



December 2020  
Grumman Road Private Industrial Landfill



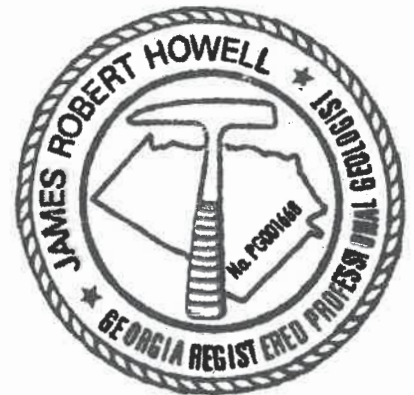
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# Assessment of Corrective Measures

Prepared for Georgia Power Company

December 2020  
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## ABBREVIATIONS

ACM	Assessment of Corrective Measures
bgs	below ground surface
CCR	coal combustion residuals
CEC	cation exchange capacity
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
Clifton landfill	Clifton Rental Company, Inc. Landfill
CFR	Code of Federal Regulations
cm/sec	centimeters per second
CSM	conceptual site model
EPRI	Electric Power Research Institute
GA EPD	Georgia Environmental Protection Division
GWPS	groundwater protection standard
ISS	in situ solidification/stabilization
MNA	monitored natural attenuation
PRB	permeable reactive barrier
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
RSL	Rule Specified Level
Site	Grumman Road Private Industrial Landfill
SRIL	Savannah Regional Industrial Landfill
SSL	statistically significant level
USEPA	U.S. Environmental Protection Agency

# 1 Introduction

This Assessment of Corrective Measures (ACM) has been prepared pursuant to the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4.10(6)(a). ACM requirements of GA EPD Rule 391-3-4.10(6)(a) are incorporated by reference from U.S. Environmental Protection Agency (USEPA) coal combustion residuals (CCR) rule (40 Code of Federal Regulations [CFR] Part 257, Subpart D). Specifically, this ACM was prepared to evaluate potential groundwater corrective measures for the occurrence of arsenic and molybdenum in groundwater at statistically significant levels (SSLs) at the Grumman Road Private Industrial Landfill (Site). As required by rule, this ACM was initiated by July 9, 2020 (ACC 2020a). A deadline extension demonstration was completed on October 7, 2020, extending the ACM completion due date by 60 days (ACC 2020b).

In 2018 and 2019, studies were performed to determine if leachate-impacted groundwater from the adjacent Clifton Rental Company, Inc. Landfill (Clifton landfill) was affecting groundwater at the Site and if it could mobilize arsenic from soil and ash downgradient of the Clifton landfill at the Site. Because arsenic and molybdenum are expected to behave similarly (relative to mobilization) in the presence of leachate-impacted groundwater, conclusions drawn about arsenic mobilization could also be applied to molybdenum (by geochemical inference). Studies verified that Site monitoring wells are affected by leachate-impacted water from Clifton landfill, which is affecting general groundwater quality at the Site. This could contribute a source of arsenic (and by geochemical inference, molybdenum) from Site soils.

Horizontal delineation of arsenic SSLs has been completed as part of Georgia ACM requirements. Horizontal delineation of molybdenum SSLs is dependent on securing access from adjacent property owners. All required off-site notifications were submitted to GA EPD and the adjacent property owners. Drilling activities for vertical delineation are scheduled for the first quarter of 2021.

This ACM supersedes the previous ACM documents submitted for the Site (SCS 2013; ACC 2017, 2019a) and incorporates additional Site investigation results obtained as part of those ACMs. This ACM has been prepared in accordance with currently applicable regulations and is a continuation of efforts to develop a corrective action plan to address exceedances of groundwater protection standards (GWPS) identified at the Site. Based on the results of the ACM, further evaluation will be performed, site-specific studies completed, and a corrective action plan developed and implemented pursuant to 40 CFR 257.97–98.

## 1.1 Purpose

The purpose of this ACM is to continue the process of selecting corrective measure(s). This process may be composed of multiple components to analyze the effectiveness of corrective measures and

to address the potential prior migration of CCR constituents to groundwater at the Site. The CCR rule (40 CFR 257, Subpart D) provides requirements for an ACM.

Per USEPA (2016) guidance, corrective measures that were clearly not viable were not evaluated. Initial steps in the ACM included analyzing existing Site information and developing a conceptual site model (CSM). The anticipated impacts of closure and source control were also considered because those activities are integral to the long-term strategy and will influence groundwater corrective measures performance. Potential groundwater corrective measures were then identified and evaluated against the following applicable criteria:

- Performance
- Reliability
- Ease of implementation
- Potential impacts (including safety, cross-media impacts, and exposure)
- Time required to begin and complete the remedy
- Any institutional requirements (e.g., permitting or environmental and public health requirements) that could affect the implementation of the remedy

These evaluation criteria were considered for each potential corrective measure. Corrective measures that are unlikely to perform satisfactorily or reliably at the Site, or that are technically impractical to implement, were not thoroughly evaluated as part of this ACM. Though several technologies and combinations of these technologies appear viable for the Site, further evaluation of the technologies is needed to select a corrective measure(s).

## 1.2 Site Location and Description

The Site, located in Port Wentworth, Chatham County, Georgia, is a permitted industrial landfill owned and operated by Georgia Power, which was previously used for disposal of fly ash and bottom ash from Georgia Power's Plant Kraft. The Site has not received ash since Plant Kraft was retired in late 2015, exempting it from the requirements of the federal CCR rule. The Site location is shown in Figure 1. Site groundwater monitoring locations are shown in Figure 2.

The Site is adjacent to two other permitted solid waste disposal facilities: one located to the east and the other to the south, as shown in Figure 1. The closed Clifton landfill [Permit No. 025-030D(L)] is east and upgradient of the Site. Based on available information, Clifton landfill was not constructed with a synthetic liner or leachate collection system and waste extends below the groundwater. The active Savannah Regional Industrial Landfill (SRIL) operated by Republic Services, Inc. [Permit No. 025-072D(L)] is south of the Site and hydraulically downgradient of both Clifton landfill and the Site. The SRIL is constructed with a synthetic liner and leachate collection system meeting the requirements specified in GA EPD Rule 391-3-4.

### 1.3 Landfill Closure

The Site consists of four parcels—A, B1, B2, and B3—comprising approximately 33 acres. Closure of the Site in accordance with the landfill permit has been completed. Parcels A and B1 were closed in 2004, and parcels B2 and B3 were closed in 2017. The Site is permitted under Solid Waste Handling Permit No. 025-061D(LI).

During previous Site investigations, CCR was encountered within the buffer zone along the facility boundary and was removed. A new final cover system was then installed to meet the requirements of GA EPD Rule 391-3.4-.10(7). The final cover was constructed to control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the CCR and potential releases of CCR from the unit. Construction of the final cover provides sufficient grades and slopes to: 1) preclude the future impoundment of water, slurry, or sediment; 2) ensure slope and cover system stability; and 3) minimize the need for further maintenance. The final cover system consists of a reinforced geosynthetic clay liner system (with a hydraulic conductivity equal to or less than  $5 \times 10^{-9}$ ) overlain by a protective soil cover (ACC 2018). The final closure Certification Report was submitted to GA EPD on November 25, 2019 (Brantley Engineering 2019).

## 2 Conceptual Site Model

The following section summarizes the geologic and hydrogeologic conditions at the Site as previously described in the *Groundwater Monitoring Plan* (SCS 1998) and the *2020 Annual Groundwater Monitoring and Corrective Action Report* (ACC 2020c).

### 2.1 Geology

The Site is in the Atlantic Coastal Plain Physiographic Province, which is underlain in the area by unconsolidated to consolidated layers of sand, silt, and clay and semi-consolidated to dense layers of limestone and dolomite at depth (Clarke et al. 2010). These sediments constitute three major aquifer systems, which are as follows (from shallow to deep): the regional surficial aquifer system, the Brunswick aquifer system, and the Floridan aquifer system. In the Atlantic Coastal Plain, the regional surficial aquifer system consists of Miocene and younger interlayered sand, silt, clay, and thin limestone beds (Clarke et al. 2010). The regional surficial aquifer system is unconfined, and the fine silty sands and clay layers are found generally less than 80 feet below ground surface (bgs; ACC 2020c).

The regional surficial aquifer is underlain by a confining unit that separates it from the Brunswick aquifer. The confining unit consists of silty clay and dense thin, phosphatic Miocene limestone. The Oligocene to Miocene Brunswick aquifer consists of two water-bearing zones. The upper Brunswick and lower Brunswick aquifers are separated by a low permeability, sandy phosphatic clay confining unit. The Brunswick aquifer is separated from the Upper Floridan aquifer with the Upper Confining unit and a non-water bearing limestone layer. The Floridan aquifer is confined by the overlying clay and non-water bearing limestone layers (ACC 2020c).

The sediments immediately underlying the Site and adjacent Clifton landfill are part of the regional surficial aquifer system described previously and consist of variable interbedded sands, silts, and clay comprising a near-surface aquifer system. Though complex with subtle distinctions, approximately 50 feet of the near-surface aquifer system (soil) can be divided into four units (Figures 3 and 4; Appendix A; SCS 1998) and described in further detail below:

- Upper Sands and Topsoil
- Unit 1 Uppermost Aquifer: Silty Fine Sand
- Unit 2 Low Permeability Zone: Interbedded Sand, Silt, and Clay
- Unit 3 Lower Sand Aquifer: Silty and/or Clayey Fine to Medium Sand

The boring and well construction logs used to create Figure 4 are included in either the *Well Installation Addendum* (ACC 2020d) or Appendix B. SCS (1998) and ACC (2020c) report the presence of two geologic units, which are consistent with Units 1 and 2. In earlier reports, Unit 2 was referred to as an aquitard. However, groundwater level (potentiometric) data suggest that Units 1 and 2 are hydraulically interconnected, so use of the term aquitard will be replaced with low permeability zone.

Although regionally all of the upper soils at the Site area are classified as the surficial aquifer system, layers of clay may be present in the surficial aquifer system (Clarke, Hacke, and Peck 1990; SCS 1998).

### **Upper Sands and Topsoil**

The upper sands, including topsoil, consist of approximately 5 to 10 feet of tan to brown or black, loose, silty, fine-grained sand with occasional organic matter. This unit disappears from between GWC-12 and GWC-11 to the east, perhaps due to excavation in conjunction with construction of the landfills (SCS 1998).

### **Unit 1 Uppermost Aquifer: Silty Fine Sand**

Unit 1 consists of variably colored (gray, tan, yellow, orange and/or brown) silty fine sand, with occasional opaque minerals, orange-brown concretions, and related iron-oxide-cemented zones known locally as hardpan. The cemented sand zones (hardpan) were observed in several borings across the Site (Figure 3). The color of Unit 1 and the presence of iron oxide zones suggests oxidizing conditions. The opaque minerals, concretions, and iron oxide zones are significant in that they could be sources of arsenic and molybdenum, which may be released upon dissolution of iron minerals if groundwater conditions become more reducing (SCS 1998).

### **Unit 2 Low Permeability Zone: Interbedded Sand, Silt, and Clay**

At depth of approximately 10 to 25 feet, the soils grade to a light gray to olive gray, silty, very fine-grained sand with occasional layers of fat (plastic) clay. The unit appears to be variable in the percentage of fine material (silt and clay). One grain size analysis indicates that the material is a silty sand, with 28% to 35% of the material passing the No. 200 sieve (SCS 1998).

Well logs from the Clifton landfill suggest that Unit 2 may become more clay rich, and better defined to the east. Unit 2 may not be present near wells GWC-12 (Clifton landfill well), GWC-16, and GWC-15 (Figure 4), or may not be identifiable as finer-grained soils.

### **Unit 3 Lower Sand Aquifer: Silty and/or Clayey Fine to Medium Sand**

Well logs from boring GWC-11 (Clifton landfill well) indicate silty to clayey fine- to medium-grained sand near the bottom (screened interval) of the boring (Figure 4). This appears to be hydraulically connected to Units 1 and 2 and represents a more continuous higher permeability zone in the near-surface aquifer system.

## **2.2 Hydrogeology and Groundwater Flow**

Generally, groundwater in the near-surface aquifer system flows from north to south at the Site but is influenced by local topography (Figures 5 and 6). Figure 5 represents a recent depiction of a potentiometric surface for the groundwater flow regime at the Site, Clifton landfill, and SRIL. Wells with similar screened interval elevations were used in the contouring.



Groundwater flows radially from the topographic and potentiometric high on Clifton landfill toward wells GWA-7 and GWB-6R in the northern portion of the Site, creating a semi-radial flow pattern from these wells onto the Site. In the southern portion of the Site, near Parcel A, groundwater flow is south. Based on *the 2020 Annual Groundwater Monitoring and Corrective Action Report*, the flow velocity ranges from 0.13 to 0.30 foot per day (ACC 2020c). The description below provides the hydrogeologic properties of the upper four units of sediments described in Section 2.1.

Groundwater elevations observed across the site and adjacent landfills suggest that hydraulic communication exists between Units 1, 2, and 3. For example, the groundwater elevation observed in GWC-11 is similar to the other wells along cross section B-B' (Figure 4), suggesting that Units 1 and 3 are hydraulically connected in the vicinity of GWC-11 or to the west.

The Upper Sands and Topsoil occur above the water table at the Site.

Hydrogeologic properties of Unit 1 Uppermost Aquifer include the following (SCS 1998):

- Poorly graded (well sorted) sand to a silty fine sand is present, with approximately 2% to 22% of the soil particles passing the No. 200 sieve (silt/clay sized particles), depending upon the sample.
- Falling head permeability tests on undisturbed samples in the laboratory yielded values of  $1.1 \times 10^{-4}$  and  $1.3 \times 10^{-4}$  centimeters per second (cm/sec).
- Hydraulic conductivity averaged in the  $10^{-3}$  to  $10^{-4}$  cm/sec range, based on slug tests. These values are consistent with the grain size analysis and falling head permeability tests.
- The average hydraulic conductivity is estimated to be  $2.7 \times 10^{-3}$  cm/sec (7.6 feet/day; ACC 2020c).
- The water table occurs in this unit at the Site and adjacent areas.

Cation exchange capacity (CEC) testing was performed on a sample of the Unit 1 material. This testing revealed a CEC of 6.5 milliequivalents per 100 grams for the soil. Depending on what proportion of the soil is clay rather than silt, this value could vary (i.e., increase) for the clay (SCS 1998).

Unit 2 has a lower permeability than Units 1 and 3 and locally may act as an impediment to downward migration, creating perched water within Unit 1 or impeding migration within the near-surface aquifer system. Permeabilities within Unit 2 have been identified on the order of  $10^{-4}$  to  $10^{-5}$  cm/sec where present (ACC 2020c). Unit 2 does not appear to be continuous across the sites such that it creates distinct groundwater flow systems. Some groundwater monitoring wells are installed within the Unit 2 soils at the adjacent Clifton landfill.

## 2.3 Geochemistry and Influence of Adjacent Clifton Landfill

As described in previous reports (ACC 2019a; Anchor QEA 2019), strong physical and geochemical evidence exists that supports the mobilization of arsenic and molybdenum by landfill leachate coming onto the Site from the adjacent Clifton landfill. These lines of evidence include the following:

- An active surface seep from the Clifton landfill discharging onto the Site and into a ditch between Clifton and the Site since 2009
  - Major anion and cation data exhibiting a municipal/industrial leachate signature
  - Elevated tritium indicative of municipal or industrial waste—not CCR material
- Laboratory microcosm studies that demonstrated leachate-impacted groundwater mobilized arsenic from ash and natural soil

### 2.3.1 Clifton Landfill Seep Investigation Summary

As summarized in the *Assessment of Corrective Measures – 2019 Addendum* (ACC 2019a), an active above-ground leachate seep has been observed on aerial imagery on the north side of the Clifton landfill since approximately 2009. The seepage flows onto the Site and toward a ditch between Clifton landfill and the Site north of GWA-7. Previously submitted data including tri-linear plots of major cations and anions support that both the seepage and groundwater collected from wells along the eastern boundary of the Site are typical of non-CCR landfill leachate, indicating that the leachate seepage is migrating onto the Site in groundwater. The cation and anion ratios for GWA-7 have shifted substantially between 2008 and 2018 toward a signature that is very similar to that of the Clifton landfill seepage. Additionally, the three wells directly downgradient of GWA-7 (GWB-4R, GWB-5R, and GWB-6R) have also shifted toward the Clifton landfill seepage signature. These data indicate that the Clifton landfill seepage is altering the geochemical conditions on the eastern (upgradient) side of the Site.

Samples of the Clifton leachate seepage and a subset of Site wells were analyzed for tritium in 2018. Results indicate that tritium is elevated well above background in wells hydraulically downgradient of the seep and along the eastern property boundary of the Site. Tritium was not detected in samples collected from any Site wells that are not located along the Clifton landfill boundary. Published literature has well established that leachate from waste disposal units containing municipal and industrial waste contain tritium at concentrations hundreds of times greater than natural background whereas CCR waste does not. The tritium detections are conclusive evidence of landfill leachate migration and groundwater impacts from the Clifton landfill along the eastern boundary of the Site (ACC 2019a).

In addition to the seep flowing from the Clifton landfill onto the Site, discharge from a sediment pond on the Clifton landfill property near the southeastern Site boundary has historically had elevated arsenic concentrations and specific conductivity levels (ACC 2019a). Concentrations of arsenic have been reported up to approximately 40 micrograms per liter and specific conductivity

levels at 5,560 microsiemens per centimeter. The degree of interaction of this discharge with groundwater is unknown, but there is a possibility that it is an influence on conditions in the southeastern portion of Site (ACC 2019a).

### 2.3.2 *Arsenic Mobilization Laboratory Evaluation*

As discussed in Section 2.3.1, leachate-impacted groundwater from the adjacent Clifton landfill is migrating onto the Site. Field and microcosm laboratory studies were conducted to determine if leachate-impacted groundwater from the Clifton landfill (collected on site from GWA-8) could mobilize arsenic in soil and ash downgradient of the landfill at the Site. As part of the study, Site soil or ash was combined with either leachate-impacted or unimpacted groundwater and incubated for 38 days. Samples were collected throughout the incubation period for analysis of dissolved arsenic, iron, and manganese. Samples collected from the 38-day incubated microcosms were submitted for microbial characterization.

The results of the laboratory microcosm studies provide compelling evidence that groundwater impacted by Clifton landfill leachate mobilizes arsenic from ash and naturally occurring soils at the Site (Table 1, Figure 7). Naturally occurring arsenic present at low levels in Site soil was mobilized by Clifton landfill leachate-impacted groundwater at concentrations that exceed the Site GWPS.

Leachate-impacted groundwater mobilized arsenic from ash at concentrations of the same order of magnitude as those observed in groundwater at the southeastern corner of the Site where groundwater with Clifton landfill leachate is in contact with ash. When the same Site ash material was incubated with groundwater not impacted by Clifton landfill leachate, dissolved arsenic concentrations were an order of magnitude lower. Specifically, ash incubated with unimpacted groundwater yielded arsenic concentrations approximately equal to the Site GWPS (background). Therefore, based on this study, Clifton landfill leachate impacts are likely the cause of arsenic SSLs observed at the Site.

The limited release of arsenic from the ash by groundwater not impacted by Clifton landfill leachate is consistent with the lack of detectable arsenic in groundwater at the Site in areas where Clifton landfill leachate impacts are absent. The evaluation and results are summarized in the *Arsenic Mobilization Laboratory Evaluation* (Anchor QEA 2019), submitted as Attachment A in the *Assessment of Corrective Measures – 2019 Addendum* (ACC 2019a).

The likely release mechanism for arsenic is the reductive dissolution of iron compounds, which host the arsenic. Reducing conditions created by the landfill leachate dissolve the iron compounds in soil and/or ash, thereby releasing iron and arsenic to groundwater. Molybdenum release is also associated with the reductive dissolution of iron compounds (Bennett and Dudas 2003), so the landfill leachate could also be causing the SSLs for molybdenum in groundwater.

The arsenic mobilization study and Site geochemical conditions indicate that improved control of leachate impacts to groundwater from the Clifton landfill would be expected to reduce arsenic and molybdenum mobilization and resultant SSLs at the Site.

## 3 Nature and Extent of Appendix IV Constituents

### 3.1 Groundwater Monitoring and Constituents of Concern

#### 3.1.1 Groundwater Monitoring Program

Groundwater monitoring has been performed at the Site according to a state permit since 2000. Assessment monitoring was initiated in 2005 under the state program and identified arsenic and intermittent selenium exceedances of GWPS. Since that time additional investigation has been performed and ACMs prepared and updated as the site conceptual model was updated, closure activities performed, and site conditions changed. The current state-approved groundwater monitoring network is composed of 18 monitoring wells installed around the Site (Figure 2 and Table 2). Site monitoring wells consist of 2 upgradient wells, 13 downgradient wells, and 3 sidegradient wells. Monitoring well locations GWA-7 and GWA-8 serve as upgradient locations for the Site.

#### 3.1.2 Statistically Significant Levels of Appendix IV Constituents

Under new GA EPD regulations applicable to the Site, background sampling occurred between 2016 and 2018. Groundwater detection monitoring began following completion of background sampling, with the first sampling event occurring in March 2019. Statistically significant increases of Appendix III constituents were noted, as described in the *Supplemental 2019 First Semiannual Groundwater Monitoring Report* (ACC 2019b). The Appendix III statistically significant increases triggered assessment sampling for Appendix IV constituents. GWPS values are included in Table 3. The October 2019 and April 2020 sampling events noted the Appendix IV constituents arsenic and molybdenum at SSLs that exceeded the GWPS. Recurring SSLs that exceeded the GWPS for arsenic (0.0287 milligram per liter) and molybdenum (0.01 milligram per liter) during assessment monitoring are summarized below (ACC 2020c):

- Arsenic SSLs exceeded the GWPS at monitoring wells GWC-15, GWC-16, and GWC-20.
- Molybdenum SSLs exceeded the GWPS at monitoring wells GWB-4R, GWC-1, GWC-14, GWC-15, GWC-16, GWC-20, and GWC-21. [Note that all are SSLs of the state-derived GWPS, but not of the federal Rule Specified Level (RSL), except for GWC-16.]

Isoconcentration maps for arsenic and molybdenum for the April and September/October 2020 sampling events are included in Figures 8 through 11, respectively. The GWPSs shown on the isoconcentration maps were calculated using data through the April 2020 sampling event. Analytical results from the August 2020 initial assessment monitoring event for Appendix IV constituents and September/October 2020 semiannual assessment sampling events are summarized in Tables 4a and 4b, respectively, and are included in Appendix C. Prior analytical data are summarized in the *2020 Annual Groundwater Monitoring and Corrective Action Report* (ACC 2020c). Statistical analysis has not yet been conducted on the September/October 2020 semiannual sampling data.

## 4 Groundwater Corrective Measures Alternatives

### 4.1 Objectives of the Corrective Measures

Pursuant to 40 CFR 257.97(b), the following summarizes the criteria that must be met by the remedy:

- Protect human health and the environment.
- Attain applicable GWPS.
- Control the source of the release to reduce or eliminate, to the maximum extent feasible, further releases of Appendix IV constituents to the environment.
- Remove from the environment as much of the material released from the CCR unit as is feasible, considering factors such as avoiding inappropriate disturbances of sensitive ecosystems.
- Comply with any relevant standards (i.e., all applicable Resource Conservation and Recovery Act [RCRA] requirements) for management of wastes generated by the remedial actions.

All corrective measures selected for evaluation for potential use at the Site are anticipated to satisfy the above performance criteria to varying degrees of effectiveness.

### 4.2 Summary of Potential Corrective Measures

The following presents a summary of potential groundwater corrective measures evaluated as part of this ACM. Based on site-specific information and knowledge of corrective alternatives, the following remedies—or combination of remedies—are being considered using the evaluation criteria specified in 40 CFR 257.96(c):

- Geochemical approaches (in situ injection)
- Hydraulic containment (pump-and-treat)
- In situ solidification/stabilization (ISS)
- Monitored natural attenuation (MNA)
- Permeable reactive barrier (PRB) wall
- Phytoremediation
- Subsurface vertical barrier wall

Although these technologies are potentially feasible remedies, further data collection and evaluation are required to: 1) verify the feasibility of each and 2) provide sufficient information to design a corrective action system that meets the criteria specified in 40 CFR 257.97(b). Table 5 provides a summary of these technologies compared to the evaluation criteria discussed in Section 1 as applied to Site conditions.

#### 4.2.1 *Geochemical Approaches (In Situ Injection)*

Geochemical approaches include several technologies that modify the geochemistry of the Site to immobilize arsenic and molybdenum. Because migration of leachate from the Clifton landfill is likely



mobilizing arsenic and possibly molybdenum from ash and natural soil, redox manipulation is one geochemical approach at the Site. In this case, oxygen would be added to groundwater to help prevent the reductive dissolution of iron and release of arsenic and molybdenum that are associated with iron, and to induce the precipitation of iron oxides and oxyhydroxides that attenuate arsenic and molybdenum. Oxygenation could be achieved by chemical and physical methods.

Chemical methods include the following:

- Injection of oxygenating chemicals (oxidants)
- Emplacement of slow-release oxygenating candles in wells

Physical methods of oxygenation include the following:

- Air sparging
- Installation of Waterloo Emitters in wells

Success of these oxygenation approaches, however, is based in part on sufficient iron being available in groundwater to precipitate the iron oxides and oxyhydroxides upon oxygenation. If sufficient iron is not available, it can be supplied through addition of an iron compound such as ferrous sulfate or ferric chloride.

Four commonly used chemical oxidants in in situ chemical oxidation applications are permanganate, persulfate, hydrogen peroxide, and ozone. Permanganate, persulfate, and hydrogen peroxide are injected as liquids. Ozone is diffused as a gas, is more difficult to employ, and therefore is used less frequently (USEPA 2012). Permanganate may also be encapsulated in slow-release candles, which are installed in wells or by direct push technology directly into the aquifer (Christenson et al. 2016; Christensen et al. 2012).

Air sparging has been used for groundwater corrective action for many years. Air sparging entails the injection of air directly into groundwater through a sparge well. The oxygenation by sparge wells would help prevent the release of arsenic and molybdenum from the soil and ash and would help induce the precipitation of iron oxides and oxyhydroxides that attenuate arsenic and molybdenum. Air sparging has been used to oxygenate groundwater and increase arsenic removal by adsorption onto iron oxides and oxyhydroxides (Miller et al. 2002). Based on similarity in geochemical behavior, molybdenum is expected to be removed by similar processes.

Waterloo Emitters are groundwater oxygenation devices installed in specialized emitter wells. The standard Waterloo Emitter is comprised of a 5-foot-long cylindrical polyvinyl chloride (PVC) frame around which diffusive tubing is coiled. In a typical application, oxygen gas from an oxygen gas cylinder is diffused through the emitter into groundwater to stimulate the aerobic bioremediation of organic compounds (Solinst 2020). At the Site, oxygenation by Waterloo Emitters would be used to help immobilize arsenic and molybdenum.

Other geochemical approaches (also known as enhanced attenuation) include the injection of treatment solutions to immobilize arsenic and molybdenum by precipitation/coprecipitation and/or sorption. Depending upon site-specific conditions, treatment solutions containing iron and other additives could be injected to facilitate:

- Sorption of arsenic and molybdenum to iron oxides and oxyhydroxides
- Sequestration of arsenic and molybdenum in sulfide minerals

Arsenic and molybdenum may be attenuated by sorption onto metal (commonly iron) oxides and oxyhydroxides (e.g., ferrihydrite) under oxidizing conditions. Under reducing conditions, attenuation mechanisms include precipitation and coprecipitation with metal sulfides (e.g., realgar for arsenic, molybdenite for molybdenum, iron pyrite for both) and sorption onto the sulfide mineral surfaces. In sorption under oxidizing conditions, an iron source (such as ferrous sulfate) may be injected into the subsurface where it oxidizes to iron oxyhydroxide (ferrihydrite; Pugh et al. 2012; Redwine et al. 2004). Arsenic and molybdenum then sorb on the oxyhydroxide surfaces. Since sorption is pH-dependent, pH control through the addition of a buffer may increase sorption of arsenic and molybdenum. If sufficient iron already exists in the groundwater, then addition of oxygen (as described previously) may be sufficient to create iron oxides and oxyhydroxides to which arsenic and molybdenum sorb.

In the sequestration-in-sulfides technology, soluble sources of organic carbon, ferrous iron, and sulfate are injected into the subsurface to optimize conditions for sulfate-reducing bacteria growth (Saunders 1998). Sulfate-reducing bacteria produce sulfide minerals as a byproduct of their metabolism, and arsenic and molybdenum are removed from groundwater and immobilized by the sulfide minerals. Sulfide phases such as realgar (for arsenic) and molybdenite (for molybdenum) may precipitate directly, and/or arsenic and molybdenum may substitute for other elements in the iron sulfide (pyrite) mineral structure. In addition, arsenic and molybdenum may sorb to sulfide mineral surfaces. In recent successful applications for arsenic, a treatment solution containing molasses, ferrous sulfate heptahydrate, and small amounts of commercial fertilizer dissolved in water were injected to significantly decrease arsenic concentrations in groundwater.

Because of its multiple modes of application and its ability to adapt to site-specific geochemical conditions, geochemical approaches are viable corrective actions for the Site. Site-specific geochemical analysis, laboratory treatability, and/or pilot studies would need to be performed to determine the specific treatments for geochemical approaches, including oxygenation.

