Supervisor, Senior Technician

2015:

PROJECT:	CHENANGO COUNTY LANDFILL CELL 4, Norwich NY
MATERIALS:	60 mil HDPE WB/Geocomposite/Geotextile/GCL
SIZE:	382,844/302,400/382,500/93,000 SF
PROJECT:	CHEVRON BAYONNE REMEDIATION, Bayonne NJ
MATERIALS/SIZE:	40 mil HDPE Smooth 295,779/Geotextile 567,000 SF
PROJECT:	MAPLEWOOD RAINCAPS, Jetersville VA
MATERIALS/SIZE:	40 mil HDPE 191,813/Raincap 191,322 SF
PROJECT:	SAVONA POND RE-LINING, Savona NY
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 180,194 SF
PROJECT:	LACKAWANNA RAINCAP, Lackawanna NY
MATERIALS/SIZE:	40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
PROJECT:	ROUTE 281 PONDS, Cortland NY
MATERIALS/SIZE:	45 mil EPDM 126,482 SF
PROJECT:	BERGEN FARM POND, Odessa NY
MATERIALS/SIZE:	60 mil HDPE 120,952/Geotextile 120,952 SF
PROJECT:	CAMP SMITH FIRING RANGE, Cortlandt Manor NY
MATERIALS/SIZE:	40 mil LLDPE Textured 34,798/Geotextile 29,539 SF

2014:

PROJECT:	LANCHESTER LANDFILL CAP
MATERIALS/SIZE:	50 mil LL Textured 295,000/Closure Turf 295,000 SF
PROJECT:	SOMERSET LANDFILL CELL AREA II
MATERIALS/SIZE:	60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
PROJECT:	FONF STORMWATER PONDS
MATERIALS/SIZE:	40 mil HDPE SS Textured 230,000 SF
PROJECT:	KILBUCK WETLANDS
MATERIALS/SIZE:	60 mil HDPE Textured 126,106/Geotextile 136,106 SF
PROJECT:	HONEYWELL WASTEBEDS 1-8
MATERIALS/SIZE:	40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
PROJECT:	JAMES BAIRD STATE PARK GOLF POND
MATERIALS/SIZE:	45 mil EPDM 107,500/Geotextile 94,500 SF
PROJECT:	COLD BROOK WWTF LAGOONS
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 81,000/Geotextile 81,000 SF

PROJECT: BEAR MOUNTAIN POND
MATERIALS/SIZE: 40 mil HDPE Textured 68,003 SF

PROJECT: NOVELIS XR5 POND
MATERIALS/SIZE: XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF

PROJECT: HOLMES FARM POND NO. 2
MATERIALS/SIZE: 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF

PROJECT: SYRACUSE UNIVERSITY UG BASINS
MATERIALS/SIZE: 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF

PROJECT: TCI VAPOR BARRIER
MATERIALS/SIZE: 40 mil HDPE Smooth 35,007 SF

PROJECT: SYRACUSE VAPOR BARRIER
MATERIALS/SIZE: 60 mil HDPE 10,000 SF

PROJECT: MASSENA TRANSFORMER PAD NO. 3
MATERIALS/SIZE: XR5 (8130) 31,238/Geotextile 9,028 SF

PROJECT: ERIE BLVD.-WEST BRIDGE OVER ONONDAGA CREEK
MATERIALS/SIZE: 30 mil PVC 26,500 SF

PROJECT: GRAND ISLAND WWTP
MATERIALS/SIZE: 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF

PROJECT: EM BROWN POND
MATERIALS/SIZE: 40 mil LLDPE Textured 13,600 SF

PROJECT: BINGHAMTON UNIVERSITY WF POND
MATERIALS/SIZE: 60 mil Reinforced Polypropylene 13,200 SF

PROJECT: UPSTATE SHREDDING-JAMESTOWN POND
MATERIALS/SIZE: 60 mil HDPE Textured 13,120 SF

PROJECT: DANSVILLE STORMWATER POND
MATERIALS/SIZE: XR5 (8130) 3,000 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 362,782/Geotextile 336,732 SF

2013:
PROJECT: LOWER MT. WASHINGTON VALLEY SECURE SW LANDFILL CELL
MATERIALS/SIZE: 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF

PROJECT: HIGH ACRES LANDFILL CELL
MATERIALS/SIZE: Geocomposite 255,000 SF

PROJECT: MILLSEAT LANDFILL
MATERIALS/SIZE: Geocomposite 240,000 SF

PROJECT: NORTHEAST INDUSTRIAL PARK CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF

PROJECT: PINE-TON FARM POND
MATERIALS/SIZE: 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF

PROJECT: TRIPLE-R FARM POND
MATERIALS/SIZE: 60 mil HDPE Smooth 62,100/Geotextile 82,800 SF

PROJECT: MINNEWASKA LANDFILL CLOSURE
MATERIALS/SIZE: 40 mil LLDPE Textured 65,320/Geocomposite 75,600 SF

PROJECT: NRG BEVERLY
MATERIALS/SIZE: 40 mil HDPE Smooth 117,300 SF

PROJECT: BATTENFIELD SECONDARY CONTAINMENT
MATERIALS/SIZE: XR-5 (8130) 25,000/Geotextile 22,500 SF

PROJECT: NEWPORT NAVAL STATION GCL & XR5 POND LINERS
MATERIALS/SIZE: GCL 37,200 SF/XR5 (8130) 32,000 SF

PROJECT: ROSAMOND GIFFORD ZOO
MATERIALS/SIZE: 60 mil HDPE Textured 23,000/Geotextile 25,500 SF

PROJECT: DTE ENERGY POND
MATERIALS/SIZE: GCL 5,075 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 192,672/Geotextile 11,250/Geonet 78,300 SF

2012:

PROJECT: SALINA LANDFILL CLOSURE
MATERIALS: 60 mil LLDPE Textured/GCL/Geocomposite/Geotextile
SIZE: 1,685,880/337,125/360,180/2,353,500 SF

PROJECT: HONEYWELL RAINCAP
MATERIALS/SIZE: Duraskrim 12 mil 244,000 SF

PROJECT: HONEYWELL MIXING PAD
MATERIALS/SIZE: 30 mil HDPE Textured/Geotextile/Geocomposite 48,000 SF each

PROJECT: MASSENA SOIL PAD LINING
MATERIALS/SIZE: 40 mil LLDPE Microspike 65,000 SF

PROJECT: BUCKEYE TERMINAL LINER REPAIRS
MATERIALS/SIZE: Polysulphide 18,900 SF

PROJECT: DAVIDSON-SONESTOWN WWT SAND FILTER LINER
MATERIALS/SIZE: 60 mil HDPE Smooth 20,000/Geotextile 40,000 SF

PROJECT: CLINTON COUNTY-WAYNE TOWNSHIP LANDFILL FLOATING COVER
MATERIALS/SIZE: 60 mil HDPE Smooth 49,000/Polypro Reinforced 45 mil 40,000 SF

PROJECT: HONEYWELL FLOATING COVER
MATERIALS/SIZE: 75,000 SF

PROJECT: NRG HUNTLEY SECONDARY CONTAINMENT
MATERIALS/SIZE: XR5 8130 Reinforced 30 mil 5,800 SF

PROJECT: ALCOA POND LAGOON LINER
MATERIALS: 60 mil HDPE Textured 13,100 SF

PROJECT: SNOOK'S DAM POND LINER
MATERIALS/SIZE: 60 mil HDPE Textured 6,000 SF

PROJECT: HONEYWELL TRIB 5A CULVERT LINING
MATERIALS/SIZE: 40 mil LLDPE Textured 2,100/Geotextile 4,000 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 386,000/60 mil PE 243,800/Geotextile 627,000 SF

2011:

PROJECT:	BROOME COUNTY LANDFILL CAP
MATERIALS:	40 mil LLDPE Textured/Geotextile/Geocomposite/GCL
SIZE:	783,840/874,800/783,000/118,575 SF
PROJECT:	HONEYWELL SCA SECONDARY CONTAINMENT
MATERIALS/SIZE:	60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
PROJECT:	HONEYWELL INTERNATIONAL POND LINER
MATERIALS/SIZE:	40 mil LLDPE Textured/Geotextile/Geocomposite/Geogrid
SIZE:	191,334/342,000/25,000/181,562 SF
PROJECT:	HONEYWELL CWTP LINER
MATERIALS/SIZE:	40 mil HDPE Smooth 104,393/Geotextile 124,200/Geocomposite 17,400 SF
PROJECT:	KNOX POND-GUROSICK COALCOMPANY RECLAMATION
MATERIALS/SIZE:	40 mil LLDPE Smooth 104,364/Geotextile 202,500 SF
PROJECT:	BENNINGTON VAOT POND
MATERIALS/SIZE:	60 mil HDPE Textured 58,800 SF
PROJECT:	BROOKHAVEN NATIONAL LAB-GRR ENGINEERED CAP
MATERIALS/SIZE:	40 mil HDPE 139,800 SF
PROJECT:	PPL MONTOUR S.E.S SEDIMENTATINO BASIN LINER
MATERIALS/SIZE:	XR5 10,000 SF
PROJECT:	STEEL WINDS TRANSFORMER PAD LINING
MATERIALS/SIZE:	XR5 6,000 SF
PROJECT:	SUNY COBLESKILL DAIRY COMPLEX LAGOON LINER
MATERIALS/SIZE:	60 mil HDPE Textured 28,000/Geotextile 28,000 SF
PROJECT:	ESSEX COUNTY WWT REED BED LINER
MATERIALS/SIZE:	60 mil LLDPE Smooth 6,000 SF
PROJECT:	PA IMPOUNDMENTS
MATERIALS/SIZE:	40 mil PE 2,121,310/Geotextile 3,323,974 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications:
- OSHA 40 hour HAZWOP with 8 hour annual update
- OSHA 10 hour Construction Safety & Health
- Poly-Flex, Inc. Geomembrane Welding
- J & L Engineering QA/QC - Geosynthetics Installation Training Course
- IAGI – Certified Welding Technician
- Rough Terrain Forklift
- First Aid/CPR
- NYS DEC Erosion & Sediment Control
- SBE Excavation & Trenching Safety Course

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BOUNTHAN KEOPHIPHATH

GEOSYNTHETICS EXPERIENCE RESUME

Position: Supervisor

2015:

PROJECT:	BROOME COUNTY LANDFILL CELL 3
MATERIALS:	60 mil HD-S WB/60 mil HD-T WB/Geocomposite/Geotextile/GCL/Raincap
SIZE:	556,865/265,057/593,600/994,500/339,450/276,000 SF
PROJECT:	CHENANGO COUNTY LANDFILL CELL 4
MATERIALS:	60 mil HDPE Textured WB/Geocomposite/Geotextile/GCL
SIZE:	382,844/302,400/382,500/93,000 SF
PROJECT:	FRANKLIN COUNTY LANDFILL CELL NO. 5, Constable NY
MATERIALS:	60 mil HDPE Textured/Geocomposite/Geotextile/GCL
SIZE:	778,200/756,000/576,000/288,300 SF
PROJECT:	DUPONT NEWBURGH-STAUFFER LANDFILL CAP
MATERIALS/SIZE:	40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
PROJECT:	CLEARFIELD BASINS
MATERIALS/SIZE:	40 mil HDPE Textured 139,187/Geotextile 42,900 SF
PROJECT:	ROUTE 281 PONDS
MATERIALS/SIZE:	45 mil EPDM 126,482 SF
PROJECT:	ALLEN FARM POND
MATERIALS/SIZE:	60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
PROJECT:	SIDNEY WWTP
MATERIALS/SIZE:	40 mil HDPE Smooth 22,532 SF
PROJECT:	MASSENA TRANSFORMER PAD #2
MATERIALS/SIZE:	XR-5 (8130) 10,222/Geotextile 8,000 SF
PROJECT:	SYRACUSE UNIVERSITY COE BASIN
MATERIALS/SIZE:	40 mil HDPE 6,875/Geotextile 6,875 SF
PROJECT:	NATIONAL GRID 5-MILE ROAD TRANSFORMER PAD
MATERIALS/SIZE:	XR5 (8130) 5,897/Geotextile 4,400 SF
PROJECT:	WILLIAMS POND
MATERIALS/SIZE:	40 mil HDPE Textured 4,133/Geotextile 8,266 SF
PROJECT:	MEXICO WWTP REED BED/SLUDGE DRYING BED
MATERIALS/SIZE:	XR-3 (8228) 6,600 SF
PROJECT:	CONWAY TRANSFORMER PAD
MATERIALS/SIZE:	XR5 1,550/Geotextile 3,100 SF
PROJECT:	PA WATER IMPOUNDMENTS
MATERIALS/SIZE:	40 mil PE 191,511/Geotextile 191,511 SF

2014:

PROJECT:	HOLCIM CATSKILL LANDFILL CAP
MATERIALS/SIZE:	Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
PROJECT:	LANCHESTER LANDFILL CELL
MATERIALS:	60 mil HDPE Textured/Geotextile/Geocomposite/GCL/Geonet
SIZE:	1,904,860/945,000/899,640/900,000/34,800 SF
PROJECT:	HONEYWELL WASTEBEDS 1-8
MATERIALS/SIZE:	40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
PROJECT:	FRANKLIN COUNTY LANDFILL CELL NO. 5
MATERIALS/SIZE:	60 HD-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
PROJECT:	BETHLEHEM VAPOR BARRIER
MATERIALS/SIZE:	20 mil PVC 707,200/Geotextile 1,417,500 SF
PROJECT:	GROWS LANDFILL RAINCAPS
MATERIALS/SIZE:	Raincap #1- 369,473 SF/Raincap #2- 500,000 SF
PROJECT:	HONEYWELL RAINCAP
MATERIALS/SIZE:	12 mil Duraskrim B/B 303,600 SF
PROJECT:	CORTLAND COUNTY LANDFILL CAP
MATERIALS/SIZE:	40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
PROJECT:	FONF STORMWATER PONDS
MATERIALS/SIZE:	40 mil HDPE SS Textured 230,000 SF
PROJECT:	COLD BROOK WWTF LAGOONS
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
PROJECT:	HOLMES FARM POND No. 1
MATERIALS/SIZE:	60 mil HDPE Smooth 93,530/Geotextile 103,000 SF
PROJECT:	JORDAN FARM POND
MATERIALS/SIZE:	60 mil HDPE Smooth 72,692/Geotextile 72,692 SF
PROJECT:	NORFOLK WWTP
MATERIALS/SIZE:	60 mil HDPE Smooth 69,748 SF
PROJECT:	BEAR MOUNTAIN POND
MATERIALS/SIZE:	40 mil HDPE Textured 68,003 SF
PROJECT:	NOVELIS XR5 POND
MATERIALS/SIZE:	XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
PROJECT:	BROAD BROOK WATER FILTRATION PLANT LAGOON
MATERIALS/SIZE:	80 mil HDPE Smooth 31,000/Geotextile 31,000 SF
PROJECT:	MASSENA TRANSFORMER PAD #3
MATERIALS/SIZE:	XR5 (8130) 31,238/Geotextile 9,028 SF
PROJECT:	TCI VAPOR BARRIER
MATERIALS/SIZE:	40 mil HDPE Smooth 35,007 SF
PROJECT:	BINGHAMTON UNIVERSITY WF POND
MATERIALS/SIZE:	60 mil Reinforced Polypropylene 13,200 SF
PROJECT:	PA IMPOUNDMENTS
MATERIALS/SIZE:	40 mil PE 241,824/Geotextile 150,262/Geocomposite 47,850 SF

2013:

PROJECT: BETHLEHEM VAPOR BARRIER
MATERIALS/SIZE: 20 mil PVC 707,200/Geotextile 1,417,500 SF

PROJECT: DELAWARE COUNTY SWA-ROLLING HILLS LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF

PROJECT: LANCHESTER LANDFILL CAP
MATERIALS/SIZE: 50 mil LL Textured 295,000/Closure Turf 295,000 SF

PROJECT: HONEYWELL WASTEBEDS 1-8
MATERIALS/SIZE: 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF

PROJECT: MONMOUNTH LANDFILL CAP
MATERIALS/SIZE: 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF

PROJECT: LOWER MT. WASHINGTON VALLEY SECURE SW LANDFILL CELL
MATERIALS/SIZE: 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF

PROJECT: MILLSEAT LANDFILL
MATERIALS/SIZE: Geocomposite 240,000 SF

PROJECT: WILSON HIGH SCHOOL DETENTION BASIN
MATERIALS/SIZE: 40 mil PVC 58,190/Geotextile 127,500 SF

PROJECT: TRIPLE-R FARM POND
MATERIALS/SIZE: 60 mil HDPE Smooth 62,100/Geotextile 82,800 SF

PROJECT: NRG BEVERLY
MATERIALS/SIZE: 40 mil HDPE Smooth 117,300 SF

PROJECT: NEWPORT NAVAL STATION XR5 POND LINER
MATERIALS/SIZE: XR5 (8130) 32,000 SF

PROJECT: ROSAMOND GIFFORD ZOO
MATERIALS/SIZE: 60 mil HDPE Textured 23,000/Geotextile 25,500 SF

PROJECT: HONEYWELL RAINCAP
MATERIALS/SIZE: Duraskrim R12BV 245,000 SF

PROJECT: HONEYWELL DEWATERING PAD
MATERIALS/SIZE: 30 mil HDPE Smooth 38,200/Geocomposite 32,625/Geotextile 30,000 SF

PROJECT: HOUSEKNECHT FARM POND
MATERIALS/SIZE: 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF

PROJECT: KITTANSETT CLUB POND
MATERIALS/SIZE: 45 mil Reinforced Polypropylene 38,820 SF

PROJECT: HONEYWELL CONTAMINATED SOIL PAD LINER
MATERIALS/SIZE: Duraskrim 12WB 31,500 SF

PROJECT: BINGHAMTON UNIVERSITY WF POND
MATERIALS/SIZE: 60 mil Reinforced Polypropylene 13,200 SF

PROJECT: MASSENA TRANSFORMER PAD #2
MATERIALS/SIZE: XR-5 (8130) 4,000/Geotextile 8,000 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 1,015,690/813,760/Geocomposite 75,000 SF

2012:

PROJECT:	SALINA LANDFILL CLOSURE
MATERIALS:	60 mil LLDPE Textured/GCL/Geocomposite/Geotextile
SIZE:	1,685,880/337,125/360,180/2,353,500 SF
PROJECT:	HONEYWELL SCA SECONDARY CONTAINMENT
MATERIALS/SIZE:	60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
PROJECT:	AMENIA TOWN LANDFILL CAP
MATERIALS/SIZE:	40 mil LLDPE 391,920/Geocomposite 751,100 SF
PROJECT:	UPPER HARBOR BROOK IRM DITCH LINING
MATERIALS/SIZE:	40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 58,860 SF
PROJECT:	HONEYWELL RAINCAP
MATERIALS/SIZE:	Duraskrim 12 mil 244,000 SF
PROJECT:	HONEYWELL INTERNATIONAL POND LINER
MATERIALS:	40 mil LLDPE Textured/Geocomposite/Geotextile/Geogrid
SIZE:	191,334/25,000/342,000/181,562 SF
PROJECT:	HONEYWELL RAINCAP #2
MATERIALS/SIZE:	Duraskrim 12 mil 218,760 SF
PROJECT:	HONEYWELL ISR/IRM
MATERIALS/SIZE:	60 mil HDPE Textured 67,000/Geocomposite 67,000/Geotextile 67,000 SF
PROJECT:	CLAYTON LANDFILL CLOSURE
MATERIALS/SIZE:	40 mil LLDPE Textured 38,200/Geocomposite 42,000 SF
PROJECT:	BROOME COUNTY LANDFILL RAINCAP
MATERIALS/SIZE:	8 mil BBR 185,000/Geotextile 185,000 SF
PROJECT:	NYSEG HOMER-FORMER MGP SITE
MATERIALS/SIZE:	30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF
PROJECT:	FT. DRUM CONVERSION LINER REPAIRS
MATERIALS/SIZE:	100 mil HDPE Smooth 16,900 SF
PROJECT:	WAYLAND PONDS BASIN LINER
MATERIALS/SIZE:	40 mil LLDPE Smooth 31,500 SF
PROJECT:	SNOOK'S DAM POND LINER
MATERIALS/SIZE:	60 mil HDPE Textured 6,000 SF
PROJECT:	WEITSMAN POND LINER
MATERIALS/SIZE:	60 mil HDPE Textured 5,500 SF
PROJECT:	PA IMPOUNDMENTS
MATERIALS/SIZE:	40 mil PE 186,000/60 mil PE 176,700/Geocomposite 176,700 SF

2011:

PROJECT:	BROOKFIELD AVE. LANDFILL CLOSURE
MATERIALS:	40 mil LLDPE Textured BW/60 mil LLDPE Smooth/GCL/Geocomposite
SIZE:	5,906,250/630,000/920,700/12,000,000 SF
PROJECT:	LYCOMING COUNTY LANDFILL CELL
MATERIALS:	100 mil HDPE Textured/GCL/Geocomposite/Geotextile/Geonet
SIZE:	1,400,960/692,850/704,700/836,341/704,700 SF
PROJECT:	BROOME COUNTY LANDFILL CAP
MATERIALS:	40 mil LLDPE Textured/Geotextile/Geocomposite/GCL
SIZE:	783,840/874,800/783,000/118,575 SF

PROJECT:	PPL MONTOUR SEDIMENTATION BASIN LINER
MATERIALS/SIZE:	XR5 10,000 SF
PROJECT:	PA IMPOUNDMENTS
MATERIALS/SIZE:	40 mil PE 1,478,585/Geocomposite 97,875/Geotextile 2,716,537 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift
First Aid/CPR

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JOE RANDALL

GEOSYNTHETICS EXPERIENCE RESUME

Position: Supervisor/Safety Representative

2015:

PROJECT:	HOLCIM CATSKILL LANDFILL CAP
MATERIALS/SIZE:	Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
PROJECT:	HONEYWELL OUI CAP, Solvay NY
MATERIALS/SIZE:	40 LL-T 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
PROJECT:	IRONTON LANDFILL, Ironton OH
MATERIALS/SIZE:	40 mil LLDPE Textured 703,825/GCL 703,825 SF
PROJECT:	BERGEN FARM POND, Odessa NY
MATERIALS/SIZE:	60 mil HDPE 120,952/Geotextile 120,952 SF
PROJECT:	ROUTE 281 PONDS, Cortland NY
MATERIALS/SIZE:	45 mil EPDM 126,482 SF
PROJECT:	WAREHAM BIORETENTION BASIN, Wareham MA
MATERIALS/SIZE:	40 mil 35,000 SF
PROJECT:	CLEARFIELD BASINS, Clearfield PA
MATERIALS/SIZE:	40 mil HDPE Textured 139,187/Geotextile 42,900 SF
PROJECT:	ALLEN FARM POND, Scipio Center NY
MATERIALS/SIZE:	60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
PROJECT:	BERGEN-BONDUELLE POND, Bergen NY
MATERIALS:	80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
PROJECT:	BECK FARM POND, Freeville NY
MATERIALS/SIZE:	60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
PROJECT:	MORRISVILLE WWTP, Morrisville NY
MAERIALS/SIZE:	36 mil Reinforced Polypropylene 10,000 SF
PROJECT:	SYRACUSE UNIVERSITY COE BASIN, Syracuse NY
MATERIALS/SIZE:	40 mil HDPE 6,875/Geotextile 6,875 SF
PROJECT:	DESALES UNIVERSITY BASIN, Center Valley PA
MATERIALS/SIZE:	40 mil HDPE 14,500 SF

2014:

PROJECT:	LANCHESTER LANDFILL CELL
MATERIALS:	60 mil HDPE Textured/Geotextile/Geocomposite/GCL/Geonet
SIZE:	1,904,860/945,000/899,640/900,000/34,800 SF
PROJECT:	GROWS LANDFILL RAINCAPS
MATERIALS/SIZE:	Raincap #1- 369,473 SF/Raincap #2- 500,000 SF

PROJECT: NEW HOPE FARM POND
MATERIALS/SIZE: 60 mil HDPE 106,000/Geotextile 115,000 SF

PROJECT: HILTON FARM POND
MATERIALS/SIZE: 60 mil HDPE Smooth 72,880/Geotextile 87,000 SF

PROJECT: SOMERS HIGHWAY GARAGE STORMWATER POND
MATERIALS/SIZE: 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF

PROJECT: WICKHAM HILL STORAGE BASIN
MATERIALS/SIZE: 40 mil HDPE Textured 38,000 SF

PROJECT: LITTLE LEAGUE ESPN COMPOUND-UG BASIN
MATERIALS/SIZE: 40 mil LLDPE Smooth 16,966/Geotextile 33,932 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 140,214/Geocomposite 47,850 SF

2013:
PROJECT: BETHLEHEM VAPOR BARRIER
MATERIALS/SIZE: 20 mil PVC 707,200/Geotextile 1,417,500 SF

PROJECT: LANCHESTER LANDFILL CAP
MATERIALS/SIZE: 50 mil LL Textured 243,502/Closure Turf 243,502 SF

PROJECT: GEDNEY WAY LANDFILL CLOSURE
MATERIALS/SIZE: 40 mil LLDPE Textured 278,304/Geocomposite 87,750 SF

PROJECT: LOWER MT. WASHINGTON VALLEY SECURE SW LANDFILL CELL
MATERIALS/SIZE: 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF

PROJECT: HIGH ACRES LANDFILL CELL
MATERIALS/SIZE: Geocomposite 255,000 SF

PROJECT: USNYPP CAYUGA LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 173,988/Geocomposite 151,200 SF

PROJECT: UPPER HARBOR BROOK IRM DITCH LINING
MATERIALS/SIZE: 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF

PROJECT: CORNING-TIOGA AVE. PASSIVE PARK
MATERIALS/SIZE: GCL 41,850 SF

PROJECT: ROSAMOND GIFFORD ZOO
MATERIALS/SIZE: 60 mil HDPE Textured 23,000/Geotextile 25,500 SF

PROJECT: BERNE WWTP
MATERIALS/SIZE: 40 mil HDPE Smooth 19,575 SF

PROJECT: THE COUNTRY CLUB OF ROCHESTER POND
MATERIALS/SIZE: 60 mil HDPE Smooth 34,804/Geotextile 24,000/Geocomposite 18,000 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 196,660/Geotextile 161,260 SF

2012:
PROJECT: BROOKFIELD AVE. LANDFILL CLOSURE
MATERIALS: 40 mil LLDPE Textured BW/60 mil LLDPE Smooth BW/GCL/Geocomposite
SIZE: 5,906,250/630,000/920,700/12,000,000 SF

PROJECT: NYSEG HOMER FORMER MGP SITE
MATERIALS/SIZE: 30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF

PROJECT: TUXEDO LANDFILL CAP REPAIRS
MATERIALS/SIZE: Geocomposite 22,400 SF

2011
PROJECT: LYCOMING COUNTY LANDFILL CELL
MATERIALS: 100 mil HPDE Textured/GCL/Geocomposite/Geotextile/Geonet
SIZE: 1,400,960/692,850/704,700/836,341/704,700 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS: 40 mil PE 1,061,825/Geotextile 2,249,662 SF

PROJECT: HONEYWELL JERSEY CITY SA5 CAP
MATERIALS/SIZE: 40 mil LLDPE/Geotextile/Geocomposite 150,000 SF each

THIS IS A 5-YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications:
OSHA 40 hour HAZWOP with 8 hour annual update
OSHA 10 hour Construction Safety & Health
Poly Flex, Inc. Geomembrane Welding
J & L Engineering QA/QC - Geosynthetics Installation Training Course
IAGI Certified Welding Technician
Rough Terrain Forklift
First Aid/CPR
NYS DEC Erosion & Sediment Control
SBE Excavation & Trenching Safety Course

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GREG ROSS

GEOSYNTHETICS EXPERIENCE RESUME

Position: Supervisor

2015:

PROJECT:	HOLCIM CATSKILL LANDFILL CAP
MATERIALS/SIZE:	Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
PROJECT:	BROOME COUNTY LANDFILL CELL 3, Binghamton NY
MATERIALS:	60 mil HDPE-S WB/60 mil HDPE-T/Geocomposite/Geotextile/GCL/Raincap
SIZE:	556,865/265,057/593,600/994,500/339,450/276,000 SF
PROJECT:	FRANKLIN COUNTY LANDFILL CELL NO. 5, Constable NY
MATERIALS:	60 mil HDPE Textured/Geocomposite/Geotextile/GCL
SIZE:	778,200/756,000/576,000/288,300 SF
PROJECT:	DUPONT NEWBURGH-STAUFFER LANDFILL CAP, Newburgh NY
MATERIALS/SIZE:	40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
PROJECT:	BERGEN FARM POND, Odessa NY
MATERIALS/SIZE:	60 mil HDPE 120,952/Geotextile 120,952 SF
PROJECT:	SYNERGY FARM POND, Wyoming NY
MATERIALS/SIZE:	60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
PROJECT:	WILLIAMS POND, Brooklyn Township PA
MATERIALS/SIZE:	40 mil HDPE Textured 4,133/Geotextile 8,266 SF
PROJECT:	SUGARLOAF CI AGENT, Chester NY
MATERIALS/SIZE:	Polyvinyl System 3,040 SF

2014:

PROJECT:	LANCHESTER LANDFILL CELL
MATERIALS:	60 mil HDPE Textured/Geotextile/Geocomposite/GCL/Geonet
SIZE:	1,904,860/945,000/899,640/900,000/34,800 SF
PROJECT:	HONEYWELL WASTEBEDS 1-8
MATERIALS/SIZE:	40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
PROJECT:	BETHLEHEM VAPOR BARRIER
MATERIALS/SIZE:	20 mil PVC 707,200/Geotextile 1,417,500 SF
PROJECT:	GROWS LANDFILL RAINCAPS
MATERIALS/SIZE:	Raincap #1- 369,473 SF/Raincap #2- 500,000 SF
PROJECT:	HONEYWELL RAINCAP
MATERIALS/SIZE:	12 mil Duraskrim B/B 303,600 SF
PROJECT:	CORTLAND COUNTY LANDFILL CAP
MATERIALS/SIZE:	40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF

PROJECT: SOMERS HIGHWAY GARAGE STORMWATER POND
MATERIALS/SIZE: 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF

PROJECT: WICKHAM HILL STORAGE BASIN
MATERIALS/SIZE: 40 mil HDPE Textured 38,000 SF
PROJECT: LITTLE LEAGUE ESPN COMPOUND-UG BASIN
MATERIALS/SIZE: 40 mil LLDPE Smooth 16,966/Geotextile 33,932 SF

PROJECT: MASSENA TRANSFORMER PAD
MATERIALS/SIZE: XR5 (8130) 31,238/Geotextile 9,028 SF

PROJECT: BINGHAMTON UNIVERSITY WF POND
MATERIALS/SIZE: 60 mil Reinforced Polypropylene 13,200 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 591,298/Geotextile 561,400 SF

2013:
PROJECT: DELAWARE COUNTY SWA-ROLLING HILLS LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF

PROJECT: LANCHESTER LANDFILL CAP
MATERIALS/SIZE: 50 mil LL Textured 295,000/Closure Turf 295,000 SF

PROJECT: MONMOUNTH LANDFILL CAP
MATERIALS/SIZE: 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF

PROJECT: AMENIA TOWN LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE 391,920/Geocomposite 751,100 SF

PROJECT: MILLSEAT LANDFILL
MATERIALS/SIZE: Geocomposite 240,000 SF

PROJECT: GEDNEY WAY LANDFILL CLOSURE
MATERIALS/SIZE: 40 mil LLDPE Textured 278,304/Geocomposite 87,750 SF

PROJECT: WILSON HIGH SCHOOL DETENTION BASIN
MATERIALS/SIZE: 40 mil PVC 58,190/Geotextile 127,500 SF

PROJECT: NRG BEVERLY
MATERIALS/SIZE: 40 mil HDPE Smooth 117,300 SF

PROJECT: ROSAMOND GIFFORD ZOO
MATERIALS/SIZE: 60 mil HDPE Textured 23,000/Geotextile 25,500 SF

PROJECT: HONEYWELL RAINCAP
MATERIALS/SIZE: Duraskrim R12BV 245,000 SF

PROJECT: HONEYWELL DEWATERING PAD
MATERIALS/SIZE: 30 mil HDPE Smooth 38,200/Geocomposite 32,625/Geotextile 30,000 SF

PROJECT: HOUSEKNECHT FARM POND
MATERIALS/SIZE: 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF

PROJECT: PINE-TON FARM POND
MATERIALS/SIZE: 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF

PROJECT: HONEYWELL CONTAMINATED SOIL PAD LINER
MATERIALS/SIZE: Duraskrim 12WB 31,500 SF

PROJECT: CLINTON COUNTY-WAYNE TOWNSHIP LANDFILL FLOATING COVER
MATERIALS/SIZE: 60 mil HDPE Smooth 49,000/Polypro Reinforced 45 mil 40,000 SF

PROJECT: NEWPORT NAVAL STATION GCL & XR5 POND LINERS
MATERIALS/SIZE: GCL 37,200 SF/XR5 (8130) 32,000 SF

PROJECT: MASSENA TRANSFORMER PAD #2
MATERIALS/SIZE: XR-5 (8130) 4,000/Geotextile 8,000 SF

PROJECT: DTE ENERGY POND
MATERIALS/SIZE: GCL 5,075 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 398,383/Geotextile 204,886/Geonet 78,300 SF

2012:
PROJECT: BROOKFIELD AVE. LANDFILL CLOSURE
MATERIALS: 40 mil LLDPE Textured BW/60 mil LLDPE Smooth/GCL/Geocomposite
SIZE: 5,906, 250/630,000/920,700/12,000,000 SF

PROJECT: BROOME COUNTY LANDFILL CELL
MATERIALS: 60 mil HDPE Textured/Smooth/Geotextile/Geocomposite/GCL
SIZE: 397,800/327,600/356,700/765,000/356,700 SF

PROJECT: SALINA LANDFILL CLOSURE
MATERIALS: 60 mil LLDPE Textured/GCL/Geocomposite/Geotextile
SIZE: 1,685,880/337,125/360,180/2,353,500 SF

PROJECT: HONEYWELL SCA SECONDARY CONTAINMENT
MATERIALS/SIZE: 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF

PROJECT: HONEYWELL RAINCAP #2
MATERIALS/SIZE: Duraskrim 12 mil 218,760 SF

PROJECT: HONEYWELL FLOATING COVER
MATERIALS/SIZE: 75,000 SF

PROJECT: BROOME COUNTY LANDFILL RAINCAP
MATERIALS/SIZE: 8 mil BBR 185,000/Geotextile 185,000 SF

PROJECT: FT. DRUM CONVERSION LINER REPAIRS
MATERIALS/SIZE: 100 mil HDPE Smooth 16,900 SF

PROJECT: FIVE POINTS LANDFILL POND
MATERIALS/SIZE: 60 mil HDPE Smooth 33,000/Geotextile 33,000 SF

PROJECT: UPPER HARBOR BROOK IRM DITCH LING
MATERIALS/SIZE: 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 58,860 SF

PROJECT: WEITSMAN POND LINER
MATERIALS/SIZE: 60 mil HDPE Textured 5,500 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 60 mil PE 420,500/Geotextile 176,700 SF