The performance and reliability of geochemical approaches are considered medium for several reasons (depending upon the mode of application) as shown in Table 5. Implementation of geochemical approaches is considered relatively easy, except for oxygenation by physical means (air sparging, Waterloo Emitters), which are considered moderate due to physical and mechanical components that need to be designed and installed. All forms of geochemical treatment could have

the consequences of unintended release of arsenic and molybdenum already attenuated to aquifer solids, unless geochemical conditions are well understood. Though geochemical approaches are generally relatively easy to implement, laboratory treatability and/or pilot studies will likely be required, so implementation is estimated to take 1 to 2 years. Also, multiple injections may be required for geochemical approaches, depending upon the mode of application. The presence of Clifton landfill leachate will probably complicate an otherwise straightforward geochemical treatment. If the leachate coming from Clifton is not controlled, then time to achieve GWPS would be much greater than if the leachate were not present.

#### 4.2.2 *Hydraulic Containment (Pump-and-Treat)*

Hydraulic containment uses pumping wells (and sometimes injection wells, trenches, galleries, and/or trees) to contain and prevent the expansion of impacted groundwater. It should be noted that using trees to implement hydraulic containment is discussed in Section 4.2.6. Effective hydraulic containment uses pumping wells or other subsurface hydraulic mechanisms to create a horizontal and vertical capture zone or a hydraulic barrier. If pumped, the water may be reused in beneficial applications or treated, discharged, or reinjected. Reinjection contributes to hydraulic containment by creating a hydraulic barrier of clean water. Hydraulic containment is one of the most mature corrective action technologies, and it is described in *Pump-and-Treat Ground-Water Remediation: A Guide for Decision Makers and Practitioners* (USEPA 1996) and *Groundwater Contamination Optimal Capture and Containment* (Gorelick et al. 1993).

Due to the hydraulic characteristics of the near-surface aquifer system, hydraulic containment could be implemented at the Site. Hydraulic containment may be achieved by pump-and-treat.

In the pump-and-treat scenario, arsenic and molybdenum are readily treatable by commonly used water treatment technologies such as iron coprecipitation. However, a water treatment system would need to be designed and constructed for the Site.

Hydraulic containment via pump-and-treat has been used for groundwater corrective action for decades. When the pump-and-treat system is online, the performance is considered high: arsenic and molybdenum are readily treated, and, if the system subsurface hydraulics are designed properly, the area of impact will stabilize or shrink. Over time, performance generally declines as the area of impact shrinks, at which time other corrective measures may be more appropriate to address residual impacts. Because these systems require substantial operation and maintenance, the reliability is considered medium. In other words, pumps, piping, and the water treatment system must be maintained and will be offline occasionally for various reasons.

Similarly, pump-and-treat is difficult to implement due to design; installation of wells, pumps, and piping; and space constraints at the Site. An on-site water treatment plant would be required to

accommodate the quantity and constituents in the pumped groundwater. Because the quantity of water requiring treatment cannot be determined without further study, the design parameters of the treatment system would also need to be verified through additional investigations.

Pump-and-treat could probably be designed and installed within 1 to 2 years. Regulatory requirements and institutional controls may be greater for pump-and-treat than some of the other technologies. For example, permits may be required for the withdrawal and reinjection (if used) of water. Discharge of treated water would likely require a National Pollutant Discharge Elimination System permit.

### *4.2.3 In Situ Stabilization/Solidification*

ISS, also known as deep soil mixing, is a method for solidifying soil or waste material, immobilizing constituents of interest in the solid matrix, and reducing leaching of the constituents to groundwater. In the solidification process, materials are added to unconsolidated material to create an indurated mass (block) with relatively low permeability. Stabilization refers to converting unconsolidated material to a more chemically stable form. Some materials, such as Portland cement, provide both physical (solidification) and chemical (stabilization) benefits. Materials specific to the constituents of interest (e.g., ferrous sulfate or zero-valent iron for arsenic and molybdenum) may be added in small quantities to further reduce leaching of the constituents.

ISS may be implemented by mixing with a bucket, large augers, or rotary methods. At the Site, ISS would be used as a source control measure to solidify/stabilize ash beneath the water table, thereby reducing leaching to groundwater. Due to the ISS application depths required at the Site, mixing by auger is likely the only viable application method.

ISS has been used extensively to treat inorganic constituents, including arsenic and molybdenum, for decades. Performance is considered high, as leaching of constituents can be greatly reduced in both laboratory treatability studies and subsequent field applications. Reliability is considered high because the stabilized block does not require maintenance and is essentially permanent.

Ease of implementation is considered moderate at the Site because mixing would need to be implemented at depth from the top or slopes of the ash landfill. Depending upon the method of application, a cement batch plant (and associated pumps) may need to be constructed at the Site.

ISS may cause a temporary spike of arsenic, and possibly molybdenum, in groundwater at the time of implementation. This spike is expected to dissipate, and groundwater arsenic and molybdenum concentrations to fall below pre-implementation values with time.

ISS could be designed and implemented in 1 to 2 years. Laboratory treatability and possibly a field pilot test would need to be performed.

#### 4.2.4 *Monitored Natural Attenuation*

MNA is defined by USEPA as follows (USEPA 1999):

The reliance on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. [...] The “natural remediation processes” that are at work in such a remediation approach include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater.

MNA has been a component of corrective action of RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) sites since the 1990s. MNA describes a range of physical and biological processes in the environment that reduce the concentration, toxicity, or mobility of constituents in groundwater. For inorganic constituents, the mechanisms of natural attenuation include sorption, precipitation and coprecipitation, ion exchange, and physical processes such as dispersion (USEPA 1999, 2007a, 2007b; EPRI 2015). MNA as a remedial alternative depends on a good understanding of localized hydrogeologic and geochemical conditions and may require considerable information and monitoring over an extended period of time.

Where Site conditions are conducive to MNA, it has the potential to provide a more sustainable, more easily implemented alternative to other remediation technologies such as pump-and-treat. The Electric Power Research Institute (EPRI) prepared a document describing implementation of MNA for 24 inorganic constituents (EPRI 2015).

When properly implemented, MNA removes constituents from groundwater and immobilizes them onto aquifer solids. Decisions to utilize MNA as a remedy or remedy component should be supported by site-specific data and analysis (USEPA 1999, 2015).

According to USEPA guidance (USEPA 2015), a four-phase approach should be used to establish whether MNA can be successfully implemented at a given site. The phases (also referred to as “steps” or “tiers”) include the following (USEPA 1999, 2007a):

1. Demonstrate that the extent of groundwater impacts is stable or shrinking.
2. Determine the mechanisms and rates of attenuation.
3. Determine if the capacity of the aquifer is sufficient to attenuate the mass of constituents in groundwater and that the immobilized constituents are stable and will not remobilize.
4. Design a performance monitoring program based on the mechanisms of attenuation and establish contingency remedies (tailored to site-specific conditions) should MNA not perform adequately.

Attenuation mechanisms can be placed in two broad categories:

1. Physical mechanisms include dilution, dispersion, flushing, and related processes. All constituents are subject to physical attenuation mechanisms, so physical processes should be considered in MNA evaluations. In its most recent guidance, USEPA discourages using dilution and dispersion as primary MNA mechanisms because these mechanisms disperse contaminant mass rather than immobilize it (USEPA 2015). Further, USEPA advises that dilution and dispersion may be appropriate as a polishing step (e.g., at the boundaries of a plume, when source control is complete, an active remedy is being used at the site, and/or appropriate land use and groundwater controls are in place).
2. Chemical mechanisms of attenuation for inorganic constituents include adsorption to, or coprecipitation with, oxides and hydrous oxides (oxyhydroxides) of iron and manganese; coprecipitation with, and adsorption to, iron sulfides such as pyrite; precipitation as carbonates, sulfides, sulfates, and/or phosphates; and ion exchange on clays or related minerals (USEPA 2007b).

Arsenic and molybdenum are subject to physical attenuation mechanisms and are also readily chemically attenuated. Examples of chemical attenuation mechanisms affecting arsenic and molybdenum include sorption to naturally occurring oxides and oxyhydroxides of iron (ferrihydrite) and other metals, and precipitation or coprecipitation as sulfide minerals (EPRI 2015).

MNA is compatible with the other groundwater corrective actions that are potentially viable for the Site. At a minimum, MNA could serve as a polishing step when coupled with other corrective measures (USEPA 2015). However, the impacts of Clifton landfill leachate on the Site may need to be mitigated to allow natural attenuation processes to operate and MNA to be successfully implemented, which may be all that is needed at the Site due to source control and the relatively small area of impacts.

The performance of MNA requires further investigation, especially related to the identification of attenuating mechanisms, aquifer capacity for attenuation, and time to achieve GWPS. The aquifer material at the Site contains significant silt and/or clay, which favors natural attenuation mechanisms such as sorption. However, previous investigations show that leachate from the Clifton landfill is likely mobilizing arsenic and possibly molybdenum from ash and natural soil, resulting in a continued source of those constituents to groundwater if not controlled. Therefore, MNA performance is considered medium to high if landfill leachate from Clifton landfill is controlled.

Implementation of MNA at the Site will be relatively easy. Most of the wells for MNA are already in place, though a few additional wells may need to be installed to monitor progress in critical areas. Solid (e.g., aquifer) samples and precipitates forming in wells (if present) will need to be collected and analyzed to identify attenuating mechanisms, test capacity and permanence, and help determine the time required to achieve GWPS.



Reliability of MNA will be relatively high because MNA requires almost no operation and maintenance. Potential impacts of the remedy will be negligible because MNA is non-intrusive and produces no effluents or emissions.

Implementation of MNA would require some geochemical studies and possibly the installation of some new wells. Because MNA does not require design and construction of infrastructure other than new monitoring wells, it can be initiated within 6 months to a year and fully implemented in 18 to 24 months. The longer time period is because initial geochemical studies would need to be performed to support USEPA's tiers. The additional data would be needed for statistical analysis and to determine if additional monitoring wells need to be installed.

#### *4.2.5 Permeable Reactive Barrier Wall*

A PRB wall is the emplacement of chemically reactive materials in the subsurface to intercept impacted groundwater, provide a flow path through the reactive media, and capture or transform the constituents in groundwater to achieve GWPS downgradient of the PRB wall. Therefore, the PRB wall is an in situ technology that allows impacted water to flow through the media and provides a barrier to constituents rather than to groundwater flow (Powell et al. 1998, 2002).

EPRI provides an overview of PRB walls and possible PRB reactive media for constituents from CCR. In addition, development and testing of new reactive media for CCR constituents, including arsenic and molybdenum, have been performed in the last few years so several media options applicable to the Site are available.

In a PRB wall implementation, reactive media may be emplaced in a trench or mixed directly with the soil or aquifer media using augers or other mixing techniques. Two PRB wall design configurations have historically been used, depending upon the size, material properties, and subsurface hydraulics of impacted sites (ITRC 2005):

- Continuous: The wall containing reactive media extends across the entire flowpath of the plume. These should have minimal impact on groundwater flow and do not necessarily have to be tied to a low permeability unit, although that would be dependent on the depth of impacts and would safeguard against constituents flowing under the PRB wall if permeability of the reactive media was reduced.
- Funnel-and-gate: In this configuration, the reactive media do not extend across the entire plume; rather, barrier walls are used to control and direct flow to a reactive gate that contains the reactive media. The funnels can be constructed of sheet piles, bentonite, or other barrier wall material. Similar to barrier walls used for containment, funnels must be tied into a confining bed or low permeability unit to avoid having impacted water flow under the wall. Funnels can also be placed in zones of greatest contaminant mass flux through the aquifer, to maximize efficiency of treatment. The use of a funnel can cause a significant increase in

groundwater flow velocity, which must be considered in designing the reactive portion of the wall for residence time. The funnel must be designed to extend beyond the extent of the plume to avoid end-around flow.

Groundwater residence time through the gate needs to be sufficient to allow capture of the constituents as groundwater moves through the reactive media. Residence time can be determined from laboratory treatability studies on the media.

Site characterization is especially important for PRB walls to allow proper design where groundwater flows naturally through the reactive media. An understanding of the following site and constituent characteristics is required for the success of the system (Powell et al. 1998):

- The permeability of the reactive zone, which must be kept greater than or equal to the aquifer to avoid diverting flow away from the PRB wall
- An understanding of the groundwater impact area boundaries and flow paths, which includes the following criteria:
  - The reactive media and funnel system, if used, must be properly designed and placed such that the groundwater will not bypass or be diverted around or under the system.
  - Excessive depth and fractured rock are difficult for placement of media.
- The geochemistry of the constituents and how they will interact with the reactive media
- Determination of how quickly groundwater will move through the reactive media to calculate residence time of the impacted groundwater
- The ability of the reactive media to remove constituents from groundwater yet remain reactive for an extended period

One operational consideration of a PRB wall is that the reactive media may become spent (less effective) or even clogged through time, such that it needs to be replaced. Laboratory treatability studies and site subsurface hydraulic conditions may be used to select and project the life of the reactive media.

Inorganic constituents have been shown to be amenable to remediation using PRB technology when using the appropriate reactive media. These constituents include arsenic and molybdenum, as well as other Appendix IV parameters (McGregor et al. 2002; EPRI 2015; Dugan 2017).

A PRB wall can be installed through trenching, or soil excavation, in a similar manner as a slurry wall. A biopolymer slurry is used to stabilize the trench walls during excavation. The biopolymer is usually guar gum-based to allow microbial breakdown of residual slurry after placement of the reactive media. The reactive media is placed through the slurry by tremie. The depths are limited to approximately 90 feet or the depth a trench can be kept open (ITRC 2005). A PRB wall may also be

installed through soil mixing techniques depending upon Site conditions, required depth of the wall, and other considerations.

Three types of media could be used in PRB walls at the Site:

- Oxygenating chemicals
- Adsorptive media
- Organic matter and chemicals to create sulfide minerals (biowall)

Because of the reductive dissolution of iron and associated release of arsenic and molybdenum from ash or natural soil, the PRB wall could contain a chemical compound that would create oxidizing conditions. Commercial products such as ORC (oxygen release compound) and EHC-O (redox compound/oxygen release; ITRC 2011) and other readily available chemicals (e.g., potassium permanganate and calcium peroxide) could be used in a PRB wall to provide oxygen to groundwater.

Multiple effective adsorptive media are available for arsenic and molybdenum in conventional PRB applications, either continuous or funnel-and-gate. The reactive media are usually mixed with coarse sand to maintain permeability.

Another variation on a PRB wall that may be appropriate for Site conditions is a biowall (ITRC 2011; Neculita et al. 2007). The geochemical principles behind this application are similar to the sequestration in sulfide geochemical approach described in Section 4.2.1. Specifically, the reactive portion of the wall would contain an organic carbon source (electron donor) such as mulch or other readily available organic matter, an iron and sulfur source (e.g., ferrous sulfate, zero-valent iron, or others), and coarse sand to maintain permeability through the wall. The sulfate-reducing bacteria naturally occurring at the Site or in the mulch would reduce sulfate to sulfide. Arsenic and molybdenum from groundwater are captured in sulfide minerals formed as a byproduct of the sulfate reduction.

Due to the three possible modes of application, the availability of effective reactive media for arsenic and molybdenum, relatively shallow depths, and the ease of trenching (or excavating) to required depths at the Site, PRB walls are viable options for groundwater corrective action. One uncertainty is the presence of a laterally continuous low permeability zone (Unit 2), which the PRB wall could be tied into if needed.

When working effectively in suitable conditions, PRB walls can reduce constituents to GWPS downgradient of the walls. However, because of site-specific uncertainties associated with the reactive media and subsurface hydraulics, performance is considered medium to high. Similarly, because the reactive media is expended, may clog through time, and will need to be replaced at some point, reliability is considered to be medium. Further technology-specific evaluation is required to more definitively determine the feasibility of implementing a PRB at the Site.

Because it involves trenching or mixing with augers, and due to space constraints at the Site, ease of implementation is considered moderate to difficult. Alteration of subsurface hydraulics (flow) may be a potential impact of this remedy. Considering the need for laboratory treatability studies on the reactive media, analysis of the subsurface hydraulics, and the relatively small area of emplacement, time to implement the remedy is estimated to be 1 to 2 years.

#### *4.2.6 Phytoremediation*

Phytoremediation is the use of plants to degrade, immobilize, or contain constituents in soil, groundwater, surface water, and sediments. Phytoremediation is a viable alternative to more active and costly environmental remediation technologies, especially for large areas with relatively low levels of constituents in shallow soil or shallow groundwater. For arsenic and molybdenum, phytoremediation may be applied in two modes: 1) direct uptake of constituents by plants known as hyperaccumulators and storage in their roots, stems, and leaves; and 2) uptake of water by trees to create hydraulic containment. Though hyperaccumulating plants are available for both arsenic and molybdenum (Wang et al. 2002; Boojar and Tavakkoli 2011), these plants have shallow root systems that would not extend to groundwater (approximately 15 feet or more) in most areas of groundwater SSLs.

Trees have been used to extract water and some organic contaminants from the ground in phytoremediation applications in deeper groundwater zones (i.e., excess of 50 ft bgs). Trees can affect hydraulic gradients and groundwater flow by removal of water and thus can be used to create a partial barrier to groundwater flow. With respect to the site-specific conditions, trees would be applied for hydraulic containment, but some arsenic and molybdenum may be either immobilized within the root zone or incidentally taken up into the tree biomass. Hydraulic containment may be enhanced by planting the tree in a column of more permeable material (i.e., an engineered TreeWell® system), such that flow of water increases to the tree and it acts more like a pumping well.

To fully evaluate hydraulic containment using trees, the following investigations should be performed: 1) determine the amount of water transpired (pumped) by each tree during the growing season; 2) determine the number and placement of trees; and 3) determine if hydraulic containment could be achieved with the tree array. The performance and reliability of trees are considered medium because the trees may not transpire (pump) enough water to maintain hydraulic containment based on site-specific conditions and may not transpire as much during winter.

Implementation of hydraulic containment using trees at the Site will be relatively easy, primarily consisting of constructing the TreeWells® and planting the trees. TreeWells® are compatible with MNA and geochemical approaches, should any advantage be gained by implementing two or three of these technologies simultaneously.

Constructed wetlands have been used to remediate wastewater and shallow groundwater. Constructed wetlands will be further investigated as a potential corrective action for areas of the Site with impacts where groundwater may be close to the surface, such as low-lying areas near the southern property boundary.

#### *4.2.7 Subsurface Vertical Barrier Wall*

Vertical barrier walls are used to stop the flow of groundwater and any constituents that groundwater contains. Though effective, vertical barrier walls may serve as groundwater dams, so hydraulic containment to address mounding of groundwater behind barrier walls or flow of groundwater around the ends of barrier walls should be considered.

Bentonite slurry walls have been used for decades to control the flow of groundwater in environmental applications as well as general foundation construction. Soil-bentonite walls are constructed by excavating a narrow vertical trench and emplacing bentonite slurry to support the trench walls. The bentonite slurry used to support the trench walls is generally a mixture of pulverized bentonite in water. Water from the slurry bleeds into the trench wall, leaving behind a mat of particles known as filter cake, which along with the hydrostatic force of the slurry, holds the trench open. Once the trench reaches final grade, the trench is backfilled with a mixture of soil from the excavation, slurry, and soil from other sources, as necessary, to achieve the desired properties of strength and hydraulic conductivity. The backfill is generally placed with a tremie, clamshell, and/or a bulldozer, displacing the trench support slurry. Installation of soil-bentonite barrier walls can require significant amounts of space for mixing backfill (Bliss 2014).

Cement-bentonite barrier walls are similar to soil-bentonite walls except that the stabilizing fluid used during excavation is a cement-bentonite water mix. The slurry remains in place to form the wall, so a separate operation to mix the backfill and displace the slurry is not necessary. Because the excavated material is not used in the backfill mix, significant amounts of spoil are generated with this type of barrier wall. Also, due to the method of excavation with the slurry, there can be a significant amount of slurry waste (up to 40% of the total trench/panel volume) during excavation.

Barrier walls used alone at the Site could produce groundwater mounding, with possible rise of groundwater to the surface, and could produce groundwater flow around the end of the barrier walls. However, barrier walls could be used to improve the subsurface hydraulic (flow) conditions for PRB walls and pump-and-treat. For example, barrier walls could form the impermeable portions of a funnel-and-gate PRB wall to direct groundwater to the treatment gates containing reactive media and could be used in a similar way to direct groundwater toward pumping wells in a pump-and-treat system. Because they could be part of PRB wall or hydraulic containment (pump-and-treat) systems, barrier walls are potentially viable corrective measures at the Site. Vertical barrier walls, such as

slurry walls, would not be applied alone at the Site due to the potential for groundwater rise to the surface and flow of impacted groundwater around the ends of walls.

Subsurface vertical barrier walls are a widely used and accepted technology, with relatively high performance and reliability. Implementation at the Site is considered easy to moderate, due to trenching or other emplacement methods. Potential impacts of the remedy include alteration of subsurface hydraulics (flow).

Time to implement the remedy (design and construct the wall) could be 1 to 2 years.



## 5 Remedy Selection Process

The purpose of this ACM is to continue the process of selecting corrective measure(s) for groundwater based on further evaluation using the criteria outlined in 40 CFR 257.96 and GA EPD Rule 391-3-4-.10(6)(a). The following sections present the site management strategy, additional data gathering, schedule, reporting, and next steps.

A groundwater remedy system that incorporates one or more remedies described in this ACM may be implemented. The remedy will be designed to meet the performance standards described in 40 CFR 257.98(c). Because the groundwater remedy may incorporate multiple approaches, additional data and analysis will be required to perform a thorough location-specific evaluation regarding the feasibility of each potential remedy and to design or configure a groundwater corrective action plan.

Some of the data needed to evaluate potential remedies may be collected concurrently with routine groundwater monitoring events or during supplementary sampling events, if required. Additional data collection or feasibility evaluations may require 18 to 24 months to complete.

### 5.1 Landfill Closure and Site Management Strategy

To meet the requirements of GA EPD Rule 391-3-4-.10(7), post-closure care activities will continue at the Site for at least 30 years, including maintaining the integrity of the final cover system and continuing groundwater monitoring. The Site will be inspected routinely to ensure that all the CCR disposed of in the facility remains properly covered with the approved final closure system for the facility (ACC 2018).

GPC plans to proactively use adaptive site management to support the corrective action strategy and address potential changes in Site conditions as appropriate. A remediation approach will be used as follows: 1) the corrective measures system will be implemented to address current conditions; 2) the performance of the system will be monitored and evaluated semiannually; 3) the CSM will be updated as more data are collected; and 4) the corrective action system will be adjusted and augmented to ensure that performance criteria are met. Using this approach, performance objectives will be established, conditions will be monitored, and results will be compared to the performance objectives. Based on monitoring data, the corrective measures may be adjusted if performance objectives are not met, leading to continuous improvements in Site knowledge and corrective measures performance. Moreover, Site conditions may require implementation of more than one corrective measure technology to meet remediation goals over the life of the project.

### 5.2 Additional Data Gathering

Installation of three delineation wells adjacent to monitoring wells GWC-15, GWC-16, and GWC-20 is proposed to vertically delineate arsenic and molybdenum at the Site. The installation of two

additional delineation wells adjacent to monitoring wells GWB-4R and GWC-1 is proposed to vertically delineate state-derived GWPS exceedances (but not federal RSL exceedances) for molybdenum. The proposed vertical delineation wells will be installed in the Unit 3 permeable material beneath the Unit 2 low permeability zone to an approximate depth of 50 feet bgs. Horizontal delineation is dependent on securing access from adjacent property owners. Per GA EPD guidance, where “denial of access prevents the installation of off-site delineation wells, a USEPA approved fate and transport model analysis may be used to delineate the limit of the contaminant plume” (GA EPD 2019). If off-site access cannot be secured, a fate and transport model analysis will be used to achieve horizontal delineation.

Additional data and analysis will be required to perform a thorough site-specific evaluation and supplemental design of groundwater corrective actions for the Site. Without the influence of the leachate from the Clifton landfill, arsenic and molybdenum may not be released from ash or natural soil or may be attenuated in the groundwater-aquifer system after release. Additional data collection could include geochemical investigations, geochemical and/or groundwater modeling, laboratory bench-scale studies, and pilot tests as needed. Additional bench-scale and pilot tests may require an estimated 1 to 2 additional years to complete.

### **5.3 Schedule, Reporting, and Next Steps**

Additional data collection is planned to begin in 2021, including installing wells for vertical delineation during the first quarter of 2021. GPC will prepare semiannual reports to document Site groundwater conditions, results associated with additional data gathering identified in Section 5.2 and in Table 5, and the progress in selecting and designing the remedy in accordance with 40 CFR 257.97(a). The reports will be posted to GPC’s website. An addendum to this report will be submitted in February 2021 with the semi-annual report to align schedules and will be reported semi-annually thereafter.

At least 30 days prior to the selection of remedy or remedies, a public meeting to discuss the results of the ACM will be held pursuant to 40 CFR 257.96(e). The final remedy selection report will be developed as outlined in 40 CFR 257.97(a). Once the remedy has been selected, the implementation of the remedy will be initiated in accordance with 40 CFR 257.98.

## 6 References

- ACC (Atlantic Coast Consulting, Inc.), 2017. *Assessment of Corrective Measures – Addendum*. Grumman Road Private Industrial Landfill. Prepared for Georgia Power Company. November 2017.
- ACC, 2018. *Inactive CCR Landfill*. Grumman Road Ash Landfill. Prepared for Georgia Power Company. November 2018.
- ACC, 2019a. *Assessment of Corrective Measures – 2019 Addendum*. Grumman Road Private Industrial Landfill. Prepared for Georgia Power Company. October 2019.
- ACC, 2019b. *Supplemental 2019 First Semiannual Groundwater Monitoring Report*. Grumman Road Private Industrial Landfill. Prepared for Georgia Power Company. August 2019.
- ACC, 2020a. *Notice of Assessment of Corrective Measures*. Plant Kraft Grumman Road Ash Landfill. Prepared for Georgia Power Company. July 9, 2020.
- ACC, 2020b. *Deadline Extension Demonstration: Assessment of Corrective Measures*. Plant Kraft Grumman Road Ash Landfill. Prepared for Georgia Power Company. October 7, 2020.
- ACC, 2020c. *2020 Annual Groundwater Monitoring and Corrective Action Report*. Grumman Road Private Industrial Landfill. Prepared for Georgia Power Company. July 2020.
- ACC, 2020d. Letter to: Ms. Kristen Jurinko, P.G., Southern Company – Environmental Solutions. Regarding: September 2020 Well Installation Addendum. Grumman Road Private Industrial Landfill. September 30, 2020.
- Anchor QEA (Anchor QEA, LLC), 2019. *Arsenic Mobilization Laboratory Evaluation*. Grumman Road. Prepared for Southern Company Services, Inc. September 2019.
- Bennett, B. and M.J. Dudas, 2003. "Release of arsenic and molybdenum by reductive dissolution of iron oxides in a soil with enriched levels of native arsenic." *Journal of Environmental Engineering and Science* 2(4).
- Bliss, M., 2014. *Chapter 16: "Cutoff Walls." Design Standard No. 13 Embankment Dams. DS-13(16)-14: Phase 4 Final*. Prepared for the U.S. Department of the Interior, Bureau of Reclamation. July 2014.
- Boojar, M.M.A., and Z. Tavakkoli, 2011. "New Molybdenum-Hyperaccumulator Among Plant Species Growing on Molybdenum Mine – A Biochemical Study on Tolerance Mechanism Against Metal Toxicity." *Journal of Plant Nutrition* 34(10):1532–1557.

- Brantley Engineering (Brantley Engineering, LLC), 2019. *Closure Construction Certification Report*. Grumman Road Ash Landfill Parcel A'. Prepared for Southern Company Services Engineering and Construction Services. November 8, 2019.
- Christenson, M.D., A. Kambhu, and S.D. Comfort, 2012. "Using slow-release permanganate candles to remove TCE from a low permeable aquifer at a former landfill." *Chemosphere* 89: p. 680–687.
- Christenson, M., A. Kambhu, J. Reece, S. Comfort, and L. Brunner, 2016. "A five-year performance review of field-scale, slow-release permanganate candles with recommendations for second-generation improvements." *Chemosphere* 150: 239-237.
- Clarke, Hacke, and Peck, 1990. "Geology and Groundwater Resources of the Coastal Area of Georgia." *Georgia Geologic Survey Bulletin* 113:106.
- Clarke, J.S., L.J. Williams, and G.C. Cherry, 2010. "Hydrogeology and Water Quality of the Floridan Aquifer System and Effect of Lower Floridan Aquifer Pumping on the Upper Floridan Aquifer at Hunter Army Airfield, Chatham County, Georgia: U.S." *Geological Survey Scientific Investigations Report*: 2010–5080(56).
- Dugan, P.J., 2017. *What's Really in the Water? New Treatment Options for Coal Combustion Residuals (CCRs) and Mining-Influenced Water*. Paper presented at the 34th Annual Pittsburgh Coal Conference 2017 (Pittsburgh, Pennsylvania). September 2017.
- EPRI (Electric Power Research Institute), 2015. *Monitored Natural Attenuation for Inorganic Constituents in Coal Combustion Residuals*. EPRI, Palo Alto, California: 3002006285. December 2015.
- GA EPD (Georgia Environmental Protection Division), 2019. *Guidance Document for Groundwater Release Notification Requirements Under Rule 391-3-4-.17(6)*. October 2018.
- Gorelick, S.M., R.A. Freeze, D. Donohue, and J.F. Keely, 1993. *Groundwater Contamination Optimal Capture and Containment*. Boca Raton, Florida: Lewis.
- ITRC (Interstate Technology and Regulatory Council), 2005. *Permeable Reactive Barriers: Lessons Learned/New Directions*. Interstate Technology and Regulatory Council, Permeable Reactive Barriers Team, PRB-4, Washington, D.C.
- ITRC, 2011. *Technical/Regulatory Guidance - Permeable Reactive Barrier: Technology Update*, p. 234. Prepared by the Interstate Technology and Regulatory Council and PRB: Technology Update Team. June 2011.
- McGregor, R.G., S. Hansler, D.W. Blowes, and E. Laratta, 2002. "The Use of a PRB to Treat Groundwater Impacted by Coal-Combustion By-Products." In *Proceedings, Third International*

- Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, California.*  
Paper 2A-02. Columbus, Ohio: Battelle Press.
- Miller, R.J., W. Thompson, and M. Walker, 2002. *Control of Groundwater Arsenic Plume by Air Sparging.* Remediation of Chlorinated and Recalcitrant Compounds. Columbus, Ohio; Battelle Press.
- Neculita, C.M., G.J. Zagury, and B. Bussiere, 2007. "Passive treatment of acid mine drainage in bioreactors using sulphate-reducing bacteria: critical review and research needs." *Journal of Environmental Quality* 36: 1-16.
- Powell, R.M., R.W. Puls, D.W. Blowes, J.L. Vogan, R.W. Gillham, P.D. Powell, D. Schultz, R. Landis, and T. Sivavec, 1998. *Permeable Reactive Barrier Technologies for Contaminant Remediation.* EPA/600/R-98/125. September 1998.
- Pugh, J.D., D.W. Morris, and J.C. Redwine, 2012. In situ Systems and Methods for the Immobilization of Contaminants. Original Assignee: Southern Company Services, Inc. U.S. Patent 8,157,476. April 2012.
- Powell, R.M., P.D. Powell (Powell & Associates Science Services), and R.W. Puls (Subsurface Protection and Remediation Division National Risk Management Research Laboratory), 2002. *Economic Analysis of the Implementation of Permeable Reactive Barriers for Remediation of Contaminated Ground.* EPA/600/R-02/034. June 2002.
- Redwine, J.C., J.R. Howell, R.J. Donahoe, and L. Yang, 2004. "In situ Chemical Fixation of Arsenic in Soil: Laboratory and Field Results." In: *Proceedings, Air and Waste Management Association 97th Annual Conference and Exhibition, Indianapolis, Indiana.*
- Saunders, J.A., 1998. Situ Bioremediation of Contaminated Groundwater. U.S. Patent 5,833,855.
- SCS (Southern Company Services, Inc.), 1998. *Groundwater Monitoring Plan.* Grumman Road Monofill. Prepared for Savannah Electric and Power Company. 1998.
- SCS, 2013. *Assessment of Corrective Measures: Landfill Parcel A.* Grumman Road Ash Landfill. Prepared for Georgia Power Company. February 2013.
- Solinst, 2020. "Video Series: Understanding How Waterloo Emitters Work." *Enhanced Biodegradation.* Accessed October 21, 2020. Available at: <https://www.solinst.com/products/enhanced-biodegradation/703-waterloo-emitters/>.
- USEPA (U.S. Environmental Protection Agency), 1996. *Pump-and-Treat Ground-Water Remediation: A Guide for Decision Makers and Practitioners.* EPA 625/R-95/005. July 1996.

- USEPA, 1999. *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*. EPA/OSWER No. 9200.4-17P, Office of Solid Waste and Emergency Response, Washington D.C.
- USEPA, 2007a. *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 1– Technical Basis for Assessment*. EPA/600/R-07/139. October 2007.
- USEPA, 2007b. *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 2–Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium*. EPA/600/R-07/140. October 2007.
- USEPA, 2012. *A Citizen's Guide to In Situ Chemical Oxidation*. Office of Solid Waste and Emergency Response. September 2012.
- USEPA, 2015. *Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites*. U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response Directive 9283.1-36. August 2015.
- USEPA, 2016. *Resource Conservation and Recovery Act Facilities Investigation Remedy Selection Track: A Toolbox for Corrective Action*. May 20, 2016.
- Wang, J., F.-J. Zhao, A.A. Meharg, A. Raab, J. Feldmann, and S.P. McGrath, 2002. "Mechanisms of Arsenic Hyperaccumulation in *Pteris vittata*. Uptake Kinetics, Interactions with Phosphate, and Arsenic Speciation." *Environmental Stress and Adaptation* 130(3): 1552-1561.

# Tables

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**Table 1**  
**Microcosm Results Summary**

Microcosm Configuration	Incubation Time (days)	pH	Specific Conductance (µS/cm)	ORP (mV)	Dissolved Arsenic (µg/L)	Dissolved Manganese (µg/L)	Dissolved Iron (µg/L)
Soil (T4-18') and Clifton Landfill Leachate-Impacted Groundwater (GWA-7)	2	6.78	2,290	190	36.9	37.7	170
	4	6.97	2,350	210	40.3	45.1	130
	8	7.07	2,320	190	48.1	55.1	95
	16	6.91	2,320	120	47	56.9	93
	38	7.18	2,260	--	48.3	51.2	74
Ash (UDGR-7) and Clifton Landfill Leachate-Impacted Groundwater (GWA-7)	2	6.70	2,210	210	89.2	32.3	570
	4	6.85	2,260	280	90.9	40.5	470
	8	6.81	2,230	280	148	60.3	1,010
	16	6.72	2,210	230	185	84.5	1,130
	38	7.14	2,160	30	172	93.9	670
Ash (UDGR-7) and Unimpacted Groundwater (GWC-13)	2	6.02	103	270	20.7	11.3	25 U
	4	6.39	136	--	19.4	14	25 U
	8	6.21	108	320	23.8	24.9	25 U
	16	5.99	107	310	19	32.7	25 U
	38	6.33	110	220	19	52.1	25 U
Control: Clifton Landfill Leachate-Impacted Groundwater (GWA-7)	0-38	6.68	2,500	160	0.5 U	13	710
Control: Unimpacted Groundwater (GWC-13)	0-38	4.95	61	270	0.50 U	5.6	290

Notes:

--: ORP values not reported

µg/L: micrograms per liter

µS/cm: microsiemens per centimeter

mV: millivolts

ORP: oxidation-reduction potential

U: indicates that the compound was analyzed for but not detected



**Table 2**  
**Monitoring Well Network Summary**

Well ID	Installation Date	Northing (SD)	Easting (SD)	Ground Surface Elevation (SD)	Top of Casing Elevation (SD)	Top of Screen Elevation (SD)	Bottom of Screen Elevation (SD)	Bottom Depth (ft BTOC)	Purpose
GWA-7	07/29/1998	780887.99	960553.30	46.11	47.10	30.90	25.90	21.20	Upgradient
GWA-8	07/29/1998	781167.66	960453.78	44.02	46.84	31.04	26.04	20.80	Upgradient
GWB-4R <sup>1</sup>	03/10/1997	779975.87	960770.83	46.82	49.58	32.82	22.82	27.00	Sidegradient
GWB-5R <sup>2</sup>	03/11/1997	780294.37	960686.46	45.31	47.82	31.31	21.31	26.50	Sidegradient
GWB-6R <sup>2</sup>	10/09/2018	780573.41	960610.31	44.71	47.40	34.71	24.71	22.70	Sidegradient
GWC-1	10/09/2018	779574.06	960864.07	47.17	50.30	28.37	23.37	28.20	Downgradient
GWC-2 <sup>1</sup>	10/09/2018	779433.81	960353.99	48.11	51.84	25.11	20.11	32.73	Downgradient
GWC-9	07/24/1998	781007.52	959954.35	43.62	47.11	24.71	19.71	27.40	Downgradient
GWC-11	07/23/1998	780352.70	960115.63	45.78	49.38	31.78	26.78	22.60	Downgradient
GWC-12	07/22/1998	780099.06	960175.37	43.78	47.48	25.78	20.78	26.70	Downgradient
GWC-13	07/22/1998	779737.90	960268.64	44.48	47.82	29.02	24.02	23.80	Downgradient
GWC-14	07/22/1998	779112.64	960423.84	47.45	50.70	28.70	23.70	27.00	Downgradient
GWC-15	07/22/1998	778948.31	960660.49	45.34	48.12	26.32	21.32	26.80	Downgradient
GWC-16	07/21/1998	779034.61	960956.85	44.95	47.79	24.59	19.59	28.20	Downgradient
GWC-17 <sup>3</sup>	1998	781420.05	960041.65	41.45	44.09	25.89	20.89	23.50	Downgradient
GWC-20	2010	779294.68	960950.04	46.74	50.03	29.74	24.74	25.59	Downgradient
GWC-21	2010	779031.11	960941.58	44.70	47.94	28.70	23.70	24.54	Downgradient
GWC-22	2010	780712.60	960057.05	43.71	46.72	32.81	27.81	19.21	Downgradient

Notes:

Wells surveyed in October 2017 unless otherwise noted.

1. Denotes well surveyed June 2020

2. Denotes well surveyed October 2018

3. Denotes original boring log and installation date not available

ft BTOC: feet below top of casing

SD: site datum

**Table 3**  
**Summary of Groundwater Protection Standards**

Constituent	Units	MCL	Site Background	RSL	State GWPS
Antimony, Total	mg/L	0.006	0.003	--	0.006
Arsenic, Total	mg/L	0.01	0.0287*	--	0.0287
Barium, Total	mg/L	2	0.22	--	2
Beryllium, Total	mg/L	0.004	0.003	--	0.004
Cadmium, Total	mg/L	0.005	0.0025	--	0.005
Chromium, Total	mg/L	0.1	0.068	--	0.1
Cobalt, Total	mg/L	--	0.0102	0.006	0.0102
Combined Radium, Total	pCi/L	5	33.8*	--	33.8
Fluoride, Total	mg/L	4	0.6556	--	4
Lead, Total	mg/L	--	0.013	0.015	0.013
Lithium, Total	mg/L	--	0.03	0.04	0.03
Mercury, Total	mg/L	0.002	0.0005	--	0.002
Molybdenum, Total	mg/L	--	0.01	0.1	0.01
Selenium, Total	mg/L	0.05	0.0438	--	0.05
Thallium, Total	mg/L	0.002	0.001	--	0.002

Notes:

GWPSs are derived from April 2020 sampling event

--: not applicable

\*: indicates that site background is greater than MCL

GWPS: groundwater protection standard

MCL: maximum contaminant level

mg/L: milligrams per liter

pCi/L: picocuries per liter

RSL: rule specified level

State GWPS: GWPS derived using Georgia Environmental Protection Division rule requirements

**Table 4a**  
**Summary of Groundwater Analytical Data (August 2020)**

Substance	Well ID																			
	GWA-7	GWA-8	GWB-4R	GWB-5R	GWB-6R	GWC-1	GWC-2	GWC-9	GWC-11	GWC-12	GWC-13	GWC-14	GWC-15	GWC-16	GWC-17	GWC-20	GWC-21	GWC-22		
	8/19/2020	8/17/2020	8/19/2020	8/19/2020	8/19/2020	8/19/2020	8/18/2020	8/19/2020	8/18/2020	8/17/2020	8/17/2020	8/18/2020	8/18/2020	8/18/2020	8/18/2020	8/18/2020	8/18/2020	8/18/2020		
Appendix IV	Antimony	<0.0014	<0.00028	<0.00028	<0.00028	<0.00028	0.00061 J	<0.00028	<0.00028	0.00064 J	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	0.0022 J	
	Arsenic	0.0060 J	<0.00078	0.0033 J	0.0019 J	0.0036 J	0.0070 J	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	0.0012 J	0.28	0.045	<0.00078	0.30	0.0059	<0.00078	
	Barium	0.10	0.051	0.076	0.10	0.064	0.057	0.050	0.17	0.12	0.018	0.024	0.028	0.030	0.32	0.074	0.38	0.18	0.085	
	Beryllium	<0.00023	0.00019 J	<0.000046	<0.000046	0.000050 J	<0.000046	0.000051 J	0.00022 J	<0.000046	0.00046 J	<0.000046	<0.000046	<0.000046	0.000068 J	0.0016 J	<0.000046	<0.000046	0.000076 J	
	Cadmium	<0.00059	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	0.00058 J	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	0.00024 J
	Chromium	0.015 J	0.00082 J	0.0022 J	0.0012 J	0.0037 J	0.0028 J	<0.00055	0.0013 J	0.0015 J	0.0010 J	0.00077 J	0.00059 J	0.0018 J	0.0012 J	0.0011 J	0.0011 J	0.0012 J	0.0012 J	0.00056 J
	Cobalt	0.0021 J	<0.00038	0.00072 J	<0.00038	<0.00038	<0.00038	<0.00038	0.0011 J	0.00040 J	0.00060 J	<0.00038	<0.00038	<0.00038	<0.00038	0.0025 J	<0.00038	<0.00038	<0.00038	<0.00038
	Fluoride	0.21	0.079 J	0.17	<0.050	<0.050	<0.050	<0.050	0.092 J	<0.050	0.19	<0.050	<0.050	<0.050	<0.050	<0.050	0.51	<0.050	<0.050	<0.050
	Lead	0.0044 J	<0.000036	0.00048 J	0.000079 J	0.00014 J	<0.000036	<0.000036	0.000096 J	0.00035 J	0.000049 J	0.000076 J	<0.000036	0.000090 J	0.00017 J	0.00014 J	<0.000036	0.00027 J	0.00072 J	
	Lithium	<0.0040	0.0010 J	0.014 J	<0.00081	<0.00081	<0.00081	<0.00081	0.0019 J	<0.00081	0.00091 J	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	0.0065 J	<0.00081	<0.00081	<0.00081
	Mercury	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078
	Molybdenum	<0.0034	<0.00069	0.16	<0.00069	0.0010 J	0.061	<0.00069	<0.00069	0.00077 J	<0.00069	<0.00069	0.017	0.12	0.15	0.00092 J	0.097	0.069	<0.00069	
	Radium	5.45	2.63	3.10	2.49	4.53	1.91	1.09 U	2.34	6.76	2.25	1.42	0.731 U	1.84	4.24	3.11	6.86	3.27	7.65	
	Selenium	<0.0078	<0.0016	<0.0016	<0.0016	<0.0016	0.0020 J	<0.0016	<0.0016	0.0028 J	<0.0016	<0.0016	0.0029 J	0.0022 J	0.0058 J	0.0020 J	<0.0016	0.013	<0.0016	
Thallium	<0.00072	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	0.00021 J	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	0.00017 J		

Notes:

Results for substances are reported in milligrams per liter. Radium results are reported in picocuries per liter.

Radium data are for Radium 226 & Radium 228 (combined).

<: Indicates the substance was not detected above the relevant laboratory method detection limit

J: Indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value; therefore, value displayed (value J) is qualified by the laboratory as an estimated number

U: Indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value; therefore, value followed by U is qualified by the laboratory as estimated.

**Table 4b**  
**Summary of Groundwater Analytical Data (September/October 2020)**

Substance	Well ID																			
	GWA-7	GWA-8	GWB-4R	GWB-5R	GWB-6R	GWC-1	GWC-2	GWC-9	GWC-11	GWC-12	GWC-13	GWC-14	GWC-15	GWC-16	GWC-17	GWC-20	GWC-21	GWC-22		
	9/28/2020	9/28/2020	10/1/2020	9/30/2020	9/30/2020	9/28/2020	9/29/2020	10/1/2020	9/29/2020	9/29/2020	9/28/2020	9/29/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020	9/30/2020		
Appendix III	Boron	4.6	0.15	5.2	4.0	4.2	0.69	0.024 J	0.028 J	1.2	4.7	0.24	0.053	0.86	8.1	0.86	9.9	2.3	0.25	
	Calcium	3.3	25.6	48.4	70.4	27.5	70.7	0.18 J	5.5	123	42.0	2.9	30.8	109	177	53.5	292	98.4	20.9	
	Chloride	113	13.7	15.7	24.1	53.9	13.8	5.4	16.8	143	24.3	4.3	10.6	1.7	39.6	257	34.9	23.7	8.5	
	Fluoride	0.069 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.16	<0.050	<0.050	<0.050	<0.050	0.15	<0.050	<0.050	<0.050
	pH	5.86	4.41	5.75	4.99	5.39	5.79	4.60	4.42	4.77	3.95	4.76	5.69	6.71	5.47	4.08	6.04	5.82	4.63	
	Sulfate	20.0	93.6	178	339	339	71.6	8.6	35.0	516	237	25.6	93.5	18.5	736	193	956	306	65.5	
	TDS	1450	175	424	652	816	373	33.0	111	1100	440	60.0	187	434	1140	752	1860	634	113	
Appendix IV	Antimony	<0.0014	<0.00028	<0.00028	0.00030 J	0.00059 J	0.00035 J	0.0016 J	<0.00028	0.00051 J	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	0.00033 J	0.0016 J	
	Arsenic	<0.0039	<0.00078	0.0027 J	0.0017 J	0.0040 J	0.0058	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	0.24	0.044	0.0012 J	0.31	0.0029 J	<0.00078	
	Barium	0.095	0.050	0.077	0.16	0.092	0.051	0.049	0.15	0.14	0.018	0.029	0.026	0.034	0.14	0.035	0.35	0.19	0.045	
	Beryllium	<0.00023	0.00021 J	<0.000046	0.000065 J	0.000046 J	<0.000046	0.000075 J	0.00020 J	<0.000046	0.00043 J	<0.000046	<0.000046	<0.000046	0.000089 J	0.0013 J	<0.000046	<0.000046	<0.000046	
	Cadmium	<0.00059	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	0.00077 J	<0.00012	<0.00012	0.00012 J	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	<0.00012	0.00024 J
	Chromium	0.014 J	0.00071 J	0.0020 J	0.0018 J	0.0045 J	0.0024 J	<0.00055	0.0012 J	0.0011 J	0.00085 J	0.00062 J	<0.00055	0.0016 J	0.00098 J	0.00096 J	0.0013 J	0.00067 J	0.00064 J	
	Cobalt	<0.0019	<0.00038	0.00050 J	0.00056 J	<0.00038	<0.00038	<0.00038	0.00099 J	0.00055 J	0.00057 J	<0.00038	<0.00038	<0.00038	<0.00038	0.0018 J	<0.00038	<0.00038	<0.00038	
	Lead	0.0043 J	<0.000036	0.00026 J	0.0012 J	0.000080 J	0.000043 J	<0.000036	0.000038 J	0.00032 J	0.000037 J	0.000064 J	<0.000036	0.000047 J	0.000091 J	0.000060 J	<0.000036	0.000054 J	0.00023 J	
	Lithium	<0.0040	0.0010 J	0.013 J	<0.00081	<0.00081	<0.00081	<0.00081	0.0019 J	<0.00081	0.00086 J	<0.00081	<0.00081	<0.00081	<0.00081	0.0041 J	<0.00081	<0.00081	<0.00081	
	Molybdenum	<0.0034	<0.00069	0.15	<0.00069	0.00097 J	0.059	<0.00069	<0.00069	<0.00069	<0.00069	<0.00069	0.0089 J	0.11	0.15	0.0041 J	0.33	0.028	<0.00069	
	Radium	22.4	2.08	2.60	4.45	6.39	1.29	1.00 U	3.30	8.30	0.845 U	1.28	0.331 U	2.14	2.47	3.09	5.62	3.83	2.79	
	Selenium	0.010 J	<0.0016	<0.0016	<0.0016	0.0023 J	<0.0016	<0.0016	<0.0016	0.0024 J	<0.0016	<0.0016	0.0051 J	<0.0016	0.0037 J	<0.0016	<0.0016	0.0061 J	<0.0016	
	Thallium	<0.00072	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	0.00017 J	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	<0.00014	
See Note 1	Vanadium	0.10	<0.0022	0.0047 J	0.0037 J	0.018	0.0042 J	<0.0022	<0.0022	0.0023 J	0.0046 J	<0.0022	<0.0022	0.0028 J	0.0028 J	<0.0022	0.0029 J	0.0029 J	<0.0022	
	Zinc	0.16	0.0092 J	0.0064 J	<0.0022	<0.0022	0.0092 J	0.056	0.025	0.0031 J	0.0074 J	0.016	<0.0022	0.032	0.0051 J	0.0043 J	0.031	0.0096 J	<0.0022	

Notes:

Results for substances are reported in milligrams per liter. Radium results are reported in picocuries per liter.

Radium data are for Radium 226 & Radium 228 (combined).

1. Appendix II parameter included to meet Georgia Environmental Protection Division Rule 391-3-4-.14 requirements that are not included in the Appendix IV parameter list

<: Indicates the substance was not detected above the relevant laboratory method detection limit

J: Indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value; therefore, value displayed (value J) is qualified by the laboratory as an estimated number

TDS: total dissolved solids

U: Indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value; therefore, value followed by U is qualified by the laboratory as estimated.

**Table 5  
Evaluation of Remedial Technologies**

Corrective Measure	Regulatory Citation for Criteria:	40 CFR 257.96(C)(1)			
	Description	Performance	Reliability	Ease or Difficulty of Implementation	Potential Impacts of Remedy
Geochemical Approaches (injection of oxidizing chemicals or placement of slow release oxidizing chemical candles in wells)	Geochemical approaches involve modifying the geochemistry of the Site to immobilize arsenic and molybdenum on solids created by injection. Depending upon the objective and Site geochemical conditions, immobilization may be achieved by oxygenation or injection of the appropriate treatment solutions. Oxygenation may be achieved chemically by injecting oxidants or placing slow release oxidizing chemical candles in wells or by physical methods such as air sparging or installation of Waterloo Emitters in wells. Other forms of geochemical approaches (also known as enhanced attenuation) include the injection of treatment solutions to immobilize constituents by precipitation/coprecipitation and/or sorption. The treatment solutions would likely contain iron compounds to create ferrihydrite to sorb arsenic and molybdenum, or to precipitate sulfide minerals, which incorporate arsenic and molybdenum into their mineral structures.	The performance of this remedy is considered medium. The groundwater is made more oxidizing by the treatment chemicals, which prevents mobilization of arsenic and molybdenum concentrations due to Clifton landfill leachate and produces conditions more amenable to attenuation.	The reliability of this remedy is considered medium. Multiple injections will likely be required, or oxidizing candles will need to be replaced.	Implementation of this remedy would be relatively easy.	The unintended release of constituents currently bound to soil is possible if inappropriate treatment chemicals are used.
Geochemical Approaches (oxygenation by physical means such as air sparging or Waterloo emitters)		The performance of this remedy is considered medium. Oxygen would need good distribution within the aquifer, and sufficient iron would need to be present in groundwater to facilitate attenuation.	The reliability of this remedy is considered medium. Mechanical components such as sparging wells and emitters would need to be maintained.	The ease of implementation for this remedy is considered moderate. Mechanical components would need to be designed and installed.	The unintended release of constituents currently bound to soil is possible if geochemical conditions are not well understood.
Geochemical Approaches (adsorption to, or coprecipitation with iron compounds via injection of treatment chemicals)		The performance of this remedy is considered medium. Leachate from the Clifton landfill would need to be controlled for adsorption to iron compounds.	The reliability of this remedy is considered medium. Multiple injections will likely be required.	Implementation of this remedy would be relatively easy.	The unintended release of constituents currently bound to soil is possible if inappropriate treatment chemicals are used.
Hydraulic Containment (pump-and-treat)	Hydraulic containment uses pumping wells (and sometimes injection wells, trenches, and/or galleries) to contain and prevent the expansion of impacted groundwater by creating a horizontal and vertical capture zone or a hydraulic barrier. If pumped, the water may be reused in beneficial applications or treated, discharged, or reinjected after treatment. Reinjection contributes to hydraulic containment by creating a hydraulic barrier of clean water. Hydraulic containment in various applications (including pump-and-treat) is applicable to arsenic and molybdenum because conventional and proven water treatment technologies are available for arsenic and molybdenum.	Hydraulic containment via pump-and-treat has been used for groundwater corrective action for decades. When the pump-and-treat system is online, the performance is considered high. Arsenic and molybdenum are readily treated, and if the system subsurface hydraulics are designed properly, the area of impact will stabilize or shrink.	Because the pump-and-treat system requires substantial operation and maintenance, the reliability is considered medium. In other words, pumps, piping, and the water treatment system must be maintained and will be offline occasionally for various reasons.	Hydraulic containment via pump-and-treat is difficult to implement due to design; installation of wells, pumps, and piping; and space constraints. An on-site water treatment plant would be required to accommodate the quantity and constituents in the pumped groundwater. Because the quantity of water requiring treatment cannot be determined without further study, the design parameters of the treatment system would also need to be verified through additional investigations.	Hydraulic containment via pump-and-treat will alter groundwater flow hydraulics beneath and adjacent to the Site; this could be evaluated with a groundwater model.
In Situ Solidification/Stabilization	ISS, also known as deep soil mixing, is a method for solidifying soil or waste material, immobilizing constituents of interest in the solid matrix, and reducing leaching of the constituents to groundwater. ISS both reduces permeability and chemically binds constituents of interest such as arsenic and molybdenum. Materials specific to the constituents of interest (e.g., ferrous sulfate or zero-valent iron for arsenic and molybdenum) may be added in small quantities to further reduce leaching of the constituents. In ISS, Portland cement and sometimes select chemical additives are mixed with soil or waste material using a bucket, large augers, or rotary methods. At the Site, ISS would be used as a source control measure to solidify/stabilize ash beneath the water table, thereby reducing leaching to groundwater. Due to the ISS application depths required at the Site, mixing by auger is likely the only viable application method.	Performance is considered high, as leaching of constituents can be greatly reduced in both laboratory treatability studies and subsequent field applications. Site-specific performance would need to be assessed with laboratory treatability and possibly a field pilot test.	Reliability is considered high because the stabilized block does not require maintenance and is essentially permanent.	Ease of implementation is considered moderate at the Site because mixing would need to be implemented at depth from the top or slopes of the ash landfill. Depending upon the method of application, a cement batch plant (and associated pumps) may need to be constructed at the Site.	ISS may cause a temporary spike of arsenic, and possibly molybdenum, in groundwater at the time of implementation. This spike is expected to dissipate, and groundwater arsenic and molybdenum concentrations to fall below pre-implementation values with time.

**Table 5**  
**Evaluation of Remedial Technologies**

Corrective Measure	Regulatory Citation for Criteria:	40 CFR 257.96(C)(1)			
	Description	Performance	Reliability	Ease or Difficulty of Implementation	Potential Impacts of Remedy
Monitored Natural Attenuation	MNA relies on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. For arsenic and molybdenum, the primary mechanisms of natural attenuation include sorption to iron compounds such as ferrihydrite or iron sulfide minerals, precipitation and coprecipitation with sparingly soluble sulfide minerals and other compounds, and physical processes such as dispersion (USEPA 1999, 2007a, 2007b; EPRI 2015). Under favorable conditions, these processes act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater.	The performance of MNA requires further investigation, especially related to the identification of attenuating mechanisms, aquifer capacity for attenuation, and time to achieve GWPS. The aquifer material at the Site contains significant silt and/or clay, which favors natural attenuation mechanisms such as sorption. However, leachate from the Clifton landfill is likely mobilizing arsenic and possibly molybdenum from ash and natural soil, resulting in a continued source of those constituents to groundwater if not controlled. Therefore, MNA performance is considered medium to high if landfill leachate from Clifton landfill is controlled.	Reliability of MNA will be relatively high because MNA requires almost no operation and maintenance.	Implementation of MNA at the Site will be relatively easy. Most of the wells for MNA are already in place, though a few additional wells may need to be installed to monitor progress in critical areas.	Potential impacts of the remedy will be negligible because MNA is non-intrusive and produces no effluents or emissions.
PRB Wall (containing sorptive media, oxygenation chemicals, or organic matter)	A PRB wall is the emplacement of chemically reactive materials in the subsurface to intercept impacted groundwater, provide a flow path through the reactive media, and capture or transform the constituents in groundwater to achieve GWPS downgradient of the PRB wall. PRB walls are an in situ technology that allows impacted water to flow through the media and provides a barrier to constituents rather than to groundwater flow, thereby reducing constituents to compliance levels downgradient of the reactive barrier (Powell et al. 1998, 2002). PRB walls may be constructed as funnel-and-gate systems.  In a PRB wall implementation, reactive media may be emplaced in a trench or mixed directly with the soil or aquifer media using augers or other mixing techniques. If emplaced in a trench, coarse sand is usually included to maintain permeability through the wall. Effective reactive media are commercially available for arsenic and molybdenum.  Depending on the site conditions and the objective of the PRB wall, three types of media could be used: oxygenating chemicals, adsorptive media, or organic matter and chemicals to create sulfide minerals (i.e., a biowall).	When working effectively in suitable conditions, PRB walls can reduce constituents to GWPS downgradient of the walls. However, because of site-specific uncertainties associated with the reactive media and subsurface hydraulics, performance is considered medium to high.	Because the reactive media are expended, may clog through time, and will need to be replaced at some point, reliability is considered to be medium.	Because it involves trenching or mixing with augers, and due to space constraints, ease of implementation is considered moderate to difficult.	Alteration of subsurface hydraulics (flow) may be a potential impact of this remedy.
Phytoremediation	Phytoremediation uses trees or other plants to take up or immobilize constituents or achieve some level of hydraulic containment. Hyperaccumulating plants are available for arsenic and molybdenum, but the roots of those plants are too shallow to access impacted groundwater at the Site. Some level of hydraulic containment could be achieved at the Site using trees, including the engineered TreeWell® system. Trees can affect hydraulic gradients and groundwater flow by removal of water and thus can be used to create a partial barrier to groundwater flow. This process may be enhanced by planting the tree in a column of more permeable material (e.g., the TreeWell® system), such that water preferentially flows toward the TreeWell®. Transpiration of groundwater causes the tree well to act like a pumping well. In addition, some arsenic and molybdenum may be immobilized within the root zone or incidentally taken up into the tree biomass.	The performance of TreeWells® is considered medium because the trees may not transpire (pump) enough water to maintain hydraulic containment based on site-specific conditions.	The reliability of TreeWells® is considered medium because the trees may not transpire (pump) as much during winter.	Implementation of hydraulic containment using trees will be relatively easy, primarily consisting of constructing the TreeWells® and planting the trees.	No potential impacts have been identified.