2011:
PROJECT: LYCOMING COUNTY LANDFILL CELL
MATERIALS: 100 mil HDPE Textured/GCL/Geocomposite/Geotextile/Geonet
SIZE: 1,400,960/692,850/704,700/836,341/704,700 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift
First Aid/CPR
NYS DEC Erosion & Sediment Control

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F: (607) 729-2415
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BOUALAY BOUTSADY
GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman/Technician

2015:
Broome County Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057-Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
GROWS Landfill Raincap #2 500,000 SF
Sidney WWTP, 40 mil HDPE Smooth 22,532 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Somerset Landfill Cell, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
FONF Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF
Bear Mountain Pond, 40 mil HDPE Textured 68,003 SF
Norfolk WWTP, 60 mil HDPE Smooth 69,748 SF
Novelis XR5 Pond, XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
Cayuga WWTP Reed Bed Sludge Treatment System, 40 mil HDPE 23,000 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF
Buffalo AOC Dewatering Pad, 40 mil LLDPE Textured 26,950 SF
Syracuse Vapor Barrier, 60 mil HDPE 10,000 SF

2013:
Salina Landfill Closure, 60 mil LL Textured 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500 SF
Honeywell Raincap, Duraskrim R12BV 245,000 SF
Monmouth Landfill Cap, 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Kittansett Club Pond, 45 mil Reinforced Polypropylene 38,820 SF
PA Impoundments, 40 mil PE 607,169/Geotextile 699,886/Geonet 78,300 SF

2012:
Lackawanna Cap Tar Pit Liner, 40 mil LLDPE Textured/Geocomposite/GCL 120,000 SF each
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Honeywell Raincap, Duraskrim 12 mil 244,000 SF
Maywood Remediation Concrete Pad Lining, 40 mil LLDPE Microspike 65,000 SF
PA Impoundments, 40 mil PE 322,600/Geotextile 322,600 SF

2011:
Brookfield Ave. Landfill Closure, 40 mil LLDPE Textured BW 5,906,250/60 mil LLDPE Smooth SW 63,000/Geocomposite 12,000,000/GCL 920,700 SF
Broome County Landfill Cap, 40 mil LL Text. 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
Honeywell SCA Secondary Containment, 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
Honeywell Jersey City SA5 Cap, 40 mil LLDPE 150,000/Geotextile 150,000/Geocomposite 150,000 SF

Bennington VAOT Pond, 60 mil HDPE Textured 58,800 SF
Steel Winds Transformer Pad Lining, XR5-8138 6,000 SF
PA Impoundments, 40 mil PE 1,694,702/60 mil PE 118,399/Geotextile 306,181/Geocomposite 23,680 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift
First Aid/CPR

CHENANGO CONTRACTING, INC

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BOB CARR

GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman/Master Seamer

2015:
Honeywell OU1 Cap, 40 mil LLDPE Textured 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Ironton Landfill, 40 mil LLDPE Textured 703,825/GCL 703,825 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Clearfield Basins, 40 mil HDPE Textured 139,187/Geotextile 42,900 SF
Allen Farm Pond, 60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
Boeing Absolute Barrier 43,680 SF
Wareham Bioretention Basin, 40 mil 35,000 SF
DeSales University Basin, 40 mil HDPE 14,500 SF
Syracuse University COE Basin, 40 mil HDPE 6,875/Geotextile 6,875 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
GROWS Landfill Raincaps, Raincap #1- 369,473 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
New Hope Farm Pond, 60 mil HDPE 106,000/Geotextile 115,000 SF
Kilbuck Wetlands, 60 mil HDPE Textured 126,106/Geotextile 136,106 SF
James Baird State Park Golf Pond, 45 mil EPDM 107,500/Geotextile 94,500 SF
Somers Highway Garage Stormwater Pond, 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF
Wickham Hill Storage Basin, 40 mil HDPE Textured 38,000 SF
Little League ESPN Compound-UG Basin, 40 mil LLDPE Smooth 16,966/Geotextile 33,932 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
GE Hudson Falls WTP Railcar Pit, 40 mil HDPE Textured 2,400/Geocomposite 850 SF
PA Impoundments, 40 mil PE 315,381/Geotextile 162,457/Geocomposite 47,850 SF

2013:
Gedney Way Landfill Closure, 40 mil LLDPE Textured 278,304/Geocomposite 87,750 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
High Acres Landfill Cell, Geocomposite 255,000 SF
USNYPP Cayuga Landfill Cap, 40 mil LLDPE Textured 173,988/Geocomposite 151,200 SF
Salina Landfill Closure, 60 mil LLDPE-T 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Kittansett Club Pond, 45 mil Reinforced Polypropylene 38,820 SF
The Country Club of Rochester, 60 mil HDPE Smooth 34,804/Geotextile 24,000/Geocomposite 18,000 SF
Corning-Tioga Ave. Passive Park, GCL 41,850 SF
Upper Harbor Brook IRM Ditch Lining, 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF
PA Impoundments, 40 mil PE 208,786/Geotextile 146,250 SF

2012:
Amesbury-Titcomb Landfill Cap, 40 mil LLDPE 665,000 SF
Amenia Town Landfill cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Clayton Landfill Closure, 40 mil LLDPE Textured 38,200/Geocomposite 42,000 SF
Tuxedo Landfill Cap Repairs, Geocomposite 22,400 SF

2011 and 2012:
Brookfield Ave. Landfill Closure, 40 mil LLDPE Textured BW 5,906,250/60 mil LLDPE Smooth BW 630,000/Geocomposite 12,000,000/GCL 920,700 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift
First Aid/CPR

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VIRADET CHANTHAVONG

GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman, Technician

2015:
Broome County Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057-
Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Clearfield Basins, 40 mil HDPE Textured 139,187/Geotextile 42,900 SF
Allen Farm Pond, 60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Massena Transformer Pad #2, XR5 (8130) 10,222/Geotextile 8,000 SF
National Grid 5-Mile Road Transformer Pad, XR5 (8130) 5,897/Geotextile 4,400 SF
Mexico WWTP Reed Bed/Sludge Drying Bed, XR-3 (8228) 6,600 SF
Syracuse University COE Basin, 40 mil HDPE 6,875/Geotextile 6,875 SF
PA Impoundment, 40 mil PE 191,511/Geotextile 191,511 SF

2014:
Franklin County LF Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Honeywell Raincap, 12 mil Duraskrim B/B 303,600 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
Cortland County Landfill Cap, 40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
Honeywell Raincap, 12 mil Duraskrim B/B 303,600 SF
Kilbuck Wetlands, 60 mil HDPE Textured 126,106/Geotextile 136,106 SF
Cold Brook WWTF Lagoons, 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
Hilton Farm Pond, 60 mil HDPE Smooth 72,880/Geotextile 87,000 SF
Novelis XR5 Pond, XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
Grand Island WWTP, 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF
Little League ESPN Compound-UG Basin, 40 mil LLDPE Smooth 16,966/Geotextile 33,932 SF
Broad Brook Water Filtration Plant Lagoon, 80 mil HDPE Smooth 31,000/Geotextile 31,000 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF
EM Brown Pond, 40 mil LLDPE Textured 13,600 SF
Binghamton University WF Pond, 60 mil Reinforced Polypropylene 13,200 SF
Upstate Shredding-Jamestown Pond, 60 mil HDPE Textured 13,120 SF
PA Impoundments, 40 mil PE 604,606/Geotextile 486,994/Geocomposite 47,850 SF

2013:
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500 SF
Delaware Co. SWA-Rolling Hills LF Cap, 40 mil LL Text. 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
High Acres Landfill Cell, Geocomposite 255,000 SF
Millseat Landfill, Geocomposite 240,000 SF
Northeast Industrial Park Cap, 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF
Pine-Ton Farm Pond, 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
Triple-R Farm Pond, 60 mil HDPE Smooth 62,100/Geotextile 82,800 SF
Minnewaska Landfill Closure, 40 mil LLDPE Textured 65,320/Geocomposite 75,600 SF
NRG Beverly, 40 mil HDPE Smooth 117,300 SF
Battenfield Secondary Containment, XR-5 (8130) 25,000/Geotextile 22,500 SF

Newport Naval Station XR5 Pond Liner, XR5 (8130) 32,000 SF
Rosamond Gifford Zoo, 60 mil HDPE Textured 23,000/Geotextile 25,500 SF
Wilson High School Detention Basin, 40 mil PVC 58,190/Geotextile 127,500 SF
Corning-Tioga Ave. Passive Park, GCL 41,850 SF
Honeywell Dewatering Pad, 30 mil HDPE Smooth 38,200/Geocomposite 32,625/Geotextile 30,000 SF
Binghamton University WF Pond, 60 mil Reinforced Polypropylene 13,200 SF
PA Impoundments, 40 mil PE1, 120,083/60 mil PE 60,240/Geotextile 874,000/Geocomposite 75,000 SF

2012:
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Honeywell SCA Secondary Containment, 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
Amesbury-Titcomb Landfill Cap, 40 mil LLDPE 665,000 SF
Lackawanna Cap Tar Pit Liner, 40 mil LLDPE Textured/Geocomposite/GCL 120,000 SF each
Upper Harbor Brook IRM Ditch Lining, 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 58,860 SF
Honeywell Raincap, Duraskrim 12 mil 244,000 SF
NRG Huntley Secondary Containment, XR5 8130 Reinforced 30 mil 5,800 SF
ALCOA Pond Lagoon Liner, 60 mil HDPE Textured 13,100 SF
DeRuyter Silage Pond Lagoon Liner, 60 mil HDPE Smooth 12,000 SF
Davidson-Sonestown WWT Sand Filter Liner, 60 mil HDPE Smooth 20,000/Geotextile 40,000 SF
Clinton County-Wayne Township LF Floating Cover, 60 mil HDPE Sm. 49,680/Polypro Reinforced 45 mil 40,800 SF
Hamilton Manure Storage Lagoon Liner, 60 mil HDPE Smooth 120,100/Geotextile 188,900 SF
PA Impoundments, 40 mil PE 322,600/Geotextile 322,600 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome County Landfill Cap, 40 mil LLDPE Textured 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Westchester County-Sproutbrook Landfill Closure, 40 mil LLDPE Textured 1,824,580/Geocomposite 1,625,250 SF
Honeywell Int. Pond Liner, 40 mil LLDPE Textured 191,334/Geocomposite 25,000/Geotextile 342,000/Geogrid 181,562 SF
Honeywell CWTP Liner, 40 mil HDPE Smooth 104,393/Geotextile 124,200/Geocomposite 17,400 SF
Brookhaven National Lab-GRR Engineered Cap, 40 mil HDPE 139,800 SF
PPL Montour S.E.S. Sedimentation Basin Liner, XR5 10,000 SF
Impoundment Sites, 40 mil PE 2,125,102/60 mil PE 118,399/Geotextile 3,433,565/Geocomposite 23,680 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift
First Aid/CPR

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TIM PARKS

GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman, H&S Manager

2015:

PROJECT:	BROOME COUNTY LANDFILL CELL 3
MATERIALS:	60 mil HD-S WB/60 mil HD-T WB/Geocomposite/Geotextile/GCL/Raincap
SIZE:	556,865/265,057/593,600/994,500/339,450/276,000 SF
PROJECT:	CHENANGO COUNTY LANDFILL CELL 4
MATERIALS:	60 mil HDPE Textured WB/Geocomposite/Geotextile/GCL
SIZE:	382,844/302,400/382,500/93,000 SF
PROJECT:	HOLCIM CATSKILL LANDFILL CAP
MATERIALS/SIZE	Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
PROJECT:	CHEVRON BAYONNE REMEDIATION
MATERIALS/SIZE:	40 mil HDPE Smooth 295,779/Geotextile 567,000 SF
PROJECT:	LACKAWANNA RAINCAP
MATERIALS/SIZE:	40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
PROJECT:	GROWS LANDFILL RAINCAP NO. 2
MATERIALS/SIZE:	Raincap 500,000 SF
PROJECT:	SAVONA POND RE-LINING
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 180,194 SF

2014:

PROJECT:	LANCHESTER LANDFILL CELL
MATERIALS:	60 mil HDPE Textured/Geotextile/Geocomposite/GCL/Geonet
SIZE:	1,904,860/945,000/899,640/900,000/34,800 SF
PROJECT:	GROWS LANDFILL RAINCAP No. 1
MATERIALS/SIZE:	Raincap 369,473 SF
PROJECT:	FRANKLIN COUNTY LANDFILL CELL NO. 5
MATERIALS/SIZE:	60 HD-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
PROJECT:	SOMERSET LANDFILL CELL AREA II
MATERIALS/SIZE:	60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
PROJECT:	HONEYWELL WASTEBEDS 1-8
MATERIALS/SIZE:	40 mil LLDPE Textured WB 914,480/Geotextile 1,377,000 SF
PROJECT:	HONEYWELL RAINCAP
MATERIALS/SIZE:	12 mil Duraskrim B/B 303,600 SF
PROJECT:	COLD BROOK WWTF LAGOONS
MATERIALS/SIZE:	45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF

PROJECT: FONF STORMWATER PONDS
MATERIALS/SIZE: 40 mil HPDE SS Textured 230,000 SF

PROJECT: NEW HOPE FARM POND
MATERIALS/SIZE: 60 mil HDPE 106,000/Geotextile 115,000 SF

PROJECT: JORDAN FARM POND
MATERIALS/SIZE: 60 mil HDPE Smooth 72,692/Geotextile 72,692 SF

PROJECT: HILTON FARM POND
MATERIALS/SIZE: 60 mil HDPE Smooth 72,880/Geotextile 87,000 SF

PROJECT: HOLMES FARM POND NO. 2
MATERIALS/SIZE: 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF

PROJECT: BEAR MOUNTAIN POND
MATERIALS/SIZE: 40 mil HDPE Textured 68,003 SF

PROJECT: SYRACUSE UNIVERSITY UG BASINS
MATERIALS/SIZE: 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF

PROJECT: NORFOLK WWTP
MATERIALS/SIZE: 60 mil HDPE Smooth 69,748 SF

PROJECT: BROAD BROOK WATER FILTRATION PLANT LAGOON
MATERIALS/SIZE: 80 mil HDPE Smooth 31,000/Geotextile 31,000 SF

PROJECT: GRAND ISLAND WWTP
MATERIALS/SIZE: 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF

PROJECT: LITTLE LEAGUE ESPN COMPOUND-UG BASIN
MATERIALS/SIZE: 40 mil LLDPE Smooth 16,966/Geotextile 33,932 SF

PROJECT: UPSTATE SHREDDING-JAMESTOWN POND
MATERIALS/SIZE: 60 mil HDPE Textured 13,120 SF

PROJECT: MASSENA TRANSFORMER PAD #3,
MATERIALS/SIZE: XR5 (8130) 31,238/Geotextile 9,028 SF

PROJECT: WICKHAM HILL STORAGE BASIN
MATERIALS/SIZE: 40 mil HDPE Textured 38,000 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 604,606/Geotextile 486,994/Geocomposite 47,850 SF

2013:
PROJECT: DELAWARE COUNTY SWA-ROLLING HILLS LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF

PROJECT: LANCHESTER LANDFILL CAP
MATERIALS/SIZE: 50 mil LL Textured 295,000/Closure Turf 295,000 SF

PROJECT: BETHLEHEM VAPOR BARRIER
MATERIALS/SIZE: 20 mil PVC 707,200/Geotextile 1,417,500 SF

PROJECT: SALINA LANDFILL CLOSURE
MATERIALS: 60 mil LLDPE Textured/GCL/Geocomposite/Geotextile
SIZE: 1,685,880/337,125/360,180/2,353,500 SF

PROJECT: AMENIA TOWN LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE 391,920/Geocomposite 751,100 SF

PROJECT: MONMOUTH LANDFILL CAP
MATERIALS/SIZE: 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF

PROJECT: GEDNEY WAY LANDFILL CLOSURE
MATERIALS/SIZE: 40 mil HDPE Textured 278,304/Geocomposite 87,750 SF

PROJECT: HONEYWELL RAINCAP
MATERIALS/SIZE: Duraskrim 12 mil 244,000 SF

PROJECT: HOUSEKNECHT FARM POND
MATERIALS/SIZE: 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF

PROJECT: USNYPP CAYUGA LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 173,988/Geocomposite 151,200 SF

PROJECT: BERNE WWTP
MATERIALS/SIZE: 40 mil HDPE Smooth 19,575 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 814,570/Geotextile 452,386 SF

2012:

PROJECT: BROOME COUNTY LANDFILL CELL
MATERIALS: 60 mil HDPE Textured/60 mil HDPE Smooth/Geotextile/Geocomposite/GCL
SIZE: 397,800/327,600/356,700/765,000/356,700 SF

PROJECT: CLINTON COUNTY-WAYNE TOWNSHIP LF FLOATING COVER
MATERIALS/SIZE: 60 mil HDPE Smooth 49,680/Polypro Reinforced 45 mil 40,800 SF

PROJECT: HAMILTON MANURE STORAGE LAGOON LINER
MATERIALS/SIZE: 60 mil HDPE Smooth 120,100/Geotextile 188,900/Geonet 73,950 SF

PROJECT: FIVE POINTS LANDFILL POND
MATERIALS/SIZE: 60 mil HDPE Smooth 33,000/Geotextile 33,000 SF

PROJECT: DERUYTER SILAGE POND LAGOON LINER
MATERIALS/SIZE: 60 mil HDPE Smooth 12,000 SF

PROJECT: WEITSMAN POND LINER
MATERIALS/SIZE: 60 mil HDPE Textured 5,500 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 516,986/Geotextile 478,900 SF

2011:

PROJECT: LYCOMING COUNTY LANDFILL CELL
MATERIALS: 100 mil HDPE Textured/GCL/Geocomposite/Geotextile/Geonet
SIZE: 1,400,960/692,850/704,700/836,341/704,700 SF

PROJECT: BROOME COUNTY LANDFILL CAP
MATERIALS/SIZE: 40 mil LL-T 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil 3,058,514/60 mil 141,399/Geotextile 4,107,000/Geocomposite 23,680 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
SBE Respiratory Protection Safety Course

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DON SOUMPHONPHAKDY

GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman, QAQC,

2015:
Chenango Co. Landfill Cell 4, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Honeywell OU1 Cap, 40 mil LLDPE Textured 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
GROWS Landfill Raincap No. 2, 500,000 SF
Chevron Bayonne Remediation, 40 mil HDPE Smooth 295,779/Geotextile 567,000 SF
Lackawanna Raincap, 40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
Holmes Farm Pond No. 2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
Camp Smith Firing Range, 40 mil LLDPE Textured 34,798/Geotextile 29,539 SF

2014:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
Franklin County LF Cell No.5, 60 HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
Cortland County Landfill Cap, 40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
Honeywell Raincap, 12 mil Duraskrim B/B 303,600 SF
FONF Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF
Holmes Farm Pond No. 1, 60 mil HDPE Smooth 93,530/Geotextile 103,000 SF
Bear Mountain Pond, 40 mil HDPE 68,003 SF
Novelis XR5 Pond, XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
Kilbuck Wetlands, 60 mil HDPE Textured 126,106/Geotextile 136,106 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF
Wickham Hill Storage Basin, 40 mil HDPE Textured 38,000 SF
Somers Highway Garage Stormwater Pond, 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF
Grand Island WWTP, 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF
Buffalo AOC Dewatering Pad, 40 mil LLDPE Textured 26,950 SF
Cayuga WWTP Reed Bed Sludge Treatment System, 40 mil HDPE 23,000 SF
Upstate Shredding-Jamestown Pond, 60 mil HDPE Textured 13,120 SF
Syracuse Vapor Barrier, 60 mil HDPE 10,000 SF
PA Impoundments, 40 mil PE 329,277/Geotextile 312,719 SF

2013:
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Delaware C. SWA-Rolling Hills LF Cap, 40 LL Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
Lanchester Landfill Cap, 50 mil LL Textured 243,502/Closure Turf 243,502 SF
USNYPP Cayuga Landfill Cap, 40 mil LLDPE Textured 173,988/Geocomposite 220,000 SF
Northeast Industrial Park Cap, 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF
Honeywell Raincap, Duraskrim R12BV 245,000 SF

Minnewaska Landfill Closure, 40 mil LLDPE Texture 65,320/Geocomposite 75,600 SF
Battenfield Secondary Containment, XR-5 (8130) 25,000/Geotextile 22,500 SF
Pine-Ton Farm Pond, 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
Corning-Tioga Ave. Passive Park, GCL 41,850 SF
Upper Harbor Brook IRM Ditch Lining, 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF
PA Impoundments, 40 mil PE 1,233,427/60 mil PE 60,240/Geotextile 1,180,136/Geocomposite 75,000 SF

2012:
Honeywell International Pond Liner, 40 mil LLDPE Textured 191,334/Geotextile 342,000/Geocomposite 25,000/Geogrid 181,562 SF
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Amenia Town Landfill Cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Clayton Landfill Closure, 40 mil LLDPE Textured 38,200/Geocomposite 42,000 SF
Lackawanna Cap Tar Pit Liner, 40 mil LLDPE Textured/GCL/Geocomposite 120,000 SF each
Clinton County-Wayne Township Floating Cover, 60 mil HDPE Smooth 49,680/Polypro Reinforced 45 mil 40,800 SF
Honeywell Floating Cover, 75,000 SF
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Honeywell Raincap, Duraskrim 12 mil 244,000 SF
Honeywell Mixing Pad, 30 mil HDPE Textured/Geotextile/Geocomposite 48,000 SF each
Honeywell ISR/IRM, 60 mil HDPE Textured/Geocomposite/Geotextile 67,000 SF each
Alcoa Pond Lagoon Liner, 60 mil HDPE Textured 13,100 SF
Snook's Dam Pond Liner, 60 mil HDPE Textured 6,000 SF
Weitsman Pond Liner, 60 mil HDPE Textured 5,500 SF
NRG Huntley Secondary Containment, XR5 (8130) Reinforced 30 mil 5,800 SF
Honeywell Trib 5A Culvert Lining, 40 mil LLDPE Textured 2,100/Geotextile 4,000 SF
PA Impoundments, 40 mil PE 522,600/Geotextile 200,000 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome Co. Landfill Cap, 40 mil LLDPE Text. 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 291,600/Geocomposite 765,000/GCL 237,150 SF
Honeywell SCA Secondary Containment, 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
Honeywell CWTP Liner, 40 mil HDPE Smooth 104,393/Geotextile 124,200/Geocomposite 17,400 SF
Knox Pond-Gurosik Coal Company Reclamation, 40 mil LLDPE Smooth 104,364/Geotextile 202,500 SF
Bennington VAOT Pond, 60 mil HDPE Textured 58,800 SF
Brookhaven National Lab-GRR Engineered Cap, 40 mil HDPE 139,800 SF
Impoundment Sites, 40 mil PE 2,688,729/60 mil PE 141,399/Geotextile 3,803,405/Geocomposite 23,680 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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ADAM STITH

GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman, AT7 Operator

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Beck Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Sugarloaf CI Agent, Polyvinyl System 3,040 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
PA Water Impoundment, 40 mil PE 191,511/Geotextile 191,511

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
Cortland County Landfill Cap, 40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
Bear Mountain Pond, 40 mil HDPE Textured 68,003 SF/AT7 Operator
Somers Highway Garage Stormwater Pond, 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF
Little League ESPN Compound-UG Basin, 40 mil LLDPE Smooth 16,966/Geotextile 33,932 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF/Slinger Operator
Cayuga WWTP Reed Bed Sludge Treatment System, 40 mil HDPE 23,000 SF/AT7 Operator
PA Impoundments, 40 mi PE 249,573/Geotextile 236,863 SF

2013:
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Delaware C. SWA-Rolling Hills LF Cap, 40 LL Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Amenia Town Landfill Cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Monmouth Landfill Cap, 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF
Wilson High School Detention Basin, 40 mil PVC 58,190/Geotextile 127,500 SF
Gedney Way Landfill Closure, 40 mil HDPE Textured 278,304/Geocomposite 87,750 SF
NYSEG Homer-Former MGP Site, 30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF
Houseknecht Farm Pond, 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF
Battenfield Secondary Containment, XR-5 (8130) 25,000/Geotextile 22,500 SF
PA Impoundments, 40 mil PE 611,157/Geotextile 501,146 SF

2012:
Brookfield Ave. Landfill Closure, 40 mil LLDPE Textured BW 5,906, 250/60 mil LLDPE Smooth BW 630,000
GCL 920,700/Geocomposite 12,000,000 SF
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Honeywell SCA Secondary Containment, 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
Amesbury-Titcomb Landfill Cap, 40 mil LLDPE 665,000 SF
Hamilton Manure Storage Lagoon Liner, 60 mil HDPE Smooth 120,100/Geotextile 188,900 SF
Lackawanna Cap Tar Pit Liner, 40 mil LLDPE Textured/GCL/Geocomposite 120,000 SF each
Clinton County-Wayne Twnsp LF Floating Cover, 60 mil HDPE Smooth 49,680/Polypro Reinforced 45 mil 40,800 SF
Honeywell Raincap #2, Duraskrim 12 mil 218,760 SF
NYSEG Homer-Former MGP Site, 30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF
DeRuyter Silage Pond Lagoon Liner, 60 mil HDPE Smooth 12,000 SF

Tuxedo Landfill Cap Repairs, Geocomposite 22,400 SF
Stewart ANG Ponds, 60 mil HDPE Textured 25,900 SF
Alcoa Pond Lagoon Liner, 60 mil HDPE Textured 13,100 SF
Weitsman Pond Liner, 60 mil HDPE Textured 5,500 SF
PA Impoundments, 60 mil PE 243,800/Geotextile 241,000 SF

2011:
Westchester County-Sproutbrook Landfill Closure, 40 mil LLDPE Textured 1,824,580/Geocomposite 1,625,250 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
Broome County Landfill Cap, 40 LLDPE Textured 783,840/GCL 118,575/Geotextile 874,800/Geocomposite 783,000 SF
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
SUNY Cobleskill Dairy Complex Lagoon Lining, 60 mil HDPE Textured 28,000/Geotextile 28,800 SF
PA Impoundments, 40 mil PE 1,126,836/60 PE 118,399/Geotextile 1,261,441/Geocomposite 78,424/Net 70,450 SF

Certifications: OSHA 40 hour HAZWOP with 8-hour annual refresher
OSHA 10 hour Construction Safety & Health
AT7 Operator

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LASA VONGSOUPHATH

GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman, Technician

2015:
Franklin Co. Landfill Cell No.5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
GROWS Landfill Raincap #1- 369,473 SF
PA Impoundments, 40 mil PE 154,110/Geotextile 150,262 SF

2013:
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
High Acres Landfill Cell, Geocomposite 255,000 SF
Millseat Landfill, Geocomposite 240,000 SF
Honeywell Raincap, Duraskrim R12BV 245,000 SF
Gedney Way Landfill Closure, 40 mil HDPE Textured 278,304/Geocomposite 87,750 SF
Northeast Industrial Park Cap, 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF
Pine-Ton Farm Pond, 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
Triple-R Farm Pond, 60 mil HDPE Smooth 62,100/Geotextile 82,800 SF
NRG Beverly, 40 mil HDPE Smooth 117,300 SF
Clinton County-Wayne Township LF Floating Cover, 60 mil HDPE Sm. 49,000/Polypro Reinforced 45 mil 40,000 SF
Newport Naval Station XR5 Pond Liner, XR5 (8130) 32,000 SF
Rosamond Gifford Zoo, 60 mil HDPE Textured 23,000/Geotextile 25,500 SF
Wilson High School Detention Basin, 40 mil PVC 58,190/Geotextile 127,500 SF
Upper Harbor Brook IRM Ditch Lining, 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF
Corning-Tioga Ave. Passive Park, GCL 41,850 SF
Honeywell Dewatering Pad, 30 mil HDPE Smooth 38,200/Geocomposite 32,625/Geotextile 30,000 SF
Binghamton University WF Pond, 60 mil Reinforced Polypropylene 13,200 SF
Kittansett Club Pond, 45 mil Reinforced Polypropylene 38,820 SF
Honeywell Contaminated Soil Pad Liner, Duraskrim 12WB 31,500 SF
Berne WWTP, 40 mil HDPE Smooth 19,575 SF
Massena Transformer Pad #2, XR-5 (8130) 4,000/Geotextile 8,000 SF
PA Impoundments, 40 mil PE 614,232/Geotextile 656,260 SF

2012:
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Honeywell SCA Secondary Containment, 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
Amenia Town Landfill Cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Honeywell Raincap, Duraskrim 12 mil 244,000 SF
Honeywell Raincap #2, Duraskrim 12 mil 218,760 SF
Maywood Remediation Concrete Pad Lining, 40 mil LLDPE Microspike 65,000 SF
Clayton Landfill Closure, 40 mil LLDPE Textured 38,200/Geocomposite 42,000 SF
Honeywell ISR/IRM, 60 mil HDPE Textured/Geocomposite/Geotextile 67,000 SF each
Ft. Drum Conversion Liner Repairs, 100 mil HDPE Smooth 16,900 SF
Snook's Dam Pond Liner, 60 mil HDPE Textured 6,000 SF

Weitsman Pond Liner, 60 mil HDPE Textured 5,500 SF
PA Impoundments, 40 mil PE 522,600/Geotextile 522,600 SF

2011:
Broome County LF Cap, 40 mil LLDPE Text 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
Brookfield Ave. Landfill Closure, 40 mil LLDPE Textured BW 5,906,250/60 mil LLDPE Smooth BW 630,000/GCL 920,700/Geocomposite 12,000,000 SF
Honeywell Int. Pond Liner, 40 mil LLDPE-T 191,334/Geocomposite 25,000/Geotextile 342,000/Geogrid 181,562 SF
Honeywell Jersey City SA5 Cap, 40 mil LLDPE 150,000/Geotextile 150,000/Geocomposite 150,000 SF
PA Impoundments, 40 mil PE 1,658,495/60 mil PE 23,000/Geotextile 2,735,662

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certification: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift
First Aid/CPR

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PETER WARD

GEOSYNTHETICS EXPERIENCE RESUME

Position: Foreman, QAQC, Master Seamer

2015:

PROJECT:	BROOME COUNTY LANDFILL CELL 3
MATERIALS:	60 mil HD-S WB/60 mil HD-T WB/Geocomposite/Geotextile/GCL/Raincap
SIZE:	556,865/265,057/593,600/994,500/339,450/276,000 SF
PROJECT:	FRANKLIN COUNTY LANDFILL CELL NO. 5
MATERIALS:	60 mil HDPE Textured/Geocomposite/Geotextile/GCL
SIZE:	778,200/756,000/576,000/288,300 SF
PROJECT:	DUPONT NEWBURGH-STAUFFER LANDFILL CAP
MATERIALS/SIZE:	40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
PROJECT:	ROUTE 281 PONDS
MATERIALS/SIZE:	45 mil EPDM 126,482 SF
PROJECT:	WAREHAM BIORETENTION BASIN
MATERIALS/SIZE:	40 mil 35,000 SF
PROJECT:	MEXICO WWTP REED BED/SLUDGE DRYING BED
MATERIALS/SIZE:	XR-3 (8228) 6,600 SF
PROJECT:	NATIONAL GRID 5-MILE ROAD TRANSFORMER PAD
MATERIALS/SIZE:	XR5 (8130) 5,897/Geotextile 4,400 SF
PROJECT:	MAPLEWOOD RAINCAPS
MATERIALS/SIZE:	40 mil HDPE 191,813/Raincap 191,322 SF
PROJECT:	CONWAY TRANSFORMER PAD
MATERIALS/IZE:	XR5 1,550/Geotextile 3,100 SF
PROJECT:	PA WATER IMPOUNDMENT
MATERIALS/SIZE:	40 mil PE 191,511/Geotextile 191,511 SF

2014:

PROJECT:	HOLCIM CATSKILL LANDFILL CAP
MATERIALS/SIZE	Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
PROJECT:	NEW HOPE FARM POND
MATERIALS/SIZE:	60 mil HDPE 106,000/Geotextile 115,000 SF
PROJECT:	LANCHESTER LANDFILL CELL
MATERIALS:	60 mil HDPE Textured/Geotextile/Geocomposite/GCL/Geonet
SIZE:	1,904,860/945,000/899,640/900,000/34,800 SF
PROJECT:	GROWS LANDFILL RAINCAP No. 1
MATERIALS/SIZE:	Raincap 369,473 SF

PROJECT: JAMES BAIRD STATE PARK GOLF POND
MATERIALS/SIZE: 45 mil EPDM 107,500/Geotextile 94,500 SF

PROJECT: COLD BROOK WWTF LAGOONS
MATERIALS/SIZE: 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF

PROJECT: SOMERS HIGHWAY GARAGE STORMWATER POND
MATERIALS/SIZE: 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF

PROJECT: MASSENA TRANSFORMER PAD #3,
MATERIALS/SIZE: XR5 (8130) 31,238/Geotextile 9,028 SF

PROJECT: ERIE BLVD.-WEST BRIDGE OVER ONONDAGA CREEK
MATERIALS/SIZE: 30 mil PVC 26,500 SF

PROJECT: WICKHAM HILL STORAGE BASIN
MATERIALS/SIZE: 40 mil HDPE Textured 38,000 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 329,277/Geotextile 312,719 SF

2013:
PROJECT: DELAWARE COUNTY SWA-ROLLING HILLS LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF

PROJECT: LANCHESTER LANDFILL CAP
MATERIALS/SIZE: 50 mil LL Textured 295,000/Closure Turf 295,000 SF

PROJECT: LOWER MT. WASHINGTON VALLEY SECURE SW LANDFILL CELL
MATERIALS/SIZE: 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF

PROJECT: SALINA LANDFILL CLOSURE
MATERIALS: 60 mil LLDPE Textured/GCL/Geocomposite/Geotextile
SIZE: 1,685,880/337,125/360,180/2,353,500 SF
PROJECT: AMENIA TOWN LANDFILL CAP
MATERIALS/SIZE: 40 mil LLDPE 391,920/Geocomposite 751,100 SF

PROJECT: NORTHEAST INDUSTRIAL PARK CAP
MATERIALS/SIZE: 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF

PROJECT: NRG BEVERLY
MATERIALS/SIZE: 40 mil HDPE Smooth 117,300 SF

PROJECT: HOUSEKNECHT FARM POND
MATERIALS/SIZE: 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF

PROJECT: NEWPORT NAVAL STATION GCL & XR5 POND LINERS
MATERIALS/SIZE: GCL 37,200 SF/XR5 (8130) 32,000 SF

PROJECT: BINGHAMTON UNIVERSITY WF POND
MATERIALS/SIZE: 60 mil Reinforced Polypropylene 13,200 SF

PROJECT: MASSENA TRANSFORMER PAD #2
MATERIALS/SIZE: XR-5 (8130) 4,000/Geotextile 8,000 SF

PROJECT: KITTANSETT CLUB POND
MATERIALS/SIZE: 45 mil Reinforced Polypropylene 38,820 SF

PROJECT: PA IMPOUNDMENTS
MATERIALS/SIZE: 40 mil PE 208,786/Geotextile 146,250 SF

2012:

PROJECT:	AMESBURY-TITCOMB LANDFILL CAP
MATERIALS/SIZE:	40 mil LLDPE 665,000 SF
PROJECT:	BROOME COUNTY LANDFILL RAINCAP
MATERIALS/SIZE:	8 mil BBR 185,000/Geotextile 185,000 SF
PROJECT:	CLINTON COUNTY-WAYNE TOWNSHIP LF FLOATING COVER
MATERIALS/SIZE:	60 mil HDPE Smooth 49,680/Polypro Reinforced 45 mil 40,800 SF
PROJECT:	NRG HUNTLEY SECONDARY CONTAINMENT
MATERIALS/SIZE:	XR5 8130 Reinforced 30 mil 5,800 SF

2011 and 2012:

PROJECT:	BROOKFIELD AVE. LANDFILL CLOSURE
MATERIALS:	40 mil LLDPE Textured BW/60 mil LLDPE Smooth BW/GCL/Geocomposite
SIZE:	5,906,250/630,000/920,700/12,000,000 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications:
- OSHA 40 hour HAZWOP with 8 hour annual refresher
- OSHA 10 hour Construction Safety & Health
- Rough Terrain Forklift
- First Aid/CPR

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ERIC BILODEAU

GEOSYNTHETICS EXPERIENCE RESUME

Position: QAQC, Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
Holmes Farm Pond No.2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Sugarloaf CI Agent, Polyvinyl System 3,040 SF
Williams Pond, 40 mil HDPE Textured 4,133/Geotextile 8,266 SF

Certifications: OSHA 10 hour Construction Safety & Health

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JAI KEOPANYA

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Chenango Co. Landfill Cell 4, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Lackawanna Raincap, 40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Massena Transformer Pads, #2- XR5 (8130) 10,222/Geotextile 8,000/ #3- XR5 31,238/Geotextile 9,028 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,896/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Cortland County Landfill Cap, 40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
Kilbuck Wetlands, 60 mil HDPE Textured 126,106/Geotextile 136,106 SF
Cold Brook WWTF Lagoons, 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
Holmes Farm Pond No. 2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
GE Hudson Falls WTP Railcar Pit, 40 mil HDPE Textured 2,400/Geocomposite 850 SF
Dansville Stormwater Pond, XR5 (8130) 3,000 SF
PA Impoundments, 40 mil PE 240,115/Geotextile 174,275/Geocomposite 47,850 SF

2010:
Allegany Co. Landfill Cap Phase 2, 40 mil LLDPE-T 212,290/Geocomposite 397,300/GCL 145,725/Geotextile 95,400 SF
Crapo Hill Landfill Stage 3 Final Cover, 40 mil LLDPE Textured 261,280/Geocomposite 249,200/SF
Southeast Landfill Closure, 40 mil LLDPE Smooth 614,560 SF
Richfield Springs Treatment Facility Reed Bed, 40 mil HDPE and Geotextile 30,000 SF
National Grid-MVO Secondary Containment, GCL 208,000/Geocomposite 215,000
Nine Mile Point Secondary Containment, XR5 (8130) 9,250/Geotextile 10,350 SF
NYSEG Stoney Ridge Secondary Containment, XR5 (8130) 4,625/Geotextile 9,000 SF
PA Impoundments, 40 mil PE 768,000/60 mil PE 151,200/GCL 216,500/Geonet 69,600/Geotextile 508,800 SF

2009:
Broome County Landfill Raincap, Duraskrim 12BV 414,000/Geotextile 424,350 SF
Chautauqua Co. LF Expansion, 40 LL-T 862,000/60 HD-T 552,000/Geocomposite 1,682,800/Geotextile 556,200 SF
Glatfelter-Spring Grove Lagoon, 40 mil HDPE Textured 414,000/Geocomposite 391,500 SF
AES Cayuga Landfill Cell, 60 mil HDPE Textured 750,000/Geotextile 750,000/GCL 750,000 SF
Northern Tier SWA Landfill Cap No. 2, 30 mil PVC 183,000/Geotextile 360,000 SF
AES Cayuga Landfill Cap, 40 mil LLDPE Textured 179,400/Geocomposite 182,000 SF
Gowanda Bank Stabilization, 40 mil LLDPE Textured 34,500/Geocomposite 26,250/Geotextile 8,400 SF
NYSEG Secondary Containment, XR-5 (8138) 18,000/Geotextile 36,000 SF
Golden Age Cheese-Woodhull Pond, 60 mil HDPE Smooth 46,000/Geotextile 46,000 SF
Charlton Landfill Closure, 40 mil LLDPE 34,500 SF
Federal-Mogul RCRA Landfill Cap, 40 mil HDPE Smooth 34,500/Geocomposite 36,400/Geotextile 54,000 SF
RGE Oil Containment, XR-5 8138 4,625 SF

2008:
Cortland County Landfill Cell Phase 2, 60 mil HDPE Textured 1,414,500/Geocomposite 700,000/Geotextile 1,986,000/GCL 600,000 SF
Auburn Landfill 2 Cell 4, 60 mil HDPE Text. 862,000/Geocomposite 576,000/Geotextile 1,015,000/GCL 321,000 SF
Steuben County-Bath LF Cell, 60 mil HDPE Textured 700,000/40 mil LLDPE Textured 360,000/Geocomposite 1,000,000/Geotextile 350,000/GCL 335,000/Duraskrim 12BBR 170,000 SF
Riverhead-Young's Ave. Landfill Closure, 40 mil LLDPE Textured 1,441,000/Geocomposite 129,000 SF
Franklin Phase V Landfill Cell, 80 mil HD-T 441,600/40 mil HD-T 151,800/Geocomposite 444,375/GCL 220,875 SF
Mill Seat Landfill Stage IV-A, Geocomposite 241,000 SF
Chenango County Landfill, Geocomposite 200,000/Geotextile 33,300/60 mil HDPE Textured 2,300 SF
Delaware County Landfill Raincap, 40 mil 94,000 SF
Oswego Soil Pad, 40 mil 91,000 SF
Hackettstown Pond, 40 mil HDPE Textured 69,000 SF
New Smithville Transfer Basin, 60 mil HDPE Textured 30,020/Geotextile 30,020 SF
PPL Secondary Containments, XR5 (8130) 21,000 SF total (4 sites)
Bloomville Sand Bed Filter, 40 mil HDPE Smooth 10,000 SF
PPL Williamsport/Lockhaven, XR5 (8130) 6,000/7,000 SF
Mansfield-PNC Pond, 40 mil LLDPE Textured 10,000 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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DEVIN KEOPHIPHAT

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Mexico WWTP Reed Bed/Sludge Drying Bed, XR-3 (8228) 6,000 SF
National Grid 5-Mile Road Transformer Pad, XR5 (8130) 5,897/Geotextile 4,400 SF

2014:
Lanchester Area E, Stage 2 Landfill Cell, 60 mil HDPE Textured 1,904,860 SF/GCL 900,000 SF/Geotextile 945,000 SF/Geocomposite 899,640 SF/Geonet 34,800 SF
Franklin County LF Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Holmes Farm Pond, 60 mil HDPE Smooth 93,530/Geotextile 103,000 SF
Cortland County Landfill, 40 mil LLDPE Textured 285,153 SF/Geocomposite 285,153 SF/GCL 56,012 SF
Cold Brook WWTF Lagoons, 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
Bear Mountain Pond, 40 mil HDPE Textured 68,003 SF
Jordan Farm Pond, 60 mil HDPE Smooth 72,692/Geotextile 72,692 SF
Norfolk WWTP, 60 mil HDPE Smooth 69,748 SF
Broad Brook Water Filtration Plant Lagoon, 80 mil HDPE Smooth 31,000/Geotextile 30,000 SF
Massena Transformer Pad No. 3, XR5 (8130) 31,238/Geotextile 9,028 SF

Certifications: 40 hour HAZWOP with 8 hour annual refresher
10 hour Construction Safety & Health

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MARK KINNER

GEOSYNTHETICS EXPERIENCE RESUME

Position: QAQC, Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Honeywell OU1 Cap, 40 mil LLDPE Textured 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
Ironton Landfill, 40 mil LLDPE Textured 703,825/GCL 703,825 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Clearfield Basins, 40 mil HDPE Textured 139,187/Geotextile 42,900 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Allen Farm Pond, 60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
Morrisville WWTP, 36 mil Reinforced Polypropylene 10,000 SF
DeSales University Basin, 40 mil HDPE 14,500 SF
Syracuse University COE Basin, 40 mil HDPE 6,875/Geotextile 6,875 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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WADE MORSE

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Honeywell OU1 Cap, 40 mil LLDPE Textured 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Ironton Landfill, 40 mil LLDPE Textured 703,825/GCL 703,825 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
Clearfield Basins, 40 mil HDPE Textured 139,187/Geotextile 42,900 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Allen Farm Pond, 60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
Boeing Absolute Barrier 43,680 SF
Wareham Bioretention Basin, 40 mil 35,000 SF
DeSales University Basin, 40 mil HDPE 14,500 SF
Morrisville WWTP, 36 mil Reinforced Polypropylene 10,000 SF
Syracuse University COE Basin, 40 mil HDPE 6,875/Geotextile 6,875 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
GROWS Landfill Raincap No. 2, 500,000 SF
Wickham Hill Storage Basin, 40 mil HDPE Textured 38,000 SF
New Hope Farm Pond, 60 mil HDPE 106,000/Geotextile 115,000 SF
Hilton Farm Pond, 60 mil HDPE Smooth 72,880/Geotextile 87,000 SF
PA Impoundments, 40 mil PE 87,714/Geocomposite 47,850 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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JACOB PATRIQUIN

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician, AT7 Operator

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Chenango Co. Landfill Cell 4, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
GROWS Landfill Raincap No.2, 500,000 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Sugarloaf CI Agent, Polyvinyl System 3,040 SF
Williams Pond, 40 mil HDPE Textured 4,133/Geotextile 8,266 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Kilbuck Wetlands, 60 mil HDPE Textured 126,106/Geotextile 136,106 SF
Cayuga WWTP Reed Bed Sludge Treatment System, 40 mil HDPE 23,000 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF
Wickham Hill Storage Basin, 40 mil HDPE Textured 38,000 SF
Syracuse Vapor Barrier, 60 mil HDPE 10,000 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
AT7 Operator

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TYLER PETTY

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Chenango Co. Landfill Cell 4, 60 mil HD-T WB 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Boeing Absolute Barrier 43,680 SF

Certifications: OSHA 10 hour Construction Safety & Health

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PHOUVONG PHOMPHAKDY

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Chenango Co. Landfill Cell 4, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Lackawanna Raincap, 40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
Williams Pond, 40 mil HDPE Textured 4,133/Geotextile 8,266 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
PA Water Impoundment, 40 mil PE 191,511/Geotextile 191,511 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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VIRASACK PHOUMMANY

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Honeywell OU1 Cap, 40 mil LLT 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Ironton Landfill, 40 mil LLDPE Textured 703,825/GCL 703,825 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
GROWS Landfill Raincap No.2, 500,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Clearfield Basins, 40 mil HDPE Textured 139,187/Geotextile 42,900 SF
Allen Farm Pond, 60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF
Morrisville WWTP, 36 mil Reinforced Polypropylene 10,000 SF
DeSales University Basin, 40 mil HDPE 14,500 SF
Syracuse University COE Basin, 40 mil HDPE 6,875/Geotextile 6,875 SF
Williams Pond, 40 mil HDPE Textured 4,133/Geotextile 8,266 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Wickham Hill Storage Basin, 40 mil HDPE Textured 38,000 SF
Cortland County Landfill Cap, 40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
Massena Transformer Pad #2, XR5 (8130) 10,222/Geotextile 8,000 SF
GE Hudson Falls WTP Railcar Pit, 40 mil HDPE Textured 2,400/Geocomposite 850 SF
Holmes Farm Pond No. 2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
PA Impoundments, 40 mil PE 87,714/Geocomposite 47,850 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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SOUKHY RACHPRAXA

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Chenango Co. Landfill Cell 4, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
Holmes Farm Pond No.2, 60 mil HD Smooth 68,000/Geotextile 71,000 SF
Williams Pond, 40 mil HDPE Textured 4,133/Geotextile 8,266 SF
PA Water Impoundment, 40 mil PE 191,511/Geotextile 191,511 SF

2012:
Brookfield Ave. Landfill Closure, 40 mil LLDPE Textured BW 5,906,250/60 mil LLDPE Smooth 630,000/GCL 920,700/Geocomposite 12,000,000 SF
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Amesbury-Titcomb Landfill Cap, 40 mil LLDPE 665,000 SF
Five Points Landfill Pond, 60 mil HDPE Smooth 33,000/Geotextile 33,000 SF
Wayland Ponds Basin Liner, 40 mil LLDPE Smooth 31,500 SF
Snook's Dam Pond Liner, 60 mil HDPE Textured 6,000 SF
Buckeye Terminal Liner Repairs, Polysulphide 18,900 SF
PA Impoundments, 40 mil PE 662,886/60 mil PE 420,500/Geotextile 865,800/Geocomposite 176,700 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome County Landfill Cap, 40 mil LLDPE Textured 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
PPL Montour S.E.S. Sedimentation Basin Liner, XR5 10,000 SF
PA Impoundments, 40 mil PE 1,481,739/60 mil PE 118,399/Geotextile 1,699,115/Geocomposite 23,680 SF

2010:
Allegany Co. Landfill Cap Phase 2, 40 mil LLDPE-T 212,290/Geocomposite 397,300/GCL 145,725/Geotextile 95,400 SF
Chautauqua Co. Landfill, 40 mil LLDPE-T 862,000/60 mil HDPE-T 552,000/Geocomposite 1,682,800/Geotextile 556,000 SF
Crapo Hill Landfill Stage 3 Final Cover, 40 mil LLDPE Textured 261,280/Geocomposite 249,200/SF
NRG Dunkirk Landfill Cell, 60 mil HDPE Sm. 248,400/60 mil HDPE-T 23,230/Geocomposite 534,000/Geotextile 37,800 SF
Jasper WWTP Reed Bed Liner, 30 mil PVC 15,000/Geotextile 25,650 SF
National Grid-MVO Secondary Containment, GCL 208,000/Geocomposite 215,000
Destiny USA-Carousel Center Retention Pond, 30 mil LLDPE 13,800 SF
West Windsor WWTP Reed Bed Liner, 30 mil PVC 15,000/Geotextile 25,650 SF
PA Impoundments, 40 mil PE 476,400/60 mil PE 360,450/GCL 216,500/Geocomposite 105,530/Geotextile 553,000 SF
Lemoyne College Basin Liner, 30 mil LLDPE 41,600/Geotextile 80,000 SF

2009:
Smithtown Landfill Cap & Closure, 40 mil LLDPE Textured BW 707,250/Geotextile 1,424,625/GCL 103,500 SF
Auburn Landfill Closure, 40 mil LLDPE-T 313,092/Geocomposite 565,600/Geotextile 75,600/GCL 3,000 SF
Broome County Landfill Raincap, Duraskrim 12BV 414,000/Geotextile 424,350 SF

Springwater Wetland Treatment System, 60 mil HDPE Smooth 103,500/Geotextile 97,200 SF
Delaware County Landfill Raincap, 30 mil HDPE Smooth 115,000/40 mil LLDPE and HDPE Textured 42,000 SF
Gowanda Bank Stabilization, 40 mil LLDPE Textured 34,500/Geocomposite 26,250/Geotextile 8,400 SF
NYSEG Secondary Containment, XR-5 (8138) 18,000/Geotextile 36,000 SF
Vestal CITGO, 60 mil HDPE Smooth 12,713/Geotextile 6,750 SF
Vermont PPSA Secondary Containment, 60 mil HDPE Textured 19,060 SF
Glatfelter-Spring Grove Lagoon, 40 mil HDPE Textured 414,000/Geocomposite 391,500 SF
RGE Oil Containment, XR-5 8138 4,625 SF
Cortland County LF Cell Phase 2, 60 mil HDPE-T 1,414,500/Geocomposite 700,000/Geotextile 1,986,000/GCL 600,000 SF
Franklin Phase V Landfill Cell, 80 mil HDPE-T 441,600/40 mil HDPE-T 151,800/Geocomposite 444,375/GCL 220,875 SF
AES Cayuga Landfill Cell, 60 mil HDPE Textured 750,000/Geotextile 750,000/GCL 750,000 SF
Seneca Stormwater Pond, 40 mil HDPE Textured 86,250 SF
Somerset GCL Cap, GCL 35,000 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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ZACH RANDALL

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Honeywell OU1 Cap, 40 mil LLDPE Textured 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Ironton Landfill, 40 mil LLDPE Textured 703,825/GCL 703,825 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
Morrisville WWTP, 36 mil Reinforced Polypropylene 10,000 SF

2014:
Lanchester Area E, Stage 2 Landfill Cell, 60 mil HDPE Textured 1,904,860 SF/GCL 900,000 SF/Geotextile 945,000 Geocomposite 899,640 SF/Geonet 34,800 SF
Somers Highway Garage Stormwater Pond, 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
10 hour Construction Safety & Health

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CHANTHABOUN SAYSANAVONG

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
GROWS Landfill Raincap No. 2- 500,000 SF
Honeywell OU1 Cap, 40 mil LLT 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Ironton Landfill, 40 mil LLDPE Textured 703,825/GCL 703,825 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Clearfield Basins, 40 mil HDPE Textured 139,187/Geotextile 42,900 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Allen Farm Pond, 60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
Morrisville WWTP, 36 mil Reinforced Polypropylene 10,000 SF
DeSales University Basin, 40 mil HDPE 14,500 SF
Syracuse University COE Basin, 40 mil HDPE 6,875/Geotextile 6,875 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF

2014:
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Lanchester Landfill Cell, 60 mil HD Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
GROWS Landfill Raincap No.1- 369,473 SF
Cortland County Landfill Cap, 40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
James Baird State Park Golf Pond, 45 mil EPDM 107,500/Geotextile 94,500 SF
New Hope Farm Pond, 60 mil HDPE 106,000/Geotextile 115,000 SF
Novelis XR5 Pond, XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
Somers Highway Garage Stormwater Pond, 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF
GE Hudson Falls WTP Railcar Pit, 40 mil HDPE Textured 2,400/Geocomposite 850 SF
PA Impoundments, 40 mil PE 52,500 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Impoundment Sites, 40 mil PE 211,462/Geotextile 211,462

2007:
Broome County-Nanticoke Landfill, 40 mil LLDPE 855,000/Geocomposite 855,000/Geotextile 855,000/GCL 31,500 SF
Chenango County Landfill Cell and Cap,60 mil HDPE Textured 299,000/Geocomposite 431,000/Geotextile 283,194/GCL 95,325 SF
Delaware County Landfill, 60 mil HDPE Textured 60,000/Geocomposite 59,850/Geotextile 69,000 SF
Midland Ave. Regional Treatment Facility, 40 mil HDPE Textured 51,750/Geotextile 5,400 SF
Washington Nationals Vapor Barrier Liner, 40 mil HDPE Smooth 160,875/Geotextile 297,000 SF
State Line Quarry Pond Liner, 80 mil HDPE 43,200/Geotextile 53,200 SF

AES Somerset SWD Area II Landfill Closure, 60 mil HDPE Microspike 933,750/Geocomposite 907,500 SF
Solvay Landfill Closure, 40 mil LLDPE Textured 621,000/Geocomposite 361,800/Geotextile 947,700 SF

2006:
Northern Tier SWA Landfill No. 2, Field 7B Cell, 60 mil HDPE Smooth 253,000/60 mil HDPE Textured 80,500/ Geocomposite 39,200/Geotextile 283,500/GCL 151,125/Geonet 224,750 SF
Mifflin County-Barner Landfill Cap, 40 mil LLDPE Textured 327,750/Geocomposite 209,250 SF
DuPont-Chambers Works Landfill “C” Cell 7, 60 mil HDPE Textured 299,000/Geocomposite 120,400/Geotextile 273,150/GCL143, 550 SF
Delaware County Rolling Hills Landfill Cap, 30 mil PVC 250,600/Geocomposite 296,800/Geotextile 312,750 SF
Lipari Landfill Closure Superfund Site, 40 mil HDPE Smooth 20,000 SF
Pratt & Whitney-Willow Street Remediation Pond Liner, 40 mil HDPE Textured 103,500 SF
Lockheed PVC Pond Liner, 30 mil PVC 42,000 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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GONGJAY SAYVONGSAK

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Honeywell OU1 Cap, 40 mil LLT 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Ironton Landfill, 40 mil LLDPE Textured 703,825/GCL 703,825 SF
GROWS Landfill Raincap No.2- 500,000 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Route 281 Ponds, 45 mil EPDM 126,482 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
Lackawanna Raincap, 40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
Massena Transformer Pad #2, XR-5 (8130) 10,222/Geotextile 8,000 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
DeSales University Basin, 40 mil HDPE 14,500 SF

2014:
Lanchester Landfill Cell, 60 mil HD Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
GROWS Landfill Raincap No. 1- 369,473 SF
James Baird State Park Golf Pond, 45 mil EPDM 107,500/Geotextile 94,500 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
Novelis XR5 Pond, XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
Holmes Farm Pond No. 2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
Hilton Farm Pond, 60 mil HDPE Smooth 72,880/Geotextile 87,000 SF
Bear Mountain Pond, 40 mil HDPE Textured 68,003 SF
Wickham Hill Storage Basin, 40 mil HDPE Textured 38,000 SF
EM Brown Pond, 40 mil LLDPE Textured 13,600 SF
PA Impoundments, 40 mil PE 657,106/Geotextile 486,994/Geocomposite 47,850 SF

2013:
Salina Landfill Closure, 60 mil LL Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Delaware County SWA-Rolling Hills LF Cap, 40 mil LL Text 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Monmouth Landfill Cap, 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF
Battenfield Secondary Containment, XR-5 (8130) 25,000/Geotextile 22,500 SF
Pine-Ton Farm Pond, 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
Millseat Landfill, Geocomposite 240,000 SF
Houseknecht Farm Pond, 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF
Berne WWTP, 40 mil HDPE Smooth 19,575 SF
PA Impoundments, 40 mil PE 805,519/Geotextile 768,760/Geonet 73,950 SF
2012:

Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
Amesbury-Titcomb Landfill Cap, 40 mil LLDPE 665,000 SF
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Hamilton Manure Storage Lagoon, 60 mil HDPE Smooth 120,100/Geotextile 188,900 SF
PA Impoundments, 40 mil PE 662,886/Geotextile 624,800 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
PA Impoundments, 40 mil PE 809,000/Geotextile 597,000 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour refresher
OSHA 10 hour Construction Safety & Health

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LEN SENGSOUVANH

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Honeywell OU1 Cap, 40 mil LLT 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
Lackawanna Raincap, 40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
Holmes Farm Pond No. 2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
Massena Transformer Pads, #2- XR5 (8130) 10,222/Geotextile 8,000/ #3- XR5 31,238/Geotextile 9,028 SF
Morrisville WWTP, 36 mil Reinforced Polypropylene 10,000 SF
Mexico WWTP Reed Bed/Sludge Drying Bed, XR3 (8228) 6,600 SF
Conway Transformer Pad, Geotextile 3,100/XR5- 1,100 SF
PA Impoundment, 40 mil PE 191,511/Geotextile 191,511 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,896/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Cold Brook WWTF Lagoons, 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
FONF Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF
James Baird State Park Golf Pond, 45 mil EPDM 107,500/Geotextile 94,500 SF
Hilton Farm Pond, 60 mil HDPE Smooth 72,880/Geotextile 87,000 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF
Grand Island WWTP, 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF
Upstate Shredding-Jamestown Pond, 60 mil HDPE Textured 13,120 SF
EM Brown Pond, 40 mil LLDPE Textured 13,600 SF
PA Impoundments, 40 mil PE 402,235/Geotextile 248,681/Geocomposite 47,850 SF

2013:
Amenia Town Landfill Cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Delaware C. SWA-Rolling Hills LF Cap, 40 LL Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
Lanchester Landfill Cap, 50 mil LLDPE Textured 295,000/Closure Turf 295,000 SF
Northeast Industrial Park Cap, 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF
Minnewaska Landfill Closure, 40 mil LLDPE Textured 65,320/Geocomposite 75,600 SF
Triple R Farm Pond, 60 mil HDPE Smooth 62,100/Geotextile 82,800 SF
PA Impoundments, 40 mil PE 405,446/Geotextile 161,260 SF

2006:
Northern Tier SWA Landfill No. 2 Field 7B Cell, 60 mil HDPE Smooth 253,000/60 mil HDPE Textured 80,500/Geocomposite 39,200/Geotextile 283,500/GCL 151,125/Geonet 224,750 SF
Mifflin County-Barner Landfill Cap, 40 mil LLDPE Textured 327,750/Geocomposite 209,250 SF
Haindl Park Field Cap, 40 mil LLDPE Textured 120,750/Geotextile 121,500 SF

Dupont-Chambers Works Landfill “C” Cell 7, 60 mil HDPE Textured 299,000/Geocomposite 120,400/Geotextile 273,150/GCL 143,550 SF
Delaware County Rolling Hills Landfill Cap, 30 mil PVC 250,600/Geocomposite 296,800/Geotextile 312,750 SF
Lipari Landfill Superfund Site, 40 mil HDPE Smooth 20,000 SF
Pratt & Whitney-Willow Street Remediation, 40 mil HDPE Textured 103,500 SF

2005:
University Park Airport, 60 mil HDPE 198,450/Geotextile 600,750/Geogrid 194,400 SF
SECCRA Phase 6 Landfill, 80 mil HDPE Textured 336,375/Smooth 301,875/Geocomposite 271,600 SF
Delaware County Cell 6 Landfill Extension, 60 mil HDPE White Textured 253,000/40 mil HDPE Smooth 90,000/Geocomposite 114,800/Geotextile 119,700/GCL 92,250 SF
Springs Fireplace Road Landfill Closure, 40 mil LLDPE W/B Textured 1,086,750/Geocomposite 1,064,000 SF
Town of Waverly Landfill Cap, 40 mil LLDPE Textured 138,000 SF
Southern Tier Tire Stockpile Abatement, 40 mil HDPE Smooth 17,250 SF
Allegany County Landfill Cell Repairs, 100 mil HDPE Smooth 6,900/Geotextile 5,400 SF
Englesby Brook Watershed Detention Pond, 30 mil PVC 63,000 SF
Northampton Phase 2 Landfill Closure, 40 mil HDPE Textured 310,500 SF
Dupont-Delaware (Cherry Island) Landfill, 40 mil HDPE Smooth 2,300/Geonet 4,350/Geotextile 7,200 SF
AES Cayuga Tank Lining, 80 mil HDPE Textured 17,250/Geotextile 5,400 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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LAMPHEU SISEN

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite-593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
PA Impoundment, 40 mil PE 191,511/Geotextile 191,511 SF
Allen Farm Pond, 60 mil HDPE Smooth 116,013/Geotextile 102,116 SF
Syracuse University COE Basin, 40 mil HDPE 6,875/Geotextile 6,875 SF

2014:
GE Hudson Falls WTP Railcar Pit, 40 mil HDPE Textured 2,400/Geocomposite 850 SF
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,896/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Kilbuck Wetlands, 60 mil HDPE Textured 126,106/Geotextile 136,106 SF
James Baird State Park Golf Pond, 45 mil EPDM 107,500/Geotextile 94,500 SF
New Hope Farm Pond, 60 mil HDPE 106,000/Geotextile 115,000 SF
Somers Highway Garage Stormwater Pond, 40 mil LLDPE Textured 34,788/Geotextile 32,400 SF
Wickham Hill Storage Basin, 40 mil HDPE Textured 38,000 SF
PA Impoundments, 40 mil PE 362,782/Geotextile 336,732 SF

2013:
Amenia Town Landfill Cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Delaware C. SWA-Rolling Hills LF Cap, 40 LL Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
USNYPP Cayuga Landfill Cap, 40 mil LLDPE Textured 173,988/Geocomposite 220,000 SF
High Acres Landfill Cell, Geocomposite 255,000 SF
Pine-Ton Farm Pond, 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
Rosamond Gifford Zoo, 60 mil HDPE Textured 23,000/Geotextile 25,500 SF
Berne WWTP, 40 mil HDPE Smooth 19,575 SF
PA Impoundments, 40 mil PE 405,446/Geotextile 161,260 SF

2012:
Brookfield Ave. Landfill Closure, 40 mil LLDPE Textured BW 5,906, 250/60 mil LLDPE Smooth BW 630,000 GCL 920,700/Geocomposite 12,000,000 SF
Honeywell International Pond Liner, 40 mil LLDPE Textured 191,334/Geotextile 342,000/Geocomposite 25,000/Geogrid 181,562 SF
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Honeywell SCA Secondary Containment, 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
Amesbury-Titcomb Landfill Cap, 40 mil LLDPE 665,000 SF
Honeywell Raincap, Duraskrim 12 mil 244,000 SF
Stewart ANG Ponds, 60 mil HDPE Textured 25,900 SF
Hamilton Manure Storage Lagoon Liner, 60 mil HDPE Smooth 120,100/Geotextile 188,900 SF
Honeywell Mixing Pad, 30 mil HDPE Textured/Geotextile/Geocomposite 48,000 SF each
Maywood Remediation Concrete Pad Lining, 40 mil LLDPE Microspike 65,000 SF
Tuxedo Landfill Cap Repairs, Geocomposite 22,400 SF
PA Impoundments, 40 mil PE 454,100/60 mil PE 243,800/Geotextile 695,100 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome Co. Landfill Cap, 40 mil LL Textured 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/356,700 SF
PA Impoundments, 40 mil PE 1,193,000/Geocomposite 120,000/Geotextile 981,000 SF

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OSHA 10 hour Construction Safety & Health

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VONG SOUMPHONPHAKDY

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Chenango Co. Landfill Cell, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Honeywell OU1 Cap, 40 mil LLT 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Franklin County LF Cell No.5, 60 HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Chevron Bayonne Remediation, 40 mil HDPE Smooth 295,779/Geotextile 567,000 SF
Lackawanna Raincap, 40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
Holmes Farm Pond No.2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
Camp Smith Firing Range, 40 mil LLDPE Textured 34,798/Geotextile 29,539 SF
PA Impoundment, 40 mil PE 191,511/Geotextile 191,511 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
GROWS Landfill Raincap No. 1, Raincap 369,473 SF
Honeywell Raincap, 12 mil Duraskrim B/B 303,600 SF
James Baird State Park, 45 mil EPDM 107,500/Geotextile 94,500 SF
Cold Brook WWTF Lagoons, 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
Jordan Farm Pond, 60 mil HDPE Smooth 72,692/Geotextile 72,692 SF
Norfolk WWTP, 60 mil HDPE Smooth 69,748 SF
Bear Mountain Pond, 40 mil HDPE 68,003 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF
Broad Brook Water Filtration Plant Lagoon, 80 mil HDPE Smooth 31,000/Geotextile 31,000 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF
Grand Island WWTP, 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF
Upstate Shredding-Jamestown Pond, 60 mil HDPE Textured 13,120 SF
EM Brown Pond, 40 mil LLDPE Textured 13,600 SF
PA Impoundments, 40 mil PE 362,782/Geotextile 336,732 SF

2013:
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Delaware C. SWA-Rolling Hills LF Cap, 40 LL Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
Northeast Industrial Park Cap, 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
High Acres Landfill Cell, Geocomposite 255,000 SF
Minnewaska Landfill Closure, 40 mil LLDPE Texture 65,320/Geocomposite 75,600 SF
Pine-Ton Farm Pond, 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
Upper Harbor Brook IRM Ditch Lining, 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF
Houseknecht Farm Pond, 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF
Rosamond Gifford Zoo, 60 mil HDPE Textured 23,000/Geotextile 25,500 SF
Honeywell Dewatering Pad, 30 mil HDPE Smooth 38,200/Geocomposite 32,625/Geotextile 30,000 SF
Syracuse-Harbor Brook CSO Wetlands Liner, 40 mil HDPE Textured 20,000 SF
Binghamton University WF Pond, 60 mil Reinforced Polypropylene 13,200 SF

PA Impoundments, 40 mil PE 1,320,421/60 PE 60,240/Geotextile 1,018,876/Geocomposite 75,000/Net 152,250 SF

2012:
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Clinton County-Wayne Township Floating Cover, 60 mil HDPE Smooth 49,680/Polypro Reinforced 45 mil 40,800 SF
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Honeywell Raincap, Duraskrim 12 mil 244,000 SF
Honeywell Mixing Pad, 30 mil HDPE Textured/Geotextile/Geocomposite 48,000 SF each
Honeywell ISR/IRM, 60 mil HDPE Textured/Geocomposite/Geotextile 67,000 SF each
Alcoa Pond Lagoon Liner, 60 mil HDPE Textured 13,100 SF
Davidson-Sonestown WWT Sand Filter Liner, 60 mil HDPE Smooth 20,000/Geotextile 40,000 SF
NRG Huntley Secondary Containment, XR5 (8130) Reinforced 30 mil 5,800 SF
Honeywell Trib 5A Culvert Lining, 40 mil LLDPE Textured 2,100/Geotextile 4,000 SF
PA Impoundments, 40 mil PE 522,600/Geotextile 200,000 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome County Landfill Cap, 40 mil LLDPE Textured 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
Honeywell SCA Secondary Containment, 60 mil HDPE Textured 4,001,400/Geotextile 4,000,000 SF
Honeywell Int. Pond Liner, 40 mil LLDPE-T 191,334/Geocomposite 25,000/Geotextile 342,000/Geogrid 181,562 SF
Knox Pond-Gurosik Coal Company Reclamation, 40 mil LLDPE Smooth 104,364/Geotextile 202,500 SF
Brookhaven National Lab-GRR Engineered Cap, 40 mil HDPE 139,800 SF
PPL Montour S.E.S. Sedimentation Basin Liner, XR5 10,000 SF
Essex County WWT Reed Bed Liner, 60 mil LLDPE Smooth 6,000 SF
SUNY Cobleskill Dairy Complex Lagoon Liner, 60 mil HDPE Textured 28,000/Geotextile 28,000 SF
Impoundment Sites, 40 mil PE 1,671,064/Geotextile 1,702,024 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift

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TIM TALERICO

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Franklin Co. Landfill Cell No.5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
GROWS Landfill Raincap No.2- 500,000 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Fashion Outlets of Niagara Falls-Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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JOHN WHITNEY

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
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Franklin Co. Landfill Cell No.5, 60 mil HD-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Chenango Co. Landfill Cell 4, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Dupont Newburgh-Stauffer Landfill Cap, 40 mil LLDPE Textured 242,751/Geotextile 242,751 SF
GROWS Landfill Raincap No. 2- 500,000 SF
Synergy Farm Pond, 60 mil HDPE Smooth 108,000/Geotextile 108,000 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Bergen Farm Pond, 60 mil HDPE 120,952/Geotextile 120,952 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
Cortland County Landfill Cap, 40 mil LLDPE Textured 285,153/Geocomposite 285,153/GCL 56,012 SF
FONF Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF
GROWS Landfill Raincap No. 1, Raincap 369,473 SF
James Baird State Park Golf Pond, 45 mil EPDM 107,500/Geotextile 94,500 SF
Holmes Farm Pond No. 1, 60 mil HDPE Smooth 93,530/Geotextile 103,000 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
EM Brown Pond, 40 mil LLDPE Textured 13,600 SF
PA Impoundments, 40 mil PE 187,615/Geotextile 174,275 SF