**Table 5**  
**Evaluation of Remedial Technologies**

Corrective Measure	Regulatory Citation for Criteria:	40 CFR 257.96(C)(1)			
	Description	Performance	Reliability	Ease or Difficulty of Implementation	Potential Impacts of Remedy
Subsurface Vertical Barrier Walls (if/as needed as a component of PRB walls or possibly hydraulic containment)	Subsurface vertical barrier walls can be used to stop the flow of groundwater and any constituents that groundwater contains, including arsenic and molybdenum. Though effective, vertical barrier walls may serve as groundwater dams such that groundwater rises to the surface or flows around the ends of the wall. Subsurface barrier walls are not envisioned as stand-alone corrective measures at the Site. If they offer advantages, subsurface barrier walls could be a component of PRB walls in a funnel-and-gate configuration or as part of a hydraulic containment system to direct groundwater toward pumping wells.	Subsurface vertical barrier walls are a widely used and accepted technology with relatively high performance.	Subsurface vertical barrier walls are a widely used and accepted technology with relatively high reliability due to minimal need for maintenance or replacement.	Implementation at the Site is considered easy to moderate, due to trenching or other emplacement methods.	Potential impacts of the remedy include alteration of subsurface hydraulics (flow) beneath and adjacent to the Site. This could be evaluated with a groundwater model.

**Table 5**  
**Evaluation of Remedial Technologies**

Corrective Measure	Regulatory Citation for Criteria:		40 CFR 257.96(C)(3)		Relative Cost
	Description	40 CFR 257.96(C)(2)	Institutional Requirements	Other Environmental or Public Health Requirements	
Geochemical Approaches (injection of oxidizing chemicals or placement of slow release oxidizing chemical candles in wells)	Geochemical approaches involve modifying the geochemistry of the Site to immobilize arsenic and molybdenum on solids created by injection. Depending upon the objective and Site geochemical conditions, immobilization may be achieved by oxygenation or injection of the appropriate treatment solutions. Oxygenation may be achieved chemically by injecting oxidants or placing slow release oxidizing chemical candles in wells or by physical methods such as air sparging or installation of Waterloo Emitter in wells. Other forms of geochemical approaches (also known as enhanced attenuation) include the injection of treatment solutions to immobilize constituents by precipitation/coprecipitation and/or sorption. The treatment solutions would likely contain iron compounds to create ferrihydrite to sorb arsenic and molybdenum, or to precipitate sulfide minerals, which incorporate arsenic and molybdenum into their mineral structures.	This remedy could be designed and implemented in 1 to 2 years. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation processes of each targeted constituent. The time for complete distribution of the injected materials throughout the treatment area is also variable.	Underground Injection Control permit may be required for injection of oxidizing chemicals.	Groundwater and/or geochemical modeling and monitoring may be required to demonstrate that unintended impacts (e.g., release of constituents) are not occurring and do not extend off site.	Low to Medium
Geochemical Approaches (oxygenation by physical means such as air sparging or Waterloo emitters)		This remedy could be designed and implemented in 1 to 2 years. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation processes of each targeted constituent. The time for complete distribution of the introduced oxygen throughout the treatment area is also variable.	None identified		Medium, due to mechanical equipment and possible use of oxygen
Geochemical Approaches (adsorption to, or coprecipitation with iron compounds via injection of treatment chemicals)		This remedy could be designed and implemented in 1 to 2 years. Once installed, the time required to achieve GWPS within the treatment area may be relatively quick but depends on the attenuation processes of each targeted constituent. The time for complete distribution of the injected materials throughout the treatment area is also variable.	Underground Injection Control permit may be required for injection of treatment chemicals.		Low to Medium
Hydraulic Containment (pump-and-treat)	Hydraulic containment uses pumping wells (and sometimes injection wells, trenches, and/or galleries) to contain and prevent the expansion of impacted groundwater by creating a horizontal and vertical capture zone or a hydraulic barrier. If pumped, the water may be reused in beneficial applications or treated, discharged, or reinjected after treatment. Reinjection contributes to hydraulic containment by creating a hydraulic barrier of clean water. Hydraulic containment in various applications (including pump-and-treat) is applicable to arsenic and molybdenum because conventional and proven water treatment technologies are available for arsenic and molybdenum.	Pump-and-treat could probably be designed and installed within 1 to 2 years. Based on published and unpublished case histories, time to achieve GWPS is dependent on the desorption kinetics of arsenic and molybdenum from the aquifer solids and could take an extended period of time. If leachate coming from the Clifton landfill is not controlled, time to achieve GWPS cannot be determined.	Regulatory requirements and institutional controls may be greater for pump-and-treat than some of the other technologies. For example, permits may be required for the withdrawal and reinjection (if used) of water. Discharge of treated water would likely require a National Pollutant Discharge Elimination System permit.	Above-ground treatment components may need to be present for an extended period of time, generating residuals requiring management and disposal.	High
In Situ Solidification/Stabilization	ISS is achieved by creating reactive zones in the subsurface through chemical injection to intercept constituents and permanently immobilize or degrade them into harmless end products. ISS is the process by which constituent mobility in a solid matrix is decreased through physical and/or chemical means. Grout or other chemical additives are mixed with aquifer materials to reduce permeability. The resulting lower aquifer permeability limits the flow of impacted groundwater.	ISS could be designed and implemented in 1 to 2 years. Laboratory treatability and possibly a field pilot test would need to be performed. Time to achieve GWPS is uncertain and may be dependent on natural attenuation processes.	No institutional requirements are expected.	There would be a small disruption of industrial area during construction. Following installation, the remedy is passive.	Medium, due to mobilization and use of large equipment, and possibly a cement batch plant and associated equipment such as pumps.



**Table 5**  
**Evaluation of Remedial Technologies**

Corrective Measure	Regulatory Citation for Criteria:	40 CFR 257.96(C)(2)	40 CFR 257.96(C)(3)		Relative Cost
	Description	Time to Begin/Complete Remedy	Institutional Requirements	Other Environmental or Public Health Requirements	
Monitored Natural Attenuation	MNA relies on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. For arsenic and molybdenum, the primary mechanisms of natural attenuation include sorption to iron compounds such as ferrihydrite or iron sulfide minerals, precipitation and coprecipitation with sparingly soluble sulfide minerals and other compounds, and physical processes such as dispersion (USEPA 1999, 2007a, 2007b; EPRI 2015). Under favorable conditions, these processes act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater.	Implementation of MNA would require some geochemical studies and possibly the installation of some new wells. Because MNA does not require design and construction of infrastructure other than new monitoring wells, it can be initiated within 6 months to a year and fully implemented in 18 to 24 months. The longer time period is because initial geochemical studies would need to be performed to support USEPA's tiers, and at least 1 year of groundwater monitoring data is recommended before implementation of MNA is considered complete. The additional data would be needed for statistical analysis and to determine if additional monitoring wells need to be installed. MNA is expected to be successful within a reasonable time frame if Clifton landfill leachate is controlled.	None identified	Little to no physical disruption to remediation areas and no adverse construction related impacts are expected on the surrounding industrial area. Following installation, the remedy is passive and does not require external energy.	Low
PRB Wall (containing sorptive media, oxygenation chemicals, or organic matter)	A PRB wall is the emplacement of chemically reactive materials in the subsurface to intercept impacted groundwater, provide a flow path through the reactive media, and capture or transform the constituents in groundwater to achieve GWPS downgradient of the PRB wall. PRB walls are an in situ technology that allows impacted water to flow through the media and provides a barrier to constituents rather than to groundwater flow, thereby reducing constituents to compliance levels downgradient of the reactive barrier (Powell et al. 1998, 2002). PRB walls may be constructed as funnel-and-gate systems.  In a PRB wall implementation, reactive media may be emplaced in a trench or mixed directly with the soil or aquifer media using augers or other mixing techniques. If emplaced in a trench, coarse sand is usually included to maintain permeability through the wall. Effective reactive media are commercially available for arsenic and molybdenum.  Depending on the site conditions and the objective of the PRB wall, three types of media could be used: oxygenating chemicals, adsorptive media, or organic matter and chemicals to create sulfide minerals (i.e., a biowall).	Considering the need for laboratory treatability studies on the reactive media, analysis of the subsurface hydraulics, and the relatively small area of emplacement, time to implement the remedy is estimated to be 1 to 2 years. Once installed, the time to achieve GWPS immediately downgradient of the PRB is anticipated to be relatively quick. Time to achieve GWPS more distant from PRB wall would be dependent on natural attenuation processes.	None identified	There would be a small disruption of industrial area during construction. Following installation, the remedy is passive. If reactive media are not selected carefully through laboratory treatability studies, groundwater geochemistry could be altered (possibly resulting in unintended releases of constituents downgradient of the wall).	Medium
Phytoremediation	Phytoremediation uses trees or other plants to take up or immobilize constituents or achieve some level of hydraulic containment. Hyperaccumulating plants are available for arsenic and molybdenum, but the roots of those plants are too shallow to access impacted groundwater at the Site. Some level of hydraulic containment could be achieved at the Site using trees, including the engineered TreeWell® system. Trees can affect hydraulic gradients and groundwater flow by removal of water and thus can be used to create a partial barrier to groundwater flow. This process may be enhanced by planting the tree in a column of more permeable material (e.g., the TreeWell® system), such that water preferentially flows toward the tree well. Transpiration of groundwater causes the tree well to act like a pumping well. In addition, some arsenic and molybdenum may be immobilized within the root zone or incidentally taken up into the tree biomass.	Phytoremediation could be designed and implemented in 6 to 12 months. Hydraulic containment is expected to occur in a reasonable time frame but needs to be calculated based on the number and transpiration rate of the TreeWells®.	None identified	Little to no physical disruption to remediation areas and no adverse construction-related impacts are expected on the surrounding industrial area. Following installation, the remedy is passive and does not require external energy.	Low

**Table 5  
Evaluation of Remedial Technologies**

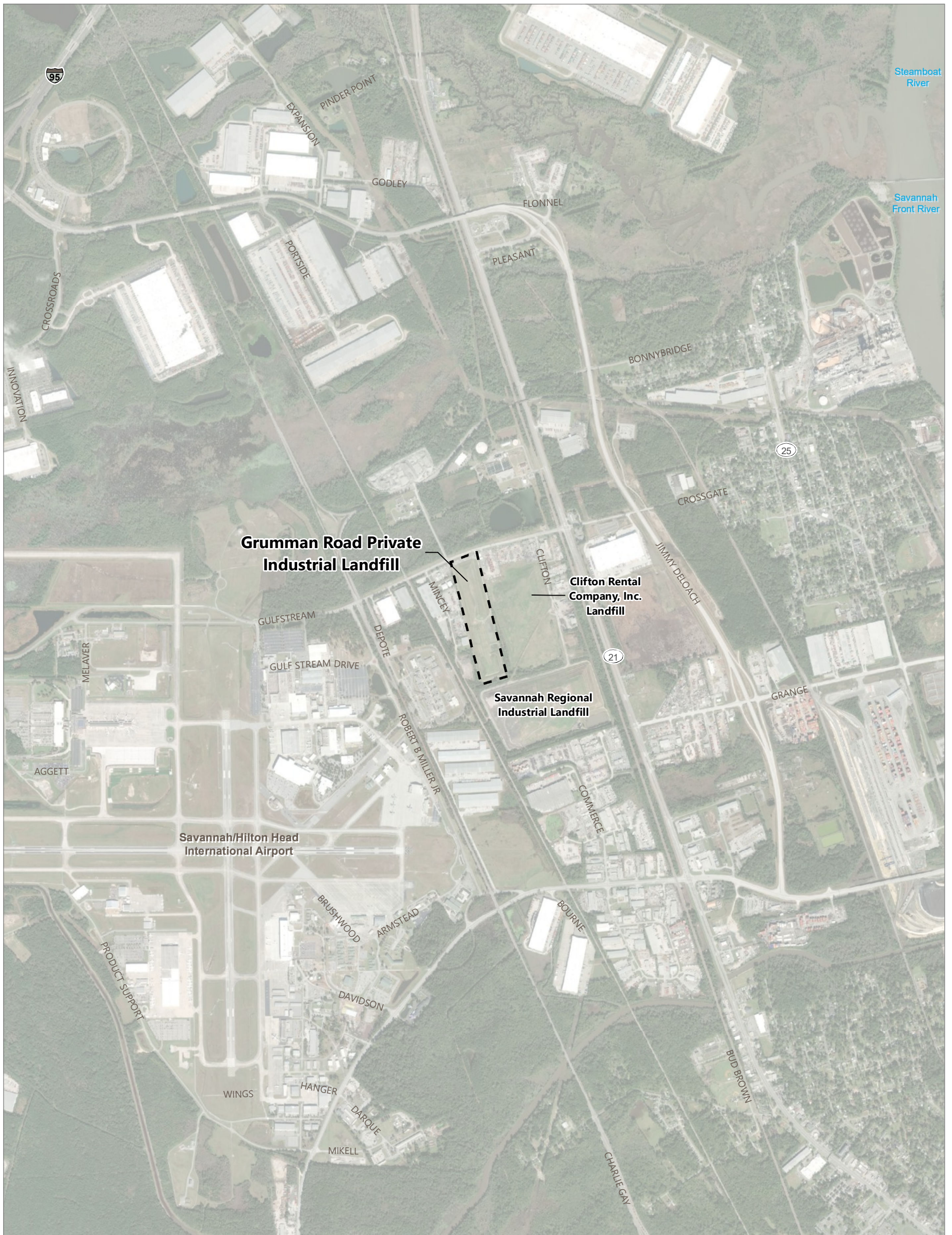
Corrective Measure	Regulatory Citation for Criteria:		40 CFR 257.96(C)(3)		Relative Cost
	Description	40 CFR 257.96(C)(2)	Institutional Requirements	Other Environmental or Public Health Requirements	
Subsurface Vertical Barrier Walls (if/as needed as a component of PRB walls or possibly hydraulic containment)	Subsurface vertical barrier walls can be used to stop the flow of groundwater and any constituents that groundwater contains, including arsenic and molybdenum. Though effective, vertical barrier walls may serve as groundwater dams such that groundwater rises to the surface or flows around the ends of the wall. Subsurface barrier walls are not envisioned as stand-alone corrective measures at the Site. If they offer advantages, subsurface barrier walls could be a component of PRB walls in a funnel-and-gate configuration or as part of a hydraulic containment system to direct groundwater toward pumping wells.	Time to implement the remedy (design and construct the wall) could be 1 to 2 years As a component of PRB walls in a funnel-and-gate configuration or as part of a hydraulic containment system, time to achieve GWPS would be dependent on the other corrective measures.	None identified	There would be some disruption of industrial area during construction. Following installation, the remedy is passive.	Medium

Notes:  
 >: greater than  
 CFR: Code of Federal Regulations  
 Clifton landfill: Clifton closed landfill  
 GWPS: groundwater protection standard  
 ISS: In situ solidification/stabilization  
 MNA: monitored natural attenuation  
 PRB: permeable reactive barrier  
 USEPA: U.S. Environmental Protection Agency

## Figures

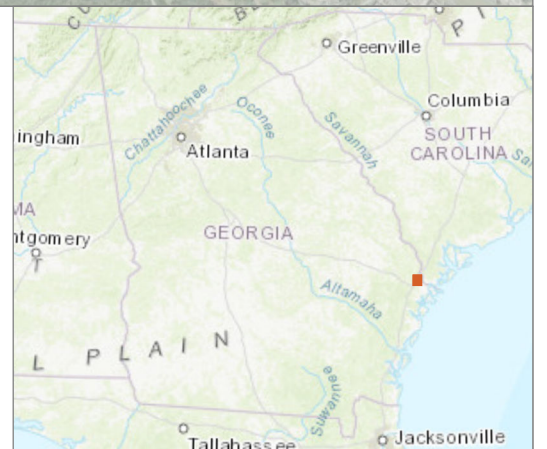
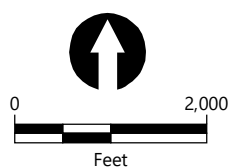
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**LEGEND:**

 Grumman Road Private Industrial Landfill



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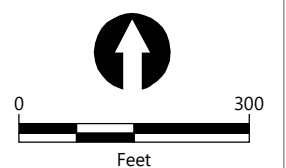
Grumman Road Private Industrial Landfill

**Monitoring Well**

Downgradient

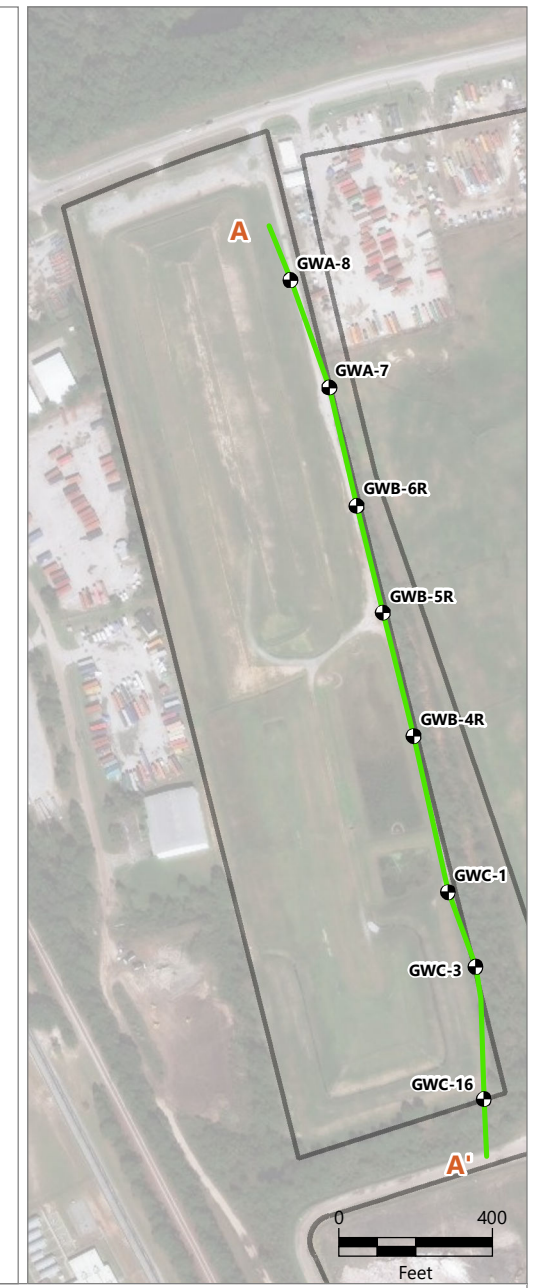
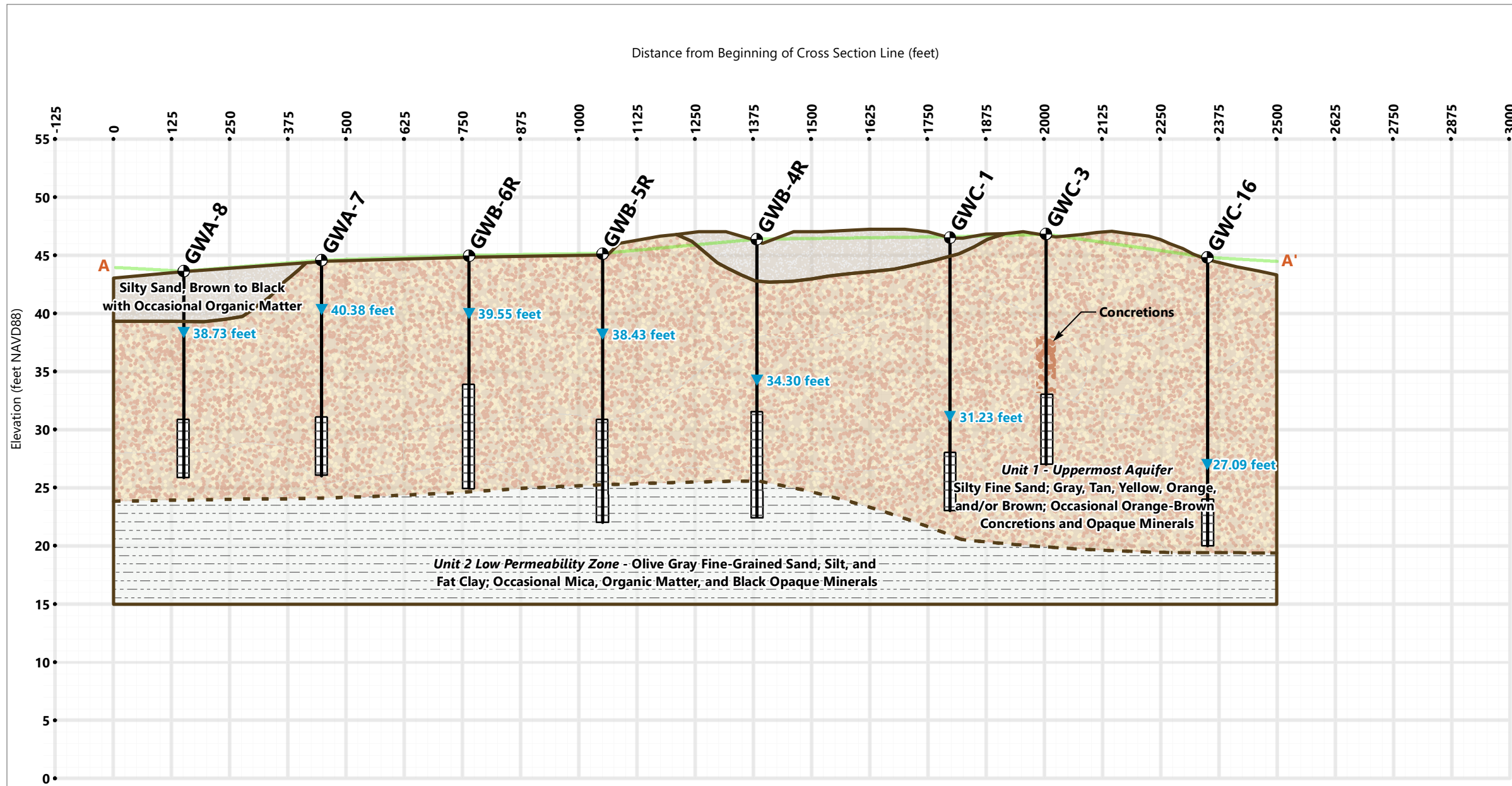
Sidegradient

Upgradient



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**LEGEND:**

- Cross Section Line
- Well Location
- Well Depth Below Top of Casing
- Monitoring Well Screened Interval
- Silty Sand, Brown to Black with Occasional Organic Matter
- Silty Fine Sand; Gray, Tan, Yellow, Orange, and/or Brown; Occasional Orange-Brown Concretions and Opaque Minerals
- Olive Gray Fine-Grained Sand, Silt, and Fat Clay; Occasional Mica, Organic Matter, and Black Opaque Minerals

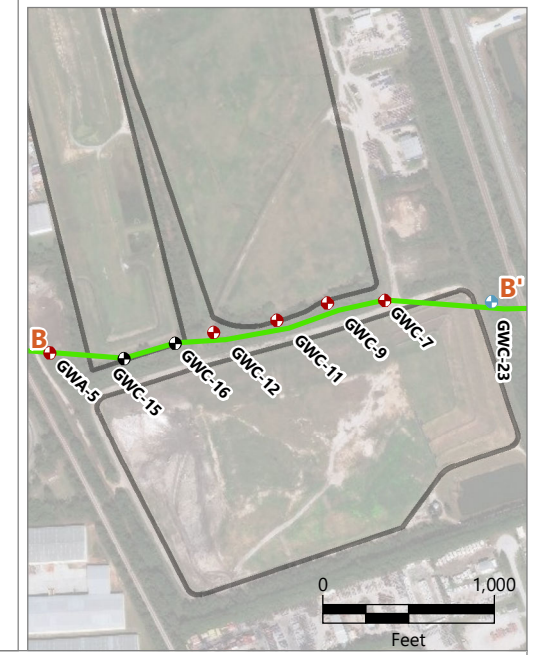
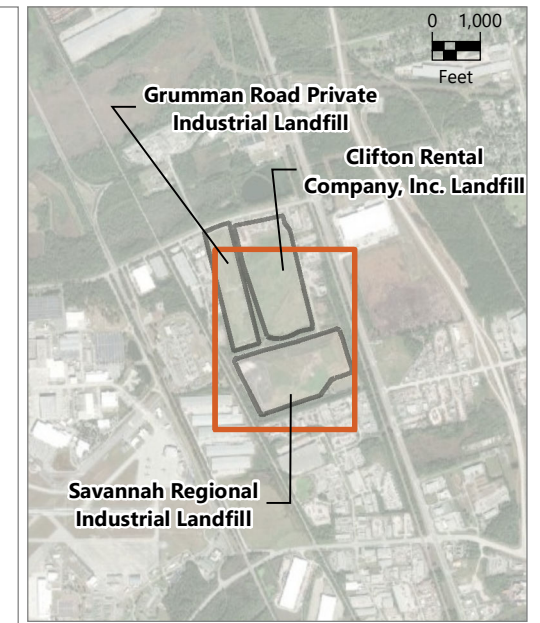
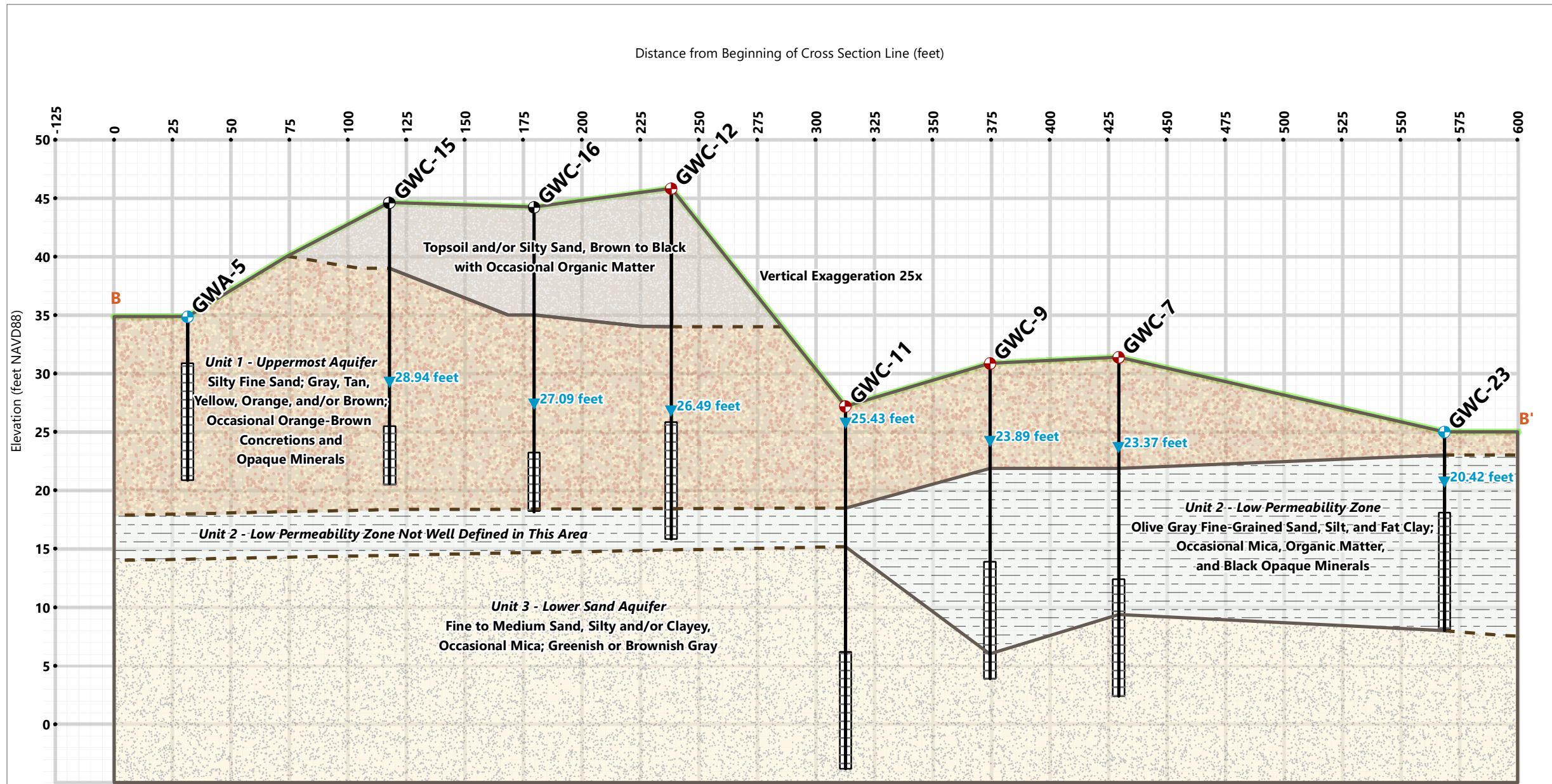
**NOTES:**

1. Cross section redrawn from figures provided in Design and Operation Plan.
2. Stratigraphic layers were correlated using a combination of boring data and gamma logs.
3. Aerial imagery is from Esri basemap service (source date: November 10, 2019).
4. Approximate groundwater elevation data for Grumman landfill are from April 16, 2020, gauging event.
5. Groundwater elevation data are not available for GWC-3.