2013:
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Delaware C. SWA-Rolling Hills LF Cap, 40 LL Textured 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Lower Mt. Washington Valley Secure SW Landfill Cell, 60 mil HDPE Textured 255,112/Geocomposite 250,880 SF
Northeast Industrial Park Cap, 40 mil LLDPE Textured 139,152/Geotextile 136,800/Geocomposite 133,980 SF
Pine-Ton Farm Pond, 60 mil HDPE Smooth 74,520/Geotextile 75,000 SF
Upper Harbor Brook IRM Ditch Lining, 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF
Houseknecht Farm Pond, 60 mil LLDPE Smooth 46,384/Geotextile 50,000 SF
Binghamton University WF Pond, 60 mil Reinforced Polypropylene 13,200 SF
PA Impoundments, 40 mil PE 1,311,370/60 mil PE 60,240/Geotextile 986,500/Geocomposite 75,000/Net 152,250 SF

2012:
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/356,700 SF
Amesbury-Titcomb Landfill Cap, 40 mil LLDPE 665,000 SF
Hamilton Manure Storage Lagoon Liner, 60 mil HDPE Smooth 120,100/Geotextile 188,900 SF

Lackawanna Cap Tar Pit Liner, 40 mil LLDPE Textured/GCL/Geocomposite 120,000 SF each
PA Impoundments, 40 mil PE 208,786/Geotextile 170,700 SF

2011:
Broome County Landfill Cap, 40 mil LLDPE Textured 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Lycoming County Landfill Cell, 100 mil HDPE-T 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Westchester County-Sproutbrook Landfill Closure, 40 mil LLDPE Textured 1,824,580/Geocomposite 1,625,250 SF
Knox Pond-Gurosik Coal Company Reclamation, 40 mil LLDPE Smooth 104,364/Geotextile 202,500 SF
Impoundment Sites, 40 mil PE 1,458,871/60 mil PE 118,399/Geotextile 1,792,127/Geocomposite 78,424 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift

CHENANGO CONTRACTING, INC

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DAVID XAYAVONG

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
GROWS Landfill Raincaps, Raincap #1- 369,473/ Raincap #2- 500,000 SF
Chenango Co. Landfill Cell, 60 mil HDT W/B 382,844/Geocomposite 302,400/Geotextile 382,500/GCL 93,000 SF
Honeywell OU1 Cap, 40 mil LLT 956,934/Geocomposite 569,125/Geotextile 853,200/Geonet 4,350 SF
Franklin County LF Cell No.5, 60 HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Chevron Bayonne Remediation, 40 mil HDPE Smooth 295,779/Geotextile 567,000 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Lackawanna Raincap, 40 mil LLDPE Textured 139,187/Geocomposite 96,320/GCL 97,875 SF
Holmes Farm Pond No.2, 60 mil HDPE Smooth 68,000/Geotextile 71,000 SF
Camp Smith Firing Range, 40 mil LLDPE Textured 34,798/Geotextile 29,539 SF
PA Impoundment, 40 mil PE 191,511/Geotextile 191,511 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Novelis XR5 Pond, XR5 (8130) Reinforced 56,228/Geocomposite 56,000/Geotextile 37,800 SF
Syracuse Vapor Barrier, 60 mil HDPE 10,000 SF
Holmes Farm Ponds, 60 mil HDPE Sm/Geotextile, Pond #1-93,530 SF/103,000 SF, Pond #2-68,000/71,000 SF
Fashion Outlets of Niagara Falls-Stormwater Ponds, 40 mil HDPE SS Textured 208786 SF
Cold Brook WWTF Lagoons, 45-mil reinforced polypropylene 70,775/Geocomposite 70,775 SF
Massena Transformer Pad #3, XR5 (8130) 31,238/Geotextile 9,028 SF
Somerset Landfill Cell Area 2, 60 mil HDPE Textured 402,298/Geocomposite 552,704/Geotextile 421,087 SF
Franklin County Landfill Cell No. 5, 60 mil HD-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Jordan Farm Pond, 60 mil HDPE Smooth 72,692/Geotextile 72,692 SF
Bear Mountain Pond, 40 mil HDPE Textured 68,003 SF
Grand Island WWTP Pond, 60 mil HDPE Smooth 20,000/Geotextile 16,000 SF
Binghamton University WF Pond, 60 mil Reinforced Polypropylene 13,200 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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DIONICIO ALBA

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
GROWS Landfill Raincap No.2, 500,000 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF

2014:
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Lanchester Landfill Cell, 60 mil HD Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
FONF Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF
Bear Mountain Pond, 40 mil HDPE Textured 68,003 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
Buffalo AOC Dewatering Pad, 40 mil LLDPE Textured 26,950 SF
PA Impoundments, 40 mil PE 341,725/Geotextile 324,537 SF

2013:
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Amenia Town Landfill Cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500
Honeywell Raincap, Duraskrim R12BV 245,000 SF
Kittansett Club Pond, 45 mil Reinforced Polypropylene 38,820 SF
NRG Beverly, 40 mil HDPE Smooth 117,300 SF
Wilson High School Detention Basin, 40 mil PVC 58,190/Geotextile 127,500 SF
Rosamond Gifford Zoo, 60 mil HDPE Textured 23,000/Geotextile 25,500 SF
NYSEG Homer-Former MGP Site, 30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF
Monmouth Landfill Cap, 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF
PA Impoundments, 40 mil PE 396,998/Geotextile 306,136/Geonet 73,950 SF

2012:
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
Amenia Town Landfill Cap, 40 mil LLDPE 391,920/Geocomposite 751,000 SF
Clayton Landfill Closure, 40 mil LLDPE Textured 38,200/Geocomposite 42,000 SF
NYSEG Homer-Former MGP Site, 30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Ft. Drum Conversion Liner Repairs, 100 mil HDPE Smooth 16,900 SF
PA Impoundments, 40 mil PE 662,886/624,800 SF

2011:
Lycoming Co. Landfill, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF

Broome County Landfill Cap 40 mil LLDPE 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
PA Impoundments, 40 mil PE 1,211,788/60 mil PE 23,000/Geotextile 1,610,892/Geocomposite 54,744 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

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OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift

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INTHARATHSONE CHANHDARA

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
GROWS Landfill Raincap No.2, 500,000 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
Broad Brook Water Filtration Plant Lagoon, 80 mil HDPE Smooth 31,000/Geotextile 31,000 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF

2013:
Delaware County SWA-Rolling Hills LF Cap, 40 mil LL Text. 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500 SF
High Acres Landfill Cell, Geocomposite 255,000 SF
PA Impoundments, 40 mil PE 710,177/60 mil PE 60,240/Geotextile 861,376/Geonet 73,950 SF

2012:
Salina Landfill Closure, 60 mil LLDPE Text. 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Hamilton Manure Storage Lagoon Liner, 60 mil HDPE Smooth 120,100/Geotextile 188,900 SF
PA Impoundments, 40 mil PE 208,786/Geotextile 170,700 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome County Landfill Cap, 40 mil LLDPE Textured 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Impoundment Sites, 40 mil PE 1,116,744/Geotextile 1,261,154/Geocomposite 54,744/Geonet 70,450 SF

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Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
10 hour Construction Safety & Health

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BOUNPONE CHANTHAVONG

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Bergen-Bonduelle Pond, 80 mil HDPE T/S 107,932/Geocomposite 112,000 SF
GROWS Landfill Raincap No. 2- 500,000 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
Sidney WWTP, 40 mil HDPE Smooth 22,532 SF

2014:
Lanchester Landfill Cell, 60 mil HD Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
GROWS Landfill Raincap No. 1- 369,473 SF
Cold Brook WWTF Lagoons, 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF
Broad Brook Water Filtration Plant Lagoon, 80 mil HDPE Smooth 31,000/Geotextile 31,000 SF
GE Hudson Falls WTP Railcar Pit, 40 mil HDPE Textured 2,400/Geocomposite 850 SF
PA Impoundments, 40 mil PE 154,110/Geotextile 150,262 SF

2013:
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Salina Landfill Closure, 60 mil LLDPE-T 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
High Acres Landfill Cell, Geocomposite 255,000 SF
PA Impoundments, 40 mil PE 596,733/Geotextile 618,750/Geonet 152,250 SF

2012:
Ft. Drum Conversion Liner Repairs, 100 mil HDPE Smooth 16,900 SF
Alcoa Wetlands Bed Liner, GCL 9,500 SF
PA Impoundments, 40 mil PE 322,600/Geotextile 322,600 SF

2011:
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 291,600/Geocomposite 765,000/GCL 118,575 SF
Broome Co. Landfill Cap, 40 mil LLDPE Text. 783,840/Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
Bennington VAOT Pond, 60 mil HDPE Textured 58,800 SF
Steel Winds Transformer Pad Lining, XR5 6,000 SF
PA Impoundments, 40 mil PE 2,148,402/60 mil PE 141,400/Geotextile 3,222,162 SF

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Certifications: OSHA 40 hour HAZWOP with 8 hour refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift

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VINAY KHAMSINGSAVATH

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Broome Co. Landfill Cell 3, 60 mil HDPE Smooth W/B 556,865/60 mil HDPE Textured W/B 265,057/Geocomposite 593,600/Geotextile 994,500/GCL 339,450/Raincap 276,000 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF

2014:
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/ GCL 900,000/Geonet 34,800 SF
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Buffalo AOC Dewatering Pad, 40 mil LLDPE Textured 26,950 SF
PA Impoundments, 40 mil PE 187,615/Geotextile 174,275 SF

2013:
Delaware County SWA-Rolling Hills LF Cap, 40 mil LL Text 506,230/Geotextile 534,600/Geocomposite 512,050 SF
Bethlehem Vapor Barrier, 20 mil PVC 707,200/Geotextile 1,417,500 SF
High Acres Landfill Cap, Geocomposite 255,000 SF
Kittansett Club Pond, 45 mil Reinforced Polypropylene 38,820 SF
PA Impoundments, 40 mil PE 504,466/60 mil PE 60,240/Geotextile 667,740/Geonet 73,950 SF

2012:
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 356,700/Geocomposite 765,000/GCL 356,700 SF
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Lackawanna Cap Tar Pit Liner, 40 mil LLDPE Textured/Geocomposite/GCL 120,000 SF each
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Ft. Drum Conversion Liner Repairs, 100 mil HDPE Smooth 16,900 SF
Alcoa Wetlands Bed Liner, GCL 9,500 SF
PA Impoundments, 40 mil PE 731,386/Geotextile 693,300 SF

2011:
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome County LF Cap, 40 mil LL Text 783,840 /Geotextile 874,800/Geocomposite 783,000/GCL 118,575 SF
PA Impoundments, 40 mil PE 2,148,402/60 mil PE 141,400/Geotextile 3,222,162 SF

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Certification: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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ANNTONIE PHANTHAVONG

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Franklin County LF Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF

2014:
Somerset Landfill Cell Area 2, 60 mil HDPE Textured 402,298/Geocomposite 552,704/Geotextile 421,087 SF
James Baird State Park Golf Pond, 45 mil EPDM 107,500/Geotextile 94,500 SF
Norfolk WWTP, 60 mil HDPE Smooth 69,748 SF
Cold Brook WWTF Lagoons, 45 mil Reinforced Polypropylene 81,000/Geocomposite 81,000 SF

Certifications: OSHA 40 hour HAZWOP with 8 hour annual refresher
OSHA 10 hour Construction Safety & Health

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SAMRANE SENGHOUNG

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
GROWS Landfill Raincap No. 2- 500,000 SF
Savona Pond Re-Lining, 45 mil Reinforced Polypropylene 180,194 SF
Beck Farm Pond, 60 mil HDPE Smooth 59,205/Geotextile 59,205 SF
Sidney WWTP, 40 mil HDPE Smooth 22,532 SF

2014:
Lanchester Landfill Cell, 60 mil HD Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
Somerset Landfill Cell Area II, 60 mil HDPE Textured 402,298/Geotextile 421,087/Geocomposite 402,298 SF
GROWS Landfill Raincap No. 2, Raincap 500,000 SF
FONF Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF
New Hope Farm Pond, 60 mil HDPE 106,000/Geotextile 115,000 SF
Syracuse University UG Basins, 40 mil LLDPE Smooth 30,000/Geotextile 60,000 SF
Erie Blvd.-West Bridge Over Onondaga Creek, 30 mil PVC 26,500 SF
Cayuga WWTP Reed Bed Sludge Treatment System, 40 mil HDPE 23,000 SF
Syracuse Vapor Barrier, 60 mil HDPE 10,000 SF
PA Impoundments, 40 mil PE 154,110/Geotextile 150,262 SF

2013:
Lanchester Landfill Cap, 50 mil LL Textured 295,000/Closure Turf 295,000 SF
Upper Harbor Brook IRM Ditch Lining, 40 mil LLDPE Textured 69,000/Geocomposite 27,500/Geogrid 62,471 SF
Clinton County-Wayne Township Floating Cover, 60 mil HDPE Smooth 49,680/Polypro Reinforced 45 mil 40,800 SF
Honeywell Wastebeds 1-8, 40 mil LLDPE Textured W/B 914,480/Geotextile 1,377,000 SF
NRG Beverly, 40 mil HDPE Smooth 117,300 SF
Rosamond Gifford Zoo, 60 mil HDPE Textured 23,000/Geotextile 25,500 SF
PA Impoundments, 40 mil PE 589,670/Geotextile 317,386/Geocomposite 75,000/Geonet 152,250 SF

2012:
Salina Landfill Closure, 60 mil LLDPE-T 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Broome County Landfill Raincap, 8 mil BBR 185,000/Geotextile 185,000 SF
Ft. Drum Conversion Liner Repairs, 100 mil HDPE Smooth 16,900 SF
Tuxedo Landfill Cap Repairs, Geocomposite 22,400 SF
NYSEG Homer-Former MGP Site, 30 mil HDPE Smooth 53,826/Geotextile 53,826/Geocomposite 10,000 SF
PA Impoundments, 40 mil PE 322,600/60 mil PE 243,800/Geotextile 563,600 SF

2011:
Westchester County-Sproutbrook Landfill Closure, 40 mil LLDPE Textured 1,824,580/Geocomposite 1,625,250 SF
Lycoming County Landfill Cell, 100 mil HDPE Textured 1,400,960/GCL 692,850/Geocomposite 704,700/Geotextile 836,341/Geonet 704,700 SF
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile 365,700/Geocomposite 765,000/GCL 365,700 SF

SUNY Cobleskill Dairy Complex Lagoon Liner, 60 mil HDPE Textured 28,000/Geotextile 28,000 SF
PA Impoundments, 40 mil PE 2,148,402/60 mil PE 141,400/Geotextile 3,222,162 SF

THIS IS A 5 YEAR RESUME. ADDITIONAL EXPERIENCE IS AVAILABLE UPON REQUEST.

Certifications: OSHA 40 hour HAZWOP with 8 hour refresher
OSHA 10 hour Construction Safety & Health
Rough Terrain Forklift
First Aid/CPR

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SAENG VONGPHACHANH

GEOSYNTHETICS EXPERIENCE RESUME

Position: Technician

2015:
Franklin Co. Landfill Cell No. 5, 60 mil HDPE-T 778,200/Geocomposite 756,000/Geotextile 576,000/GCL 288,300 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Maplewood Raincaps, 40 mil HDPE 191,813/Raincap 191,322 SF
GROWS Landfill Raincap No. 2, 500,000 SF

2014:
Lanchester Landfill Cap, 50 mil LLDPE Textured 295,000/Closure Turf 295,000 SF
Holcim Catskill Landfill Cap, Super Grip Net/Closure Turf 1,987,200/Geocomposite 60,480 SF
Lanchester Landfill Cell, 60 mil HDPE Textured 1,904,860/Geotextile 945,000/Geocomposite 899,640/
GCL 900,000/Geonet 34,800 SF
FONF Stormwater Ponds, 40 mil HDPE SS Textured 230,000 SF
TCI Vapor Barrier, 40 mil HDPE Smooth 35,007 SF
Buffalo AOC Dewatering Pad, 40 mil LLDPE Textured 26,950 SF
Erie Blvd.-West Bridge over Onondaga Creek, 30 mil PVC 26,500 SF
Cayuga WWTP Reed Bed Sludge Treatment System, 40 mil HDPE 23,000 SF
Syracuse Vapor Barrier, 60 mil HDPE 10,000 SF

2013:
Monmouth Landfill Cap, 60 mil LLDPE Textured 220,685/Geotextile 220,000 SF
Clinton County-Wayne Township LF Floating Cover, 60 mil HD Smooth 49,000/Polypro Reinforced 45 mil 40,000 SF
Gedney Way Landfill Closure, 40 mil HDPE Textured 278,304/Geocomposite 87,750 SF
Kittansett Club Pond, 45 mil Reinforced Polypropylene 38,820 SF
PA Impoundments, 40 mil PE 798,456/Geotextile 812,386/Geocomposite 75,000/Geonet 152,250 SF

2012:
Broome County Landfill Cell, 60 mil HDPE Textured 397,800/60 mil HDPE Smooth 327,600/Geotextile
356,700/Geocomposite 765,000/356,700 SF
Salina Landfill Closure, 60 mil LLDPE Text 1,685,880/GCL 337,125/Geocomposite 360,180/Geotextile 2,353,500 SF
Honeywell Raincap #2, Duraskrim 12 mil 218,760 SF
Tuxedo Landfill Cap Repairs, Geocomposite 22,400 SF
Ft. Drum Conversion Liner Repairs, 100 mil HDPE Smooth 16,900 SF
PA Impoundments, 40 mil PE 522,600/Geotextile 522,600 SF

2011:
Westchester County-Sproutbrook Landfill Closure, 40 mil LLDPE Textured 1,824,580/Geocomposite 1,625,250 SF
Steel Winds Transformer Pad Lining, XR5 (8138) 6,000 SF
PA Impoundments, 40 mil PE 1,133,000/Geotextile 1,080,000/GCL 52,000 SF

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Certification: OSHA 10 hour Construction Safety & Health
OSHA 40 hour HAZWOP with 8 hour annual refresher

CHENANGO CONTRACTING, INC.

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TEL. (607) 729-8500 FAX (607) 729-2415

CERTIFICATE OF ACCEPTANCE

PROJECT NAME: #REF! **DATE:**
PROJECT NUMBER: #REF! **QC REPRESENTATIVE:** #REF!

DETAILS OF WORK COMPLETED AND MEASURED:

I, THE UNDERSIGNED, THE AUTHORIZED REPRESENTATIVE OF

ACCEPT AND ASSUME RESPONSIBILITY FOR THE WORK DESCRIBED ABOVE FROM THIS DATE, SUBJECT TO THE EXCEPTIONS DETAILED BELOW, AND CONFIRM THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE TERMS AND THE CONDITIONS OF THE CONTRACT. THERE IS NO APPARENT DAMAGE TO THE PLASTIC LINING, NOR HAS THERE BEEN ANY INTERFERENCE WITHIN OR WITHOUT THE THE SURROUNDING WORKS.

I HAVE EVALUATED AND MEASURED THE WORK TOGETHER WITH THE CHENANGO CONTRACTING, INC. REPRESENTATIVE, AND AGREE THAT THE MEASUREMENTS SHOWN ABOVE ARE TRUE AND CORRECT, AND THAT THE INSTALLATION HAS MET OUR APPROVAL.

EXCEPTIONS:

AUTHORIZED REPRESENTATIVE:

NAME	SIGNATURE	TITLE	DATE

CHENANGO CONTRACTING, INC.

NAME	SIGNATURE	TITLE	DATE

CHENANGO CONTRACTING, INC.

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TEL. (607) 729-8500 FAX (607) 729-2415

GEOMEMBRANE DELIVERY CHECKLIST

PROJECT NAME: C.C.I. **QC REP.:**
PROJECT NUMBER: 09000 **MATERIAL:**

	Roll Number	Roll Dimensions			Status
		Width (ft)	Length (ft)	Area (ft)	
1				0	
2				0	
3				0	
4				0	
5				0	
6				0	
7				0	
8				0	
9				0	
10				0	
11				0	
12				0	
13				0	
14				0	
15				0	
16				0	
17				0	
18				0	
19				0	
20				0	
21				0	
22				0	
23				0	
24				0	
25				0	
26				0	
27				0	
28				0	
29				0	
30				0	
31				0	
32				0	
33				0	
34				0	
35				0	
36				0	
37				0	
38				0	
39				0	

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PANEL PLACEMENT LOG

PROJECT NAME: #REF! **QC REP.:** #REF!

PROJECT NUMBER: #REF! **MATERIAL:** #REF!

Panel Number	Smooth (S) / Textured (T)	Roll Number	Date Installed	Time Installed	Panel Width (ft)	Panel Length (ft)		Smooth Area (sf)	Textured Area (sf)
						Side A	Side B		
P 1								0.0	0.0
P 2								0.0	0.0
P 3								0.0	0.0
P 4								0.0	0.0
P 5								0.0	0.0
P 6								0.0	0.0
P 7								0.0	0.0
P 8								0.0	0.0
P 9								0.0	0.0
P 10								0.0	0.0
P 11								0.0	0.0
P 12								0.0	0.0
P 13								0.0	0.0
P 14								0.0	0.0
P 15								0.0	0.0
P 16								0.0	0.0
P 17								0.0	0.0
P 18								0.0	0.0
P 19								0.0	0.0
P 20								0.0	0.0
P 21								0.0	0.0
P 22								0.0	0.0
P 23								0.0	0.0
P 24								0.0	0.0
P 25								0.0	0.0
P 26								0.0	0.0
P 27								0.0	0.0
P 28								0.0	0.0
P 29								0.0	0.0
P 30								0.0	0.0
P 31								0.0	0.0
P 32								0.0	0.0
P 33								0.0	0.0
P 34								0.0	0.0
P 35								0.0	0.0
P 36								0.0	0.0
P 37								0.0	0.0
P 38								0.0	0.0
P 39								0.0	0.0
P 40								0.0	0.0
P 41								0.0	0.0

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GEOMEMBRANE TRIAL SEAM LOG

PROJECT NAME: #REF!
PROJECT NUMBER: #REF!
QC REP.: #REF!

	SMOOTH (ppi)		TEXTURED (ppi)	
	PEEL	SHEAR	PEEL	SHEAR
FUSION (min.)				
EXTRUSION (min.)				

* All Peel & Shear Values are (ppi)

						Fusion		Extrusion										
		Temp	Mach.	Tech	Setup	Temp	Speed	Preheat	Barrel	Peel #1		Peel #2		Peel #3		Shear	Shear	Shear
Date	Time	(deg F)	No.	ID	S/T	(deg C)	(ft/m)	(deg F)	(deg F)	In	Out	In	Out	In	Out	#1	#2	#3

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GEOMEMBRANE SEAMING RECORD

PROJECT NAME:	#REF!	**AIR TEST TIME (MIN)**	5
PROJECT NUMBER:	#REF!	**PSI DROP (MAX)**	4
QC REP:	#REF!		

*** For Machine Setup and Weather Conditions please refer to the Trial Weld Log**

	SEAM INFO				NON-DESTRUCTIVE TESTING INFO								
Seam Number	Date	Lgth (ft)	Start Time	Tech INI*	Date	Tech INI	Start Time	Start Press	Press Drop	AT P/F	Vbox P/F	Location Start	Location End
/													
/													
/												

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SEAM DESTRUCTIVE SAMPLE LOG

PROJECT NAME:	#REF!
PROJECT NUMBER:	#REF!
MATERIAL:	#REF!
QC REP.:	#REF!

	SMOOTH (ppi)		TEXTURED (ppi)	
	PEEL	SHEAR	PEEL	SHEAR
FUSION (min.)	#REF!	#REF!	#REF!	#REF!
EXTRUSION (min.)	#REF!	#REF!	#REF!	#REF!

Destruct	Seam	Repair	Seam	Peel (ppi)										Shear (ppi)					Field	Lab
#	#	#	Tech ID	In1	Out1	In2	Out2	In3	Out3	In4	Out4	In5	Out5	1	2	3	4	5	Pass/Fail	Pass/Fail
DS-1	#REF! / #REF!	### #REF!	#REF!																	
DS-2	#REF! / #REF!	### #REF!	#REF!																	
DS-3	#REF! / #REF!	### #REF!	#REF!																	
DS-4	#REF! / #REF!	### #REF!	#REF!																	
DS-5	#REF! / #REF!	### #REF!	#REF!																	
DS-6	#REF! / #REF!	### #REF!	#REF!																	
DS-7	#REF! / #REF!	### #REF!	#REF!																	
DS-8	#REF! / #REF!	### #REF!	#REF!																	
DS-9	#REF! / #REF!	### #REF!	#REF!																	
DS-10	#REF! / #REF!	### #REF!	#REF!																	
DS-11	#REF! / #REF!	### #REF!	#REF!																	
DS-12	#REF! / #REF!	### #REF!	#REF!																	
DS-13	#REF! / #REF!	### #REF!	#REF!																	
DS-14	#REF! / #REF!	### #REF!	#REF!																	
DS-15	#REF! / #REF!	### #REF!	#REF!																	
DS-16	#REF! / #REF!	### #REF!	#REF!																	
DS-17	#REF! / #REF!	### #REF!	#REF!																	
DS-18	#REF! / #REF!	### #REF!	#REF!																	
DS-19	#REF! / #REF!	### #REF!	#REF!																	
DS-20	#REF! / #REF!	### #REF!	#REF!																	
DS-21	#REF! / #REF!	### #REF!	#REF!																	
DS-22	#REF! / #REF!	### #REF!	#REF!																	
DS-23	#REF! / #REF!	### #REF!	#REF!																	
DS-24	#REF! / #REF!	### #REF!	#REF!																	
DS-25	#REF! / #REF!	### #REF!	#REF!																	
DS-26	#REF! / #REF!	### #REF!	#REF!																	
DS-27	#REF! / #REF!	### #REF!	#REF!																	

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REPAIR LOG

PROJECT NAME: 0 **QC REP.:** 0

PROJECT NUMBER: 0 **MATERIAL:** 0

REPAIR #	DEFECT CODE*	REPAIR DATE	TECH ID	LOCATION			REPAIR TYPE*	SIZE (ft x ft)	VACUUM TEST	
				Seam/Panel	Offset #1	Offset #2			P/F	DATE
R 1										
R 2										
R 3										
R 4										
R 5										
R 6										
R 7										
R 8										
R 9										
R 10										
R 11										
R 12										
R 13										
R 14										
R 15										
R 16										
R 17										
R 18										
R 19										
R 20										
R 21										
R 22										
R 23										
R 24										
R 25										
R 26										
R 27										
R 28										
R 29										
R 30										
R 31										
R 32										
R 33										
R 34										
R 35										
R 36										
R 37										
R 38										
R 39										
R 40										
R 41										

* See Abbreviation Sheet

CHENANGO CONTRACTING, INC.

29 ARBUTUS RD, JOHNSON CITY, NY 13790
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CERTIFICATE OF ACCEPTANCE OF SOIL SUBGRADE

PROJECT NAME: #REF! **DATE:**
PROJECT NUMBER: #REF! **QC REP.:** #REF!

AREA TO BE ACCEPTED:

I, THE UNDERSIGNED, THE AUTHORIZED REPRESENTATIVE OF CHENANGO CONTRACTING INC., DO HEREBY ACCEPT THE SOIL SUBGRADE SURFACE TO BE FREE OF VISIBLE ROCKS OR PROTRUSIONS WHICH COULD DAMAGE THE LINER. I DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONDITIONS OR CHARACTER OF THE SUBSURFACE SOIL, OR ANY EFFECTS THE SUBSURFACE SOIL OR CONDITIONS MAY HAVE ON THE LINER SYSTEM.

EXCEPTIONS:

	QC REPRESENTATIVE	
SIGNATURE	**TITLE**	**DATE**

CHENANGO CONTRACTING, INC.
EQUIPMENT LIST

VENDOR/MFG	DESCRIPTION	S/N
HONDA	GENERATOR-6500W	1147830
HONDA	GENERATOR-6500W	1147833
HONDA	GENERATOR-6500W	1144683
HONDA	GENERATOR-6500W	1144667
HONDA	GENERATOR-6500W	1144686
HONDA	GENERATOR-6500W	1140380
HONDA	GENERATOR-6500W	1140190
HONDA	GENERATOR-6500W	1135667
HONDA	GENERATOR-6500W	1145268
HONDA	GENERATOR-6500W	1135356
HONDA	GENERATOR-6500W	1108257
HONDA	GENERATOR-6500W	1136179
HONDA	GENERATOR-6500W	1109471
HONDA	GENERATOR-6500W	1121161
HONDA	GENERATOR-6500W	1131127
HONDA	GENERATOR-6500W	1134209
HONDA	GENERATOR-6500W	1129147
HONDA	GENERATOR-6500W	1134074
HONDA	GENERATOR-6500W	1131144
HONDA	GENERATOR-6500W	1131216
HONDA	GENERATOR-6500W	1134463
HONDA	GENERATOR-6500W	1161712
HONDA	GENERATOR-6500W	1134271
HONDA	GENERATOR-6500W	1123695
HONDA	GENERATOR-6500W	1133879
HONDA	GENERATOR-6500W	1141353
HONDA	GENERATOR-6500W	1106343
HONDA	GENERATOR-6500W	1141350
HONDA	GENERATOR-5000W	3161858
HONDA	GENERATOR-5000W	3141213
HONDA	GENERATOR-3500EZ	1011776
HONDA	GENERATOR-3000	1133781
HONDA	GENERATOR-3000	1102873
HONDA	GENERATOR-3000	1100496
HONDA	GENERATOR-3000	1102820
HONDA	GENERATOR-3000	1169050
HONDA	GENERATOR-3000	1159632
HONDA	GENERATOR-11000	1010915
HONDA	GENERATOR-11000	EZGT1013538
TROY BUILT	GENERATOR-3250W	1015492543
SUBARU	GENERATOR-3500	2366308

DEMTECH	MINI EXTRUDER	260-5-103338
PWT	EXTRUDER X3	6103926
PWT	EXTRUDER X3	61031007
PWT	EXTRUDER X2-EXP	X2-005-03
PWT	EXTRUDER X2-EXP	X2-001-02
PWT	EXTRUDER X2-EXP	419-98
COLUMBINE	EXTRUDER PRO X MOD	459-98
COLUMBINE	EXTRUDER PRO X MOD	399-98
COLUMBINE	EXTRUDER X2-SC	9720 X2SC
COLUMBINE	EXTRUDER X2-SC	064 X2SC
COLUMBINE	EXTRUDER X2-SC/EX	101-00
COLUMBINE	EXTRUDER X2-SC/EX	250-98
COLUMBINE	EXTRUDER X2-SC/EX	440-98
COLUMBINE	EXTRUDER X2-SC/EX	281-98
COLUMBINE	EXTRUDER X2-SC	050/96
COLUMBINE	EXTRUDER X2-SC	X2-060/96
COLUMBINE	EXTRUDER X2-SC	X2-088/96

DEMTECH	PROWEDGE	20215
DEMTECH	PROWEDGE	20214
DEMTECH	PROWEDGE	20211
DEMTECH	PROWEDGE	20204
DEMTECH	PROWEDGE	20202
DEMTECH	PROWEDGE	20201
DEMTECH	PROWEDGE	20122
DEMTECH	PROWEDGE	20119
DEMTECH	PROWEDGE	20092
DEMTECH	PROWEDGE	20090
DEMTECH	PROWEDGE	1140
DEMTECH	PROWEDGE	1132
DEMTECH	PROWEDGE	20097
DEMTECH	PROWEDGE	20173
DEMTECH	PROWEDGE	20170
DEMTECH	PROWEDGE	20225
CONCORD	905 WEDGE WELDER	702
CONCORD	905 WEDGE WELDER	703
CONCORD	905 WEDGE WELDER	659
CONCORD	905 WEDGE WELDER	639
CONCORD	905 WEDGE WELDER	599
CONCORD	905 WEDGE WELDER	598
CONCORD	905 WEDGE WELDER	560
CONCORD	905 WEDGE WELDER	561
CONCORD	905 WEDGE WELDER	554
CONCORD	905 WEDGE WELDER	555
CONCORD	905 WEDGE WELDER	528
CONCORD	905 WEDGE WELDER	527
CONCORD	905 WEDGE WELDER	526

PWT	ACCURALITE	NAL-0802
PWT	ACCURALITE	NAL-1102
PWT	ACCURALITE	NAL-1203
COLUMBINE	ACCURALITE	NAL-0020
COLUMBINE	ACCURALITE	NAL-2696
COLUMBINE	ACCURALITE	NAL-1896
WEGENER	ULTITEST SWB	96034
NELSON	TENSIOMETER	D4897
NELSON	TENSIOMETER	D5107
NELSON	TENSIOMETER	D1430

LEISTER	HOT AIR WELDER	L-01
LEISTER	HOT AIR WELDER	L-02
LEISTER	HOT AIR WELDER	L-03
LEISTER	HOT AIR WELDER	L-04
LEISTER	HOT AIR WELDER	L-05
LEISTER	HOT AIR WELDER	L-06
LEISTER	HOT AIR WELDER	L-09
LEISTER	HOT AIR WELDER	L-10
LEISTER	HOT AIR WELDER	L-11
LEISTER	HOT AIR WELDER	L-12
LEISTER	HOT AIR WELDER	L-15
LEISTER	HOT AIR WELDER	L-16
LEISTER	HOT AIR WELDER	L-17
LEISTER	HOT AIR WELDER	L-19
STEINEL	HOT AIR WELDER	L-22
STEINEL	HOT AIR WELDER	L-23
STEINEL	HOT AIR WELDER	L-24
STEINEL	HOT AIR WELDER	L-25
STEINEL	HOT AIR WELDER	L-27
LEISTER	HOT AIR WELDER	L-28
LEISTER	HOT AIR WELDER	L-29
LEISTER	HOT AIR WELDER	L-30

POLY-FLEX	DEPLOYMENT BAR	DB1
POLY-FLEX	DEPLOYMENT BAR	DB2
POLY-FLEX	DEPLOYMENT BAR	DB3
POLY-FLEX	DEPLOYMENT BAR	DB4
POLY-FLEX	DEPLOYMENT BAR	DB5
POLY-FLEX	DEPLOYMENT BAR	DB6
POLY-FLEX	DEPLOYMENT BAR	DB7
POLY-FLEX	DEPLOYMENT BAR	DB8
CETCO	GCL DEPLOYMENT BAR	DB9
CETCO	GCL DEPLOYMENT BAR	DB10
CHENANGO	IN HOUSE DEPLOY BAR	DB11
	GCL CARTS	DB12 to DB15
	GCL STINGER	DB16
	CARPET STINGERS	DB17 to DB18
	ROOFING CARTS	DB19 to DB25
	CARPET DEPLOY BARS	DB26 to DB27
	Z-BAR'S	DB28 to DB35

DEMTECH	COUPON CUTTER	CC-01
DEMTECH	COUPON CUTTER	CC-02
	TEST COUPON CUTTER BC-100/A	CC-03
	TEST COUPON CUTTER BC-100/A	CC-04
	TEST COUPON CUTTER BC-100/A	CC-05
	TEST COUPON CUTTER BC-100/A	CC-06
	TEST COUPON CUTTER BC-100/A	CC-07
	FUSION CUTTER	CC-08
	FUSION CUTTER	CC-09

TISI	TURF SEWING MACHINE	5EL1868961
TISI	TURF SEWING MACHINE	4EL1868969
TISI	TURF SEWING MACHINE	GH1879672
TISI	TURF SEWING MACHINE	HA1881736
TISI	TURF SEWING MACHINE	ME1901708
UNION SPECIAL	SEWING MACHINE	AH1818275
UNION SPECIAL	SEWING MACHINE	FH1871848
UNION SPECIAL	SEWING MACHINE	AH1818273
UNION SPECIAL	SEWING MACHINE	310410
UNION SPECIAL	SEWING MACHINE	FM1874720
UNION SPECIAL	SEWING MACHINE	FJ1872868
UNION SPECIAL	SEWING MACHINE	HJ1885103
UNION SPECIAL	SEWING MACHINE	1818284
UNION SPECIAL	SEWING MACHINE	1867234
UNION SPECIAL	SEWING MACHINE	1870639
UNION SPECIAL	SEWING MACHINE	1878812
UNION SPEICAL	SEWING MACHINE	1880457
UNION SPEICAL	SEWING MACHINE	188509X
NEWLONG NP-3II	SEWING MACHINE	AA14752
NEWLONG NP-3II	SEWING MACHINE	JI13037
NEWLONG NP-3II	SEWING MACHINE	JH12335
NEWLONG NP-3II	SEWING MACHINE	AA14328
NEWLONG NP-3II	SEWING MACHINE	AA14191
NEWLONG NP-3II	SEWING MACHINE	JE10912
NEWLONG NP-3II	SEWING MACHINE	AA14510
NEWLONG NP-3II	SEWING MACHINE	JH12929
NEWLONG NP-3II	SEWING MACHINE	AA14187
NEWLONG NP-3II	SEWING MACHINE	JH12818
NEWLONG NP-3II	SEWING MACHINE	AA14746
NEWLONG NP-3II	SEWING MACHINE	AA14501
NP3	SEWING MACHINE	AG16889
NP3	SEWING MACHINE	AG16896
NP3-II	SEWING MACHINE	2K700286
NP3-II	SEWING MACHINE	2K700287

POLARIS	4	MAG 425 6X6 ATV	2956923
POLARIS	7	RANGER	4XARF50A3XD113074
POLARIS	11	LUH 6X6	4XACL50A330832558
POLARIS	12	UTV 6X6	4XARF50A23D16603
POLARIS	13	SPORTSMAN	4XACL50A88D330233
POLARIS	14	SPORTSMAN	4XACL50A78D330241
KUBOTA	15	RTV900 4X4 DIESEL	KRTV900A41020905
KUBOTA	16	RTV900 4X4 DIESEL	KRTV900A41026240
KUBOTA	17	RTV900 4X4 DIESEL	KRTV900A81093750
POLARIS	18	SUPER SPORTSMAN	4XACL76A290655545

JCB	540 FORKLIFT	1037639
JCB	540 FORKLIFT	1064094
JCB	505-19 FORKLIFT	569411
JCB	505-19 FORKLIFT	569267
ASV	RC100	RSD02463
CAT	360B	SLE01790
CAT	287B	0287BLZSA03928
KUBOTA	B7800	72148
KUBOTA	B7800	74534
KUBOTA	B3030 HSD-F WITH LOADER	51537/15695
KUBOTA	M6040	52057
KUBOTA	BUCKET LOADER	AO761

LAYMOR	#1 BROOM-8HC	31189
LAYMOR	32 BROOM-8HC	31557
SHINDAIWA	POWER BROOM	T270
SHINDAIWA	POWER BROOM	PB270
GRAVELY	WALK BEHIND BROOM	000218
GROOMALL	GROOMALL	FT00254
WACKER	ROLLER	5571538
IR 185	AIR COMPRESSOR	336359UCN221
DRAG BRUSH	15’	MT7
QUICKPASS	SPREADER	13514
MH400	SPREADER	5775
MH400	SPREADER	9233
MH400	SPREADER	6355
REMINGTON 496	NAILGUN	J942815
RAMSET 27 Cal	NAILGUN	7120071
	HOT MELT	G5135T40M96402
	HOT MELT	
	HOT MELT	BM315109960
	HOT MELT	G5135R40M112519
ECHO	POWER BLOWER	550160
BLOWER	WALK BEHIND BLOWER	
YARDMAN	WALK BEHIND BLOWER	
TRIMBLE	GLOBAL POSITIONING SYSTEM	0224065358
MCELROY	PIPE FUSER NO. 28	82000

COMPANY VEHICLES AND TRAILERS

PURCHASE DATE	MODEL YEAR	MODEL/TYPE
SEPTEMBER 2015	2015	DODGE RAM
FEBRUARY 2015	2015	DODGE RAM
JULY 2014	2015	CHEVY SILVERADO
OCTOBER 2014	2014	DODGE RAM 1500
MAY 2014	2014	DODGE RAM 3500
OCTOBER 2013	2014	CHEVY SILVERADO
OCTOBER 2013	2014	CHEVY SILVERADO
DECEMBER 2012	2013	CHEVY SILVERADO
JUNE 2012	2013	CHEVY SILVERADO
MARCH 2012	2013	CHEVY SILVERADO
AUGUST 2011	2011	DODGE 2500 PICKUP
SEPTEMBER	2011	CHEVY
MARCH	2011	TOYOTA SCION
SEPTEMBER 2010	2010	DODGE 3500 PICKUP
AUGUST 2010	2010	DODGE RAM PICKUP
JUNE	2010	NISSAN MURANO
NOVEMBER 2009	2010	TOYOTA HIGHLANDER
JUNE 2008	2008	GMC 2500 CREW CAB
JUNE 2008	2008	GMC 2500 CAB 1 ½
MAY 2008	2008	FORD F-250 PICKUP
MARCH	2006	FORD F-350 PICKUP
DECEMBER 2015	2015	CAR MATE TRAILER
DECEMBER 2015	2015	CAR MATE TRAILER
AUGUST 2014	2014	PJ TRAILER GOOSENECK
JUNE 2014	2014	PJ TRAILER GOOSNECK 32’
MAY 2014	2014	PJ TRAILER GOOSENECK 30’
MARCH 2014	2014	CAR MATE CARGO TRAILER
AUGUST 2014	2013	CAR MATE CARGO TRAILER
AUGUST 2011	2011	LANDOLL TRAILER
DECEMBER	2011	CARRY ON TRAILER
JUNE 2008	2008	PJ TRAILER
JUNE 2008	2008	PJ TRAILER
JULY 2008	2008	BRIMAR TRAILER
NOVEMBER 2006	2007	CAR MATE TRAILER
JULY 2004	2005	WELLS CARGO GOOSENECK TRAILER
MAY 2002	2002	HILLSBOROUGH GOOSENECK FLATBED TRL
JANUARY 2008	2000	WELLS CARGO TRAILER
JANUARY 2008	2000	WELLS CARGO TRAILER
	1999	RAVEN FLATBED 48’
JANUARY 2000	1997	WELLS CARGO GOOSENECK TRL
FEBRUARY 1996	1996	HAULMARK TRAILER
FEBRUARY 1996	1996	HAULMARK TRAILER
JANUARY 2008	1994	WELLS CARGO TRAILER
MAY 1993	1993	HOMEMADE TRAILER

MANUFACTURING QUALITY CONTROL

SALES OFFICE:

AGRU AMERICA, INC.

500 Garrison Road

Georgetown, SC 29440

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Telephone: (843) 546-0600

Fax: (843) 527-2738

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11/3/2010

AGRU AMERICA, INC. - QA/QC

Manufacturing – Quality Assurance/Quality Control

AGRU AMERICA, Inc. extrudes high density polyethylene (HDPE) and linear low density polyethylene (LLDPE) geomembrane, HDPE Geonet, and Geocomposite products at its two production plants located at 500 Garrison Road, Georgetown, South Carolina, 29440 and 2000 East Newlands Drive, Fernley, Nevada, 89408.

Our USA Manufacturing Quality Assurance Program is dependent on the utilization of in-house laboratories in each plant which are, when necessary, complemented with testing performed by certified outside laboratories such as:

- Precision Geosynthetic Laboratories; Anaheim, CA
  Telephone (714) 520-9631; Fax (714) 520-9637
- TRI/Environmental, Inc.; Austin, Texas
  Telephone (512) 263-2101; Fax (512) 263-2558

  And other GRI-LAP accredited laboratories.

Raw Material – Manufacturer's Certificate of Conformity

HDPE and LLDPE resin is supplied to our plants in bulk and subjected to the following procedures:

- Prior to shipment, our resin supplier submits a certificate of analysis. Once approved, the resin is released for shipment to our plant.
- One sample is taken from each rail car after arrival and tested as follows:
  Melt Index ASTM D1238 190°C, 2.16kg, and Density ASTM D792.
- Once the tests have been completed and results found to be in compliance with our requirements, the resin is then unloaded into our silo system.
- At this stage, our supplier has performed one battery of tests and Agru America has performed one to verify the manufacturer's certificate of analysis.
- Off specification resin is returned to the supplier.
- The Manufacturer's MFI Test Data is reported on the Geomembrane Quality Certificate (Agru America's MFI Testing is done to verify the resin manufacturer's reported data).

GEOMEMBRANE

The Extrusion Process

The resin is conveyed through a vacuum pump system and flexible hoses to a dryer hopper, feeding the resin by gravity into an 8-inch barrel. This barrel is divided into five heating zones, each heating zone being computer controlled and constantly monitored.

A screw in the barrel turns at a prescribed and monitored speed. It conveys the resin slowly to full plastication, and then the plasticated resin is fed through a manifold into a coat hanger die having a width of approximately 24 feet. The die lips are open to a prescribed distance governed by the thickness of the geomembrane to be extruded.

Exiting the die, the plasticated resin forms a controlled and monitored bead, which feeds into a chrome three-roll stack in a prescribed pattern. Each chrome roll is set at a prescribed temperature, controlled by water circulation.

Exiting the controlled cooling of the roll stack, the geomembrane travels down the take off haulers towards the winder. On the way to the take off, the liner is trimmed to bring the finished width to the applicable standard. Trimmings are granulated.

The trimmed edge of one side of the geomembrane is marked every meter (3.28 ft) with thickness, resin type (HDPE or LLDPE), Agru America name, and year of manufacture. This marking also serves as product identification.

The geomembrane is visually inspected for surface defects as it travels down the take off by both the extruder and the winder operators.

The geomembrane is wound on a recycled HDPE core having 6” ID (150mm), 7” OD (175mm) and 22’8” (6.8m) length.

Each standard length roll weighs approximately 3,900 pounds (1770 kg). Rolls are fitted with two nylon slings when shipped.

Post Extrusion Quality Control

Once start-up conditions are over and commercial extrusion is initiated, post-production quality control comes into operation. A series of test procedures are performed based upon either our Standard Frequency of testing (attached), or frequencies required by customer specifications.

A sample approximately 11” by the full width of the geomembrane is taken from every roll. Based on the specified test frequencies, certain specimens are die cut, tested, and the results summarized on the Quality Certificate issued by our Quality Control Department. The certificate is signed electronically by the Quality Control Manager. The Quality Control Manager reports directly to the President of the Company.

Rolls failing to comply with either Customer Project Specifications and/or our own latest revision to our published data sheets are set aside and re-classified as off-spec (Class B rolls).

Quality Certificates are provided for all rolls of geomembranes (sample smooth & Microspike® certificates are attached), with the exception of off-spec (Class B rolls).

Sometimes a third party Quality Assurance representative is mandated by the owner of a project to oversee our manufacturing QA. We gladly subscribe to this procedure and make all our records available 24 hours a day for the duration of the mandate.

The following roll identification items are reported in our Quality Certificate:

Roll number

(example) **242366 -10**

First digit	machine
Second and third digits	week of year
Fourth digit	day of week (Monday=1, Sunday=7)
Last two digits	roll number (first roll of week is 01, etc.)

The two last digits separated from the others indicate the year the roll was produced.

Using the above key:

Roll #242366 -06 was produced on Liner Machine #2 on Wednesday in the forty-second week in 2010 (10/20/10).

Product Description (liner type: Smooth, Microspike®, Drain®, Super Gripnet®, etc.)

Roll Length & Width in feet / meters, thickness in mils / mm.

Raw material lot and/or batch number and supplier/product identification (from Resin Manufacturer's Certificate of Analysis – sample attached)

The following test results are reported in the Geomembrane Quality Certificate, derived from our Standard Test Frequency (attached) and/or supplied raw material manufacturer Certificates of Analysis (Tests performed are the latest revisions of the Standards listed):

Test / Method	Results Reported & Modifications to Standard (if any)
Thickness †ASTM D5199(Smooth), or †D5994(Textured) **(Both Modified)**	Minimum, Maximum, and Average Sheet Thickness in mm and mils. **Modification from Standard** = Measurements are taken upon sample reaching Lab Temperature Equilibrium.
Asperity Height †ASTM D7466 **(Modified)** Textured liner only	Asperity height in mils **Modifications from Standard** = Edge samples are collected from the smooth/textured junction, **not** 1 foot from edge. ASTM D5994 specimens are used for this test, not direct placement.
Density †ASTM D792	Density in g/cc
Melt Flow Index †ASTM D1238	g/10minutes (Conditions =190°C, 2.16kg). **NOTE:** Resin Manufacturer's **Certificate of Analysis result** is reported. Our testing verifies this result.
Carbon Black Content †ASTM D4218	% Carbon Black by weight
Carbon Black Dispersion †ASTM D5596	Category (Only near spherical agglomerates per GRI GM 13 & 17)
Tensile Strength †ASTM D6693 Type IV, 2 inches / minute **(Modified)**	Average Strength @ Yield in psi, ppi, & N/mm Average Strength @ Break in psi, ppi, & N/mm Average Elongation @ Yield in % Average Elongation @ Break in % **Modification from Standard** = Average of MD & TD results are reported **NOTE 1:** The D6693 results equate to the following **D638 Modifications**: Gage Length for Yield = 1.3", for Break = 2" **NOTE 2:** Yield data not reported for LLDPE
Dimensional Stability †ASTM D1204 **(Modified)**	Average Dimensional Change in % **Modification from Standard** = Average Dimensional Change of MD & TD is reported. Test is run upon sample reaching Lab Temperature Equilibrium
Tear Resistance †ASTM D1004 **(Modified)**	Tear Resistance in Lbs & N. **Modifications from Standard** = Test is run upon sample reaching Lab Temperature Equilibrium. Average Tear Resistance of MD & TD is reported.
Puncture Resistance †ASTM D4833 †FTMS 101C Method 2065 **(Both Modified)**	Puncture Resistance in Lbs & N. **Modification from Standard** = Test is run upon sample reaching Lab Temperature Equilibrium.
Environmental Stress Crack Resistance (ESCR) †ASTM D1693 **(CERTIFIED)**	This test is n longer run by Agru America, and the result is now certified by Agru America for 1500 hours (Certification letter is attached, as well as GAI-LAP's approval of the certification.)
Notched Constant Tensile Load †ASTM D5397 (Single Point, Appx.)	Pass / Fail at 300 hours (or as required by customer specifications). First roll of new resin lot tested. This test is run on HDPE only, and on smooth edge of textured liners.
Oxidative Induction Time (OIT) †ASTM D3895 Standard, 200°C, 1atm.	OIT Time in minutes. **Modification from Standard** = One run only – if result is below 140 minutes, a second run is done to verify the first.

†GRI-LAP Accredited for this method (INCLUDING Modifications)

The following Test methods are also performed per railcar in our Standard MQC, but results are **not** reported on our Quality Certificates (results can be forwarded if necessary).

Test / Method	Results Reported
Low Temperature Brittleness ASTM D746 **THIS TEST OUTSOURCED TO AN ACCREDITED 3rd PARTY LAB**	Pass / Fail for each specimen (5 specimens in both MD & TD), % of samples passing. **NOTE:** Standard MQC Temperature tested to is **-60°C**. Lower Temperatures can be done if required by customer specifications.

Additional Test Procedures
(Available if Specified, performed by GRI-LAP Accredited Third Party Labs)

Hydrostatic Resistance	ASTM D751
Volatile Loss	ASTM D1203
Resistance to Soil Burial	ASTM D3083 using ASTM D638 Type IV dumbbell at 2"/min.
Water Absorption	ASTM D570
Coefficient of Thermal Expansion	ASTM D696
Friction Angle Direct Shear Method	ASTM D5321
Moisture Vapor Transmission Rate 100°F - 100% RH	ASTM E96
Transmissivity (Profiled) Various gradients & confining pressures (if unable to perform in-house due to soils or unusual conditions)	ASTM D4716
Multi-axial Tensile Strain at Rupture (percent)	ASTM D5617
Modulus of Elasticity (1% or 2% Secant Modulus)	ASTM D638 (Modulus) or ASTM D5323

In addition to the testing described above, an in-house procedure is performed within the smooth edges of Textured (Microspike DS & SS) and Structured (Supergrip, Grip, Drain, MicroDrain) liner by the QC Lab in both plants.

Summarized, the procedure is a modified Graves Tear test (ASTM D1004), testing 2 specimens taken in the cross machine direction, and 2 specimens from the machine direction from within the smooth edges. Both the individual specimen results and the specimens themselves are checked. This test is currently being performed on each test roll (each time a tensile test is performed) produced in both plants.

The average result will be reported on the geomembrane roll Quality Certificates.

In addition to our MQC testing, Agru America will continually strive to produce superior products with isotropic characteristics.

Drainage Net (Geonet)

AGRU America drainage net is made from a blend of high quality virgin HDPE and a carbon black masterbatch. The purpose of the carbon black is to protect the plastic from UV damage in the field application.

All raw materials as well as the finished products are consistently monitored by specially trained lab technicians. Raw materials are tested as above for Geomembrane.

The blend of raw materials is plasticized by an extruder, which presses the melt through a screen changer to filter out impurities. The plastic is then fed into a rotating die which creates the net. The cooling of the net takes place in a water tank at a tightly controlled temperature. A series of nip rollers pull the net out of the tank and through the downstream equipment to the winders. The net is cut to length automatically and wound onto a 4" OD cardboard core.

Before the finished rolls are taken out of the winder frame, the quality control technician either releases the material into stock or classifies the material as scrap.

When approved by QC, the rolls are stretch wrapped and transferred to the storage yard.

Geocomposite

In addition to the drainage net, AGRU America offers geocomposites which consist of geotextiles laminated to one or both sides of the net.

All geotextiles used for this lamination process are being inspected to meet AGRU America's (or project) specifications.

The lamination process takes place just before the net reaches the winders at the end of the extrusion line. After melting the surface of the HDPE drainage net, a geotextile is pressed into the net by means of a calender. The outer 6 inches of net are not laminated and the geotextile overlaps the net by an additional 6 inches on both sides of the product.

Before the finished rolls are taken out of the winder frame, the quality control technician either releases the material into stock or classifies the material as scrap.
When approved by QC, the rolls are stretch wrapped and transferred to the storage yard.

All drainage net and geocomposite rolls are labeled as follows:

- one label on each face of the roll
- two hand written roll numbers on the stretch wrap packaging
- one label on the laboratory sample
- numbering system is as above for geomembrane

The following test results are reported in the Geonet/Composite Quality Certificate, derived from our Test Results and/or supplied raw material manufacturer Certificates of Analysis (Tests performed are the latest revisions of the Standards listed):

Test / Method	Results Reported & Modifications to Standard (if any)
Thickness (Geonet) †ASTM D5199	Minimum, Maximum, and Average Geonet Thickness in mm and mils. **Modification from Standard** = Measurements are taken upon sample reaching Lab Temperature Equilibrium. English Units reported
Density (Geonet) †ASTM D792	Geonet Density in g/cc
Melt Flow Index (Geonet) †ASTM D1238	g/10minutes (Conditions =190°C, 2.16kg). **NOTE:** Resin Manufacturer's **Certificate of Analysis result** is reported. Our testing verifies this result.
Carbon Black Content (Geonet) †ASTM D4218	% Carbon Black by weight
Peak Tensile Strength (Geonet) †ASTM D5035 or †ASTM D7179 **(Both Modified)**	MD Only tested, TD upon request only. Peak Strength @ Break in ppi **Modification from Standard** = English Units reported
Mass Per Unit Area (Geonet) †ASTM D5261	Average Mass per Unit Area in lb/ft^2 **Modification from Standard** = English Units reported
Transmissivity (Geonet) †ASTM D4716	Transmissivity, m^2 / sec Plate to Plate , 21°C, **gradient = 0.1, load = 10,000psf, seat time = 15 minutes** is Agru America's Standard Geonet MQC Transmissivity test (may be changed per project MQC specs)
Transmissivity (Geocomposite) †ASTM D4716	Transmissivity, m^2 / sec Plate to Plate , 21°C, **gradient = 0.1, load = 10,000psf, seat time = 15 minutes** is Agru America's Standard Geocomposite MQC Transmissivity test (may be changed per project MQC specs)
Ply Adhesion (Geocomposite) †ASTM D7005	Peel Strength, lbs/in, min. ave.

†**GRI-LAP Accredited for this method (INCLUDING Modifications)**

Geomembrane
Standard Frequency of Testing

Product Data

Property	Test Method	Frequency of testing (minimum)*
Thickness (min. ave.), mil	ASTM D5994/D5199	per roll
Asperity Height (min. ave.), mil	GRI GM-12 (for textured liner)	per roll, alternating top/bottom for dbl sided textured liner only
Density, g/cc, minimum	ASTM D792, Method B	200,000 lbs (railcar)
Tensile Properties (ave. both directions)	ASTM D6693, Type IV	
Strength @ Yield (min. ave.), lb/in width	2 in/minute	
Elongation @ Yield (min. ave.), % (GL=1.3in)	5 specimens in each direction	20,000 lbs
Strength @ Break (min. ave.), lb/in width		
Elongation @ Break (min. ave.), % (GL=2.0in)		
Tear Resistance, lbs. (min. ave.)	ASTM D1004	45,000 lbs
Puncture Resistance, lbs. (min. ave.)	ASTM D4833	45,000 lbs
Carbon Black Content (range in %)	ASTM D4218	20,000 lbs
Carbon Black Dispersion (Category)	ASTM D5596	45,000 lbs
Stress Crack Resistance (NCTL), hours	ASTM D5397, Appendix	200,000 lbs (railcar)
Oxidative Induction Time, minutes	ASTM D3895, 200°C, 1 atm O_2	200,000 lbs (railcar) on finished liner
Melt Flow Index, g/10 minutes	ASTM D1238, 190°C, 2.16kg	200,000 lbs (railcar) on incoming resin
Low Temperature Brittleness, °C	ASTM D746, -60°C	200,000 lbs (railcar) on finished liner
Oven Aging with HP OIT, (% retained after 90 days)	ASTM D5721 ASTM D5885, 150°C, 500psi O_2	per resin formulation
UV Resistance with HP OIT, (% retained after 1600 hours)	GRI GM11 ASTM D5885, 150°C, 500psi O_2	per resin formulation
2% Secant Modulus, lb/in. (max.)	ASTM D5323	per resin formulation-**for LLDPE liner only**
Axi-Symmetric Break Resistance Strain, % (min.)	ASTM D5617	per resin formulation-**for LLDPE liner only**

These test frequencies meet or exceed GRI's GM-13

***Theses test frequencies may be changed based on project specifications, and represent the minimum MQC testing performed. Additional costs may be incurred if required testing is greater than listed above**

All information, recommendations and suggestions appearing in this literature concerning the use of our products are based upon tests and data believed to be reliable; however, it is the users responsibility to determine the suitability for their own use of the products described herein. Since the actual use by others is beyond our control, no guarantee or warranty of any kind, expressed or implied, is made by Agru America as to the effects of such use or the results to be obtained, nor does Agru/America assume any liability in connection herewith. Any statement made herein may not be absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations. Nothing herein is to be construed as permission or as a recommendation to infringe any patent.

500 Garrison Road, Georgetown, South Carolina 29440 843-546-0600 800-373-2478 Fax: 843-527-2738
email: salesmkg@agruamerica.com www.agruamerica.com

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CoA Date: 07/14/2004

Certificate of Analysis

Shipped To: AGRU AMERICA INC
500 GARRISON RD
GEORGETOWN SC 29440
USA

Recipient: GRANT PALMER
Fax:

CPC Delivery #: 86671544
PO #: 03814
Weight: 190000 LB
Ship Date: 07/14/2004
Package: BULK
Mode: Hopper Car
Car #: GOCX058461
Seal No: 301173

Product:
MARLEX POLYETHYLENE K307 BULK

Lot Number: 8140404

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.260	g/10mi
HLMI Flow Rate	ASTM D1238	22.00	g/10mi
Density	ASTM D1505	0.9380	g/cm3
Pellet Count	P02.08.03	30.000	pel/g
Production Date		3/22/04	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP.
However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.

Jackie Edwards
Certification Systems Specialist

For CoA questions contact Carol Meza at 713-475-3625

FORMOSA PLASTICS CORPORATION, TEXAS
201 FORMOSA DRIVE PHONE:(888)FPCUSA3
PO BOX 700
POINT COMFORT TX 77978

Certificate of Analysis

CUSTOMER:AGRU AMERICA, INC.
500 GARRISON ROAD
GEORGETOWN SC 29440
PRODUCT :DF3721A
RAILCAR FPAX980245

S/O NO : EK2A429
CUSTOMER PO : 005310
DATE SHIPPED: 2/28/10
LOT NO : 10B1167
WEIGHT : 197,300.00
CUSTID:FT03888 SPIDM1
PRODUCTION DATE: 2/17/10

TEST ITEM	REFERENCE METHOD	TEST VALUE
Melt Index,g/10min	ASTM D1238	.22
HLMI, g/10 min.	ASTM D1238	23.2
Density, g/cm3	ASTM D1505	.9387
Pellet Count		24

QC SUPERVISOR: JESSE CHANG

Geosynthetic Institute
475 Kedron Avenue
Folsom, PA 19033-1208 USA
TEL (610) 522-8440
FAX (610) 522-8441

June 24, 2011

Mr. Grant Palmer
Laboratory Director
Agru-America Inc.
500 Garrison Road
Georgetown, SC 29440

Re: GAI-LAP Accreditation

Dear Grant:

The Geosynthetic Institute (GSI) is pleased to acknowledge Agru-America Inc. on its repertoire of Geosynthetic Accreditation Institute's-Laboratory Accreditation Program (GAI-LAP) accredited tests. This letter should serve as notification that Agru-America Inc. located in Georgetown, SC is currently accredited for the following twenty test methods until June 30, 2012.

1. ASTM D792 Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement
2. ASTM D1004 Test Method for Initial Tear Resistance of Plastic Film and Sheeting
3. ASTM D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
4. ASTM D1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
5. ASTM D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics
6. ASTM D3895 Test Methods for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry
7. ASTM D4218 Test Method for Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique
8. ASTM D4716 Test Method for Determining the (In-Plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head
9. ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products

10. ASTM D5035 Test Method for Breaking Strength and Elongation of Textile Fabrics (Strip Method)
11. ASTM D5199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
12. ASTM D5261 Test Method for Measuring Mass per Unit Area of Geotextiles
13. ASTM D5397 Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes using Notched Constant Tension Load Test
14. ASTM D5596 Test Methods for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
15. ASTM D5994 Test Method for Measuring the Core Thickness of Textured Geomembranes
16. ASTM D6693 Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes
17. ASTM D7005 Test Method for Determining the Bond Strength (Ply Adhesion) of Geocomposites
18. ASTM D7179 Test Method for Determining the Geonet Breaking Force
19. FTM STD. No. 101c (method 2065), Puncture Resistance and Elongation Test (1/8 in. radius probe)
20. ASTM D7466 Test Method for Measuring the Asperity Height of Textured Geomembranes

A certificate to this affect has been enclosed, signed and sealed. Any questions regarding your accreditation should be directed to George or Robert Koerner at (610) 522-8440. Once again congratulation and thank you for participating in the GAI-LAP.

Best Regards,

George R. Koerner, Ph.D., P.E. & CQA
Director Designate GSI

Accreditation #:
GAI-LAP – 26 – 97
TEL (610) 522-8440

Geosynthetic Institute
457 Kedron Avenue
Folsom, PA 19033

AGRU America Inc.

is granted accreditation
for designated geosynthetic test methods in accordance with the Geosynthetic Accreditation Institute – Laboratory Accreditation (GAI-LAP), as published in its annual directory.

This accreditation is valid until June 30, 2012.

Robert M. Koerner, Ph.D., P.E.
Director

George R. Koerner, Ph.D., P.E. & CQA
Auditor

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Geosynthetic Institute
475 Kedron Avenue
Folsom, PA 19033-1208 USA
TEL (610) 522-8440
FAX (610) 522-8441

June 7, 2011

Mr. Chris Adams
Agru America
2000 East Newlands Drive
Fernley, NV 89408

Re: GAI-LAP

Dear Chris:

The Geosynthetic Institute (GSI) is pleased to acknowledge Agru-America Inc. on its repertoire of Geosynthetic Accreditation Institute's-Laboratory Accreditation Program (GAI-LAP) accredited tests. This letter should serve as notification that Agru-America Inc. located in Fernley, Nevada is currently accredited for the following fourteen test methods until June 30, 2012.

1. ASTM D792 Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement
2. ASTM D1004 Test Method for Initial Tear Resistance of Plastic Film and Sheeting
3. ASTM D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
4. ASTM D1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer (2.16 kg and 190 degree Celsius)
5. ASTM D3895 Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry
6. ASTM D4218 Test Method for Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique
7. ASTM D4833 Test Method for Index Puncture of Geotextiles, Geomembranes and Related Products
8. ASTM D5199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
9. ASTM D5397 Test Method for NCTL Stress Crack Appendix "A"
10. ASTM D5596 Test Method for Dispersion
11. ASTM D5994 Test Method for Core Thickness

12. ASTM D6693 Standard of Method for Determining Tensile Properties of Nonreinforced Polyethylene and nonreinforced Flexible Polypropylene Type IV die with cross head movement
13. ASTM D7466 Test Method for Measuring the Asperity Height of Textured Geomembranes
14. FTM 101C Test Method 2065 for Puncture

A certificate to this affect has been enclosed, signed and sealed. Any questions regarding your accreditation should be directed to George or Robert Koerner at (610) 522-8440. Once again congratulation and thank you for participating in the GAI-LAP.

Best Regards,

George R. Koerner, Ph.D., P.E. & CQA
Director Designate GSI

Accreditation #:
GAI-LAP – 64 – 10
TEL (610) 522-8440

Geosynthetic Institute
457 Kedron Avenue
Folsom, PA 19033

AGRU America Inc.

is granted accreditation
for designated geosynthetic test methods in accordance with the Geosynthetic Accreditation Institute – Laboratory Accreditation (GAI-LAP), as published in its annual directory.

This accreditation is valid until June 30, 2012.

Robert M. Koerner, Ph.D., P.E.
Director

George R. Koerner, Ph.D., P.E. & CQA
Auditor

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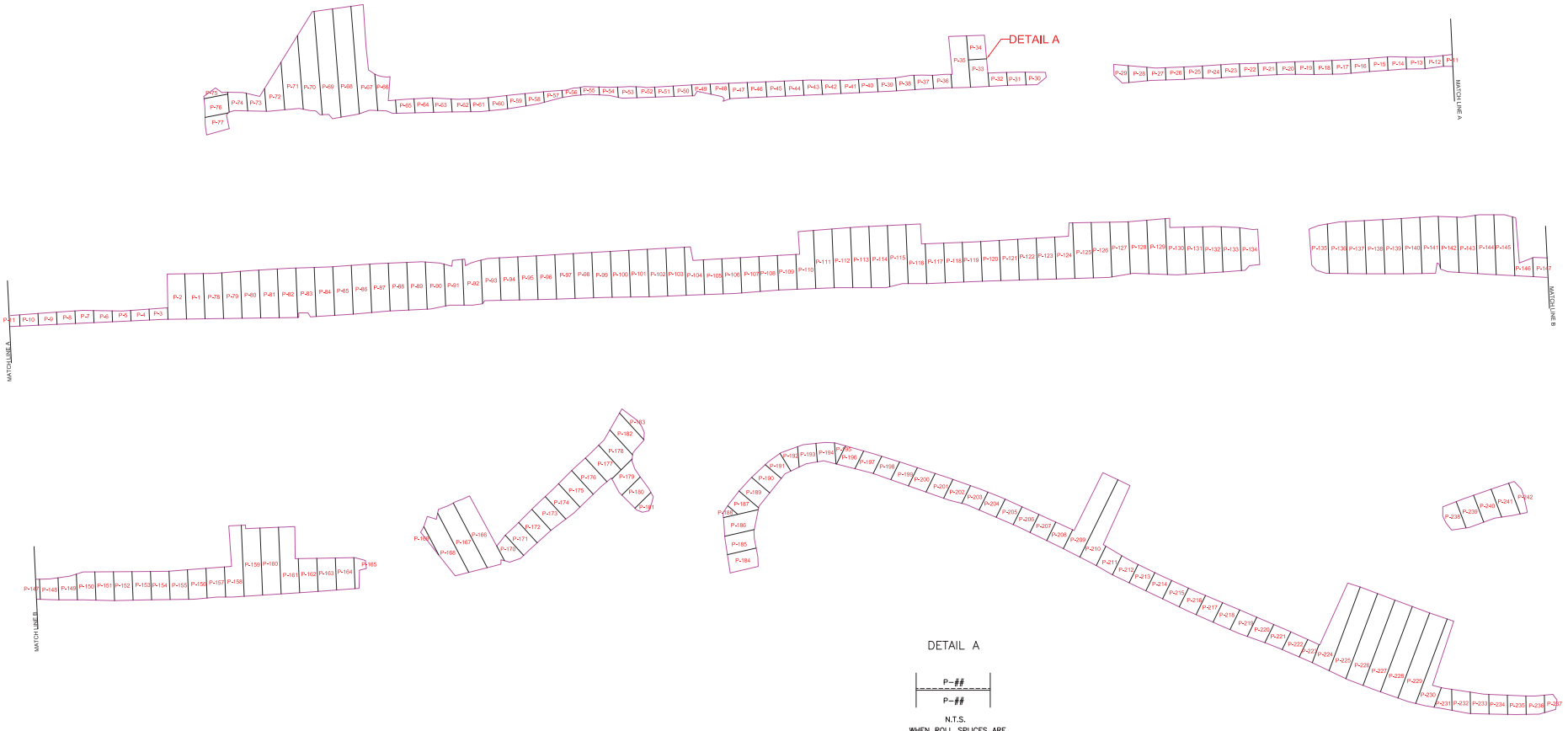
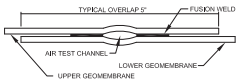


DETAIL A

N.T.S.

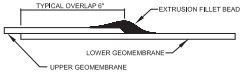
WHEN ROLL SPLICES ARE REQUIRED, PANEL NUMBERING WILL BE MODIFIED ACCORDINGLY.

DETAIL B



DOUBLE FUSION WELD
N.T.S.

DETAIL C



EXTRUSION FILLET WELD
N.T.S.