NAVD88: North American Vertical Datum of 1988







- LEGEND:**
- Cross Section Line
  - Silty Sand, Brown to Black with Occasional Organic Matter
  - Silty Fine Sand; Gray, Tan, Yellow, Orange, and/or Brown; Occasional Orange-Brown Concretions and Opaque Minerals
  - Olive Gray Fine-Grained Sand, Silt, and Fat Clay; Occasional Mica, Organic Matter, and Black Opaque Minerals
  - Fine to Medium Sand, Silty and/or Clayey, Occasional Mica; Greenish or Brownish Gray
- Monitoring Well Location**
- Clifton Rental Company, Inc. Landfill
  - Grumman Road Private Industrial Landfill
  - Savannah Regional Industrial Landfill
  - Well Depth Below Ground Surface
  - ▼ Approximate Groundwater Elevation
  - Monitoring Well Screened Interval

- NOTES:**
1. Stratigraphic layers were correlated using a combination of boring data and gamma logs.
  2. Approximate groundwater elevation data for Grumman landfill are reported in NAVD88.
  3. Approximate groundwater elevation data for Clifton and Savannah landfills are reported in NAVD88.
  4. Approximate groundwater elevation data for Grumman landfill are from April 16, 2020, gauging event.
  5. Approximate groundwater elevation data for Clifton landfill are from April 13–14, 2020, gauging event.
  6. Approximate groundwater elevation data for Savannah landfill are from February 19–20, 2020, gauging event.
  7. Groundwater elevation data are not available for GWA-5.
  8. Vertical exaggeration 25x.
  9. Aerial imagery is from Esri basemap service (source date: November 10, 2019).
- NAVD88: North American Vertical Datum of 1988



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**Figure 4**  
**B to B' Geologic Cross Section**  
 Assessment of Corrective Measures  
 Grumman Road Private Industrial Landfill





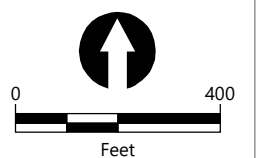
**LEGEND:**

- Site Boundary
- Groundwater Contours (NAVD88)
- Monitoring Well Location**
- Clifton Rental Company, Inc. Landfill
- Grumman Road Private Industrial Landfill
- Savannah Regional Industrial Landfill
- Estimated Groundwater Flow Direction

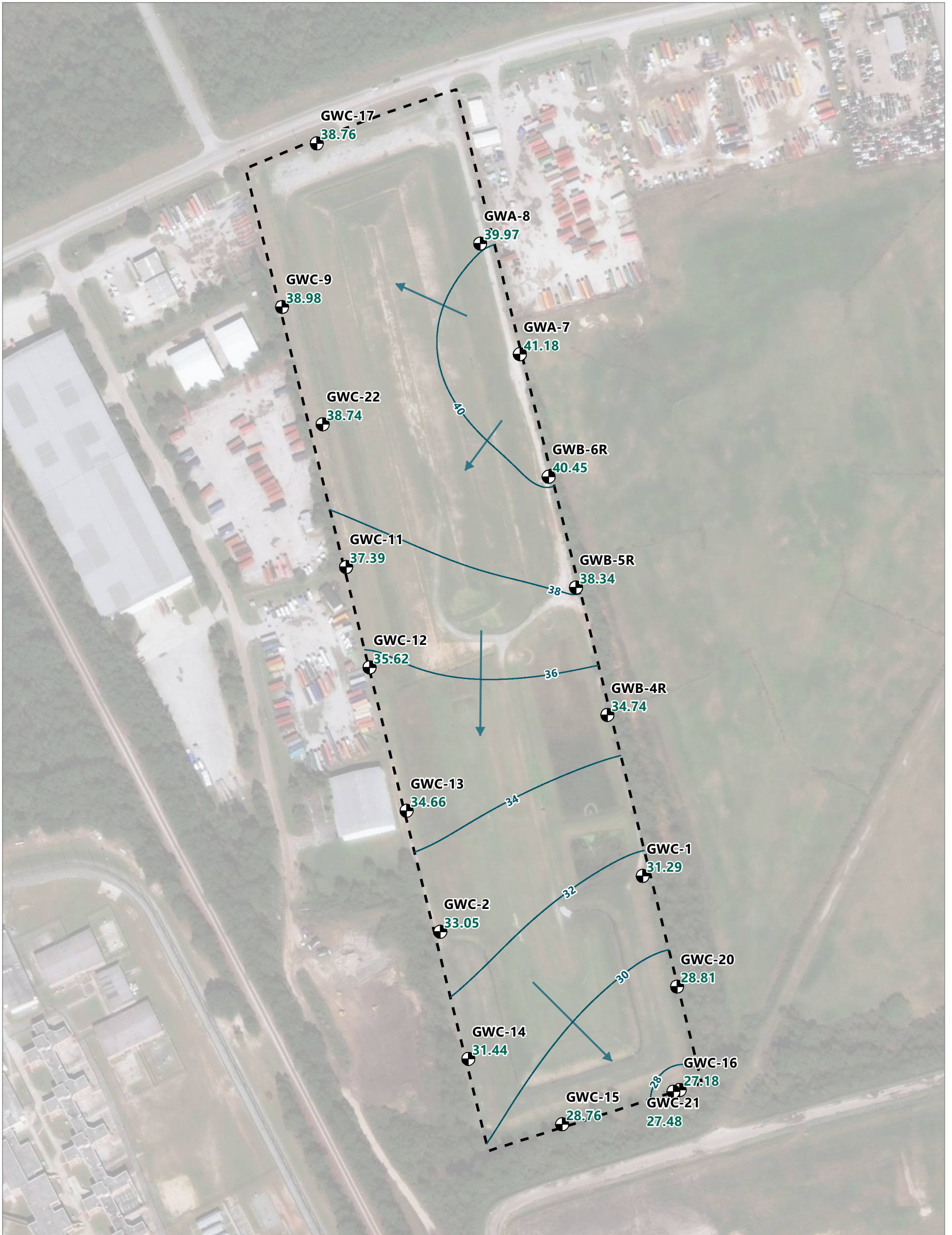
**NOTES:**

1. Grumman Road Private Industrial Landfill groundwater elevations were converted from "Site Datum" to NAVD88 by subtracting 0.73 foot from the original value.
2. Monitoring well locations for Savannah Regional Industrial Landfill and Clifton Rental Company, Inc. Landfill are digitized from existing plan drawings and should be considered approximate.
3. Clifton Rental Company, Inc. Landfill groundwater elevations are from April 13-14, 2020, sampling event.
4. Grumman Road Private Industrial Landfill groundwater elevations are from April 16, 2020, sampling event.
5. Savannah Regional Industrial Landfill groundwater elevations are from February 19-20, 2020, sampling event.
6. Wells with similar screened interval elevations were used in the contouring.
7. Aerial imagery is from Esri online basemap service.

NAVD88: North American Vertical Datum of 1988





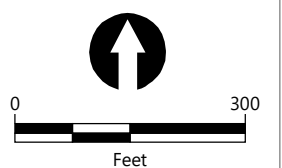


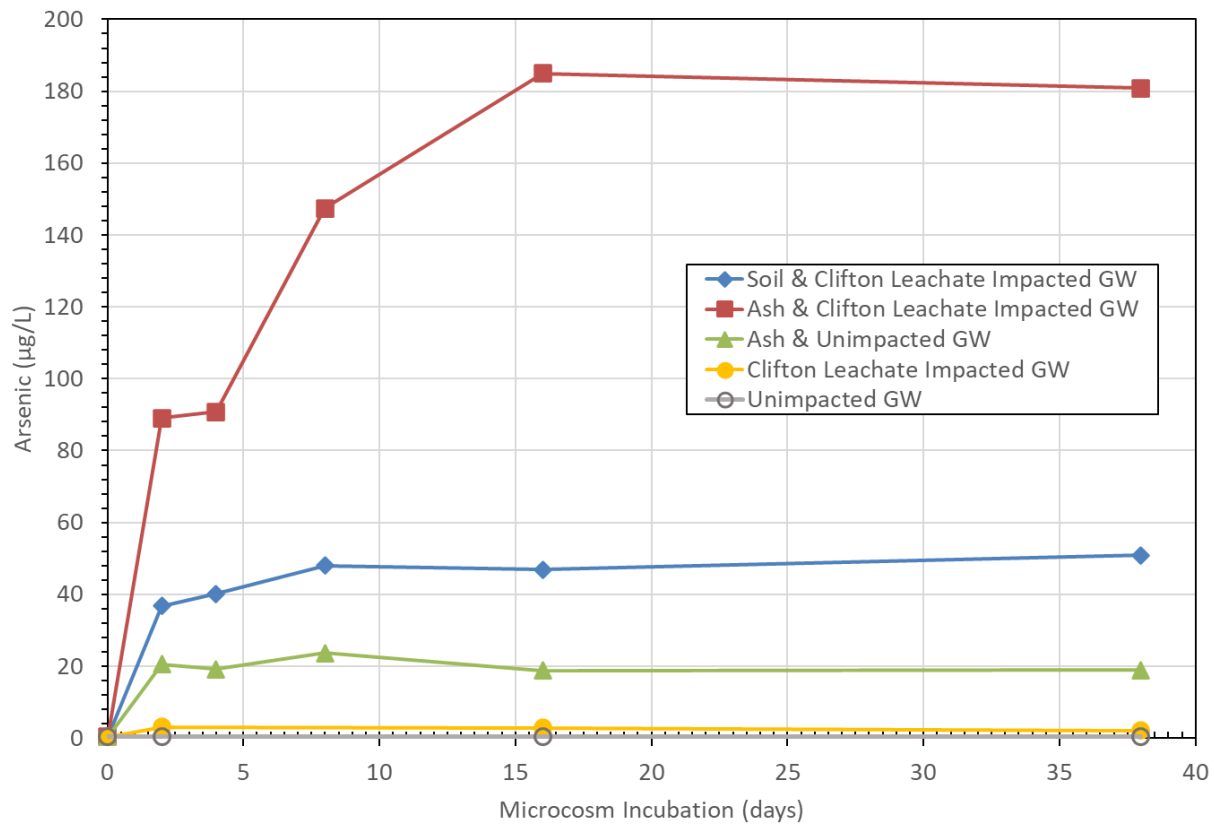
**LEGEND:**

- Grumman Road Private Industrial Landfill
- Groundwater Contours (NAVD88)
- Groundwater Flow Direction
- Monitoring Well

**NOTES:**

1. Groundwater elevations are from September 2020 sampling event.
  2. Groundwater elevation values were converted from "Site Datum" to NAVD88 by subtracting 0.73 foot from the original value.
  3. Aerial imagery is from Esri online basemap service.
- NAVD88: North American Vertical Datum of 1988





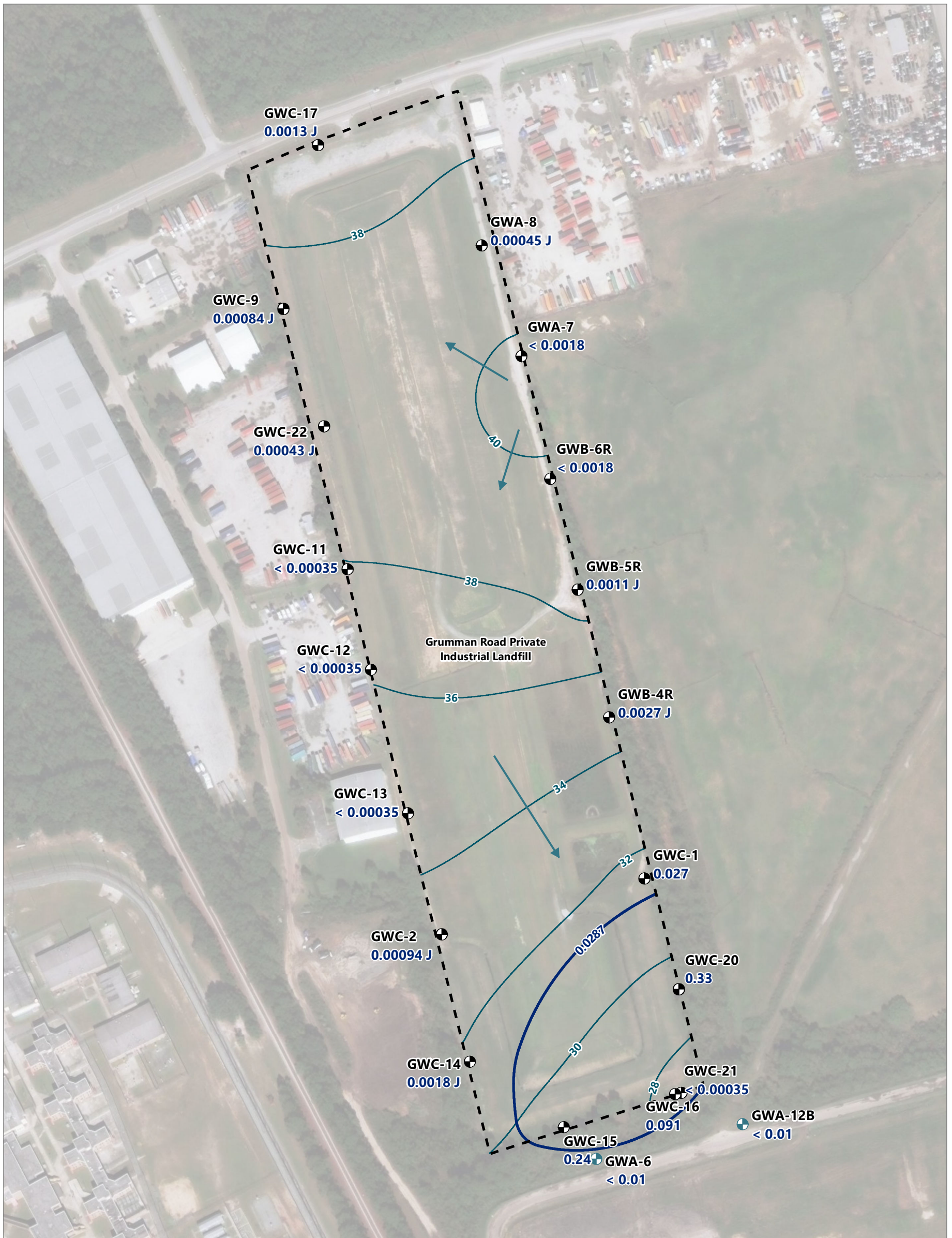
Filepath: \\Athena\Mobile\Projects\Southern Company\Grumman Road\ACM\Figures\7 Figure 7 - As microcosm.docx



**Figure 7**  
**Dissolved Arsenic in Microcosms as a Function of the Incubation Period**

Assessment of Corrective Measures  
 Grumman Road Private Industrial Landfill



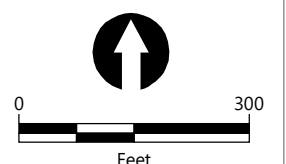


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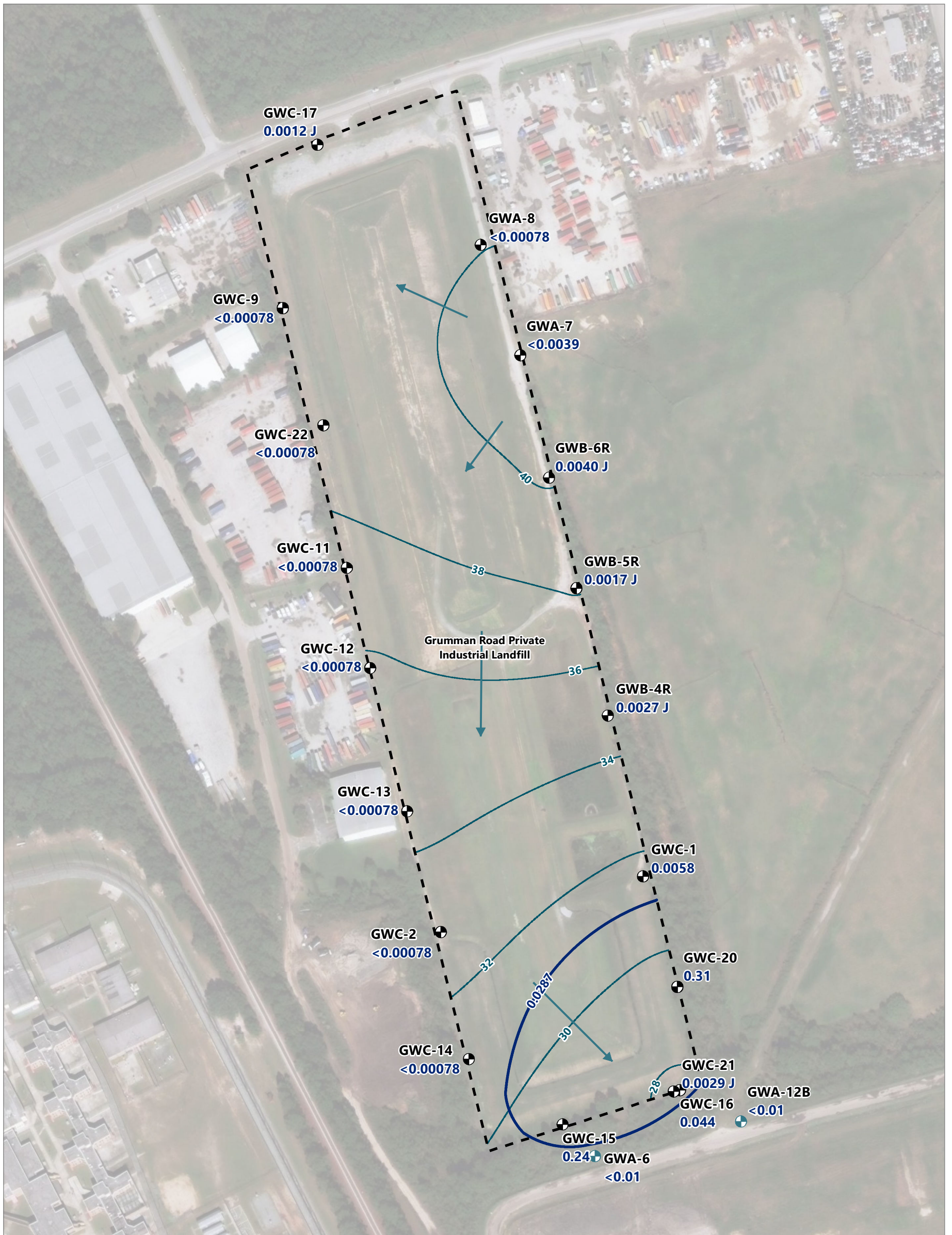
- Site Boundary
- Monitoring Well
- Savannah Regional Industrial Landfill Monitoring Well
- Arsenic Isoconcentration Contour
- Groundwater Flow Direction
- Groundwater Contours (NAVD88)

**NOTES:**

- <: Indicates the constituent was analyzed for but not detected above the method detection limit.  
mg/L: milligrams per liter
- J: Reported value is an estimate because concentration is less than reporting limit and greater than the method detection limit.
- 1. Grumman Road Private Industrial Landfill arsenic and groundwater elevation data are from the April 2020 sampling event.
- 2. Savannah Regional Industrial Landfill arsenic and groundwater elevation data are from the February 2020 sampling event.
- 3. Concentrations are reported in mg/L.
- 4. Site background concentration for arsenic is 0.0287 mg/L and is the site-specific groundwater protection standard.
- 5. The groundwater protection standard was calculated using data through the April 2020 sampling event.
- 6. GWC-21 was not used to create the isocontour.
- 7. Groundwater elevations are in feet NAVD88.
- 8. Aerial imagery is from Esri basemap service (source date: November 10, 2019).







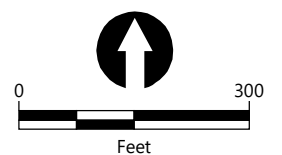
**LEGEND:**

- Site Boundary
- Monitoring Well
- Savannah Regional Industrial Landfill Monitoring Well
- Arsenic Isoconcentration Contour
- Groundwater Flow Direction
- Groundwater Contours (NAVD88)

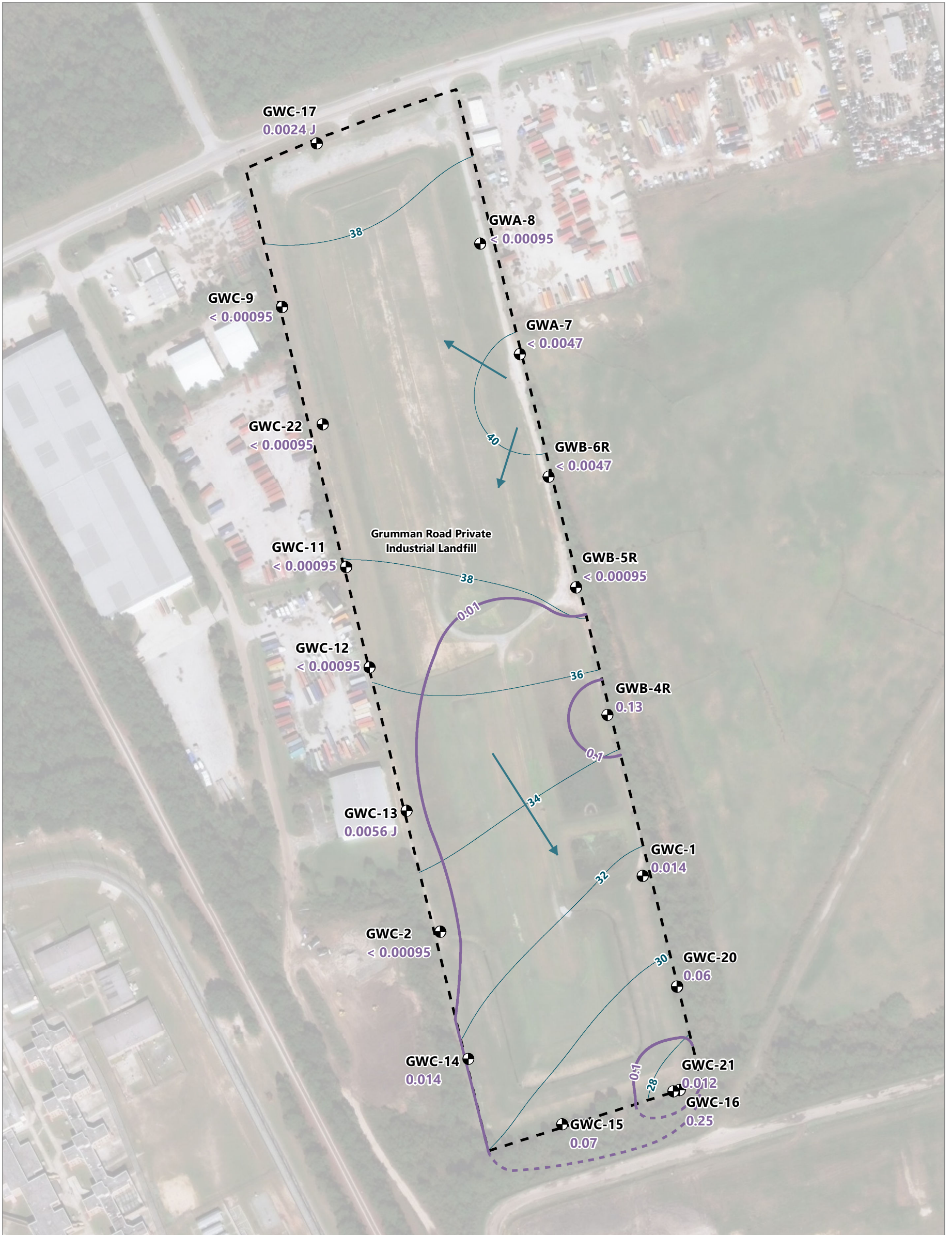
**NOTES:**

<: Indicates the constituent was analyzed for but not detected above the method detection limit.  
 mg/L: milligrams per liter  
 J: Reported value is an estimate because concentration is less than reporting limit and greater than the method detection limit.

1. Grumman Road Private Industrial Landfill arsenic and groundwater elevation data are from the September/October 2020 sampling event.
2. Savannah Regional Industrial Landfill arsenic and groundwater elevation data are from February 2020 sampling event.
3. Groundwater elevation contour lines were provided by Atlantic Coast Consulting, Inc.
4. Concentrations are reported in mg/L.
5. Site background concentration for arsenic is 0.0287 mg/L and is the site-specific groundwater protection standard.
6. The groundwater protection standard was calculated using data through the April 2020 sampling event.
7. Groundwater elevations are in feet NAVD88.
8. GWC-21 was not used to create the isocontour.
9. Aerial imagery is from Esri basemap service (source date: November 10, 2019).





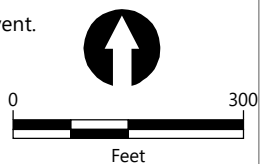


**LEGEND:**

- Site Boundary
- Monitoring Well
- Molybdenum Isoconcentration Contour
- Projected Molybdenum Isoconcentration Contour
- Groundwater Flow Direction
- Groundwater Contours (NAVD88)

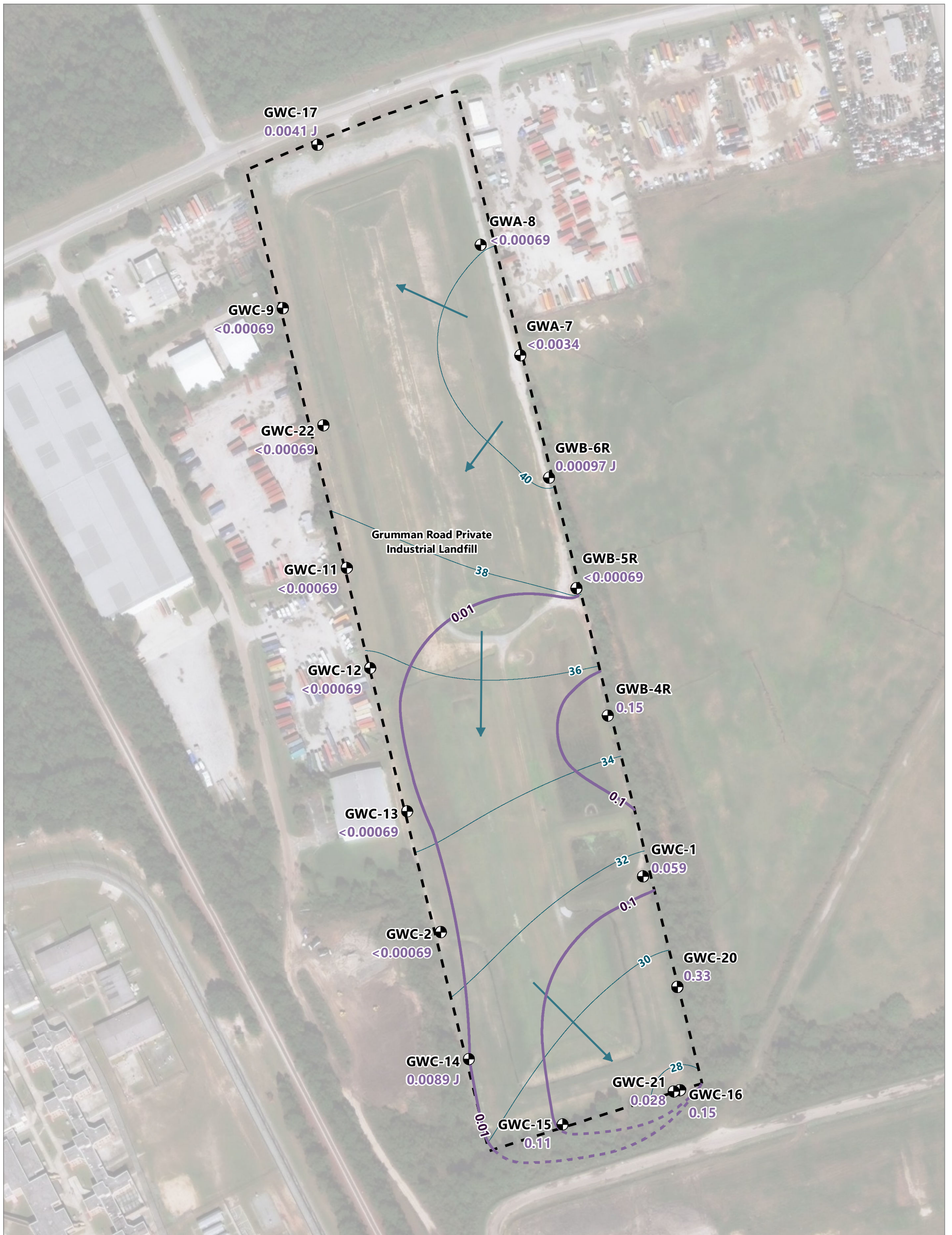
**NOTES:**

- <: Indicates the constituent was analyzed for but not detected above the method detection limit. mg/L: milligrams per liter
  - J: Reported value is an estimate because concentration is less than reporting limit and greater than the method detection limit.
  - RSL: rule specified level
1. Molybdenum and groundwater elevation data are from the April 2020 sampling event.
  2. Concentrations are reported in mg/L.
  3. RSL is 0.1 mg/L.
  4. Site background for molybdenum is 0.01 mg/L and is the site-specific groundwater protection standard.
  5. Dashed lines indicate projected molybdenum isoconcentration contours.
  6. The groundwater protection standard was calculated using data through the April 2020 sampling event.
  7. GWC-21 was not used to create isocontour.
  8. Groundwater elevations are in feet NAVD88.
  9. Aerial imagery is from Esri basemap service (source date: November 10, 2019).