LEGEND

P-##	PANEL IDENTIFICATION NUMBER
	FIELD SEAM
	APPROXIMATE LOCATION OF LINER LIMITS

0 60 120 240

NOTES :

1. GEOMEMBRANE MATERIAL: AGRU AMERICA 40-MIL HDPE MICROSPIKE.
2. TYPICAL PANEL WIDTH IS 23'.
3. TYPICAL PANEL OVERLAP FOR DOUBLE FUSION WELD IS 5".
4. PRIMARY METHOD OF PANEL SEAMING: DOUBLE FUSION WELD DETAIL B.
5. PRIMARY METHOD OF SEAMING FOR REPAIRS AND PENETRATIONS: EXTRUSION FILLET WELD DETAIL C.
6. PIPE PENETRATIONS AND SPECIAL CONNECTIONS WILL BE BUILT IN ACCORDANCE WITH CONTRACT DRAWINGS.
7. FIELD SUPERINTENDENT MAY MODIFY PANEL LAYOUT TO MEET FIELD CONDITIONS.

STATUS | DATE

CHENANGO CONTRACTING, INC
29 Arbutus Road
Johnson City, NY 13790
Phone 607-729-8500
Fax 607-729-3415

PROPOSED GEOMEMBRANE PANEL LAYOUT
HONEYWELL WASTEBEDS 1-8 INTEGRATED IRM PROJECT
SYRACUSE, NEW YORK

PROJECT NO.: 17947
SCALE: 1"=60'
DRAWN BY: NSB
SHEET: 1 OF 1

GeoTesting EXPRESS

Technologies to manage risk for infrastructure

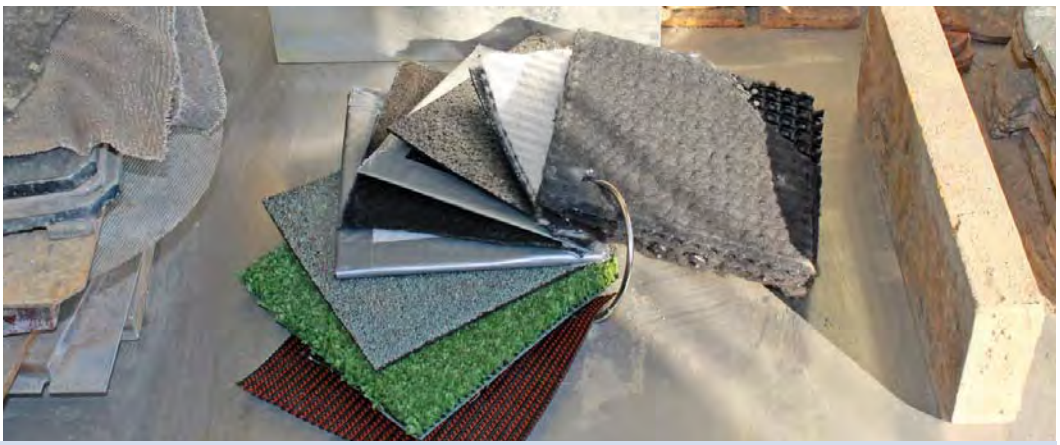
Geosynthetic Testing

Capabilities of GeoTesting Express' Geosynthetic Testing

GeoTesting Express performs over 150 standard geosynthetic tests according to the appropriate American Society for Testing and Materials (ASTM), International Standards Organization (ISO), Geosynthetic Research Institute (GRI) and Federal Test Method Standard (FTMS) standards. Our staff has years of experience testing and designing with geosynthetics. We've provided laboratory testing in support of thousands of projects utilizing geosynthetics. Our accredited laboratories work twenty-four hours a day, seven days a week to provide the most responsive service in the industry. We can perform in-plant sampling of geosynthetics at any manufacturing facility in the world.

GeoTesting Express, Inc. (GTX), has a staff with years of experience in testing and designing with geosynthetics. GTX's accredited laboratories work twenty-four hours a day, seven days a week to provide the most responsive service in the industry.

Typical Geomembrane Tests Performed	Test Method
Asperity	ASTM D7466
Carbon Black Content	ASTM D1603 / D4218
Carbon Black Dispersion	ASTM D3015 / D5596
Density	ASTM D792 / D1505
Dimensional Stability	ASTM D1204
Melt Index	ASTM D1238
Thickness	ASTM D751 / D1593 / D5199 / D5994
Puncture Resistance/Strength	FTMS 2065 / ASTM D4833
Tear Resistance	ASTM D1004
Tensile Strength & Elongation	ASTM D6693 / D882
Seam Destructive Test	ASTM D6392
Wide-Width Tensile	ASTM D4885



For More Information Contact:

Boston
t 978.635.0424

Atlanta
t 770.645.6575

Chicago
t 224.676.1371

New York
t 212.566.6630

gtt@geotesting.com

Geosynthetic Testing

Full Service Geosynthetics Laboratory

Typical Soil/Geosynthetic Interaction Tests Performed	Test Method
Gradient Ratio	ASTM D5101
Hydraulic Conductivity Ratio	ASTM D5567
Interface Shear	ASTM D5321 / D6243
Pullout Test	ASTM D6706

Typical Geocomposite Tests Performed	Test Method
Compression Test	ASTM D1621 / D6364
Transmissivity	ASTM D4716
Thickness	ASTM D5199
Ply Adhesion	ASTM D413 / D7005 / F904

Typical Geogrid Tests Performed	Test Method
Junction Strength	GRI GG2
Rib Strength	GRI GG1 / ASTM D6637
Stiffness	ASTM D1388

Typical Geofoam Tests Performed	Test Method
Compressive Strength	ASTM C165
Dimensions & Density	ASTM C303
Flexural Strength	ASTM C203

Typical GCL Tests Performed	Test Method
Fluid Loss	ASTM D5891
Index Flux / Permeability	ASTM D5887 / D5084
Internal Shear	ASTM D6243
Mass Per Unit Area	ASTM D5993
Moisture Content by Microwave	ASTM D4643
Peel Strength	ASTM D6496
Permeability with Incompatible Liquid	ASTM D6766
Swell Index	ASTM D5890
Tensile	ASTM D6768

Typical Geotextile Tests Performed	Test Method
Apparent Opening Size	ASTM D4751
Asphalt Retention	ASTM D6140
CBR Puncture	ASTM D6243
Grab Strength & Elongation	ASTM D4632
Mass Per Unit Area	ASTM D3776 / D5261
Mullen Burst	ASTM D3786
Thickness	ASTM D1777 / D5199
Permittivity	ASTM D4491
Puncture Strength	ASTM D4833
Seam Strength	ASTM D4884
Tensile Strength	ASTM D5035
Trapezoidal Tear Strength	ASTM D4533
Wide-Width Tensile Strength	ASTM D4595

Validated by the U.S. Army Corps of Engineers

Accredited by: GAI-LAP

GeoTesting EXPRESS

Technologies to manage risk for infrastructure

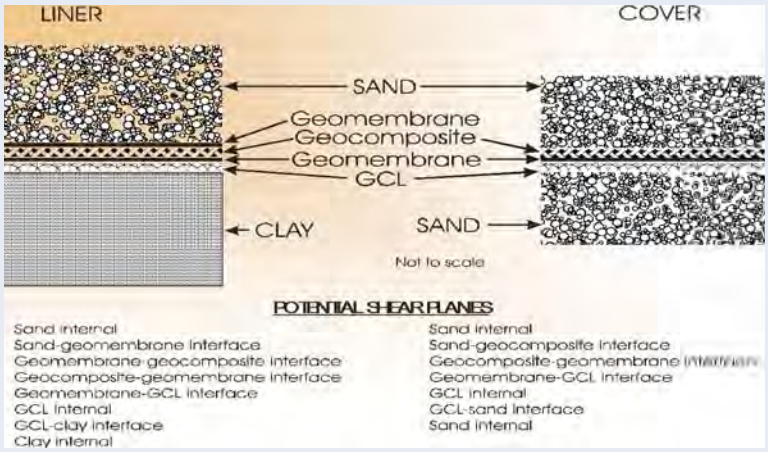
Interface & Internal Shear Testing

GeoTesting Express, Inc. (GTX), provides comprehensive service by offering in-plant sampling of geosynthetics at any geosynthetic manufacturing plant in the world. Our full service soil testing laboratory can provide moisture-density curves (Proctor) and grain size analysis testing of soils, which are often required in conjunction with interface shear tests involving soils.

Capabilities of GeoTesting Express' Interface & Internal Shear Testing

GeoTesting Express (GTX) is fully equipped to perform interface and internal shear tests of geosynthetics and soil-geosynthetic interfaces. Interface and internal shear testing of geosynthetics is usually required when geosynthetic materials are used on sloping ground. The test measures peak and post-peak shear strength which allows the determination of peak and post-peak friction angles. Our fully automated interface shear test devices run tests twenty-four hours a day, seven days a week. These devices give us complete control of testing parameters such as normal load, consolidation/hydration time, shear rate and drainage conditions. We have equipment to apply normal loads as low as 0.5 psi (72 psf) to as high as 250 psi (36,000 psf). This flexibility and control allow us to replicate field conditions and perform the test to your exact requirements. We provide you with accurate test results and the quickest turnaround possible.

GTX provides comprehensive service by offering in-plant sampling of geosynthetics at any geosynthetic manufacturing plant in the world. Our full service soil testing laboratory can provide moisture-density curves (Proctor) and grain size analysis testing of soils, which are often required in conjunction with interface shear tests involving soils.



Typical Interfaces in Landfill Liner and Cover Systems

For More Information Contact:

Boston
t 978.635.0424

Atlanta
t 770.645.6575

Chicago
t 224.676.1371

New York
t 212.566.6630

gtt@geotesting.com

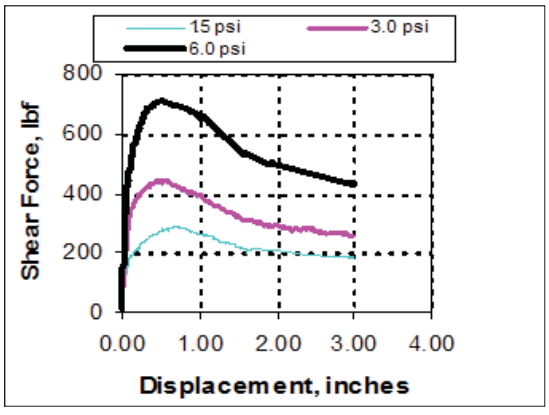
Interface & Internal Shear Testing

Full Service Laboratory and Field Testing of Soil, Rock and Geosynthetics

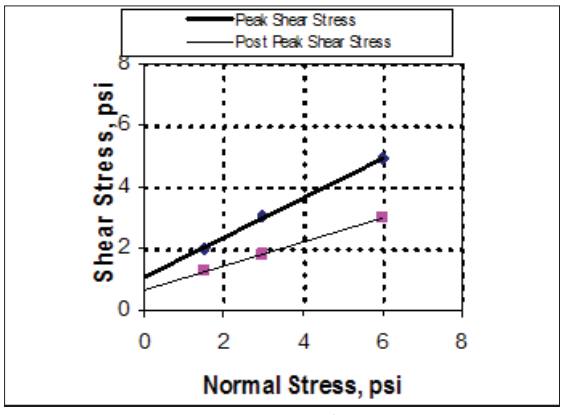
Our professional staff has been performing and evaluating interface shear tests for over thirty years. Our engineers actively participate in the American Society for Testing and Materials (ASTM) and, in fact, have led the development of the interface shear testing standards (ASTM D5321 and D6243). We are accredited by the Geosynthetics Accreditation Institute - Laboratory Accreditation Program (GAI-LAP) and validated by the United States Army Corps of Engineers (USACE). Also, our soils laboratory is accredited by the American Association of State and Highway Transportation Officials (AASHTO) and the American Association for Laboratory Accreditation (A2LA). From our many years of experience on thousands of projects we have developed "best practices" for testing all types of geomaterials. For instance, while working with clay materials and geosynthetic clay liners (GCLs) the effects of pore pressure can greatly effect interface and internal shear test results. Our experience and background in soils testing helps us to understand and minimize these effects.

High Pressure Interface Shear Test Frame

Common Shear Test Components	ASTM Test	Test Variables That Depend on Site Conditions
Soil vs. Geosynthetic	D5321	Density and moisture condition of soil, drained or undrained, shear displacement rate, normal load, geosynthetic orientation
Geosynthetic vs. Geosynthetic	D5321	Drained or undrained, shear displacement rate, normal load, geosynthetic orientation
GCL vs. Geosynthetic	D6243 or D5321	Hydration/consolidation of GCL, drained or undrained, shear displacement rate, normal load, geosynthetic orientation
GCL vs. Soil	D6243 or D5321	Density and moisture condition of soil, hydration/consolidation of GCL, drained or undrained, shear displacement rate, normal load, geosynthetic orientation
GCL Internal	D6243	Hydration/consolidation of GCL, drained or undrained, shear displacement rate, normal load, geosynthetic orientation



Typical Shear Force vs. Displacement Curves for Three Normal Stresses



Typical Peak and Post Peak Strength Envelopes

Validated by the U.S. Army Corps of Engineers

Accredited by:

GAI-LAP

QUALIFICATIONS

Overview

GeoTesting Express, Inc. (GTX) is the testing division of Geocomp Corporation. Since 1989, our internationally recognized laboratories have been helping to reduce risk by providing the fastest turnaround time available for high-quality mechanical and physical properties testing services on soils, rocks, geosynthetics, and other geo-materials. We've supported projects with some of the most challenging conditions in the world ranging from tunnels, dams, and nuclear-related facilities to deep excavations, off-shore facilities, and retaining structures. GTX offers:

- Fastest turnaround available for high-quality testing services;
- Full complement of soil, rock, and geosynthetic tests from one laboratory;
- Expert support from industry leaders;
- The ability to handle large projects without a reduction in speed or quality; and
- Fully accredited laboratories.

Turnaround Time

To process large volumes of tests within a short period of time, we have developed superior processes, utilize automated equipment (manufactured by our sister division, Geocomp Products) designed to perform tests at the maximum speed allowable by published standards, and created our own laboratory information management system (LIMS) which allows us to be the fastest in the industry. We continually track, communicate, and strive to improve our turnaround time. In fact, during periods of high-demand, we can add additional equipment from our Products division within **hours** to meet the needs of our clients. Examples of available turnaround times include:

Test	Turnaround	Test	Turnaround
Incremental Consolidation	36 hours	Permeability	36 hours
Triaxial Shear Series	48 hours	Grain Size & Atterberg Limits	48 hours
Direct Shear Series – Sand	24 hours	Direct Simple Shear – Clay	48 hours
Rock Triaxial	24 hours	Rock Unconfined Compression	24 hours
Interface Shear	24 hours	Geosynthetic Conformance	24 hours

Quality

Accreditations/Validations

Our laboratories are accredited or validated by the following nationally recognized agencies. We are the only laboratory in the country accredited or validated by each of these organizations:

American Association of State Highway and Transportation Officials (AASHTO) **AMRL and CCRL** *Soil, Aggregate, and Concrete Testing*	**Geosynthetics Accreditation Institute – Laboratory Accreditation Program** *Geosynthetics Testing*	**American Association for Laboratory Accreditation** *Soil and Rock Testing*	**United States Army Corps of Engineers** *Soil, Rock, Geosynthetics, Aggregate, Concrete, and Masonry Testing*

Our laboratories are audited by these organizations at regular intervals. During these audits, our quality system is reviewed and our testing capabilities are verified. In addition to these external audits, GTX performs internal audits on each of its laboratories at least once per year.

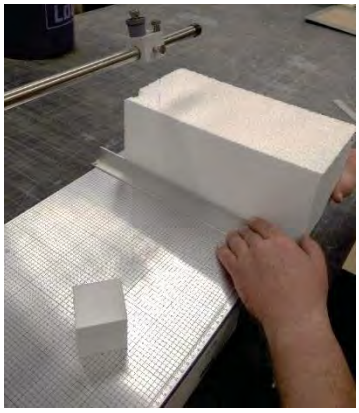
Our quality system is accredited to International Standards Organization (ISO)/IEC Guide 17025-2005 which requires our laboratory system meet internationally recognized standards. ISO/IEC Guide 17025-2005 accreditation also demonstrates technical competence in the test standards we perform. Our quality system and technical procedures are scrutinized during audits, helping us ensure that the quality of our work is maintained at the highest possible level. In addition to voluntary laboratory audits, we also participate in several sample proficiency testing programs to benchmark our work. In order for GTX to maintain its accreditations, we must achieve a minimum score (typically within ±2 standard deviations from the average) on proficiency testing. We also go beyond the requirements of our accrediting agencies by validating and verifying equipment at much higher frequencies than prescribed (including several pieces on a daily basis). We have also provided testing services in support of several nuclear power plant projects requiring us to work under an NQA-1 Quality Program – the highest level of QA in our industry. Our quality system is in compliance with NQA-1.

Process Control

GTX employs the use of Standard Operating Procedures (SOP) for performing tests and calibration/verification of testing equipment. We use an advanced, proprietary LIMS which enables bar-code labeling to track, test, and store each and every sample in the laboratory. We track due dates, completion dates, and report dates in LIMS. LIMS allows for direct data entry of test data from laboratory instruments. LIMS also produces test reports. The use of bar-code label technology allows for efficient sample storage and retrieval. In addition, by bar coding samples, our technicians can easily retrieve pertinent information about a sample without delay. We also utilize LIMS to schedule calibration/verification of test equipment, ensuring the maximum time interval does not pass for key pieces of equipment.

Staff

Our staff members are recognized as industry leaders with years of experience on some of the most interesting and challenging projects around the world. Our staff is encouraged to participate in industry organizations (such as ASTM International) to become more educated in new technologies and to help improve our field. We encourage our personnel to pursue continuing education in their technical field of choice. Our technicians are trained in specific tests and are required to demonstrate proficiency in those tests on a yearly basis. We cross-train our field and laboratory staff to promote a better understanding of the real-world applications our work impacts. Our field and laboratory personnel maintain a variety of different licenses, registrations, and certifications from agencies such as NICET, ACI, NETCEP, Geosynthetic Research Institute (GRI), and OSHA.



Prepping Geofoam specimens with wire saw

Geosynthetics

GTX performs more than 150 different geosynthetic tests to determine physical and soil-geosynthetic interactive properties. Testing is conducted in accordance with ASTM International, ISO, GRI, and Federal Test Method Standard (FTMS) standards. Our staff has years of experience testing and designing with geosynthetic materials. We've provided these services in support of thousands of projects including solid waste, mechanically-stabilized earth (MSE) walls, roadways, and lagoons.

Our accredited laboratories work 24 hours a day, seven days a week to provide the most responsive service in the industry. GTX's procedures and equipment are designed to conduct tests according to published standards while reducing the total amount of time required to provide test results.

ASTM D4833 Pin Puncture Test

We can perform in-plant sampling of geosynthetics at any manufacturing facility in the world. We also provide 3rd party construction quality assurance (CQA) of geosynthetic installation to ensure geosynthetics are being installed correctly on any type of project.

Our Director of Testing Services, **Gary T. Torosian**, actively participates and serves as secretary on the executive committee in ASTM Committee D35 on geosynthetics. He has spent years focused on improving the interface shear test standards (D5321 and D6243) within ASTM in addition to several others.

Conformance Testing

GTX performs testing of geosynthetics prior to installation in the field to ensure conformance with project specifications. It is critical to the success of any project to receive accurate test results quickly. Samples can be shipped to our laboratory from the manufacturing facility prior to being shipped or from the project site prior to installation.

Geomembrane Tests and Methods

Typical Geomembrane Tests Performed	Test Method
Asperity	ASTM D7466
Carbon Black Content	ASTM D1603 / D4218
Carbon Black Dispersion	ASTM D3015 / D5596
Density	ASTM D792 / D1505
Dimensional Stability	ASTM D1204
Melt Index	ASTM D1238
Thickness	ASTM D751 / D1593 / D5199 / D5994
Puncture Resistance/Strength	FTMS 2065 / ASTM D4833
Tear Resistance	ASTM D1004
Tensile Strength & Elongation	ASTM D6693 / D882
Seam Destructive Test	ASTM D6392
Wide-Width Tensile	ASTM D4885

Geotextile Tests and Methods

Typical Geotextile Tests Performed	Test Method
Apparent Opening Size	ASTM D4751
Asphalt Retention	ASTM D6140
CBR Puncture	ASTM D6243
Grab Strength & Elongation	ASTM D4632
Mass Per Unit Area	ASTM D3776 / D5261
Mullen Burst	ASTM D3786
Thickness	ASTM D1777 / D5199
Permittivity	ASTM D4491
Puncture Strength	ASTM D4833
Seam Strength	ASTM D4884
Tensile Strength	ASTM D5035
Trapezoidal Tear Strength	ASTM D4533
Wide-Width Tensile Strength	ASTM D4595

GCL Tests and Methods

Typical GCL Tests Performed	Test Method
Fluid Loss	ASTM D5891
Index Flux / Permeability	ASTM D5887 / D5084
Internal Shear	ASTM D6243
Mass Per Unit Area	ASTM D5993
Moisture Content by Microwave	ASTM D4643
Peel Strength	ASTM D6496
Permeability with Incompatible Liquid	ASTM D6766
Swell Index	ASTM D5890
Tensile	ASTM D6768

Geocomposite Tests and Methods

Typical Geocomposite Tests Performed	Test Method
Compression Test	ASTM D1621 / D6364
Transmissivity	ASTM D4716
Thickness	ASTM D5199
Ply Adhesion	ASTM D413 / D7005 / F904

Geofoam Tests and Methods

Typical Geofoam Tests Performed	Test Method
Compressive Strength	ASTM C165
Dimensions & Density	ASTM C303
Flexural Strength	ASTM C203

Geogrid Tests and Methods

Typical Geogrid Tests Performed	Test Method
Junction Strength	GRI GG2
Rib Strength	GRI GG1 / ASTM D6637
Stiffness	ASTM D1388

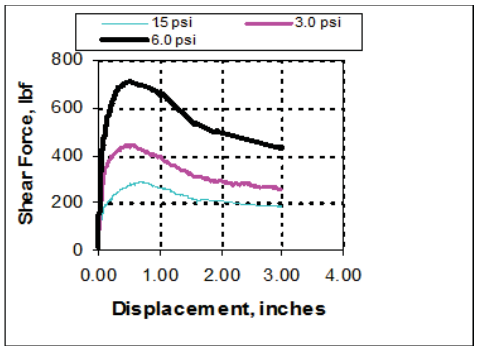
Seam Destructive Testing

GTX offers same-day service for geomembrane seam testing. We understand the critical need of receiving seam test results as quickly as possible. A delay in receiving seam test results could potentially lead to equipment down time, decrease of manpower utilization, or even geosynthetic damage. GTX's LIMS allows us to conduct and report seam testing results without delay.

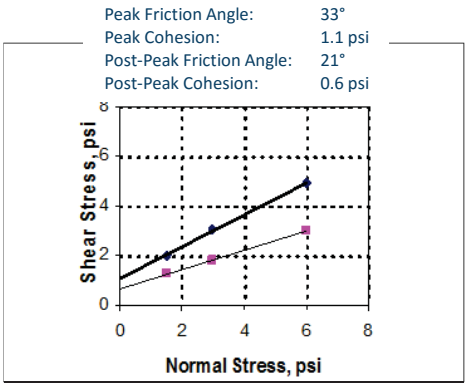
Interface/Internal Shear Testing

GTX is fully equipped to perform interface and internal shear tests of geosynthetics and soil-geosynthetic interfaces. Interface and internal shear testing of geosynthetics is usually required when geosynthetic materials are used on sloping ground. The test measures peak and post-peak shear strength, which allows the determination of peak and post-peak friction angles. Our fully automated interface shear test devices run tests 24 hours a day, seven days a week. These devices give us complete control of testing parameters, such as normal load, consolidation/hydration time, shear rate, and drainage conditions. We have equipment to apply normal loads as low as 0.5 psi (72 psf) to as high as 250 psi (36,000 psf). This flexibility and control allows us to replicate field conditions and perform the test to your exact requirements. Equipped with 14 shear boxes for direct, interface, and internal shear, we provide you with accurate test results and the quickest turnaround possible.

High Pressure Interface Shear Test Frame



Typical Shear Force vs. Displacement Curves for 3 Normal Stresses



Typical Peak and Post Peak Strength Envelopes

Field Construction Quality Assurance

GTX has provided CQA services of geosynthetic liner and capping materials for landfill, pond and MSE walls for more than 25 years. Our field personnel are certified by the Geosynthetic Certification Institute– Inspectors Certification Program (GCI-ICP) for "Geosynthetic and Compacted Clay Liner Materials" in addition to "Mechanically Stabilized Earth (MSE) Walls, Berms and Slopes Using Geosynthetic Reinforcement." In addition, our field personnel are OSHA 40 hour safety trained.

Services for MSE Walls, Berms and Slopes

- Identify and provide feedback on design anomalies.
- On-site inspection and documentation of geosynthetic installation and soil placement activities by a GCI-ICP certified inspector.
- Reduce risk of geosynthetic damage during installation.
- Accredited laboratory testing of soils and geosynthetics proposed for use, including direct shear and pullout resistance.

Accreditation #:
GAI-LAP - 20 - 96
TEL (610) 522-8440

Geosynthetic Institute
475 Kedron, Ave.
Folsom, PA 19033

GeoTesting Express, Inc.

is granted accreditation
for designated geosynthetic test methods in accordance with the Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP), as published in its annual directory.
This accreditation is valid until June 30, 2018.

Robert M. Koerner, Ph.D., P.E.
Director Emeritus

GRI
GEI GII
GSI
GAI GCI

George R. Koerner, Ph.D., P.E. & CQA
Auditor

© GOES 74

Geosynthetic Institute
475 Kedron Avenue
Folsom, PA 19033-1208 USA

TEL (610) 522-8440
FAX (610) 522-8441

June 18, 2017 Revision

Mr. Joseph D. Tomei
Geotesting Express Inc.
125 Nagog Park
Acton, MA 01720

Re: GAI-LAP

Dear Mr. Gary Tomei:

The Geosynthetic Institute (GSI) is pleased to acknowledge Geotesting Express on its repertoire of Geosynthetic Accreditation Institute's-Laboratory Accreditation Program (GAI-LAP) accredited tests. This letter should serve as notification that Geotesting Express located in Acton, MA is currently accredited for the following sixty (60) test methods until June 30, 2018.

1. ASTM D374 Test Methods for Thickness of Solid Electrical Insulation
2. ASTM D413 Test Methods for Rubber Property - Adhesion to Flexible Substrate
3. ASTM D751 Test Methods for Coated Fabrics (thickness)
4. ASTM D792 Test Method for Specific Gravity and Density of Plastics by Displacement
5. ASTM D1004 Test Method for Initial Tear Resistance of Plastic Film and Sheeting
6. ASTM D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
7. ASTM D1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
8. ASTM D1505 Test Method for Density of Plastics by the Density Gradient Technique
9. ASTM D1593 Specification for Nonrigid Vinyl Chloride Plastic Sheeting (thickness)
10. ASTM D1603 Test Method for Carbon Black in Olefin Plastics
11. ASTM D1777 Test Method for Measuring the Thickness of Textile Materials
12. ASTM D3015 Standard of Practice for Microscopic Examination of Pigment Dispersion in Plastic Compounds
13. ASTM D3776 Test Method for Mass Per Unit Area (Weight) or Woven Fabric

14. ASTM D3786 Test Method for Hydraulic Burst Strength of Knitted Goods and Nonwoven Fabrics (Diaphragm Bursting Strength Tester Method)
15. ASTM D3787 Test Method for Bursting Strength of Textiles-Constant-Rate of Traverse (CRT) Ball Burst Test
16. ASTM D4218 Test Method for Carbon Black in Olefin Plastics (Muffle Furnace)
17. ASTM D4491 Test Methods for Water Permeability of Geotextiles by Permittivity
18. ASTM D4533 Test Method for Index Trapezoidal Tearing Strength of Geotextiles
19. ASTM D4595 Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
20. ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles
21. ASTM D4716 Test Method for Determining the (In-Plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head
22. ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile
23. ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products
24. ASTM D4884 Test Method for Seam Strength of Sewn Geotextiles
25. ASTM D4885 Test Method for Determining Performance Tensile Strength of Geomembranes Using Wide Strip Testing
26. ASTM DS 199 Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes
27. ASTM D5261 Test Method for Measuring Mass per Unit Area of Geotextiles
28. ASTM D5321 Test Method Determining the Coefficient of Soil and Geosynthetic or Geosynthetic to Geosynthetic Friction by the Direct Shear Method
29. ASTM D5596 Test Methods for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
30. ASTM D5884 Test Method for the Tearing Strength of Internally Reinforced Geomembranes
31. ASTM D5887 Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liners Specimens Using a Flexible Wall Permeameter
32. ASTM D5890 Standard Test Method for Swell Index of Clay Mineral Component of Geosynthetic Clay Liners
33. ASTM D5891 Standard Test Method for Fluid Loss of Clay Component of GCL
34. ASTM D5993 Test Method for Measuring the Mass Per Unit Area of GCL
35. ASTM D5994 Test Method for Measuring the Core Thickness of Textured Geomembranes
36. ASTM D6140 Test Method to Determine Asphalt Retention of Paving Fabrics Used in Asphalt Paving for Full Width Applications
37. ASTM D6214 Test Method for Determining the Integrity of Field Seams Used in Joining Geomembranes by Chemical Fusion Methods
38. ASTM D6241 Test Method for the Static Puncture Strength of Geotextiles and Geotextile Related Products Using a 50-mm Probe

39. ASTM D6243 Test Method for Determine the Internal and Interface Shear Resistance of Geosynthetic Clay Liners by the Direct Shear Method
40. ASTM D6364 Test Method for Determining the Short-Term Compression Behavior of Geosynthetics
41. ASTM D6392 Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods
42. ASTM D6496 Standard Test Method for Determining the Average Bonding Peel Strength Between Top and Bottom Layers of Needle-Punched Geosynthetic Clay Layers
43. ASTM D6636 Standard Test Method for Determination of Ply Adhesion Strength of Reinforced Geomembrane
44. ASTM D6637 Standard Test Method for Determining Tensile Properties of Geotextile by Single or Multi Rib Tensile Method
45. ASTM D6693 Test Method for Determining Tensile Properties of Polyethylene and Nonreiforced Flexible Polypropylene Membranes
46. ASTM D6766 Test Method for Evaluation of Hydraulic Properties of Geosynthetic Clay Liners Permeated with Potentially Incompatible Liquids
47. ASTM D6768 Test Method for Tensile Strength of Geosynthetic Clay Liners
48. ASTM D7003 Test Method for Strip Tensile Properties of Reinforced Geomembranes
49. ASTM D7004 Test Method for Grab Tensile Properties of Reinforced Geomembranes
50. ASTM D7005 Test Method for Determining the Bond Strength of Geocomposites
51. ASTM D7179 Test Method for Determining Geonet Breaking Force
52. ASTM D7408 Standard Test Method for non-reinforced PVC Geomembrane Seams
53. ASTM D7466 Test Method for Measuring the Asperity Height of Textured Geomembranes
54. ASTM D7737 Standard Test Method for Individual Geogrid Junction Strength
55. ASTM D7747 Standard Test Method for Integrity of Seams using Thermo-Fusion Method for Reinforced Geomembranes by the Strip Tensile Method
56. ASTM D7749 Standard Test Method for Integrity of Seams using Thermo-Fusion Method for Reinforced Geomembranes by the Grab Method
57. FTM STD. No. 1O1c (method 2065), Puncture Resistance a Test (1/8 in. radius probe)
58. ASTM C165 Standard Test Methods for Measuring Compressive Properties of Thermal Insulations
59. ASTM C203 Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
60. ASTM C303 Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation

Any questions regarding your accreditation should be directed to George or Robert Koerner at (610) 522-8440. Once again congratulation and thank you for participating in the GAI-LAP.

Regards,

George R. Koerner, Ph.D., P.E. & CQA
Director

DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS
GEOTECHNICAL AND STRUCTURES LABORATORY
WATERWAYS EXPERIMENT STATION, 3909 HALLS FERRY ROAD
VICKSBURG, MISSISSIPPI 39180-6199

December 6, 2016

Reply to the Attention of:
Concrete and Materials Branch

Mr. Joe Tomei
GeoTesting Express, Inc.
125 Nagog Park
Acton, MA 01720

Dear Mr. Tomei:

An inspection of your materials testing laboratory was performed on July 21, 2016. You provided deficiency corrections to the Materials Testing Center (MTC) on September 14, 2016. These deficiency corrections were compared to the ASTM Standards for compliance and found to be satisfactory. Your Quality System meets the requirements of the U.S. Army Corps of Engineers. The material test methods that you are validated to perform for the U.S. Army Corps of Engineers are:

Aggregate Tests: ASTM C40, C117, C127, C128, C136, C29, C88, C123, C131, C142, C535, C566, C702, C1077, C1252, D75, D2419, D4791, D5821, and CRD-C119.

Concrete Tests: ASTM C31, C39, C138, C143, C172, C173, C231, C1064, C470, C511, C617, C1077, and C1231.

Masonry, Mortar, & Grout Tests: ASTM C109, C140, C780, and C1019.

Rock Tests: ASTM D2845, D2936, D3740, D3967, D4543, D4644, D5240, D5312, D5313, D5607, D5731, D5873, D6032, D7012, D7625, CRD-C144, and CRD-C169.

Soil Tests: ASTM D421, D422, D558, D559, D560, D698, D854, D1140, D1556, D1557, D1883, D2166, D2168, D2216, D2434, D2435, D2487, D2488, D2850, D2974, D3080, D3740, D4220, D4253, D4254, D4318, D4546, D4643, D4767, D4829, D4972, D5084, D6913, D6938, D7181, D7263, and E329.

Geosynthetic Tests: ASTM C165, C203, C303, D374, D413, D751, D792, D1004, D1204, D1238, D1505, D1593, D1603, D1777, D3015, D3776, D3786, D3787, D4218, D4491, D4533, D4595, D4632, D4716, D4751, D4833, D4884, D4885, D5199, D5261, D5321, D5596, D5884, D5887, D5890, D5891, D5993, D5994, D6214, D6241, D6243, D6364, D6392, D6496, D6636, D6637, D6693, D6766, D6768, D7003, D7004, D7005, D7179, D7408, D7466, D7737, D7747, D7749, and FTM STD. No. 101c (method 2065).

We will add your laboratory to the list of commercial laboratories qualified to conduct material tests for the U.S. Army Corps of Engineers; see the MTC page at www.erdc.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/9254/Article/476661/materials-testing-center.aspx. All Corps offices will be notified of this decision and will have the opportunity to use your services. GeoTesting Express, Inc. Acton, MA will remain on our list of laboratories qualified to conduct material tests until **July 21, 2019** three (3) years from the date of the inspection.

Sincerely,

Alfred B. Crawley, PE
Director
Materials Testing Center

Copy Furnished: Mr. Silas T. Sanderson, New England District

Recent Relevant Project Experience and References

Project Name:	**Glenview Landfill Closure**	
Location:	**Chelmsford, MA**	
Contract No.:	not available	
Period of Performance:	2016/2017	
Dollar Value of Project:	not available	
Total Invoiced by GTX:	$85,000	
Customer Point of Contact:	Laura Bugay	
	Company:	Langdon Environmental, LLC
	Address:	2 Summer St Natick, MA
	TEL:	(617) 970-8995
Customer Point of Contact:	Chris Ryan	
	Company:	Charter Environmental
	Address:	500 Harrison Ave Boston, MA
	TEL:	(978) 420-5106
Customer Point of Contact:	Dave Welch	
	Company:	New England Liner Systems
	Address:	40 Westfield Drive Plantsville, CT
	TEL:	(860) 426-1880

Brief Description of Work: GTX teamed with the three companies listed above to provide comprehensive on-site Construction Monitoring and Quality Assurance/Quality Control of the soils placement and geosynthetics installation during the construction of the landfill closure. GTX was on-site full-time from August of 2016 through January of 2017. GTX also performed all the soils, geosynthetics, and interface shear testing during the construction of the landfill closure project. Soil index and permeability properties were tested along with and conformance testing of the geomembrane materials used. GTX also performed interface shear testing of the soil and geomembrane for slope stability.

Project Name:	**Middleboro Sanitary LF Ph III Construction**	
Location:	Middleboro, MA	
Contract No.:	not available	
Period of Performance:	2016	
Dollar Value of Project:	not available	
Total Invoiced by GTX:	$11,000	
Customer Point of Contact:	Paul Shamoian	
	Company:	Civil & Environmental Consultants, Inc.
	Address:	31 Bellows Road Raynham, MA
	TEL:	774-501-2176

Brief Description of Work: GTX provided the soils and geosynthetics (geomembrane, geotextile, geocomposite) testing during the construction for all project phases listed above. GTX also provided direct shear testing of the site soils and interface shear testing of all materials for slope stability.

Project Name:	**Ann Street LF Phase IV Cells 9 & 10**
Location:	Cumberland County, NC
Contract No.:	not available
Period of Performance:	2017
Dollar Value of Project:	not available
Total Invoiced by GTX:	$8,000
Customer Point of Contact:	Lindsay Weiford
Company:	Draper Aden Associates
Address:	8090 Villa Park Drive Richmond, VA
TEL:	(804) 264-2228

Brief Description of Work: GTX provided the geosynthetics conformance testing during the construction for the project phases listed above. Soil index and permeability properties and conformance testing of all geosynthetic materials used. GTX also tested the various soil/geosynthetic components for interface shear (slope stability).

Project Name:	**Turnkey Landfill Phase 10, 11A, 11B, 12, and 13 Projects**
Location:	Rochester, NH
Contract No.:	not available
Period of Performance:	2014 - 2017
Dollar Value of Project:	not available
Total Invoiced by GTX:	$125,000
Customer Point of Contact:	Bill Goodman
Company:	Civil & Environmental Consultants, Inc.
Address:	31 Bellows Road Raynham, MA
TEL:	774-501-2176

Brief Description of Work: GTX provided the soils and geosynthetics testing during the construction for all project phases listed above. Soil index and permeability properties and conformance testing of all geosynthetic materials used. GTX also tested the various soil/geosynthetic components for interface shear (slope stability).

Project Name:	**2017 Taunton Cell 5 FC**
Location:	Taunton, MA
Contract No.:	not available
Period of Performance:	2017
Dollar Value of Project:	not available
Total Invoiced by GTX:	$8,600
Customer Point of Contact:	Chris Dohner
Company:	Civil & Environmental Consultants, Inc.
Address:	31 Bellows Road Raynham, MA
TEL:	774-501-2176

Brief Description of Work: GTX provided the soils and geosynthetics testing during the construction of the landfill closure project. Soil index and permeability properties and conformance testing of all geosynthetic materials used.

GTX also tested the various soil/geosynthetic components for interface shear (slope stability).

Project Name:	**Rhode Island Resource Recovery (RIRRC) Landfill Phase VI Area 1 and Phase VI Area 2 Cell Construction Projects**
Location:	Johnston, RI
Contract No.:	not available
Period of Performance:	2016-2017
Dollar Value of Project:	not available
Total Invoiced by GTX:	$55,000
Customer Point of Contact:	Paul Shamoian
Company:	Civil & Environmental Consultants, Inc.
Address:	31 Bellows Road Raynham, MA
TEL:	774-501-2176
Brief Description of Work:	GTX provided the soils and geosynthetics testing during the construction for all project phases listed above. Soil index and permeability properties and conformance testing of all geosynthetic materials used. GTX also tested the various soil/geosynthetic components for interface shear (slope stability).

Project Name:	**Fitchburg/Westminster Sanitary Landfill**
Location:	Westminster, MA
Contract No.:	not available
Period of Performance:	2014
Dollar Value of Project:	not available
Total Invoiced by GTX:	$10,000
Customer Point of Contact:	Andy Baum
Company:	Waste Management
TEL:	508-740-9520
Brief Description of Work:	GTX is providing geosynthetic conformance testing for geomembrane, geocomposite, geosynthetic clay liner, and geotextile. In addition, we are conducting interface shear testing on various liner components of the expansion for slope stability determination.

Project Name	**Southbridge Landfill**
Location:	Southbridge, MA
Contract No.:	not available
Period of Performance:	2013-2014
Dollar Value of Project:	not available
Total Invoiced by GTX:	$10,000
Customer Point of Contact:	Kevin Stetson
Company:	Sanborn, Head & Associates
Address:	1 Technology Park Drive Westford, MA
TEL:	978-392-0900

Brief Description of Work:	GTX is provided various index tests (grain size, moisture content, Atterberg limits, moisture-density relationship) and strength tests (direct shear) from soils collected at this site.

Project Name:	**Bourne Landfill Phase 4 Stage 2 Expansion**
Location:	Bourne, MA
Contract No.:	not available
Period of Performance:	2013
Dollar Value of Project:	not available
Total Invoiced by GTX:	$10,000
Customer Point of Contact:	David Welch
Company:	New England Liner Systems.
Address:	40 Westfield Drive Plantsville, CT
TEL:	860-426-1880

Brief Description of Work:	GTX is provided conformance testing of geosynthetic clay liner used to construct the expansion. Also, we conducted the interface shear testing with GCL vs. geomembrane and internal GCL shear. GTX also provided same day seam test results. Samples were delivered to our laboratory and results were provided on the same day allowing construction to continue without delay.

Project Name:	**Lincoln Avenue Landfill Capping**
Location:	Bohemia, NY
Contract No.:	not available
Period of Performance:	2012
Dollar Value of Project:	not available
Total Invoiced by GTX:	$30,000+
Customer Point of Contact:	Steve Brix
Company:	Cashin Associates
Address:	1200 Veterans Memorial Highway Hauppage, NY 11788
TEL:	631-348-7600

Brief Description of Work:	GTX provided laboratory conformance testing of geosynthetics used in construction of this landfill cap including geomembrane and geocomposite. Several interface shear test series were performed on each portion of the cap cross-section including both saturated and unsaturated tests. GTX also performed index and 100 hour performance transmissivity tests on the geocomposite and adjacent geosynthetics/soils. During field deployment of the geomembrane, GTX provided same-day seam test results to the installation crew to allow for quick soil placement over the membrane.

Project Name:	**ecomaine Phase 2 West Landfill Construction**
Location:	South Portland, ME
Contract No.:	not available
Period of Performance:	2012

Dollar Value of Project:	not available
Total Invoiced by GTX:	$10,000+
Customer Point of Contact:	Peter Mailey
Company:	Sevee & Maher Engineers, Inc.
Address:	4 Blanchard Road Cumberland Center, ME
TEL:	207-829-5016

Brief Description of Work: GTX provided in-plant sampling of the various geosynthetic products proposed for use on this new cell construction. Geosynthetics sampled and tested included flexible membrane liner, geotextile, geocomposite and geosynthetic clay liner (GCL). GTX conducted interface shear tests for each baseliner component including internal shear of GCL. We also provided same-day seam test results to allow for rapid geomembrane coverage in the field.

Project Name:	**Ontario County Landfill Stage VII-B Liner Extension**
Location:	Ontario County, NY
Contract No.:	not available
Period of Performance:	2012
Dollar Value of Project:	not available
Total Invoiced by GTX:	$6,000+
Customer Point of Contact:	Cory McDowell
Company:	Barton & Loguidice, P.C.
Address:	290 Elwood Davis Road Syracuse, NY
TEL:	315-457-5200

Brief Description of Work: GTX's role as 3rd party independent testing laboratory in support of this cell extension project required us to perform laboratory conformance testing of flexible membrane liner, geotextile, geocomposite and geosynthetic clay liner (GCL) proposed for use. GTX conducted interface shear tests for various components of the landfill cross-section. Same-day geomembrane seam peel & shear tests were performed in support of the field deployment of geosynthetics.

Project Name:	**Upton Landfill**
Location:	Upton, MA
Contract No.:	not available
Period of Performance:	2012
Dollar Value of Project:	not available
Total Invoiced by GTX:	$13,500
Customer Point of Contact:	John Bobrek
Company:	Woodard & Curran, Inc.
Address:	35 New England Business Center Andover, MA
TEL:	978-557-8150

Brief Description of Work: GTX performed four-point interface shear test series on various source soils and proposed geosynthetics (geomembrane, geotextile) for the

project. Multiple sources of drainage sand, subgrade soil & rip rap are being evaluated for conformance to the project specification for slope stability.

Project Name:	**Turnkey Landfill Phase 9 and MSE Final Cap Construction**
Location:	Rochester, NH
Contract No.:	not available
Period of Performance:	2012
Dollar Value of Project:	not available
Total Invoiced by GTX:	$35,000
Customer Point of Contact:	Bill Goodman
Company:	Civil & Environmental Consultants, Inc.
Address:	31 Bellows Road Raynham, MA
TEL:	774-501-2176

Brief Description of Work:

GTX provided the soils (protective cover, drainage sand, vegetative soil) and geosynthetics (geomembrane, geotextile and geocomposite) testing used during the construction of the MSE Final Cap. Soil index and permeability properties were tested and conformance testing was performed on the geosynthetics. We also tested the various soil/geosynthetic combinations for interface shear.

During the Phase 9 cell construction, GTX performed source testing of the clay proposed for use on the site including flexible wall permeability. Conformance testing for the various components of the baseliner were also tested including geomembrane, GCL, geotextile, geocomposite & geonet. Interface shear tests were performed for each of these components.

Project Name:	**Elizabeth Mines Superfund Site**
Location:	VT
Contract No.:	not available
Period of Performance:	2011-2012
Dollar Value of Project:	not available
Total Invoiced by GTX:	$37,000
Customer Point of Contact:	Chris Adams
Company:	Nobis Engineering, Inc.
Address:	18 Chenell Drive Concord, NH
TEL:	603-224-4182

Brief Description of Work:

GTX provided 3rd party independent testing of the geosynthetics used in capping this EPA priority site. We performed conformance testing of geomembrane and geocomposite including transmissivity testing. Same-day seam peel & shear tests were provided to support field deployment & seaming of geomembrane.

Project Name:	**Southeast Landfill**
Location:	Town of Southeast, NY
Contract No.:	not available
Period of Performance:	2010
Dollar Value of Project:	not available
Total Invoiced by GTX:	$13,000+
Customer Point of Contact:	Fred Todd
Company:	Brennan Construction
Address:	50 Prospect Hill Road Brewster, NY
TEL:	845-628-8739

Brief Description of Work: GTX provided 3rd party CQA during the geosynthetic installation portion of the project monitoring activities conducted by the installer. In addition, GTX conducted side-by-side vacuum box testing on 20% of the 40 mil textured LLDPE geomembrane seams.

Project Name:	**Brookhaven Landfill (several phases)**
Location:	Brookhaven, NY
Contract No.:	not available
Period of Performance:	2003 - 2010
Dollar Value of Project:	not available
Total Invoiced by GTX:	$79,000
Client Point of Contact:	Dan Johnson
Company:	LK McLean
Address:	437 South Country Road Brookhaven, NY
TEL:	631-286-8668
FAX:	631-286-6314

Brief Description of Work: GeoTesting Express provided laboratory conformance testing for all geosynthetics proposed for use in several phases at this landfill site including: textured geomembrane, geocomposite, geonet, geotextile and geosynthetic clay liner. We performed the interface shear tests required to assure the cap and liner components meet the slope stability requirements of the project. In addition, we are performed same-day seam destructive tests in support of several phases of the project. Our laboratory is also performed testing of the various soils used as part of the cap and liner phases.

Project Name:	**Hartford Landfill (several phases)**
Location:	Hartford, CT
Contract No.:	not available
Period of Performance:	2004 - 2010
Dollar Value of Project:	not available
Total Invoiced by GTX:	$160,000

Brief Description of Work: GeoTesting Express has been performing both laboratory and field testing in support of many phases at this landfill site. We've worked for liner installers, general contractors and designers. We've conducted

laboratory testing of various soils (cover, topsoil, low permeability soil, drainage sand, etc.) for index properties, permeability and strength (direct shear). We've performed conformance and interface shear testing for several geosynthetics materials installed at the site including: geotextile, geocomposite and 40 mil textured LLDPE & HDPE geomembrane. We've provided same-day seam destructive test results. We've also provided in-field compaction control testing by nuclear methods.

Contractors:
DG Roach & Sons, Inc.: Darryl Roach - 413-967-6733
ET&L Construction Corporation: George Kelland – 978-897-4353
R. Bates & Sons: James Learned - 978-365-4602
New England Liner Company: David Welch - 860-583-5463

Engineers:
TRC: Malcolm Beeler - 860-298-9692
Fuss & O'Neil: Donald Lussier - 860-646-2469

Project Name:	**Smithtown Landfill Cell 6 Phase 2 Cap Closure**
Location:	Smithtown, NY
Contract No.:	not available
Period of Performance:	2009 - 2010
Dollar Value of Project:	not available
Total Invoiced by GTX:	$35,000
Client Point of Contact:	Dan Johnson
Company:	LK McLean
Address:	437 South Country Road Brookhaven, NY
TEL:	631-286-8668
FAX:	631-286-6314

Brief Description of Work: GeoTesting Express provided laboratory conformance testing for all geosynthetics proposed for use in the cap including: 40 mil textured LLDPE geomembrane, geocomposite, geonet, geotextile and geosynthetic clay liner. We are performing the interface shear tests required to assure the cap components meet the slope stability requirements of the project. In addition, we are performing same-day seam destructive tests in support of the project. Our laboratory is also performing testing of the various soils being used as part of the cap including common fill, protective cover and barrier protection soils.

Project Name:	**CMW Landfill (several final covers and expansions)**
Location:	Carver, MA
Contract No.:	not available
Period of Performance:	1999-2009
Dollar Value of Project:	not available
Total Invoiced by GTX:	$110,000+
Customer Point of Contact:	Alan Kirschner

	Company:	Brown & Caldwell (formerly Cushing, Goins & Kirschner)
	Address:	48 Leona Drive Suite C Middleborough, MA 02346
	TEL:	508-923-0879
	FAX:	508-923-0894
Brief Description of Work:		GeoTesting Express has provided QC testing of all soil components of the landfill including the subgrade, gas vent sand, drainage sand, vegetative support material and clay liners and caps. We have provided 3rd party oversight during construction of the clay liners and caps. GTX has provided conformance testing, seam destructive testing and interface shear testing for the geosynthetic components including geomembrane (both HDPE and LLDPE) (approximately 2 million square feet) and geocomposite (approximately 2 million square feet).

Project Name:		**Ontario County Landfill Liner Extension & Phase 7A**
Location:		Ontario County, NY
Contract No.:		not available
Period of Performance:		2009-2010
Dollar Value of Project:		not available
Total Invoiced by GTX:		$20,000+
Customer Point of Contact:		Cory McDowell
	Company:	Barton & Loguidice
	Address:	290 Elwood Davis Road Syracuse, NY
	TEL:	315-457-5200
	FAX:	315-451-0052
Brief Description of Work:		GeoTesting Express performed laboratory conformance testing of geosynthetic materials proposed for use in the liner extension including: geocomposite, 60 mil textured HDPE geomembrane, geotextile and geosynthetic clay liner. Included in these tests were long-term performance Transmissivity tests with site-specific soil against geocomposite material. We also conducted interface shears and same-day seam destructive tests for this project.

Project Name:		**Clinton County Landfill (multiple phases)**
Location:		Clinton County, NY
Contract No.:		not available
Period of Performance:		2003 - 2010
Dollar Value of Project:		not available
Total Invoiced by GTX:		$21,000
Client Point of Contact:		Greig Graham
	Company:	Terrafix Environmental
	Address:	770 Main Street PO Box 1226 Lewiston, ME 04240
	TEL:	207-786-6808

	FAX: 207-786-6835
Brief Description of Work:	GeoTesting Express has provided laboratory testing services for multiple phases on this landfill over several years. We've provided conformance testing of HDPE geomembrane, GCL, geotextile, geocomposite and PVC. In addition, we've conducted the interface shear tests required for each component of the various expansions and closures. Also, as part of our responsibilities as the CQA laboratory, we were required to perform same-day seam destructive testing on the FML seam samples.
Project Name:	**Colebrook Landfill Expansion**
Location:	Colebrook, NH
Contract No.:	not available
Period of Performance:	2006-2009
Dollar Value of Project:	~$7,000,000
Total Invoiced by GTX:	$275,000+
Customer Point of Contact:	Richard Barthelmes
	Company: Lynnfield Engineering
	Address: 199 Newbury Street Danvers, MA 01923
	TEL: 978-777-7250
Brief Description of Work:	GeoTesting Express was contracted to provide on-site CQA for soils and geosynthetics placement for this landfill expansion project. 20' high geogrid reinforced berms were constructed to increase the capacity of this landfill over seven acres. GTX monitored activities of the contractors during construction of the berms and geosynthetic liner. In addition, GTX performed laboratory testing required for the soils and conformance testing for the geosynthetics proposed for use in a compressed schedule.
Project Name:	**Central Landfill**
Location:	Johnston, RI
Contract No.:	not available
Period of Performance:	2003-2008
Dollar Value of Project:	---
Total Invoiced by GTX:	$100,000+
Brief Description of Work:	GeoTesting Express was contracted to provide on-site CQA for soils, laboratory testing of geosynthetics (including interface shear and seam destructive tests on 60 mil textured LLDPE geomembrane) and laboratory/field testing of soils for several contractors during many phases of work at the project site. We've provided testing services to New England Liner, DiGregorio Contractors and JH Lynch & Sons. Specific phases worked on include: Areas 5, 6, 7 cap, Phase II & III Area 1 cap, Phase IV, Phase V Area 2B, Phase VI, Phase V Area 2 baseliner and Phase V baseliner.

Project Name:	**Little Broad Run Landfill**
Location:	New Haven, WV
Contract No.:	not available
Period of Performance:	2006-2007
Dollar Value of Project:	not available
Total Invoiced by GTX:	$108,000+
Customer Point of Contact:	Angie Gerdeman
Company:	Hull & Associates, Inc.
Address:	3401 Glendale Avenue Suite 300 Toledo, OH 434614
TEL:	419-385-2018

Brief Description of Work: GTX performed on-site CQA during PVC deployment for several phases between 2006 and 2007. GTX provided a senior CQA technician to work with the client during fast-paced installation schedule.

Project Name:	**URI Landfill**
Location:	South Kingston, RI
Contract No.:	not available
Period of Performance:	2004-2006
Dollar Value of Project:	not available
Total Invoiced by GTX:	$73,000
Customer Point of Contact:	Alan Benevides
Company:	Woodard & Curran
Address:	35 New England Business Center Suite 180 Andover, MA 01810
TEL:	978-557-8150

Brief Description of Work: GTX provided on-site geosynthetic installation monitoring and soil compaction control testing for closing this 18-acre alternative-cap design Superfund site. GTX conducted laboratory testing for each component of the soil cap including: subbase, low permeability soil, topsoil and vegetative support. In addition, we conducted laboratory conformance testing on geocomposite and 60 mil textured HDPE geomembrane.

Project Name:	**SPSA Landfill – Several Phases**
Location:	Virginia
Contract No.:	not available
Period of Performance:	2004-2006
Dollar Value of Project:	not available
Total Invoiced by GTX:	$28,000+
Customer Point of Contact:	Rob Vester & Scott Thornton
Company:	Draper Aden Associates
Address:	8090 Villa Park Drive Richmond, VA 23228
TEL:	804-264-2228

	FAX:	804-264-8773
Brief Description of Work:	GeoTesting Express provided conformance testing on LLDPE geomembrane, geocomposite and geotextiles used on various phases at the landfill. In addition, we performed interface shear testing between various geosynthetic and soil components. GTX performed same-day seam destructive tests for the project as well.	

Project Name:	**Quarry Hills Recreational Complex**
Location:	Quincy, MA
Contract No.:	not available
Period of Performance:	1997-2005
Dollar Value of Project:	not available
Total Invoiced by GTX:	$200,000+
Client Point of Contact:	Jonathan Taylor
Company:	Jacobs/Sverdrup Civil, Inc.
Address:	2 Center Plaza Boston, MA 02108
TEL:	617-742-8060

Brief Description of Work: GeoTesting Express has been providing QA testing for this large landfill project for several years. GeoTesting Express provides testing of subgrade soil, drainage and gas vent sand, vegetative support soil and the clay cap. We have provided strength testing during the evaluation stage of the clay cap. We've performed various index tests and several hundred undisturbed permeability tests on clay during construction as well as remolded permeability tests on clay during the source evaluation process. When required, GTX has provided sample pick-up and permeability test results on one-day turnaround.

Project Name:	**Fountain Avenue Landfill**
Location:	NY
Contract No.:	not available
Period of Performance:	2003-2005
Dollar Value of Project:	not available
Total Invoiced by GTX:	$20,000+
Client Point of Contact:	Carl Burdick
Company:	Chenango Contracting, Inc.
Address:	29 Arbutus Road Johnson City, NY 13790
TEL:	607-729-8500
FAX:	607-729-2415

Brief Description of Work: GeoTesting Express performed conformance testing of various geosynthetic materials proposed for use at the landfill. In addition, we have performed extensive interface shear testing between all soil and geosynthetic components of the cap system.

Project Name: **Lebanon Landfill**

Location:	Lebanon, NH
Contract No.:	not available
Period of Performance:	2004
Dollar Value of Project:	not available
Total Invoiced by GTX:	$13,000
Client Point of Contact:	Greig Graham
Company:	Terrafix Environmental
Address:	770 Main Street PO Box 1226 Lewiston, ME 04240
TEL:	207-786-6808
FAX:	207-786-6835

Brief Description of Work: GeoTesting Express provided five-point interface shear test series for all landfill components including several at very slow displacement rates (0.004 inches per minute). We also performed seam destructive testing on same-day turnaround.

Project Name:	**Town of North Hempstead Phase 2 Landfill 5 Closure**
Location:	North Hempstead, NY
Contract No.:	not available
Period of Performance:	2004
Dollar Value of Project:	not available
Total Invoiced by GTX:	$35,000+
Client Point of Contact:	Bob Doutney
Company:	Cashin Associates
Address:	1200 Veterans Memorial Highway Hauppauge, NY 11788
TEL:	631-348-7600
FAX:	631-348-7601

Brief Description of Work: GeoTesting Express provided conformance testing on geotextile, geocomposite, geomembrane and geosynthetic clay liner materials for use at this capping project. We also conducted interface shear test series between all components of the landfill. Testing for conformance and interface shear were required within 48 hours of sample receipt. We provided same day seam destructive test results during the construction phase of the project.

Project Name:	**51 Grove Street Remediation**
Location:	Arlington, MA
Contract No.:	not available
Period of Performance:	2004
Dollar Value of Project:	not available
Total Invoiced by GTX:	$83,000
Customer Point of Contact:	Jeff Dulgarian
Company:	Conti Environmental
Address:	One Concord Farm 490 Virginia Road Concord, MA 01742

	TEL:	978-318-9095
Brief Description of Work:	GeoTesting Express provided on-site field monitoring of geosynthetic installation activities during construction of the liner and cap for environmentally contaminated soils. We also provided the conformance testing required on geosynthetic materials used (geomembrane and geosynthetic clay liner)	
Project Name:	**Shaffer Landfill**	
Location:	Billerica, MA	
Contract No.:	not available	
Period of Performance:	2001-2003	
Dollar Value of Project:	not available	
Total Invoiced by GTX:	$75,000+	
Client Point of Contact:	Doug Murphy	
	Company:	GeoSyntec Consultants
	Address:	629 Massachusetts Avenue Boxborough, MA 01719
	TEL:	978-667-1371
	FAX:	978-667-1433
Brief Description of Work:	GeoTesting Express is providing conformance testing on geogrid, geotextile, double-sided geocomposite and geomembrane for this 68 acre double landfill project. We're also providing destructive testing of welded seams on same-day turnaround. Our geotechnical testing laboratory is also providing soil testing services for various landfill components.	
Project Name:	**Pine Bluff Arsenal**	
Location:	Pine Bluff, Arkansas	
Contract No.:	not available	
Period of Performance:	2003	
Dollar Value of Project:	not available	
Total Invoiced by GTX:	$12,000	
Client Point of Contact:	Peggy Shaaf	
	Company:	Shaw Environmental
	Address:	1430 Enclave Parkway Houston, TX 77077
	TEL:	281-368-4400
Brief Description of Work:	GeoTesting Express provided on-site field monitoring of geosynthetic installation activities during the cap construction phase of this project. We also provided the conformance testing required on the components of the liner system as well as the seam destructive testing required for the project. Geosynthetic materials installed included geomembrane and geocomposite.	
Project Name:	**Turnkey Landfill**	
Location:	Rochester, NH	

Contract No.:	not available
Period of Performance:	2003
Dollar Value of Project:	not available
Total Invoiced by GTX:	$45,000
Client Point of Contact:	Rich Wesenberg
Company:	Golder Associates
Address:	540 North Commercial Street Suite 250 Manchester, NH 03101
TEL:	603-688-0880

Brief Description of Work: GeoTesting Express provided on-site field monitoring of geosynthetic installation and soils placement for Mechanically Stabilized Earth (MSE) wall constructed along perimeter of project.

Project Name:	**Turnkey Landfill**
Location:	Rochester, NH
Contract No.:	not available
Period of Performance:	2003
Dollar Value of Project:	not available
Total Invoiced by GTX:	$40,000
Client Point of Contact:	Tony Wespiser
Company:	Earth Tech
Address:	196 Baker Avenue Concord, MA 01742
TEL:	978-371-4000

Brief Description of Work: GeoTesting Express provided on-site field monitoring of geosynthetic installation activities during the liner expansion construction phase of this project. We also provided the conformance testing required on the components of the liner system as well as the seam destructive testing required for the project.

Project Name:	**Saltville Waste Disposal Ponds**
Location:	Saltville, VA
Contract No.:	not available
Period of Performance:	2001-2002
Dollar Value of Project:	not available
Total Invoiced by GTX:	$40,000
Client Point of Contact:	Jim Magnoli
Company:	New England Liner Systems
Address:	35 Wooster Court Bristol, CT 06010
TEL:	860-583-5463
FAX:	860-582-6357

Brief Description of Work: GeoTesting Express provided conformance tests of LLDPE geomembrane, double-sided geocomposite and geosynthetic clay liner (GCL) on this 70 acre double lined landfill project. In addition, we also provided same-day seam destructive test results.

Project Name:	**Devens Consolidation Landfill (cap)**
Location:	Devens, MA
Contract No.:	not available
Period of Performance:	2002
Dollar Value of Project:	not available
Total Invoiced by GTX:	$68,000
Client Point of Contact:	Glenn Houle
Company:	Maxymillian Technologies (cap)
Address:	1801 East Street Pittsfield, MA 01201
TEL:	413-449-3050

Brief Description of Work: GeoTesting Express provided on-site field monitoring of geosynthetic installation activities during the liner and cap portions of this project. We also provided the conformance testing required on the components of the liner system as well as the seam destructive testing required for the project.

Project Name:	**White Oak Landfill**
Location:	Silver Springs, MD
Contract No.:	not available
Period of Performance:	2001
Dollar Value of Project:	not available
Total Invoiced by GTX:	$33,400
Client Point of Contact:	Erin Rhoads
Company:	Shaw Environmental (formerly IT/OHM)
TEL:	412-858-1512

Brief Description of Work: GeoTesting Express provided on-site field monitoring of geosynthetic installation activities during the liner portion of this project. We also provided the conformance and interface shear testing required on the components of the liner system as well as the seam destructive testing required for the project. Materials included geomembrane, geosynthetic clay liner, geocomposite and geotextile.

Project Name:	**Town of North Hempstead Final Cover System L-5 Landfill**
Location:	North Hempstead, NY
Contract No.:	not available
Period of Performance:	2001
Dollar Value of Project:	not available
Total Invoiced by GTX:	$44,000
Client Point of Contact:	Francis Ribaudo
Company:	Cashin Associates
Address:	1200 Veterans Memorial Highway Hauppauge, NY 11788
TEL:	631-348-7600
FAX:	631-348-7601

Brief Description of Work:	GeoTesting Express provided conformance testing on geotextile, geocomposite and geomembrane materials for use at the 30 acre landfill capping project. We also conducted interface shear test series between all components of the landfill. Testing for conformance and interface shear were required within 48 hours of sample receipt. We provided same day seam destructive test results during the construction phase of the project.
Project Name:	**Devens Consolidation Landfill (liner)**
Location:	Devens, MA
Contract No.:	not available
Period of Performance:	2001
Dollar Value of Project:	not available
Total Invoiced by GTX:	$110,000
Client Point of Contact:	Jim Henebury (now with Earth Tech) – 978-371-4000
Company:	Stone & Webster (now Shaw)
Address:	100 Technology Center Drive Stoughton, MA 02072
TEL:	617-589-5111
Brief Description of Work:	GeoTesting Express provided on-site field monitoring of geosynthetic installation activities during the liner construction phase of this project. We also provided the conformance testing required on the components of the liner system as well as the seam destructive testing required for the project. Geosynthetic materials installed included geomembrane and geocomposite.
Project Name:	**Rocky Mountain Arsenal**
Location:	Commerce City, CO
Contract No.:	not available
Period of Performance:	1997-2001
Dollar Value of Project:	not available
Total Invoiced by GTX:	$1,000,000+
Client Point of Contact:	John Berretz
Company:	KBR
Address:	c/o Rocky Mountain Arsenal – PMC 72nd Avenue at Quebec Street Commerce City, CO 80022
TEL:	303-289-0318
Brief Description of Work:	GeoTesting Express set up, maintained, staffed and managed an on-site testing laboratory in support of landfill efforts at the site. Testing performed at the on-site laboratory included soil index tests (grain size, Atterberg limits, moisture-density relationship, specific gravity and permeability). Safety and quality audits were routinely conducted at GTX's on-site facilities at this federal site. All activities were performed under strict oversight by the US Army Corps of Engineers. GTX also provided off-site laboratory conformance testing of geosynthetic materials used at the landfill portion of this high-profile,

Superfund project. Testing was required to be completed within 48 hours of sample receipt in the laboratory.

Project Name:	**Salzburg Landfill Cells 20, 21, 22**
Location:	Midland, MI
Contract No.:	not available
Period of Performance:	2000
Dollar Value of Project:	not available
Total Invoiced by GTX:	$37,000
Client Point of Contact:	John Allen
Company:	Dow Chemical
Address:	PO Box 2560 Midland, MI 48641
TEL:	989-636-6085

Brief Description of Work: GeoTesting Express performed conformance tests of geomembrane, geocomposite, and geotextile used on this 0.7 million square foot project. In addition, we provided same-day destructive seam tests. Our field personnel provided independent geosynthetic installation QA. GTX provided the client with a liner certification report upon completion of the project.

APPENDIX N
HDPE ELECTROFUSION COUPLERS

MENU

ELECTROFUSION FITTINGS

Product Overview

AGRU America offers a wide range of electrofusion fittings as part of its Pipe & Fitting system of products including couplers, tapping tees, and branch saddles, all produced from PE 100-RC.

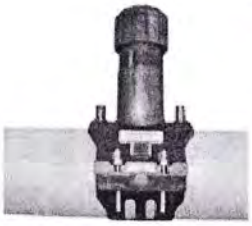
AGRU's electrofusion fittings demonstrate enormous stress crack resistance thanks to robust polyethylene (PE) 100-RC. Installation requires no sand embedding, saving costs during laying. The fittings are perfectly harmonized for all Pipe & Fitting system products, providing a robust end-to-end solution.

Technical Aspects

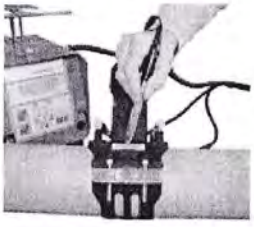
AGRU's electrofusion fittings offer permanent leak-tight connections through electrofusion welding. The simple assembly of the electrofusion fittings is owed to chamfered inlets and the fitting's long insertion depths. AGRU's fittings are simple to weld even in tight spaces or difficult terrain.