Publish Date: 2020/12/02, 3:31 PM | User: jsfox  
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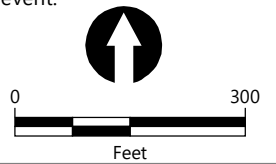


**LEGEND:**

- Site Boundary
- Monitoring Well
- Molybdenum Isoconcentration Contour
- Projected Molybdenum Isoconcentration Contour
- Groundwater Flow Direction
- Groundwater Contours (NAVD88)

**NOTES:**

- <: Indicates the constituent was analyzed for but not detected above the method detection limit.
  - mg/L: milligrams per liter
  - J: Reported value is an estimate because concentration is less than reporting limit and greater than the method detection limit.
  - RSL: rule specified level
1. Molybdenum and groundwater elevation data are from the September/October 2020 sampling event.
  2. Concentrations are reported in mg/L.
  3. RSL is 0.1 mg/L.
  4. Site background for molybdenum is 0.01 mg/L and is the site-specific groundwater protection standard.
  5. Dashed lines indicate projected molybdenum isoconcentration contours.
  6. The groundwater protection standard was calculated using data through the April 2020 sampling event.
  7. GWC-21 was not used to create isocontour.
  8. Groundwater elevations are in feet NAVD88.
  9. Aerial imagery is from Esri basemap service (source date: November 10, 2019).



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**Figure 11**  
**Isoconcentration Map: Molybdenum - September/October 2020**

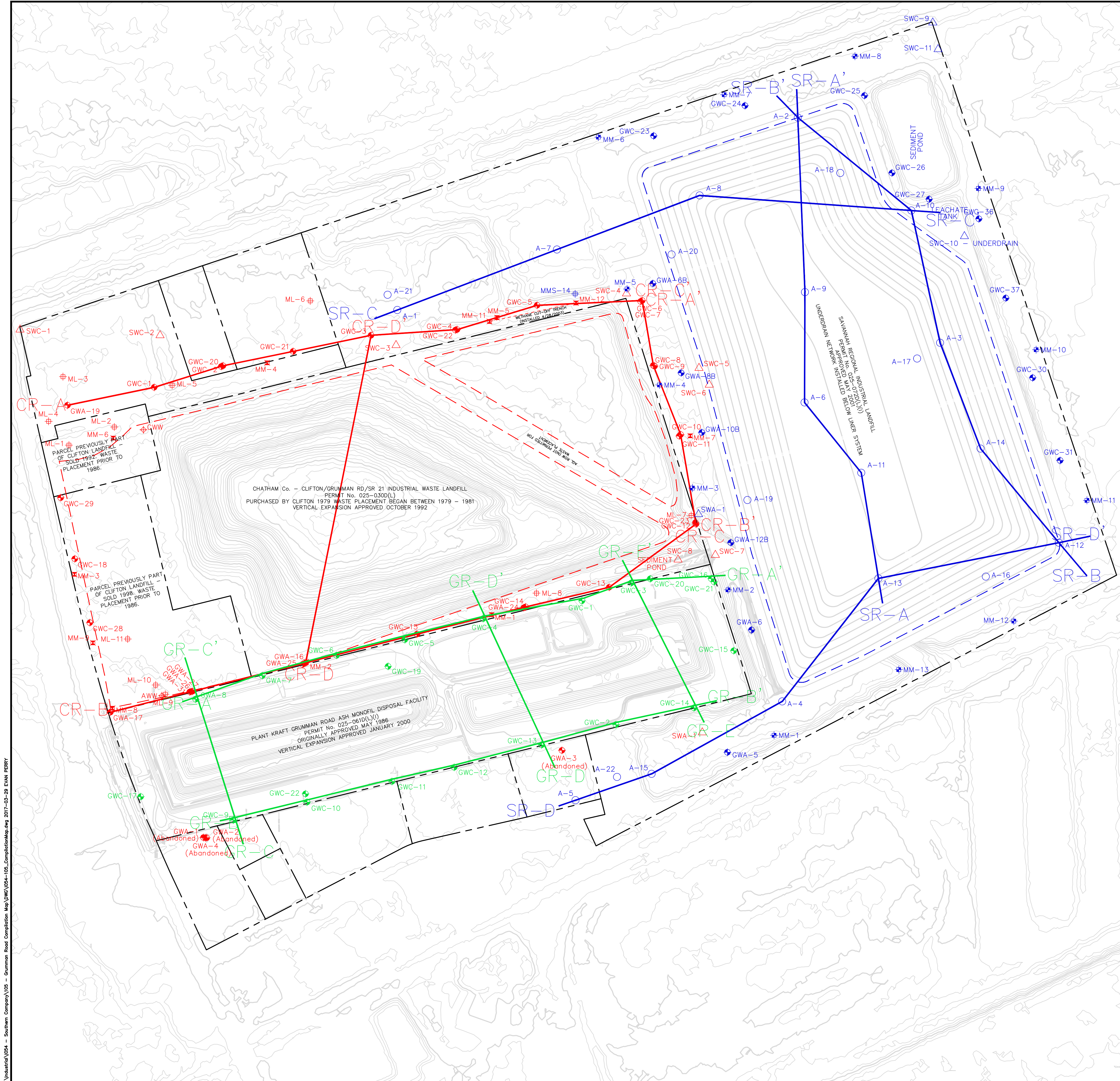
Assessment of Corrective Measures  
 Grumman Road Private Industrial Landfill

## Appendix A

# Historical Figures from Design and Operation Plan

---





**LEGEND**

EXISTING	DESCRIPTION
---	APPROXIMATE PROPERTY BOUNDARY
- - - -	APPROXIMATE LIMITS OF WASTE (CLIFTON RD)
- - - -	APPROXIMATE LIMITS OF WASTE (SRIL)
---	CROSS-SECTION (GRUMMAN RD - FIG. CS-1)
---	CROSS-SECTION (CLIFTON RD - FIG. CS-2a/b)
---	CROSS-SECTION (SRIL - FIG. CS-3)
---	PROMINENT TOPOGRAPHIC CONTOUR
---	INTERMEDIATE TOPOGRAPHIC CONTOUR
---	EXISTING ROAD
+	GROUNDWATER MONITORING WELL (GRUMMAN RD)
+	GROUNDWATER MONITORING WELL (CLIFTON RD)
+	METHANE MONITORING WELL (CLIFTON RD)
+	METHANE MONITORING STRUCTURE (CLIFTON RD)
+	POTABLE WELL (CLIFTON RD)
+	SURFACE WATER MONITORING POINT (CLIFTON RD)
+	GROUNDWATER MONITORING WELL (SRIL)
+	METHANE MONITORING WELL (SRIL)
+	METHANE MONITORING STRUCTURE (SRIL)
+	GROUNDWATER MONITORING WELL (SRIL)
+	SITE ACCEPTABILITY INVESTIGATION BORING (SRIL)

NOTES:  
 1. SRIL IS THE SAVANNAH REGIONAL INDUSTRIAL LANDFILL, CURRENTLY OWNED AND OPERATED BY REPUBLIC WASTE.  
 2. TOPOGRAPHIC SURFACE AND APPROXIMATE PROPERTY BOUNDARIES ARE FROM SAVANNAH GEOGRAPHIC INFORMATION SERVICES, MARCH 2017.  
 3. FINAL GRADE CONTOURS AND ROAD LAYOUT FROM D&O PLAN WERE USED FOR SRIL TOPOGRAPHIC INFORMATION.  
 4. MONITORING LOCATIONS ARE APPROXIMATE, BASED ON D&O PLAN DRAWINGS.

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PROJECT:  
**PLANT KRAFT GRUMMAN ROAD LANDFILL**

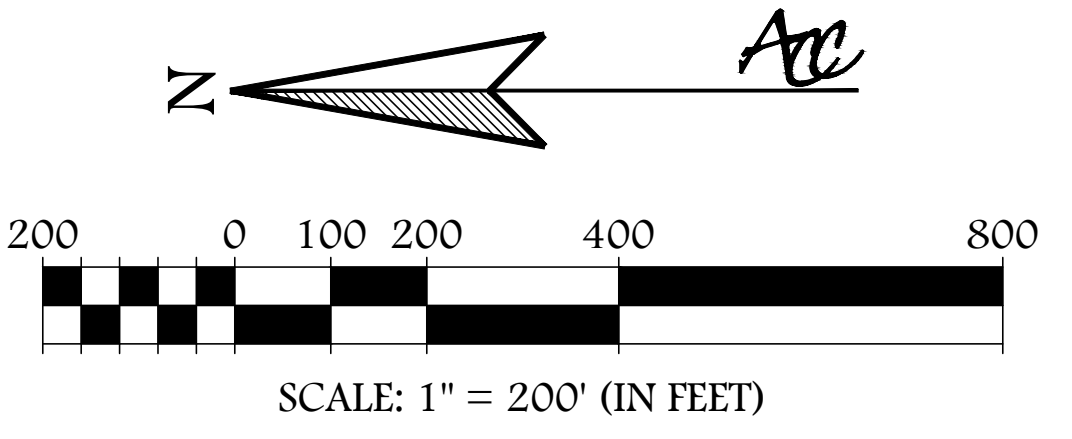
120 GULFSTREAM ROAD  
 PORT WENTWORTH, GEORGIA

REVISIONS


Drawn by: MM Checked by: EP

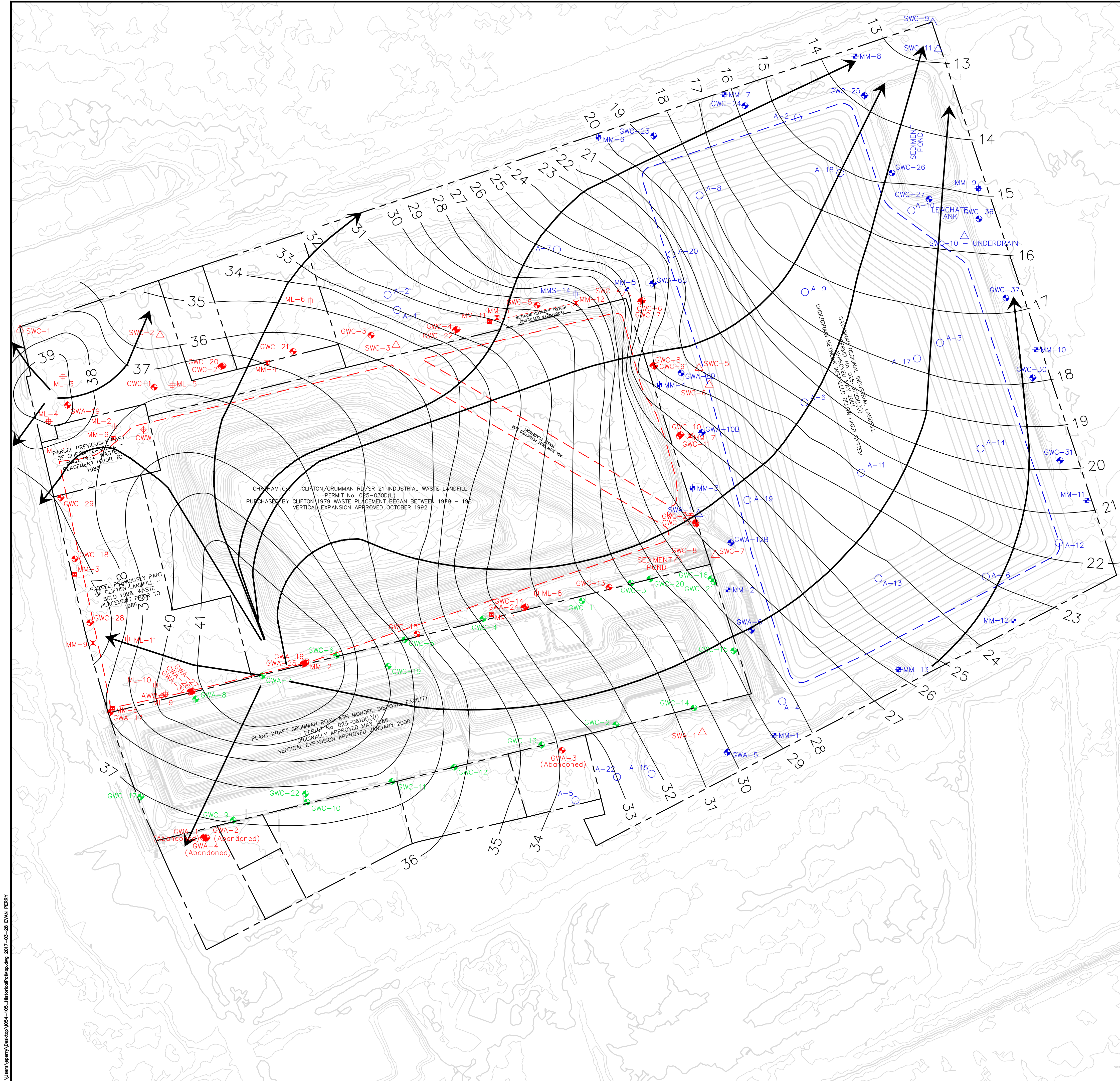
PROJECT NUMBER:  
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**ENVIRONMENTAL MONITORING NETWORK COMPILATION MAP**



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**LEGEND**

EXISTING	DESCRIPTION
---	APPROXIMATE PROPERTY BOUNDARY
- - - -	APPROXIMATE LIMITS OF WASTE (CLIFTON RD)
- - - -	APPROXIMATE LIMITS OF WASTE (SRIL)
---	POTENTIOMETRIC LINES
→	GROUNDWATER FLOW DIRECTION
---	PROMINENT TOPOGRAPHIC CONTOUR
---	INTERMEDIATE TOPOGRAPHIC CONTOUR
---	EXISTING ROAD
+	GROUNDWATER MONITORING WELL (GRUMMAN RD)
+	GROUNDWATER MONITORING WELL (CLIFTON RD)
×	METHANE MONITORING WELL (CLIFTON RD)
⊕	METHANE MONITORING STRUCTURE (CLIFTON RD)
+	POTABLE WELL (CLIFTON RD)
△	SURFACE WATER MONITORING POINT (CLIFTON RD)
+	GROUNDWATER MONITORING WELL (SRIL)
+	METHANE MONITORING WELL (SRIL)
⊕	METHANE MONITORING STRUCTURE (SRIL)
△	GROUNDWATER MONITORING WELL (SRIL)
○	SITE ACCEPTABILITY INVESTIGATION BORING (SRIL)

- NOTES:
1. SRIL IS THE SAVANNAH REGIONAL INDUSTRIAL LANDFILL, CURRENTLY OWNED AND OPERATED BY REPUBLIC WASTE.
  2. TOPOGRAPHIC SURFACE AND APPROXIMATE PROPERTY BOUNDARIES ARE FROM SAVANNAH GEOGRAPHIC INFORMATION SERVICES, MARCH 2017.
  3. FINAL GRADE CONTOURS AND ROAD LAYOUT FROM D&O PLAN WERE USED FOR SRIL TOPOGRAPHIC INFORMATION.
  4. MONITORING LOCATIONS ARE APPROXIMATE, BASED ON D&O PLAN DRAWINGS.
  5. POTENTIOMETRIC SURFACE DERIVED FROM SHEET 22 OF HORIZONTAL EXPANSION PLAN FOR CLIFTON LANDFILL DESIGN & OPERATION PLAN, DATED MARCH 25, 1998.



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PROJECT:  
**PLANT KRAFT GRUMMAN ROAD LANDFILL**

120 GULFSTREAM ROAD  
 PORT WENTWORTH, GEORGIA

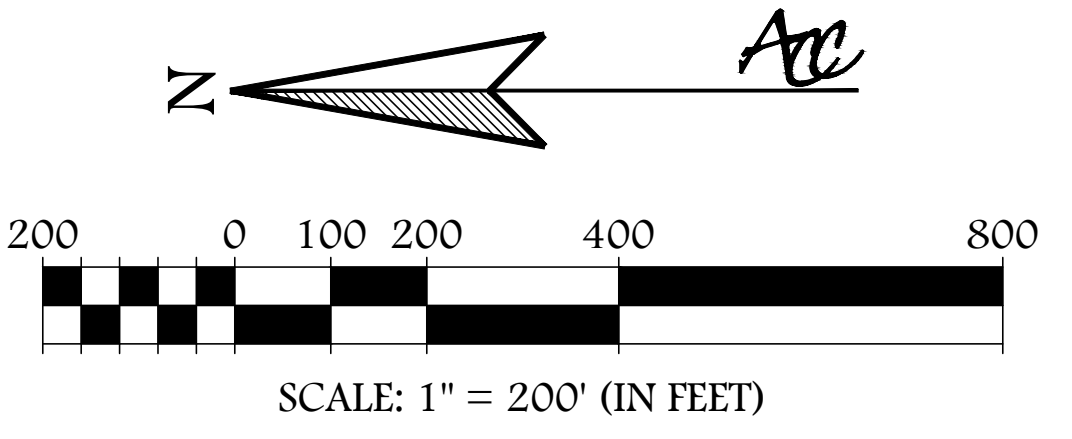
REVISIONS

NO.	DATE	DESCRIPTION

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 I054-105  
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HISTORICAL POTENTIOMETRIC SURFACE MAP



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PROJECT:

PLANT KRAFT  
 GRUMMAN ROAD  
 LANDFILL

120 GULFSTREAM ROAD  
 PORT WENTWORTH, GEORGIA

REVISIONS

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PROJECT NUMBER:

I054-105

March 2017

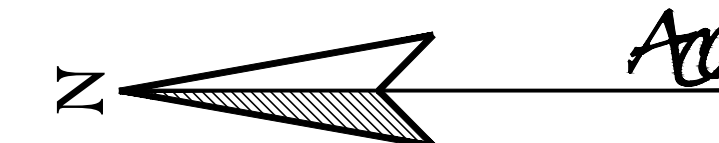
HISTORICAL SPECIFIC  
 CONDUCTANCE  
 LEVELS MAP

FIGURE 3

LEGEND

EXISTING	DESCRIPTION
	APPROXIMATE PROPERTY BOUNDARY
	APPROXIMATE LIMITS OF WASTE (CLIFTON RD)
	APPROXIMATE LIMITS OF WASTE (SRIL)
	PROMINENT TOPOGRAPHIC CONTOUR
	INTERMEDIATE TOPOGRAPHIC CONTOUR
	EXISTING ROAD
	GWA-7 GROUNDWATER MONITORING WELL (GRUMMAN RD)
	GWC-1 GROUNDWATER MONITORING WELL (CLIFTON RD)
	GWC-7 GROUNDWATER MONITORING WELL (DEEPER WELL INSTALLED BELOW CLAY)
	MM-7 METHANE MONITORING WELL (CLIFTON RD)
	ML-6 METHANE MONITORING STRUCTURE (CLIFTON RD)
	AWW POTABLE WELL (CLIFTON RD)
	SWA-1 SURFACE WATER MONITORING POINT (CLIFTON RD)
	GWC-18 GROUNDWATER MONITORING WELL (SRIL)
	MM-1 METHANE MONITORING WELL (SRIL)
	MMS-14 METHANE MONITORING STRUCTURE (SRIL)
	SWC-9 GROUNDWATER MONITORING WELL (SRIL)
	(100) CONDUCTIVITY (CLIFTON RD)
	(100) CONDUCTIVITY (GRUMMAN RD)
	(100) CONDUCTIVITY (SRIL)

- NOTES:
1. SRIL IS THE SAVANNAH REGIONAL INDUSTRIAL LANDFILL, CURRENTLY OWNED AND OPERATED BY REPUBLIC WASTE.
  2. TOPOGRAPHIC SURFACE AND APPROXIMATE PROPERTY BOUNDARIES ARE FROM SAVANNAH GEOGRAPHIC INFORMATION SERVICES, MARCH 2017.
  3. FINAL GRADE CONTOURS AND ROAD LAYOUT FROM D&O PLAN WERE USED FOR SRIL TOPOGRAPHIC INFORMATION.
  4. MONITORING LOCATIONS ARE APPROXIMATE, BASED ON D&O PLAN DRAWINGS.
  5. SPECIFIC CONDUCTANCE (MICROSIEMENS PER CENTIMETER) MEASURED IN MOST RECENT MONITORING EVENT FOR EACH FACILITY.
  6. DATA FROM DEEPER WELLS INSTALLED BELOW THE CLAY ARE NOT SHOWN.
  7. MOST RECENT AVAILABLE DATA FOR EACH LANDFILL ARE SHOWN: GRUMMAN ROAD (JAN. 2017), SRIL (AUG. 2016), AND CLIFTON (JUN. 2009).



200 0 100 200 400 800

SCALE: 1" = 200' (IN FEET)





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PLANT KRAFT  
GRUMMAN ROAD  
LANDFILL

120 GULFSTREAM ROAD  
PORT WENTWORTH, GEORGIA

REVISIONS

Drawn by: MM Checked by: EP

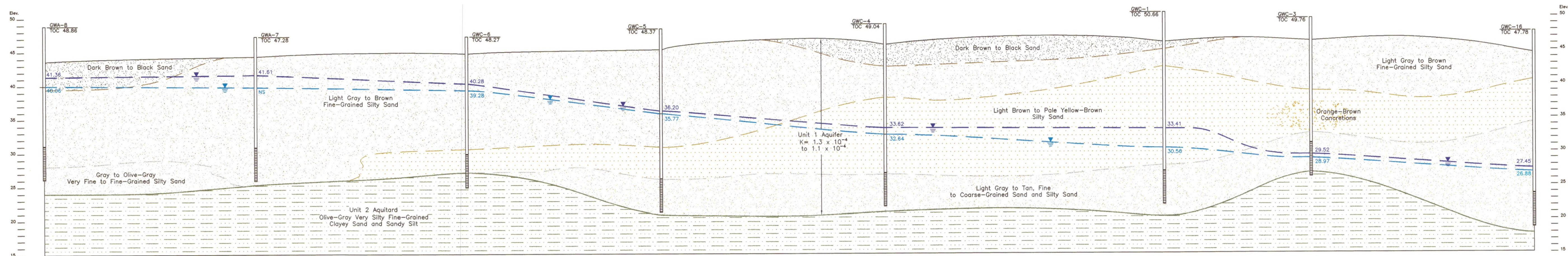
PROJECT NUMBER:

I054-105

March 2017

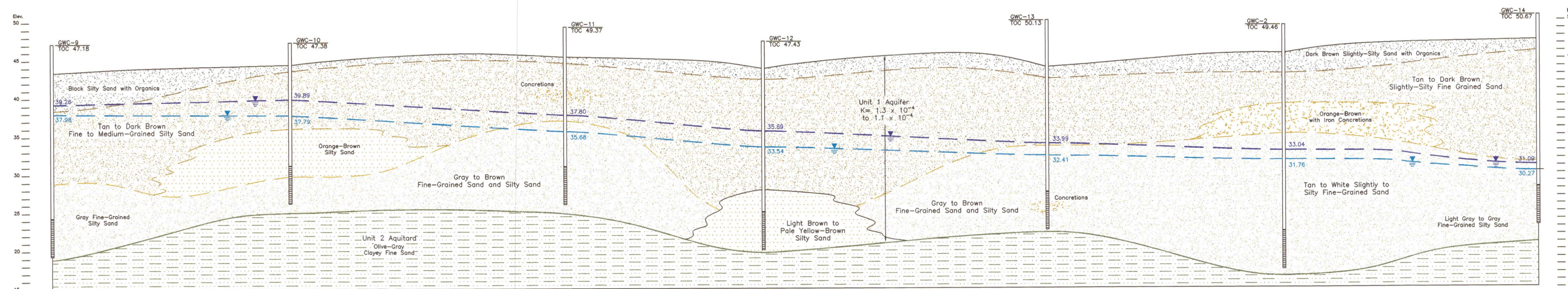
GRUMMAN ROAD  
HISTORICAL  
CROSS-SECTIONS

FIGURE CS-1



SECTION GR A-A'

Horizontal Scale: 1" = 80'  
Vertical Scale: 1" = 8'



SECTION GR B-B'

Horizontal Scale: 1" = 80'  
Vertical Scale: 1" = 8'

NOTES:

1. SCALE IS APPROXIMATE
2. CROSS-SECTIONS ARE FROM PLANT KRAFT/GRUMMAN RD LANDFILL DESIGN & OPERATION PLANS (APPROVED 2000)
3. CROSS-SECTION LINES SHOWN ON FIGURE 1





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LANDFILL

120 GULFSTREAM ROAD  
PORT WENTWORTH, GEORGIA

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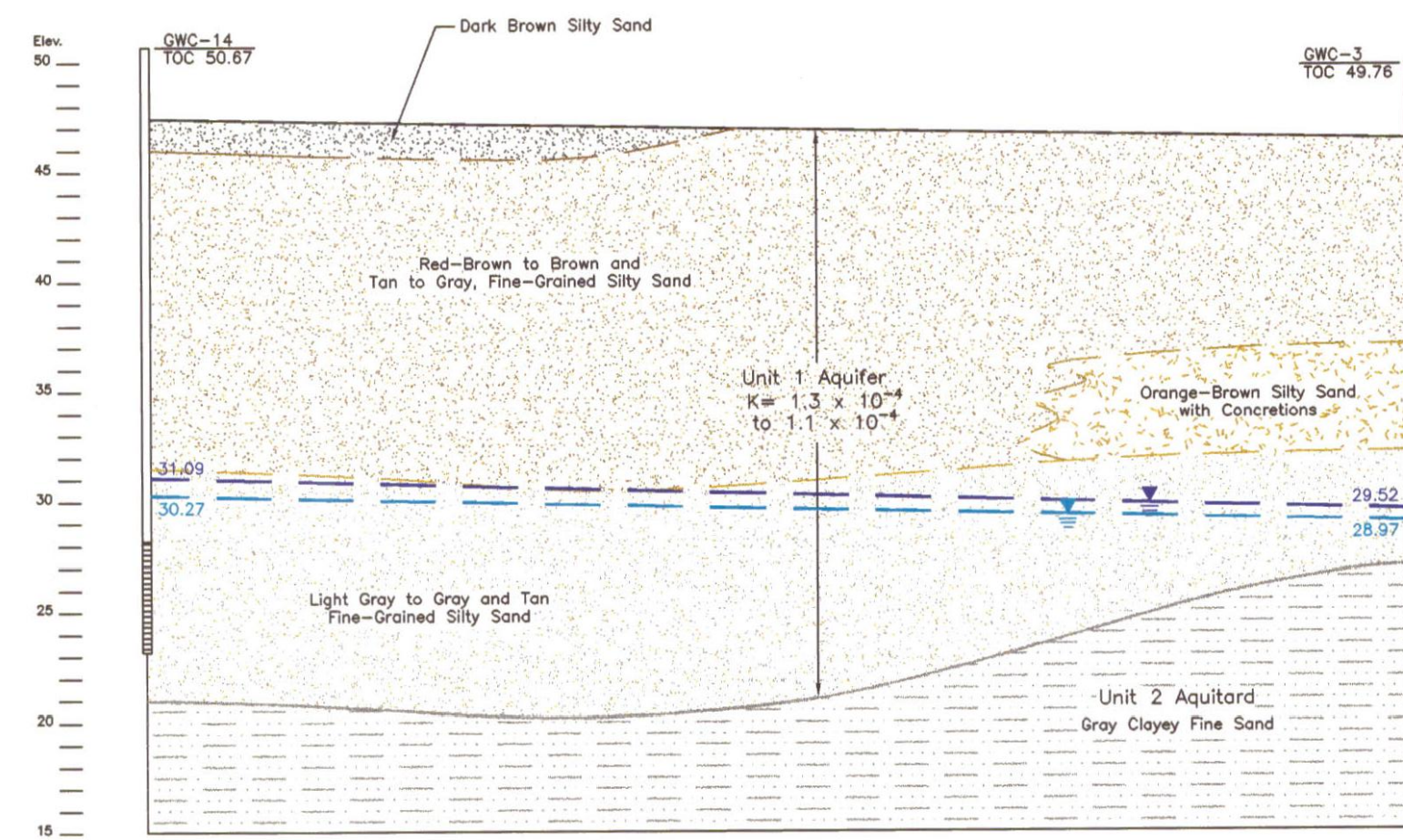
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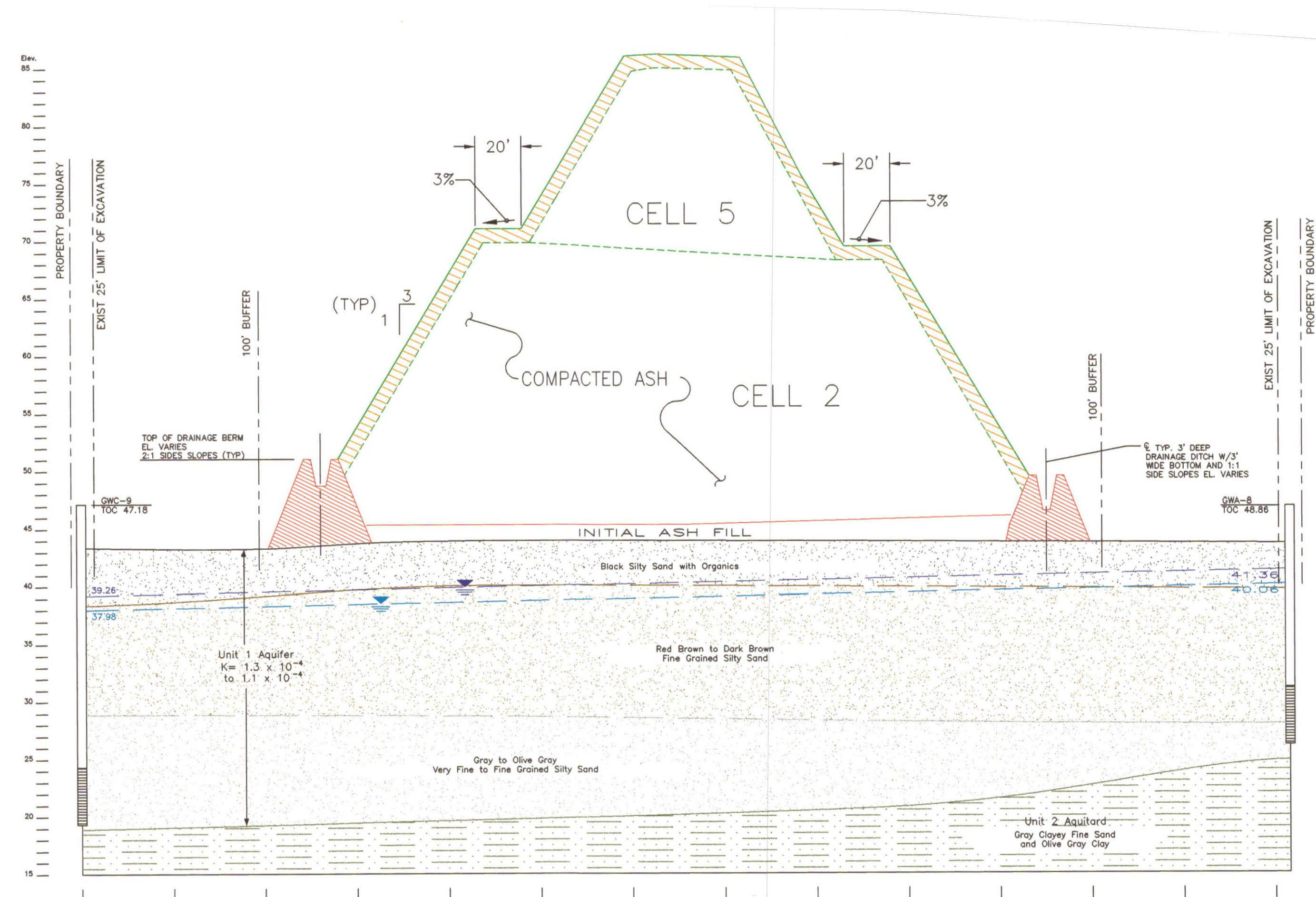
March 2017