DOWNLOAD RESOURCES

Tapping Saddle Brochure (https://agruamerica.com/resource/tapping-saddle-brochure/)



(https://agruamerica.com/wp-content/uploads/2016/12/00001-fittings-1024x685.jpg)



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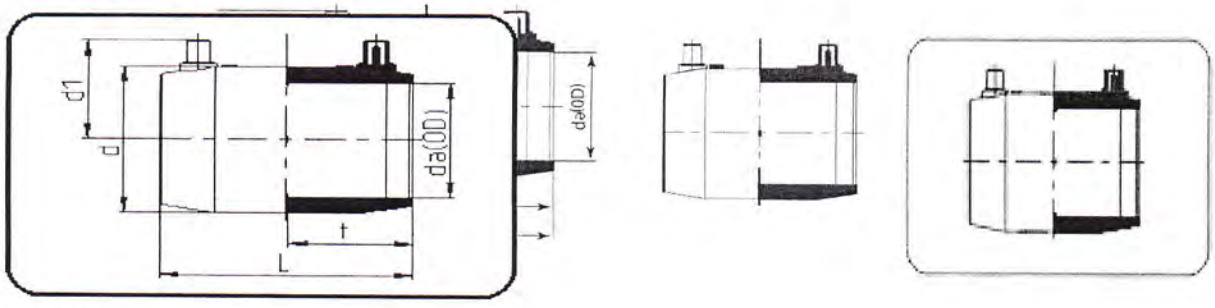
Product Solutions

Machined E-couplers

Electro Fusion Couplings



Molded of
PE100/4710/3408
Black
ASTM D2513, D3261, D3350
AWWA C906
NSF-61

SDR 11 (Standard Dimension Ratio) 230 PSI (16 bar) **(Working Pressure at 73.4 F)**

Nominal Diameter (inch)	Pipe OD	Nominal L	Nominal d	Nominal d1	Nominal t	Product Code
1/2"	0.630	2.95	1.22	1.40	1.48	R-COUPLER 0.5 SDR 11
3/4"	1.050	3.19	1.42	1.50	1.59	R-COUPLER 0.75 SDR 11
1"	1.315	3.50	1.73	1.65	1.75	R-COUPLER 1.0 SDR 11
1 1/4"	1.660	3.90	2.09	1.81	1.95	R-COUPLER 1.25 SDR 11
1 1/2"	1.900	4.37	2.64	2.01	2.19	R-COUPLER 1.5 SDR 11
2"	2.375	5.00	3.13	2.19	2.50	R-COUPLER 2 SDR 11
3"	3.500	5.55	4.33	2.84	2.74	R-COUPLER 3 SDR 11
4"	4.500	5.98	5.55	3.31	2.95	R-COUPLER 4 SDR 11
6"	6.625	7.13	8.11	4.39	3.52	R-COUPLER 6 SDR 11
8"	8.625	9.09	10.55	5.43	4.47	R-COUPLER 8 SDR 11
10"	Call	Call	Call	Call	Call	R-COUPLER 10 SDR 11
12"	Call	Call	Call	Call	Call	R-COUPLER 12 SDR 11
14"	14	11.02	17.13		5.51	R-COUPLER 14 SDR 11
16"	16	11.81	19.65		5.91	R-COUPLER 16 SDR 11
18"	18	13.78	22.01		6.89	R-COUPLER 18 SDR 11
20"	20	14.57	24.45		7.28	R-COUPLER 20 SDR 11
22"	22	14.96	26.97		7.48	R-COUPLER 22 SDR 11
24"	24	16.14	29.33		8.07	R-COUPLER 24 SDR 11

SDR 17 (Standard Dimension Ratio) 145 PSI (10 bar) **(Working Pressure at 73.4 F)**

Nominal Diameter (inch)	Pipe OD	Nominal L	Nominal d	Nominal d1	Nominal t	Product Code
18"	18	13.78	20.43	Call	6.89	R-COUPLER 18 SDR 17
20"	20	14.57	22.68	Call	6.89	R-COUPLER 20 SDR 17
22"	22	14.96	25.2	Call	7.48	R-COUPLER 22 SDR 17
24"	24	16.14	27.2	Call	8.07	R-COUPLER 24 SDR 17
26"	26	16.14	29.49	Call	8.07	R-COUPLER 26 SDR 17
28"	28	16.14	31.77	Call	8.07	R-COUPLER 28 SDR 17
30"	30	19.69	34.02	Call	9.84	R-COUPLER 30 SDR 17
32"	32	19.69	36.3	Call	9.84	R-COUPLER 32 SDR 17
36"	36	20.08	40.91	Call	10.04	R-COUPLER 36 SDR 17
42"	42	20.87	47.64	Call	10.43	R-COUPLER 42 SDR 17
48"	48	21.26	54.41	Call	10.63	R-COUPLER 48 SDR 17

APPENDIX O
HDPE PIPE

Uponor, Sclairpipe Product Range, IPS Size, PE4710

uponor

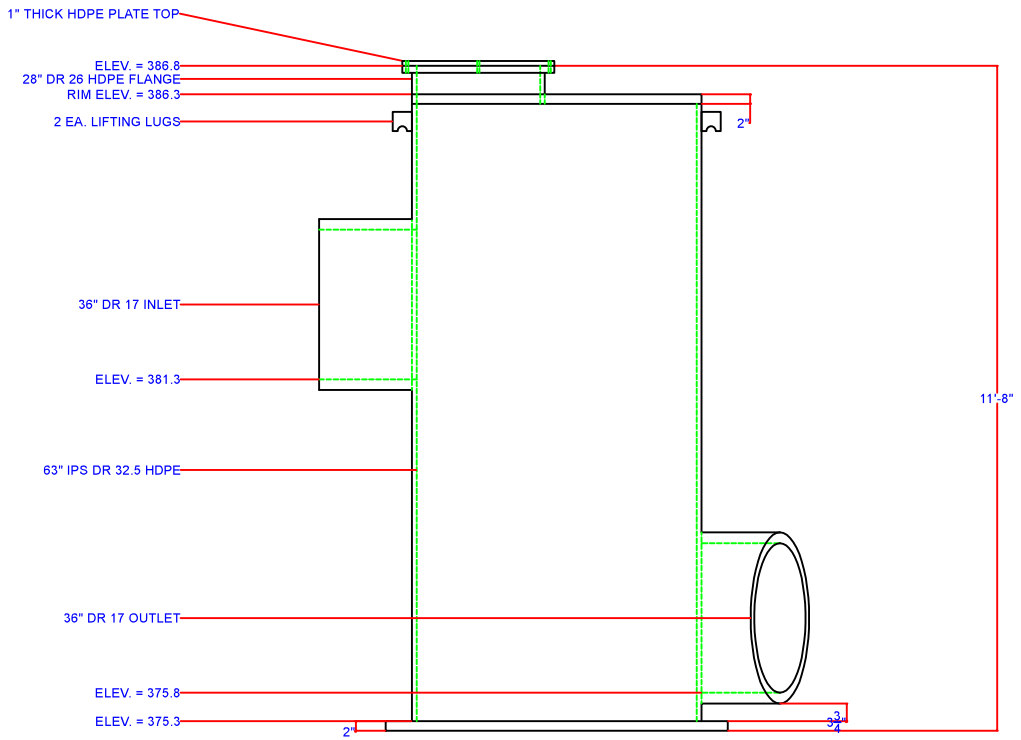
Nominal Pipe Size	PE4710			DR32.5 (64 psi)			DR26 (80 psi)			DR21 (100 psi)			DR17 (125 psi)			DR13.5 (160 psi)			DR11 (200 psi)			DR9 (250 psi)			DR7.3 (317 psi)			Nominal Pipe Size
	Minimum Outside Diameter (inches)	Maximum Outside Diameter (inches)	Average Outside Diameter (inches)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	Average Inside Diameter (inch)	Minimum Wall Thickness (inch)	Average Weight (lbs/ft)	
3	3.48	3.52	3.50	3.27	0.108	0.510	3.21	0.135	0.630	3.15	0.167	0.77	3.06	0.206	0.94	2.95	0.259	1.16	2.83	0.318	1.39	2.68	0.389	1.66	2.48	0.479	1.99	3
4	4.48	4.52	4.50	4.21	0.138	0.840	4.13	0.173	1.030	4.05	0.214	1.27	3.94	0.265	1.55	3.79	0.333	1.91	3.63	0.409	2.30	3.44	0.500	2.75	3.19	0.616	3.28	4
5	5.54	5.59	5.56	5.20	0.171	1.280	5.11	0.214	1.580	5.00	0.265	1.94	4.87	0.327	2.36	4.69	0.412	2.93	4.49	0.506	3.52	4.25	0.618	4.20	3.95	0.762	5.02	5
6	6.60	6.65	6.63	6.19	0.204	1.81	6.08	0.255	2.24	5.96	0.315	2.75	5.80	0.390	3.35	5.58	0.491	4.15	5.35	0.602	4.99	5.06	0.736	5.96	4.70	0.908	7.12	6
7	7.09	7.16	7.13	6.66	0.219	2.09	6.54	0.274	2.59	6.41	0.339	3.18	6.24	0.419	3.88	6.01	0.528	4.80	5.75	0.648	5.78	5.45	0.792	6.89	5.06	0.976	8.23	7
8	8.59	8.66	8.63	8.06	0.265	3.07	7.92	0.332	3.80	7.75	0.411	4.66	7.55	0.507	5.68	7.27	0.639	7.03	6.96	0.784	8.47	6.59	0.958	10.10	6.12	1.182	12.07	8
10	10.70	10.80	10.75	10.05	0.331	4.77	9.87	0.413	5.91	9.66	0.512	7.24	9.41	0.632	8.83	9.06	0.796	10.93	8.68	0.977	13.15	8.22	1.194	15.69	7.63	1.473	18.75	10
12	12.69	12.81	12.75	11.92	0.392	6.70	11.71	0.490	8.31	11.46	0.607	10.18	11.16	0.750	12.42	10.75	0.944	15.37	10.29	1.159	18.50	9.75	1.417	22.08	9.05	1.747	26.37	12
13	13.31	13.44	13.38	12.50	0.412	7.38	12.28	0.514	9.14	12.02	0.637	11.21	11.71	0.787	13.67	11.27	0.991	16.92	10.80	1.216	20.36	10.22	1.486	24.29	9.49	1.832	29.02	13
14	13.94	14.06	14.00	13.09	0.431	8.08	12.86	0.538	10.02	12.59	0.667	12.28	12.25	0.824	14.98	11.80	1.037	18.53	11.30	1.273	22.31	10.70	1.556	26.62	9.93	1.918	31.79	14
16	15.93	16.07	16.00	14.96	0.492	10.56	14.70	0.615	13.08	14.38	0.762	16.04	14.00	0.941	19.56	13.49	1.185	24.21	12.92	1.455	29.13	12.23	1.778	34.76	11.35	2.192	41.53	16
18	17.92	18.08	18.00	16.83	0.554	13.36	16.53	0.692	16.56	16.18	0.857	20.29	15.76	1.059	24.76	15.17	1.333	30.64	14.53	1.636	36.87	13.76	2.000	44.00	12.77	2.466	52.56	18
20	19.91	20.09	20.00	18.70	0.615	16.49	18.37	0.769	20.44	17.98	0.952	25.06	17.51	1.176	30.56	16.86	1.481	37.82	16.15	1.818	45.52	15.29	2.222	54.32	14.19	2.740	64.89	20
22	21.90	22.10	22.00	20.56	0.677	19.96	20.21	0.846	24.74	19.78	1.048	30.32	19.26	1.294	36.98	18.55	1.630	45.77	17.76	2.000	55.08	16.82	2.444	65.72	15.61	3.014	78.51	22
24	23.89	24.11	24.00	22.43	0.738	23.75	22.04	0.923	29.44	21.58	1.143	36.03	21.01	1.412	44.01	20.23	1.778	54.47	19.37	2.182	65.55	18.35	2.667	78.22	17.03	3.288	93.44	24
26	25.88	26.12	26.00	24.30	0.800	27.87	23.88	1.000	34.55	23.38	1.238	42.34	22.76	1.529	51.65	21.92	1.926	63.92	20.99	2.364	76.93	19.88	2.889	91.80				26
28	27.87	28.13	28.00	26.17	0.862	32.33	25.72	1.077	40.07	25.17	1.333	49.11	24.51	1.647	59.90	23.60	2.074	74.13	22.60	2.545	89.22	21.40	3.111	106.46				28
30	29.87	30.14	30.00	28.04	0.923	37.11	27.55	1.154	46.00	26.97	1.429	56.37	26.26	1.765	68.77	25.29	2.222	85.10	24.22	2.727	102.42	22.93	3.333	122.22				30
32	31.86	32.14	32.00	29.91	0.985	42.22	29.39	1.231	52.34	28.77	1.524	64.14	28.01	1.882	78.24	26.97	2.370	96.83	25.83	2.909	116.53							32
36	35.84	36.16	36.00	33.65	1.108	53.44	33.06	1.385	66.24	32.37	1.714	81.18	31.51	2.118	99.02	30.35	2.667	122.55	29.06	3.273	147.49							36
40	39.82	40.18	40.00	37.39	1.231	65.98	36.74	1.538	81.77	35.96	1.905	100.22	35.01	2.353	122.25	33.72	2.963	151.29										40
42	41.81	42.19	42.00	39.26	1.292	72.74	38.58	1.615	90.16	37.76	2.000	110.49	36.76	2.471	134.78	35.40	3.111	166.80										42
48	47.78	48.22	48.00	44.87	1.477	95.01	44.09	1.846	117.76	43.15	2.286	144.32	42.01	2.824	176.04													48
54	53.76	54.24	54.00	50.48	1.662	120.24	49.60	2.077	149.03	48.55	2.571	182.65	47.27	3.176	222.81													54
63	62.72	63.28	63.00	58.89	1.938	163.66	57.86	2.423	202.85	56.64	3.000	248.61																63

Pipe dimensions are in accordance with ASTM F714 and AWWA C906
Pressure Ratings are for water at 73.4 deg F.
Some of the pipe sizes and DR's above are available only on request. Check with your representative for availability.
Other dimensions and DR's not listed may be available upon special request.
All dimensions are in inches unless otherwise noted.
Weights are calculated by the methodology established in PPI's TR-7 and are applicable to PE4710

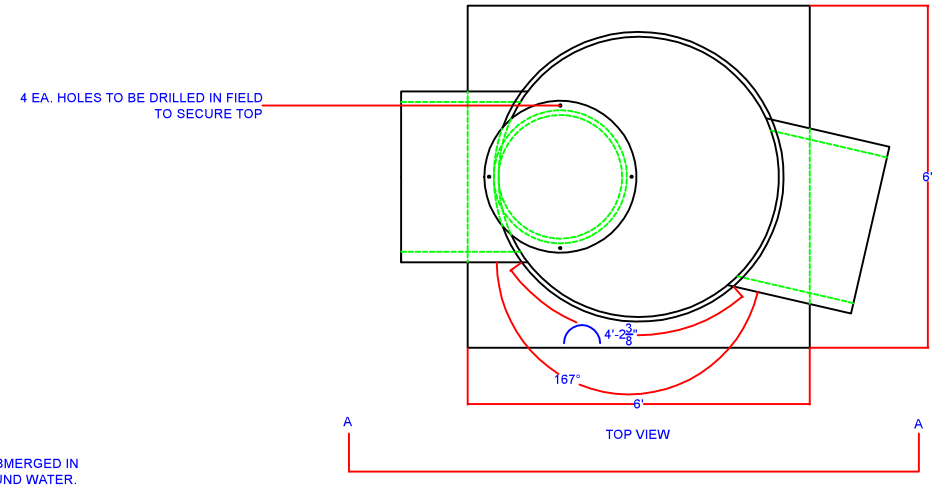
APPENDIX P
MANHOLE SUBMITTALS

CUSTOMER APPROVAL:

ENGINEER APPROVAL:



SECTION A-A



TOP VIEW

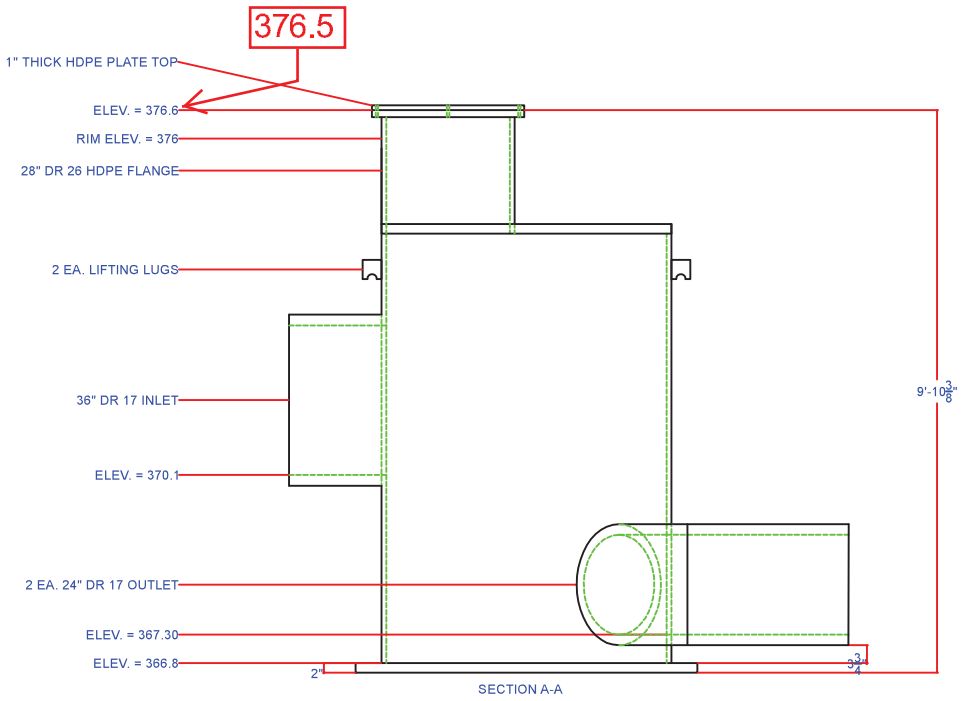
NOTES:
1. BOTTOM DESIGNED TO BE SUBMERGED IN
NO MORE THAN 3 FEET OF GROUND WATER.
2. COMPACTED STONE BASE TO BE PLACED BELOW MANHOLE.
3. COMPACTABLE BACKFILL SHOULD BE USED AROUND MANHOLE.

VARI-TECH L.L.C

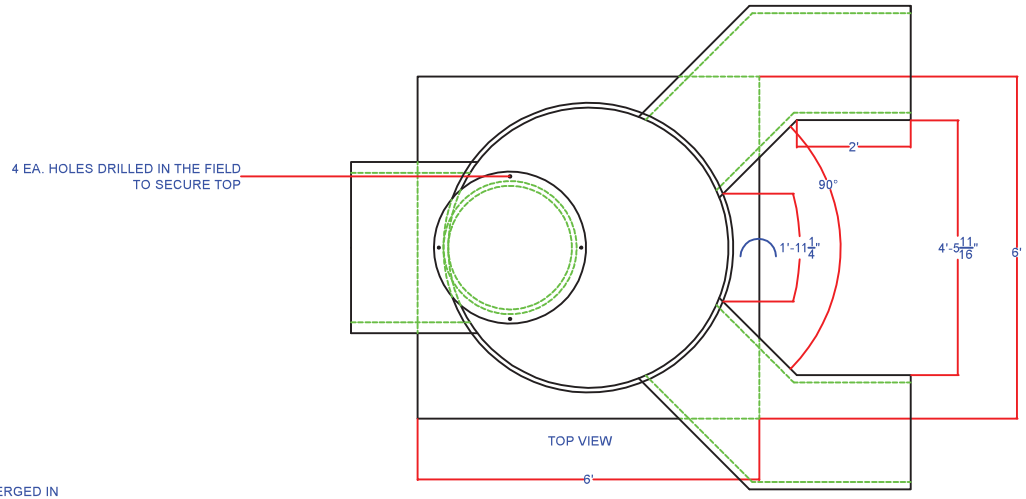
DWR BY: SAM CARIOTI	SIZE B	VARI-TECH REP AP: TRACY G.	DWG NAME MANHOLE 5	REV 004
CUSTOMER: O'BRIEN AND GERE	SCALE: NOT TO SCALE	DATE: 1/31/18	SHEET 4 OF PAGE 6	

CUSTOMER APPROVAL:

ENGINEER APPROVAL:



SECTION A-A



TOP VIEW

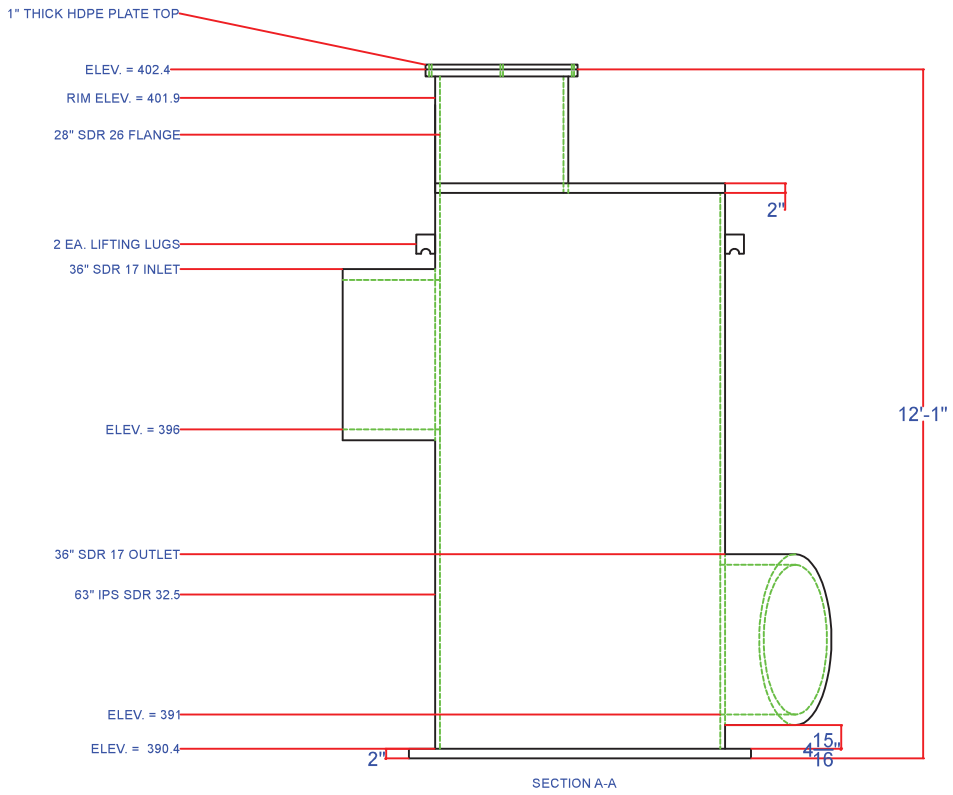
NOTES:
1. BOTTOM DESIGNED TO BE SUBMERGED IN NO MORE THAN 3 FEET OF GROUND WATER.
2. COMPACTED STONE BASE TO BE PLACED BELOW MANHOLE.
3. COMPACTABLE BACKFILL SHOULD BE USED AROUND MANHOLE.

VARI-TECH L.L.C

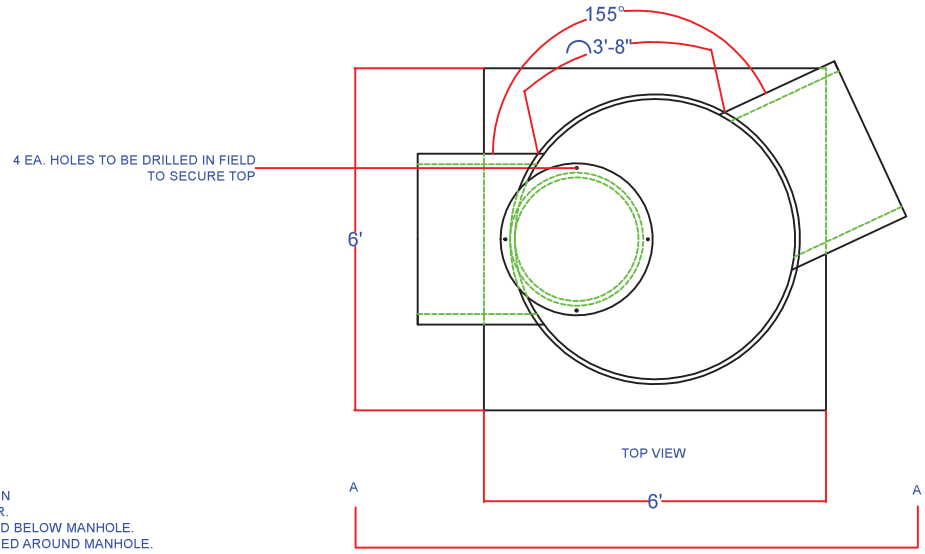
DWR BY: SAM CARIOTI	SIZE: B	VARI-TECH REP AP: TRACY G.	DWG NAME: MANHOLE 7	REV: 004
CUSTOMER: O'BRIEN AND GERE	SCALE: NOT TO SCALE	DATE: 1/24/18	SHEET: 6 OF PAGE 6	

CUSTOMER APPROVAL:

ENGINEER APPROVAL:



SECTION A-A



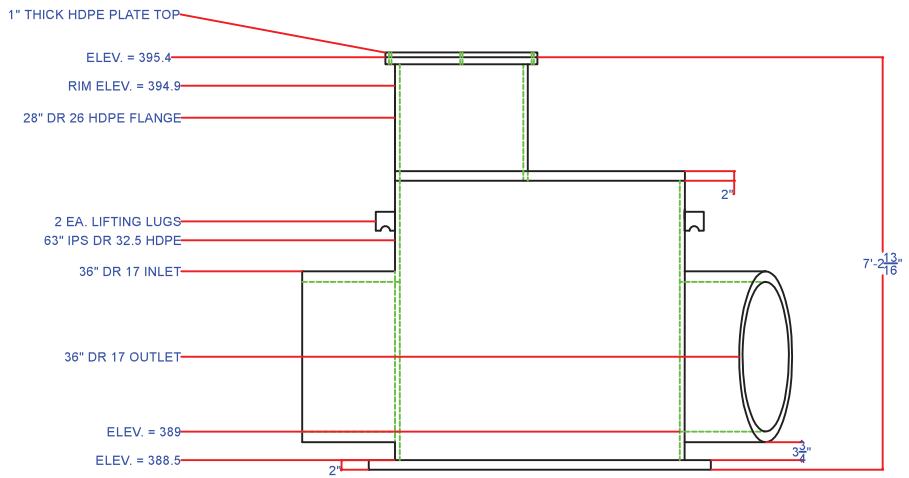
TOP VIEW

NOTES:
1. BOTTOM DESIGNED TO BE SUBMERGED IN
NO MORE THAN 3 FEET OF GROUND WATER.
2. COMPACTED STONE BASE TO BE PLACED BELOW MANHOLE.
3. COMPACTABLE BACKFILL SHOULD BE USED AROUND MANHOLE.

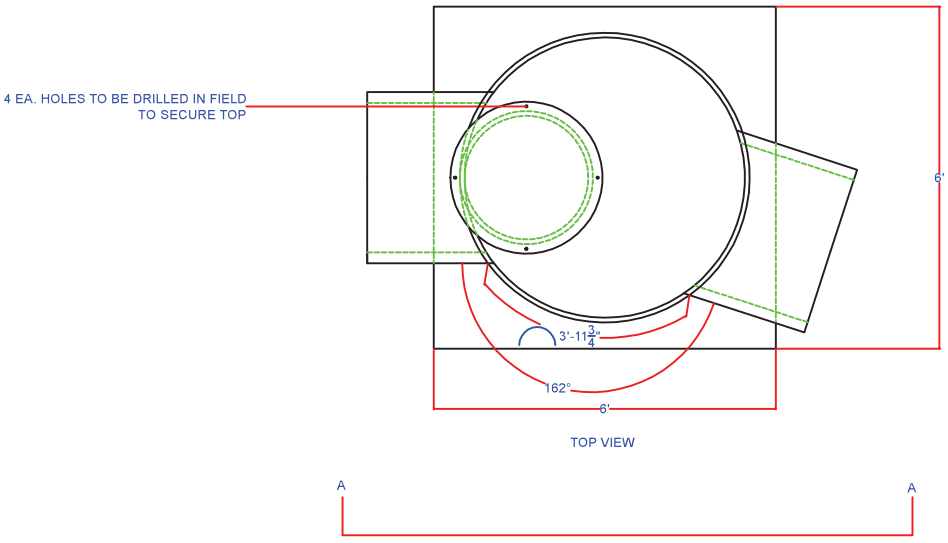
VARI-TECH L.L.C

DWR BY: SAM CARIOTI	SIZE B	VARI-TECH REP AP: TRACY G.	DWG NAME MANHOLE 2	REV 003
CUSTOMER: O'BRIEN AND GERE	SCALE: NOT TO SCALE	DATE: 1/24/18	SHEET: 1 OF PAGE 6	

CUSTOMER APPROVAL:
ENGINEER APPROVAL:



SECTION A-A



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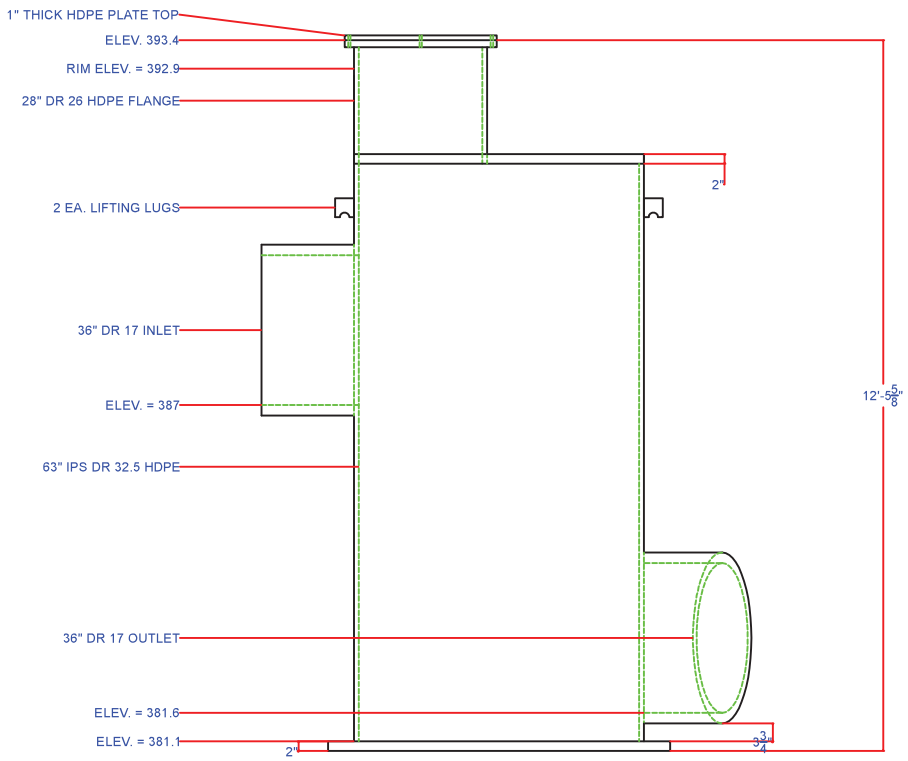
VARI-TECH L.L.C

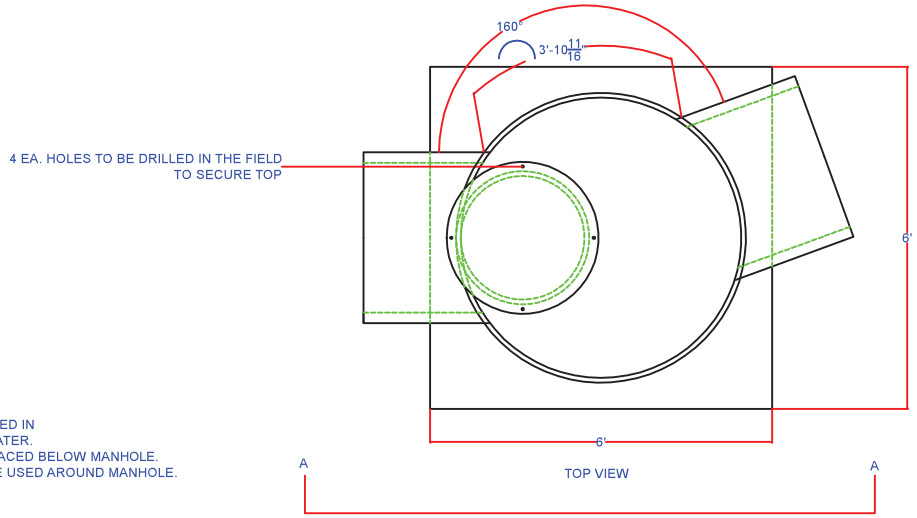
DWR BY: SAM CARIOTI	SIZE: B	VARI-TECH REP AP: TRACY G.	DWG NAME: MANHOLE 3	REV: 003
CUSTOMER: O'BRIEN AND GERE	SCALE: NOT TO SCALE	DATE: 1/24/18	SHEET: 2 OF PAGE 6	

CUSTOMER APPROVAL:

ENGINEER APPROVAL:



SECTION A-A



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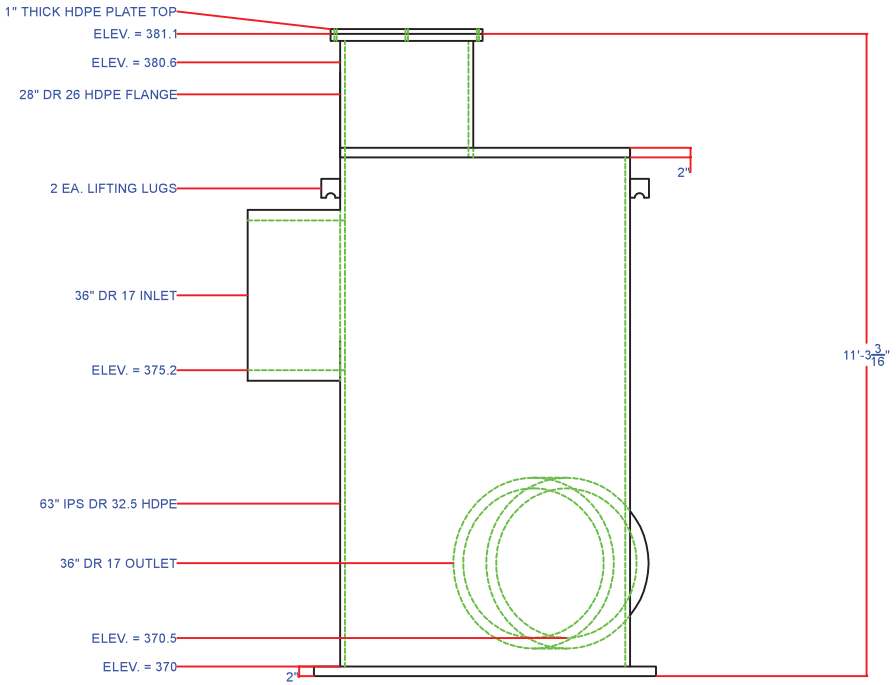
VARI-TECH L.L.C

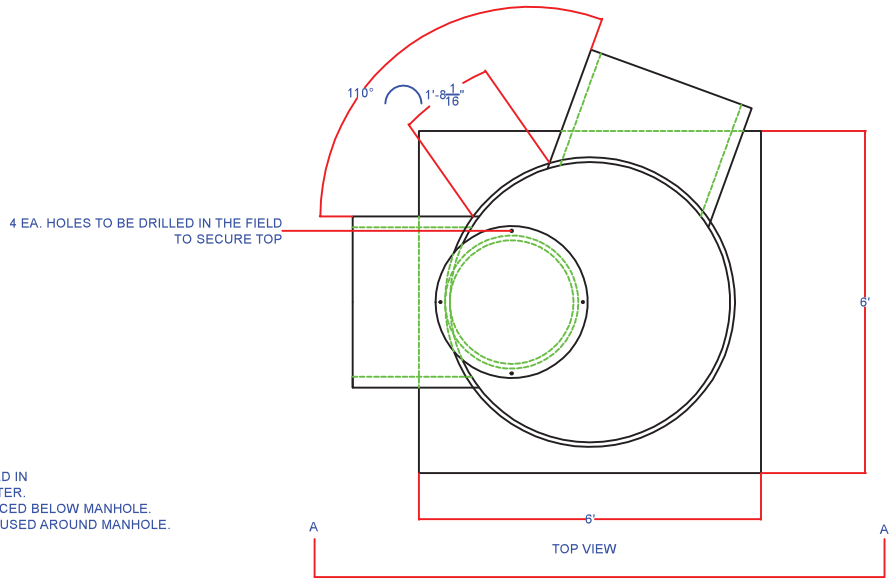
DWR BY: SAM CARIOTI	SIZE B	VARI-TECH REP AP: TRACY G.	DWG NAME MANHOLE 4	REV 003
CUSTOMER: O'BRIEN AND GERE	SCALE: NOT TO SCALE	DATE: 1/24/18	SHEET 3 OF PAGE 6	

CUSTOMER APPROVAL:

ENGINEER APPROVAL:



SECTION A-A



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VARI-TECH L.L.C

DWR BY: SAM CARIOTI	SIZE: B	VARI-TECH REP AP: TRACY G.	DWG NAME: MANHOLE 6	REV: 003
CUSTOMER: O'BRIEN AND GERE	SCALE: NOT TO SCALE	DATE: 1/24/18	SHEET: 5 OF PAGE 6	