GRUMMAN ROAD  
HISTORICAL  
CROSS-SECTIONS

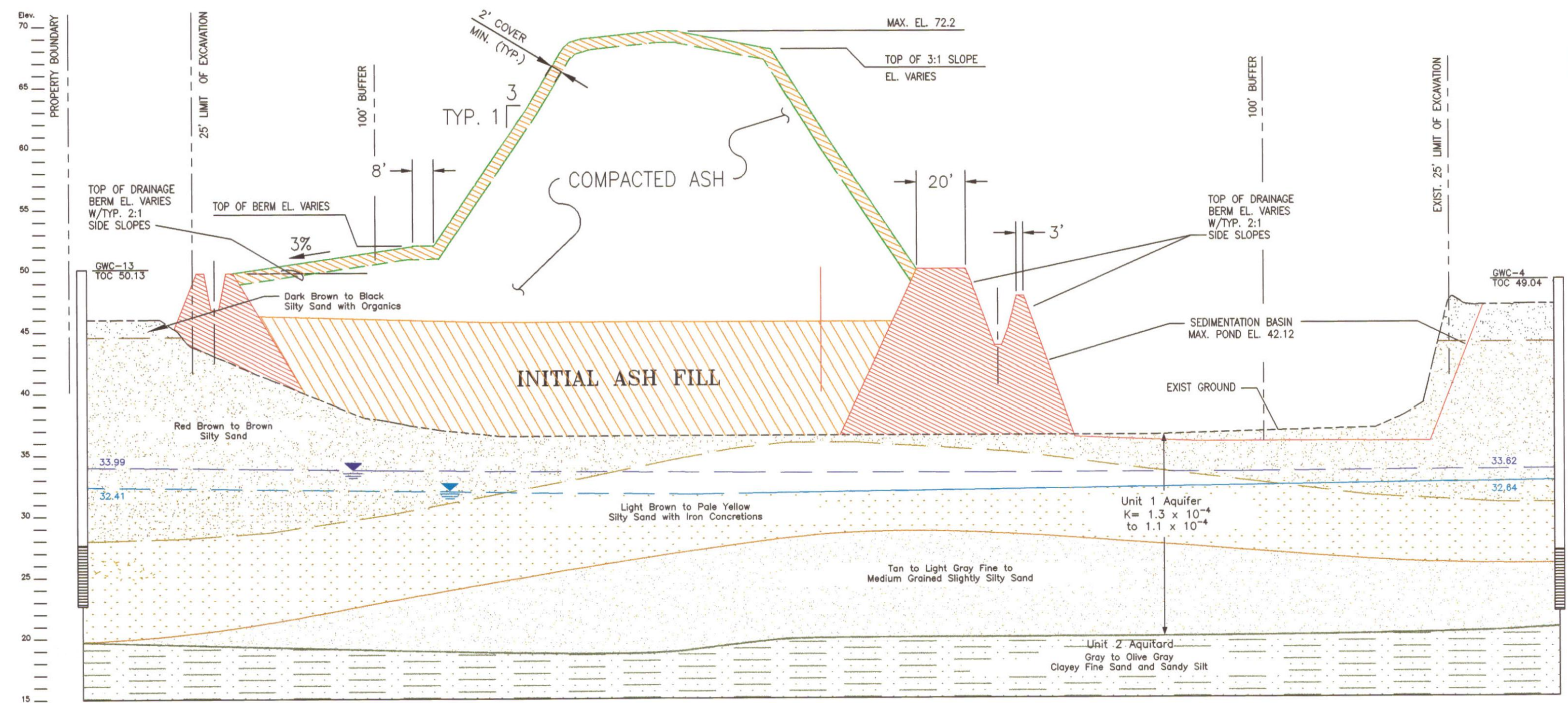
FIGURE CS-1b



SECTION GR E-E'  
Horizontal Scale: 1"= 80'  
Vertical Scale: 1"= 8'



SECTION GR C-C'  
Horizontal Scale: 1"= 40'  
Vertical Scale: 1"= 8'



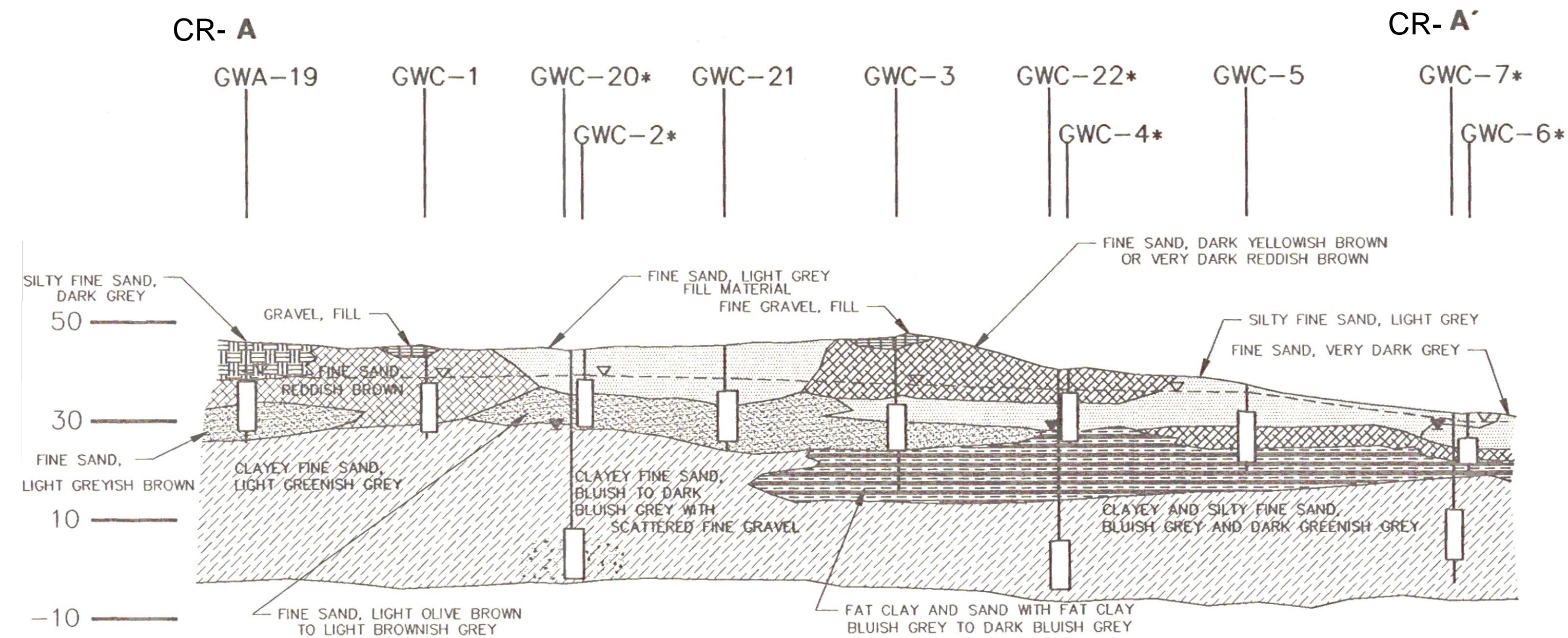
SECTION GR D-D'  
Horizontal Scale: 1"= 40'  
Vertical Scale: 1"= 8'

- NOTES:
- SCALE IS APPROXIMATE
  - CROSS-SECTIONS ARE FROM PLANT KRAFT/GRUMMAN RD LANDFILL DESIGN & OPERATION PLANS (APPROVED 2000)
  - CROSS-SECTION LINES SHOWN ON FIGURE 1





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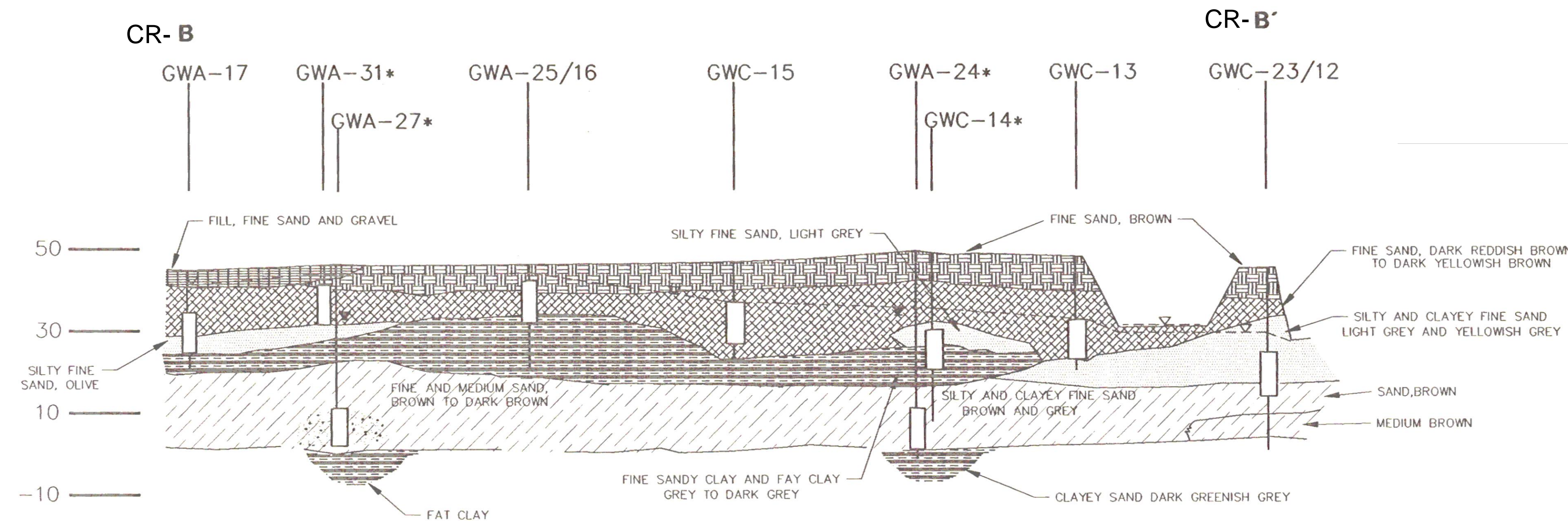


HORIZONTAL SCALE: 1" = 200'  
VERTICAL SCALE: 1" = 20'

**LEGEND**

- WATER TABLE
- SEMI-CONFINED ZONE POTENTIOMETRIC HEAD
- SCREEN INTERVAL
- BORING

GWC-8\*  
GWC-9\*  
ASTERISK BY WELL NAMES  
DISTANCE BETWEEN MARKED  
WELLS NOT TO SCALE



HORIZONTAL SCALE: 1" = 200'  
VERTICAL SCALE: 1" = 20'

- NOTES:
- SCALE IS APPROXIMATE
  - CROSS-SECTIONS ARE FROM CLIFTON LANDFILL DESIGN & OPERATION PLANS (APPROVED 1994)
  - CROSS-SECTION LINES SHOWN ON FIGURE 1

PROJECT:  
PLANT KRAFT  
GRUMMAN ROAD  
LANDFILL

120 GULFSTREAM ROAD  
PORT WENTWORTH, GEORGIA

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CLIFTON ROAD  
HISTORICAL  
CROSS-SECTIONS

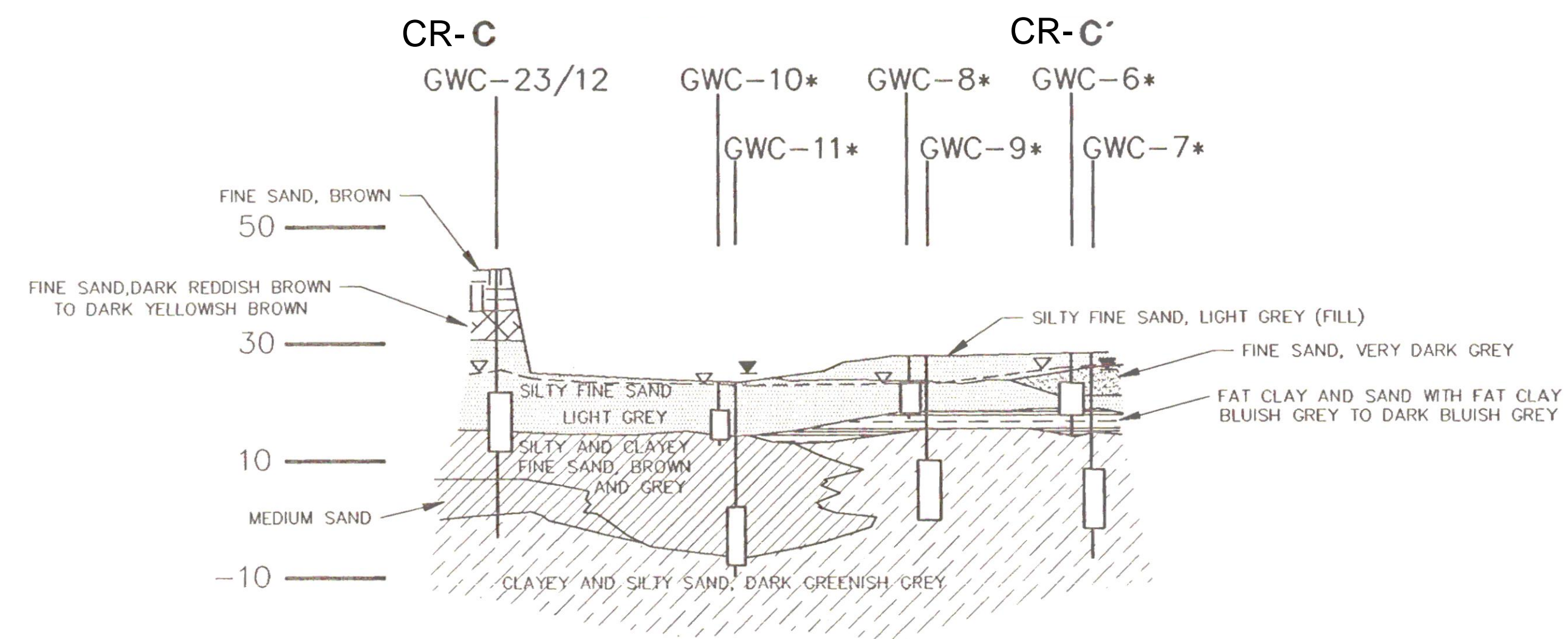
FIGURE CS-2a

P:\Industry\1054 - Southern Company\105 - Grumman Road Completion\Map\1054-105-Cross-Sections.dwg 2017-03-28 09:41 PERRY



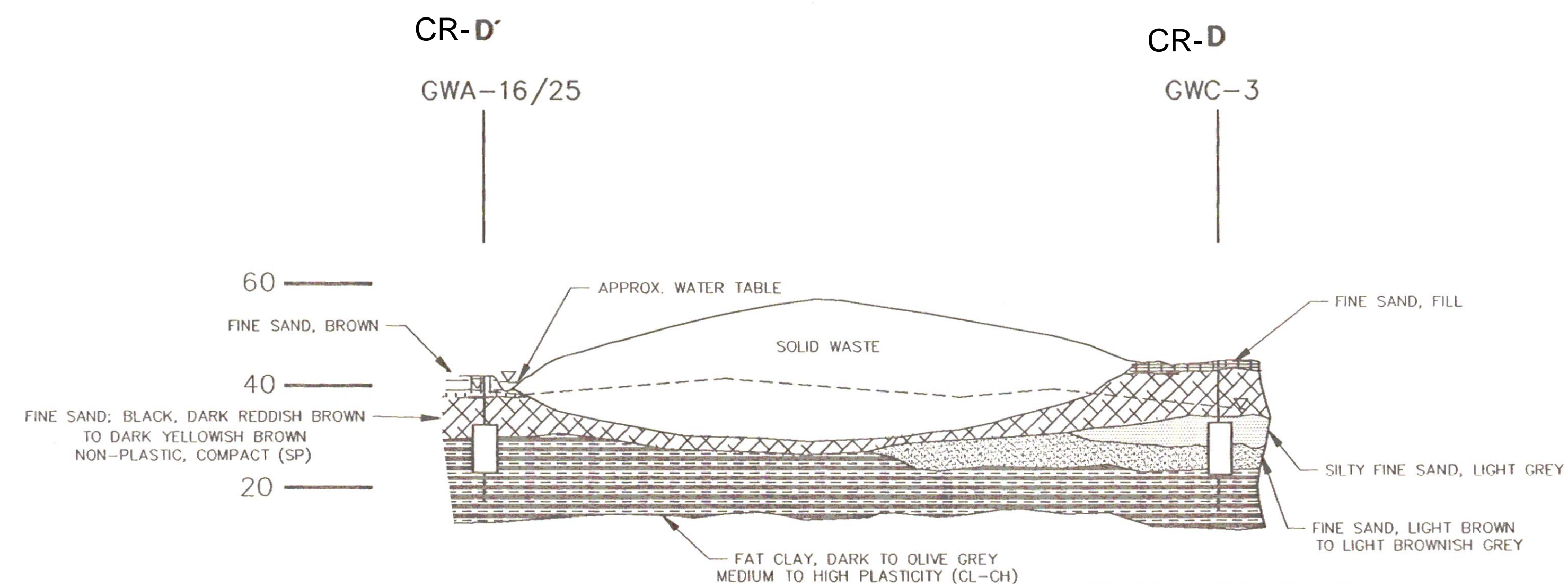
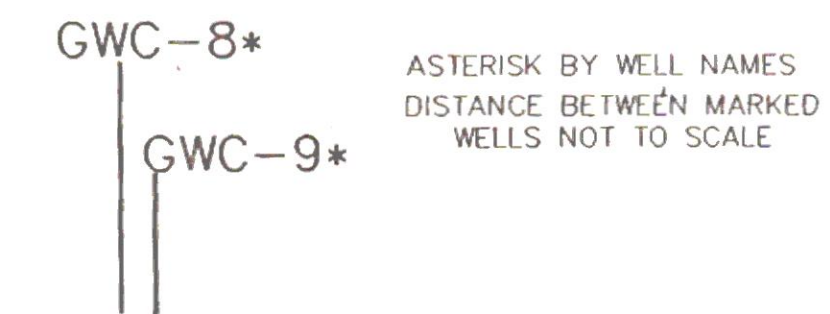
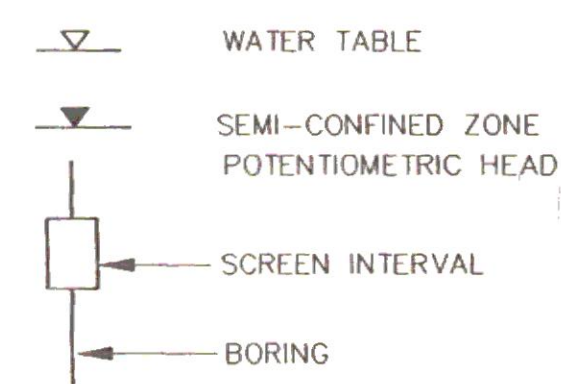


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HORIZONTAL SCALE: 1" = 200'  
VERTICAL SCALE: 1" = 20'

LEGEND



PROJECT:

PLANT KRAFT  
GRUMMAN ROAD  
LANDFILL

120 GULFSTREAM ROAD  
PORT WENTWORTH, GEORGIA

REVISIONS

NO.	DESCRIPTION	DATE

Drawn by: MM Checked by: EP

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I054-105

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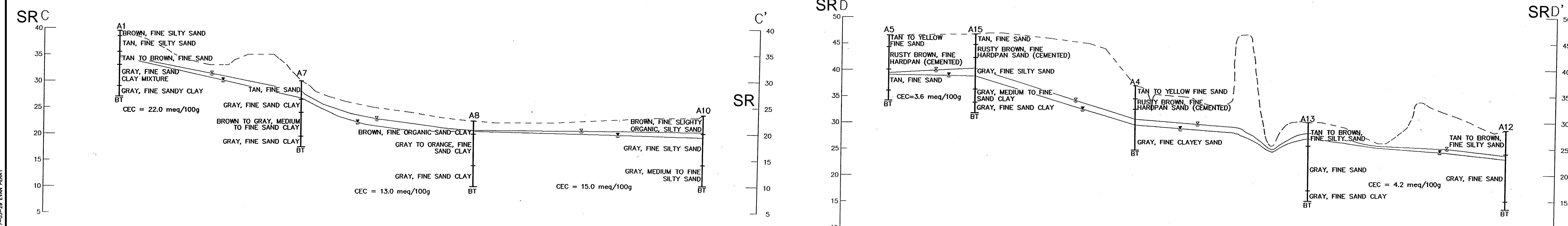
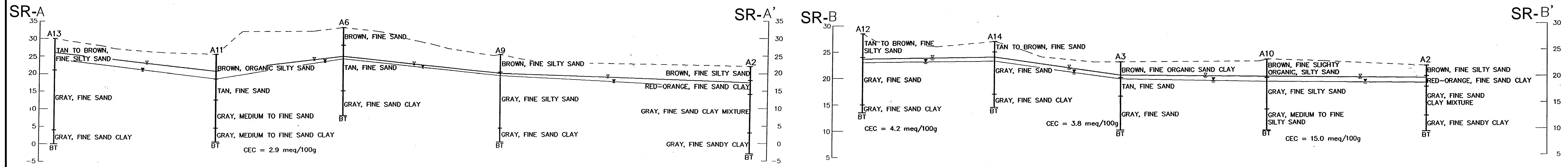
CLIFTON ROAD  
HISTORICAL  
CROSS-SECTIONS

FIGURE CS-2b

- NOTES:
1. SCALE IS APPROXIMATE
  2. CROSS-SECTIONS ARE FROM CLIFTON LANDFILL DESIGN & OPERATION PLANS (APPROVED 1994)
  3. CROSS-SECTION LINES SHOWN ON FIGURE 1



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SCALE: HORIZONTAL 1" = 100'  
VERTICAL 1" = 10'

**LEGEND**

---	TOP OF GROUND
—v—	WATER TABLE
—v—	AFTER BORING
—v—	24 HOURS LATER
BT	BORING TERMINATED

- NOTES:  
 1. SCALE IS APPROXIMATE  
 2. CROSS-SECTIONS ARE FROM CLIFTON LANDFILL EXPANSION SITE ACCEPTABILITY 1992  
 3. CROSS-SECTION LINES SHOWN ON FIGURE 1

PROJECT:  
PLANT KRAFT  
GRUMMAN ROAD  
LANDFILL

120 GULFSTREAM ROAD  
PORT WENTWORTH, GEORGIA

REVISIONS


Drawn by: MM Checked by: EP

PROJECT NUMBER:  
I054-105  
March 2017

SAVANNAH REGIONAL  
INDUSTRIAL LANDFILL  
HISTORICAL  
CROSS-SECTIONS

FIGURE CS-3

## Appendix B

# Boring and Well Construction Logs

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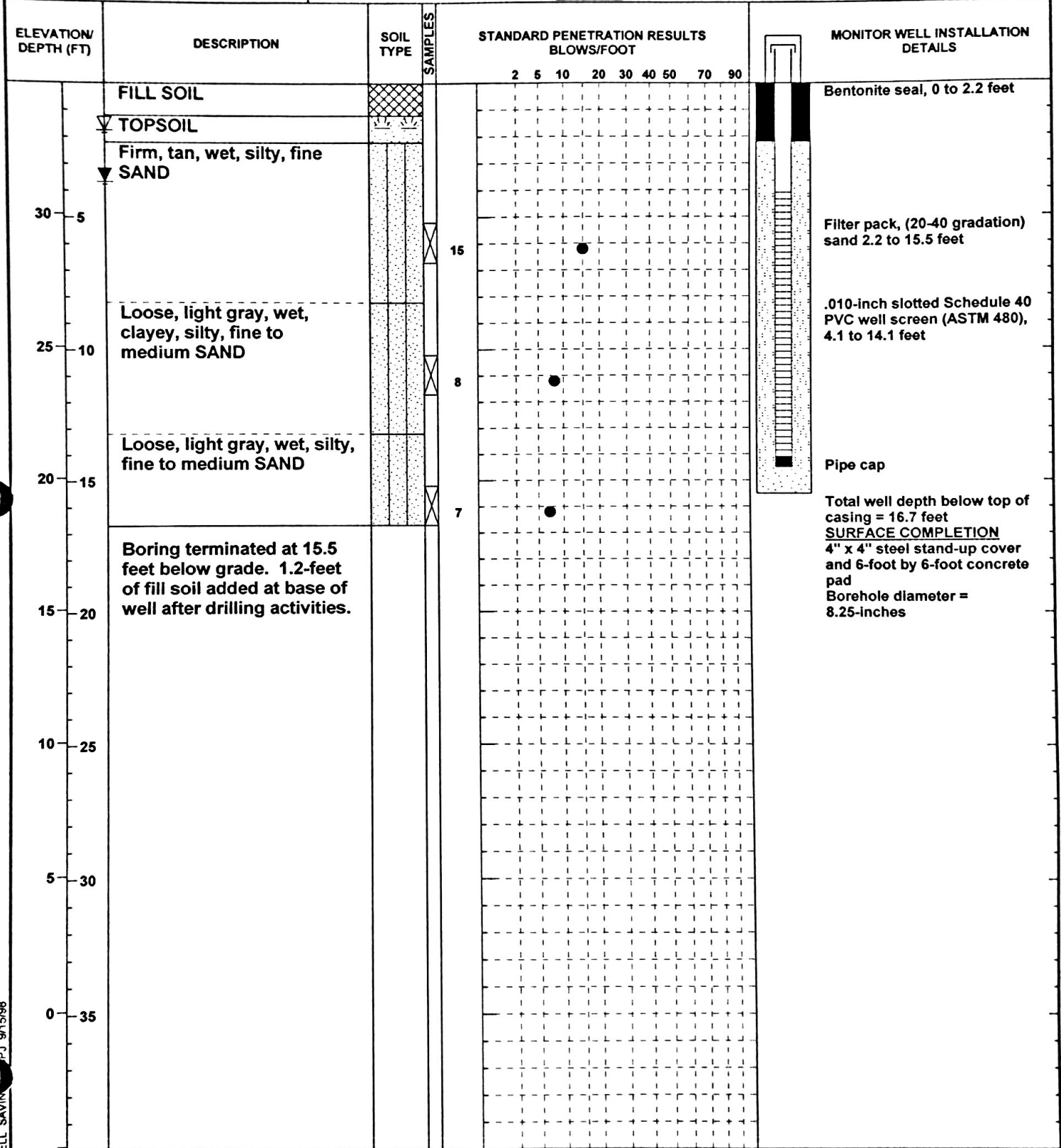




# GROUND WATER MONITORING NO. GWA-5

**BUNNELL-LAMMONS  
ENGINEERING, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL  
CONSULTANTS

PROJECT: Savannah Industrial Landfill PROJECT NO.: J98-1164-08  
 CLIENT: HHNT DATE START: 5-28-98 END: 5-28-98  
 LOCATION: Chatham County, Georgia ELEVATION: 34.86  
 DRILLER: A E Drilling, Tommy Burnette LOGGED BY: MSP  
 DRILLING METHOD: CME 750 ATV, Hollow stem auger  
 DEPTH TO - WATER> INITIAL: ▽ 1.75 AFTER 24 HOURS: ▽ 3.67 CAVING> ☒



GEOT. WELL SAVIN P-J 9/15/98

BOHRE NUMBER GWC-12  
 DATE DRILLED October 6, 1993  
 ELEVATIONS: TOP OF CASING = 45.83  
GROUND SURFACE = 43.48  
TOP OF WELL APRON = 43.48  
 GEOLOGIST A.J. Patrick

CLIENT Clifton Equipment Rental  
 PROJECT Clifton Landfill  
NO. 025-030 D (L)  
Water Quality Monitoring Plan  
 STATE PLAIN N. 779052.950  
 COORDINATES E. 961255.879

DEPTH FEET	SAMPLE INTERVAL	SAMPLE # AND TPYE	BLOWS PER 6 INCHES	GRAPHIC LOG	DESCRIPTION AND REMARKS	WELL SKETCH
0						
0-7	X	SPT	2-2-2	SP	0'-7' <b>FINE SILTY SAND</b> ; Light yellowish brown subround and subangular fine sand nonplastic, trace of black opaque fine sand, damp, littoral, (SP)	
7-12	X	SPT	1-2-2	ML	7'-12' <b>FINE SAND</b> ; Dark reddish brown, subround and subangular fine sand, non-plastic compacted, moist, (ML)	
12-17	X	SPT	4-6-6	SP	12'-17' <b>FINE SAND</b> ; Light grey, subround and subangular fine sand, trace of subangular medium sand, trace of black opaque fine sand about nonplastic, moist, (SP)	
17-22	X	SPT	2-2-2	SP	17'-22' <b>FINE SAND</b> ; Light olive grey, subround and subangular fine sand, trace of angular medium sand, non-plastic, wet, (SP)	
22-27	X	SPT	2-2-4	SP	22'-27' <b>FINE SAND</b> ; Light brownish grey, subrounded and subangular fine sand, trace of fine black opaque sand and trace of pale fine grain mica, non-plastic, wet, (SP)	
27-32	X	SPT	3-3-6	SP	27'-32' <b>FINE SAND</b> ; Light brownish grey, subrounded and subangular fine sand, trace of fine black opaque sand and trace of pale fine grain mica, non-plastic, wet, (SP)	
32-37	X	SPT	9-15-14	SW	32'-37' <b>MEDIUM SAND</b> ; Dark brownish grey, subrounded and subangular sand, trace of fine grain black opaque sand, wet, (SW)	
37-40	X	SPT	13-13-11	SW	37'-40' <b>MEDIUM SAND</b> ; Light brownish gray, subrounded and subangular sand with trace of fine grain black sand and trace of fine medium grain sand, (SW)	

METHOD OF DRILLING 4 1/4" Hollow Stem  
Auger  
 HOLE DIAMETER 7 1/4 inch  
 COMPLETION DEPTH 30.3 feet  
 HAMMER WEIGHT 140 lb.



WELL DIAMETER 2 inch  
 WELL MATERIAL ASTM 480 Schedule 40 PVC  
 WELL DEVELOPMENT Bailed  
 WATER LEVEL: INITIAL 19 feet  
FINAL 17.8 feet

BOREHOLE NUMBER GWC-11  
 DATE DRILLED May 8-10, 1994  
 ELEVATIONS: TOP OF CASING = 27.17  
GROUND SURFACE = 24.55  
TOP OF WELL APRON = 25.15  
 GEOLOGIST A.J. Patrick

CLIENT Clifton Equipment Rental  
 PROJECT Clifton Landfill  
NO. 025-030 D (L)  
Water Quality Monitoring Plan  
 STATE PLAIN N. 779122.481  
 COORDINATES E. 961622.021

DEPTH FEET	SAMPLE INTERVAL	SAMPLE # AND TYPE	BLOWS PER 6 INCHES	GRAPHIC LOG	DESCRIPTION AND REMARKS	WELL SKETCH
0						
0-8.7		SPT 3-5-5		SC	0'-8.7' <b>CLAYEY FINE SAND</b> ; Light grey, micaceous, subangular sand, trace of fine grained black opaque mineral, (SC)	
8.7-8.9		SPT 2-3-3		SC	8.7'-8.9' <b>EAT CLAY</b> ; Medium dark grey tough clay oxidizes to olive grey to moderate olive brown color with time, (CH)	
8.9-12		SPT 5-7-10		SP	8.9'-12' <b>SAND AND CLAY</b> ; Medium dark grey sand is fine to medium grain, clay is tough, soil oxidizes to moderate olive brown color with time, (SC)	
12-13.7		SPT 10-10-13		SP	12'-13.7' <b>FINE SAND</b> ; Medium dark grey, fine subangular sand that oxidizes to moderate olive brown color with time, (SP)	
13.7-17		SPT 4-6-6		SC	13.7'-17' <b>FINE SAND</b> ; Greyish brown, subangular sand, (SP)	
17-21				SC	17'-21' <b>MEDIUM SAND</b> ; Greyish brown, subangular sand, loose, (SP)	
21-29		UD		SM	21'-29' <b>CLAYEY MEDIUM SAND</b> ; Dark grey oxidizes to greyish brown with time, (SC)	
29-31.5				SM	29'-31.5' <b>SILTY FINE SAND</b> ; Dark greenish grey, (SM)	
31.5-30.4						

METHOD OF DRILLING 6 1/4" Hollow Stem Auger  
3 1/4" Hollow Stem Auger  
 HOLE DIAMETER 10" to 15' 7" to 31.5'  
 COMPLETION DEPTH 30.4 feet  
 HAMMER WEIGHT 140 lb.



WELL DIAMETER 2 inch  
 WELL MATERIAL ASTM 480 Schedule 40 PVC  
 WELL DEVELOPMENT Bailed  
 WATER LEVEL: INITIAL 2 feet  
FINAL 0.8 feet

BORING NUMBER GWC-9  
 DATE DRILLED May 7-9, 1994  
 ELEVATIONS: TOP OF CASING = 30.87  
 GROUND SURFACE = 28.35  
 TOP OF WELL APRON = 28.84  
 GEOLOGIST A.J. Patrick

CLIENT Clifton Equipment Rental  
 PROJECT Clifton Landfill  
NO. 025-030 D (L)  
Water Quality Monitoring Plan  
 STATE PLAIN N. 779225.067  
 COORDINATES E. 961913.170

DEPTH FEET	SAMPLE INTERVAL	SAMPLE # AND TPYE	BLOWS PER 6 INCHES	GRAPHIC LOG	DESCRIPTION AND REMARKS	WELL SKETCH
0						
5		SPT	2-2-2	SC	0'-9' <b>CLAYEY FINE SAND</b> ; Light grey with yellow mottling, micaceous subround sand, trace of black opaque fine grained mineral, first 4' is recent full material, (SC)	
10		SPT	2-3-3	CH	9'-12' <b>EAT CLAY</b> ; Medium dark tough clay, oxidizes to olive grey to moderate olive brown with time, (CH)	
15		SPT	1-1-8	SC	12'-14.2' <b>CLAYEY SAND</b> ; Medium dark grey to black with yellowish brown mottling, tough, subangular sand, decayed wood, (SC)	
20		SPT	11-21-23	SC	14.2'-24.8' <b>CLAYEY SAND</b> ; Yellowish grey to greyish brown, fine to medium angular to subangular sand, trace of black opaque fine grain mineral, (SC)	
25		SPT	4-4-4	SM	24.8'-28' <b>SILTY FINE SAND</b> ; Dark greenish grey micaceous subangular sand, color change does not occur over time, (SM)	

METHOD OF DRILLING 6 1/4" Hollow Stem Auger  
3 1/4" Hollow Stem Auger  
 HOLE DIAMETER 10" to 10' 7" to 28'  
 COMPLETION DEPTH 27.2 feet  
 HAMMER WEIGHT 140 lb.



WELL DIAMETER 2 inch  
 WELL MATERIAL ASTM 480 Schedule 40 PVC  
 WELL DEVELOPMENT Bailed  
 WATER LEVEL: INITIAL 4 feet  
 FINAL 4 feet

BORING NUMBER GWC-7  
 DATE DRILLED May 7-9, 1994  
 ELEVATIONS: TOP OF CASING = 31.38  
 GROUND SURFACE = 28.45  
 TOP OF WELL APRON = 29.05  
 GEOLOGIST A.J. Patrick

CLIENT Clifton Equipment Rental  
 PROJECT Clifton Landfill  
NO. 025-030 D (L)  
Water Quality Monitoring Plan  
 STATE PLAIN N. 779283.232  
 COORDINATES E. 962182.047

DEPTH FEET	SAMPLE INTERVAL	SAMPLE # AND TPYE	BLOWS PER 6 INCHES	GRAPHIC LOG	DESCRIPTION AND REMARKS	WELL SKETCH
0						
0-2				SC	0'-2' CLAYEY FINE SAND; Light grey with yellow mottling, subround, trace of black opaque fine grained mineral, recent fill material, (SC)	
2-7		SPT	3-4-5	SP	2'-7' FINE SAND; Very dark grey, (SP)	
7-9.5		SPT	3-4-4	SC	7'-9.5' CLAYEY FINE SAND; Light grey with yellow mottling, trace of black opaque fine grained mineral, (SC)	
9.5-12				CH	9.5'-12' FAT CLAY; Grey tough clay with yellowish brown mottling, (CH)	
12-16		SPT	3-5-6	SC	12'-16' CLAYEY FINE SAND; Grey to dark greenish grey with brownish yellow mottling (SC)	
16-22		SPT	4-6-12	SC	16'-22' CLAYEY FINE SAND; Dark greenish grey, subangular, trace of black opaque fine grain mineral oxidizes to brown color (SC)	
22-33.5		SPT	5-7-7	SM	22'-33.5' SILTY FINE SAND; Dark greenish grey micaceous subangular sand, color change does not occur over time (SM)	
33.5-35		UD				

METHOD OF DRILLING 6 1/4" Hollow Stem Auger  
3 1/4" Hollow Stem Auger  
 HOLE DIAMETER 10" to 10' 7" to 33.5'  
 COMPLETION DEPTH 28.8 feet  
 HAMMER WEIGHT 140 lb.



WELL DIAMETER 2 inch  
 WELL MATERIAL ASTM 480 Schedule 40 PVC  
 WELL DEVELOPMENT Bailed  
 WATER LEVEL: INITIAL 3 feet  
 FINAL 4.3 feet



# GROUNDWATER MONITORING WELL NO. GWC-23

**BUNNELL-LAMMONS  
ENGINEERING, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL  
CONSULTANTS

PROJECT: Savannah Regional Landfill

PROJECT NO.: J06-1164-20

CLIENT: Republic

START: 12-13-06 END: 12-13-06

LOCATION: Chatham County, Georgia

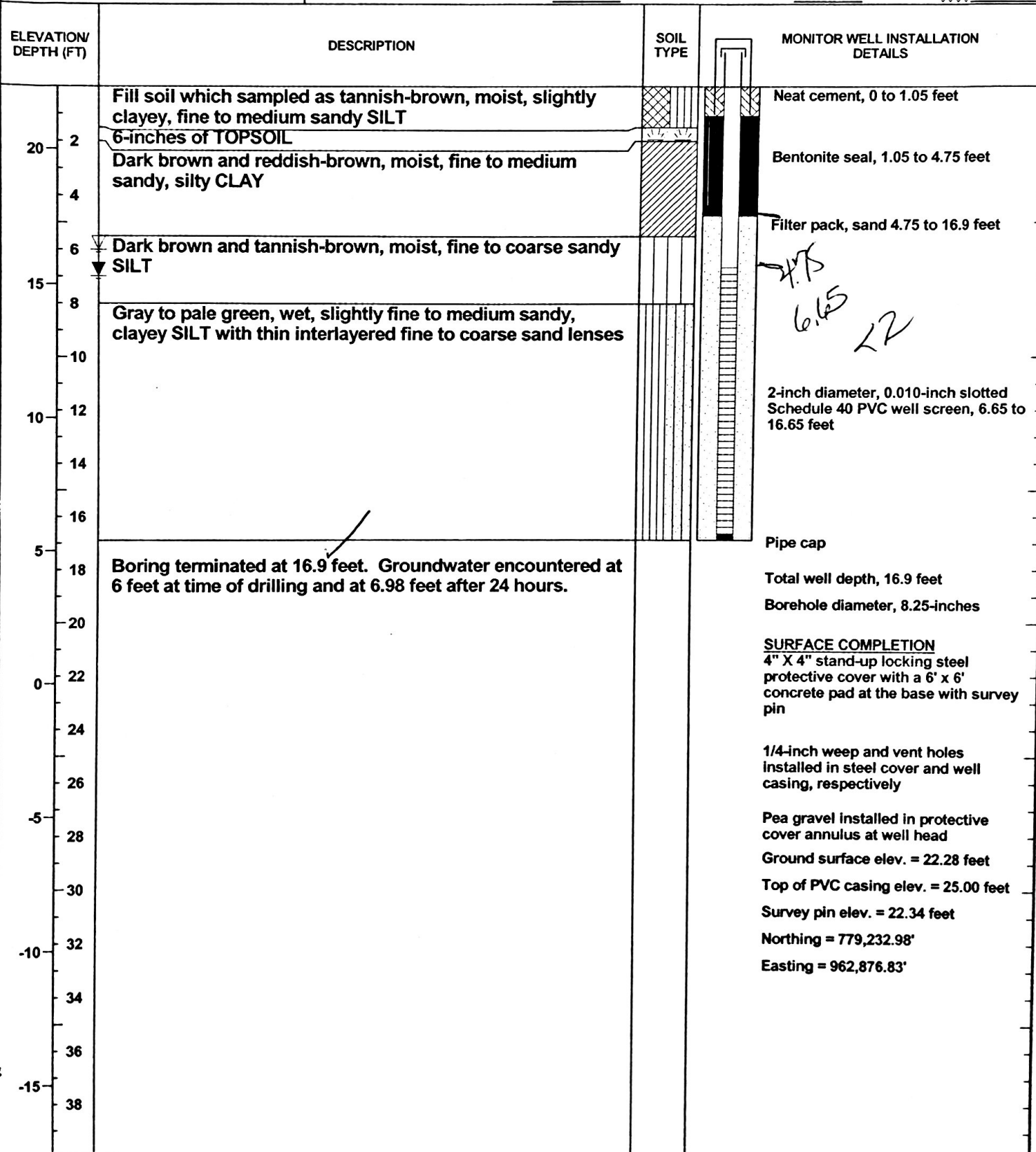
ELEVATION: 22.28

DRILLER: BLE, G. Alverson

LOGGED BY: R. Mayer

DRILLING METHOD: Geoprobe 6620DT with 4-1/4 inch ID hollow stem auger

DEPTH TO - WATER> INITIAL: ▽ 6 AFTER 24 HOURS: ▽ 6.98 CAVING>



GEOT. WELL NO. 1164 12/29/07



## Appendix C

### Laboratory Analytical Reports

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September 22, 2020

Joju Abraham  
Georgia Power-CCR  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between August 19, 2020 and August 20, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA
- Pace Analytical Services - Greensburg

Revision 1 - This report replaces the September 11, 2020 report. This project was revised on September 21, 2020 to reflect correction of Client Sample ID. (Greensburg, PA)

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring  
kevin.herring@pacelabs.com  
1(704)875-9092  
HORIZON Database Administrator

Enclosures

cc: Owens Fuquea, ACC  
Kristen Jurinko  
Matt Malone, Atlantic Coast Consulting  
Betsy McDaniel, Atlantic Coast Consulting  
Evan Perry, Atlantic Coast Consulting

Ms. Lauren Petty, Southern Co. Services



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 191  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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### **Pace Analytical Services Charlotte**

9800 Kincey Ave. Ste 100, Huntersville, NC 28078  
Louisiana/NELAP Certification # LA170028  
North Carolina Drinking Water Certification #: 37706  
North Carolina Field Services Certification #: 5342  
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001  
Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
Virginia/VELAP Certification #: 460221

---

### **Pace Analytical Services Asheville**

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
Massachusetts Certification #: M-NC030  
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

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### **Pace Analytical Services Peachtree Corners**

110 Technology Pkwy, Peachtree Corners, GA 30092  
Florida DOH Certification #: E87315  
Georgia DW Inorganics Certification #: 812  
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92491455001	DUP-1	Water	08/17/20 00:00	08/19/20 12:45
92491455002	EB-1-8-18-20	Water	08/18/20 00:00	08/19/20 12:45
92491455003	GWA-8	Water	08/17/20 14:59	08/19/20 12:45
92491455004	GWC-13	Water	08/17/20 16:16	08/19/20 12:45
92491455005	GWC-12	Water	08/17/20 17:25	08/19/20 12:45
92491455006	GWC-16	Water	08/18/20 09:32	08/19/20 12:45
92491455007	GWC-21	Water	08/18/20 10:58	08/19/20 12:45
92491455008	GWC-15	Water	08/18/20 12:56	08/19/20 12:45
92491455009	GWC-14	Water	08/18/20 14:24	08/19/20 12:45
92491455010	GWC-2	Water	08/18/20 15:23	08/19/20 12:45
92491455011	GWC-17	Water	08/18/20 14:50	08/19/20 12:45
92491455012	GWC-20	Water	08/18/20 16:36	08/19/20 12:45
92491455013	GWC-11	Water	08/18/20 10:45	08/19/20 12:45
92491455014	GWC-22	Water	08/18/20 14:30	08/19/20 12:45
92491455015	EB-2-8-18-20	Water	08/18/20 16:50	08/19/20 12:45
92491455016	DUP-2	Water	08/18/20 00:00	08/19/20 12:45
92491455017	FB-1-8-19-20	Water	08/19/20 10:30	08/20/20 12:20
92491455018	FB-2-8-19-20	Water	08/19/20 09:00	08/20/20 12:20
92491455019	GWC-1	Water	08/19/20 09:35	08/20/20 12:20
92491455020	GWC-9	Water	08/19/20 09:20	08/20/20 12:20
92491455021	GWB-5R	Water	08/19/20 11:58	08/20/20 12:20
92491455022	GWA-7	Water	08/19/20 10:30	08/20/20 12:20
92491455023	GWB-4R	Water	08/19/20 11:45	08/20/20 12:20
92491455024	GWB-6R	Water	08/19/20 14:00	08/20/20 12:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92491455001	DUP-1	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92491455002	EB-1-8-18-20	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92491455003	GWA-8	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92491455004	GWC-13	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92491455005	GWC-12	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92491455006	GWC-16	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92491455007	GWC-21	EPA 6020B	CW1	12	PASI-GA

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92491455008	GWC-15	EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92491455009	GWC-14	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
92491455010	GWC-2	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
92491455011	GWC-17	EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92491455012	GWC-20	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
92491455013	GWC-11	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
92491455013	GWC-11	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
92491455014	GWC-22	EPA 9315	LAL	1	PASI-PA		
		EPA 9320	VAL	1	PASI-PA		
		Total Radium Calculation	JAL	1	PASI-PA		
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A		
		EPA 6020B	CW1	12	PASI-GA		
		EPA 7470A	VB	1	PASI-GA		
		EPA 9315	LAL	1	PASI-PA		
		EPA 9320	VAL	1	PASI-PA		
		Total Radium Calculation	JAL	1	PASI-PA		
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A		
92491455015	EB-2-8-18-20	EPA 6020B	CW1	12	PASI-GA		
		EPA 7470A	VB	1	PASI-GA		
		EPA 9315	LAL	1	PASI-PA		
		EPA 9320	VAL	1	PASI-PA		
		Total Radium Calculation	JAL	1	PASI-PA		
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A		
		92491455016	DUP-2	EPA 6020B	CW1	12	PASI-GA
				EPA 7470A	VB	1	PASI-GA
				EPA 9315	LAL	1	PASI-PA
				EPA 9320	VAL	1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA		
EPA 300.0 Rev 2.1 1993	CDC			1	PASI-A		
92491455017	FB-1-8-19-20			EPA 6020B	CW1	12	PASI-GA
				EPA 7470A	VB	1	PASI-GA
				EPA 9315	LAL	1	PASI-PA
				EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA		
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A		
		92491455018	FB-2-8-19-20	EPA 6020B	CW1	12	PASI-GA
				EPA 7470A	VB	1	PASI-GA
				EPA 9315	LAL	1	PASI-PA
				EPA 9320	VAL	1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA		
EPA 300.0 Rev 2.1 1993	CDC			1	PASI-A		
92491455019	GWC-1			EPA 6020B	CW1	12	PASI-GA
				EPA 7470A	VB	1	PASI-GA
				EPA 9315	LAL	1	PASI-PA

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92491455020	GWC-9	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
92491455021	GWB-5R	Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
92491455022	GWA-7	EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
		EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
92491455023	GWB-4R	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	BRJ	1	PASI-A
		92491455024	GWB-6R	EPA 6020B	CW1
EPA 7470A	VB			1	PASI-GA
EPA 9315	LAL			1	PASI-PA
EPA 9320	VAL			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
EPA 300.0 Rev 2.1 1993	BRJ			1	PASI-A

PASI-A = Pace Analytical Services - Asheville  
PASI-C = Pace Analytical Services - Charlotte  
PASI-GA = Pace Analytical Services - Peachtree Corners, GA  
PASI-PA = Pace Analytical Services - Greensburg

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92491455001</b>	<b>DUP-1</b>					
EPA 6020B	Barium	0.023	mg/L	0.010	08/21/20 18:57	
EPA 6020B	Lead	0.000073J	mg/L	0.0050	08/21/20 18:57	
EPA 9315	Radium-226	0.475 ± 0.356 (0.629) C:87% T:NA	pCi/L		09/02/20 07:43	
EPA 9320	Radium-228	0.401 ± 0.482 (1.01) C:62% T:77%	pCi/L		09/09/20 13:44	
Total Radium Calculation	Total Radium	0.876 ± 0.838 (1.64)	pCi/L		09/10/20 13:24	
<b>92491455002</b>	<b>EB-1-8-18-20</b>					
EPA 9315	Radium-226	0.181 ± 0.115 (0.185) C:86% T:NA	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	0.645 ± 0.510 (1.01) C:65% T:81%	pCi/L		09/09/20 13:10	
Total Radium Calculation	Total Radium	0.826 ± 0.625 (1.20)	pCi/L		09/10/20 13:24	
<b>92491455003</b>	<b>GWA-8</b>					
	pH	4.23	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.051	mg/L	0.010	08/21/20 19:08	
EPA 6020B	Beryllium	0.00019J	mg/L	0.0030	08/21/20 19:08	
EPA 6020B	Chromium	0.00082J	mg/L	0.010	08/21/20 19:08	
EPA 6020B	Lithium	0.0010J	mg/L	0.030	08/21/20 19:08	
EPA 9315	Radium-226	1.64 ± 0.340 (0.198) C:81% T:NA	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	0.987 ± 0.488 (0.830) C:63% T:79%	pCi/L		09/09/20 12:06	
Total Radium Calculation	Total Radium	2.63 ± 0.828 (1.03)	pCi/L		09/10/20 13:24	
EPA 300.0 Rev 2.1 1993	Fluoride	0.079J	mg/L	0.10	08/20/20 22:47	
<b>92491455004</b>	<b>GWC-13</b>					
	pH	4.65	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.024	mg/L	0.010	08/21/20 19:14	
EPA 6020B	Chromium	0.00077J	mg/L	0.010	08/21/20 19:14	
EPA 6020B	Lead	0.000076J	mg/L	0.0050	08/21/20 19:14	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92491455004</b>	<b>GWC-13</b>					
EPA 9315	Radium-226	0.429 ± 0.150 (0.162) C:83% T:NA	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	0.986 ± 0.510 (0.897) C:68% T:80%	pCi/L		09/09/20 15:09	
Total Radium Calculation	Total Radium	1.42 ± 0.660 (1.06)	pCi/L		09/10/20 13:24	
<b>92491455005</b>	<b>GWC-12</b>					
	pH	3.94	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.018	mg/L	0.010	08/21/20 19:20	
EPA 6020B	Beryllium	0.00046J	mg/L	0.0030	08/21/20 19:20	
EPA 6020B	Chromium	0.0010J	mg/L	0.010	08/21/20 19:20	
EPA 6020B	Cobalt	0.00060J	mg/L	0.0050	08/21/20 19:20	
EPA 6020B	Lead	0.000049J	mg/L	0.0050	08/21/20 19:20	
EPA 6020B	Lithium	0.00091J	mg/L	0.030	08/21/20 19:20	
EPA 9315	Radium-226	0.630 ± 0.176 (0.152) C:88% T:NA	pCi/L		09/02/20 18:00	
EPA 9320	Radium-228	1.62 ± 0.620 (0.917) C:70% T:70%	pCi/L		09/09/20 15:09	
Total Radium Calculation	Total Radium	2.25 ± 0.796 (1.07)	pCi/L		09/10/20 13:24	
EPA 300.0 Rev 2.1 1993	Fluoride	0.19	mg/L	0.10	08/20/20 23:14	
<b>92491455006</b>	<b>GWC-16</b>					
	pH	5.52	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.045	mg/L	0.0050	08/21/20 19:25	
EPA 6020B	Barium	0.32	mg/L	0.010	08/21/20 19:25	
EPA 6020B	Beryllium	0.000068J	mg/L	0.0030	08/21/20 19:25	
EPA 6020B	Chromium	0.0012J	mg/L	0.010	08/21/20 19:25	
EPA 6020B	Lead	0.00017J	mg/L	0.0050	08/21/20 19:25	
EPA 6020B	Molybdenum	0.15	mg/L	0.010	08/21/20 19:25	
EPA 6020B	Selenium	0.0058J	mg/L	0.010	08/21/20 19:25	
EPA 9315	Radium-226	2.61 ± 0.460 (0.136) C:101% T:NA	pCi/L		09/02/20 18:00	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92491455006</b>	<b>GWC-16</b>					
EPA 9320	Radium-228	1.63 ± 0.625 (0.970) C:69% T:82%	pCi/L		09/09/20 15:09	
Total Radium Calculation	Total Radium	4.24 ± 1.09 (1.11)	pCi/L		09/10/20 13:24	
<b>92491455007</b>	<b>GWC-21</b>					
	pH	5.82	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.0059	mg/L	0.0050	08/21/20 19:31	
EPA 6020B	Barium	0.18	mg/L	0.010	08/21/20 19:31	
EPA 6020B	Chromium	0.0012J	mg/L	0.010	08/21/20 19:31	
EPA 6020B	Lead	0.00027J	mg/L	0.0050	08/21/20 19:31	
EPA 6020B	Molybdenum	0.069	mg/L	0.010	08/21/20 19:31	
EPA 6020B	Selenium	0.013	mg/L	0.010	08/21/20 19:31	
EPA 9315	Radium-226	1.89 ± 0.372 (0.243) C:96% T:NA	pCi/L		09/02/20 18:00	
EPA 9320	Radium-228	1.38 ± 0.583 (0.956) C:69% T:81%	pCi/L		09/09/20 15:09	
Total Radium Calculation	Total Radium	3.27 ± 0.955 (1.20)	pCi/L		09/10/20 13:24	
<b>92491455008</b>	<b>GWC-15</b>					
	pH	6.39	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.28	mg/L	0.0050	08/21/20 19:48	
EPA 6020B	Barium	0.030	mg/L	0.010	08/21/20 19:48	
EPA 6020B	Chromium	0.0018J	mg/L	0.010	08/21/20 19:48	
EPA 6020B	Lead	0.000090J	mg/L	0.0050	08/21/20 19:48	
EPA 6020B	Molybdenum	0.12	mg/L	0.010	08/21/20 19:48	
EPA 6020B	Selenium	0.0022J	mg/L	0.010	08/21/20 19:48	
EPA 9315	Radium-226	0.285 ± 0.129 (0.182) C:94% T:NA	pCi/L		09/02/20 18:00	
EPA 9320	Radium-228	1.55 ± 0.588 (0.892) C:66% T:87%	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	1.84 ± 0.717 (1.07)	pCi/L		09/10/20 13:24	
<b>92491455009</b>	<b>GWC-14</b>					
	pH	5.56	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.0012J	mg/L	0.0050	08/21/20 19:54	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92491455009</b>	<b>GWC-14</b>					
EPA 6020B	Barium	0.028	mg/L	0.010	08/21/20 19:54	
EPA 6020B	Chromium	0.00059J	mg/L	0.010	08/21/20 19:54	
EPA 6020B	Molybdenum	0.017	mg/L	0.010	08/21/20 19:54	
EPA 6020B	Selenium	0.0029J	mg/L	0.010	08/21/20 19:54	
EPA 9315	Radium-226	0.388 ± 0.152 (0.201)	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	C:84% T:NA 0.343 ± 0.564 (1.23)	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	C:69% T:66% 0.731 ± 0.716 (1.43)	pCi/L		09/10/20 13:24	
<b>92491455010</b>	<b>GWC-2</b>					
	pH	4.60	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.050	mg/L	0.010	08/21/20 20:00	
EPA 6020B	Beryllium	0.000051J	mg/L	0.0030	08/21/20 20:00	
EPA 9315	Radium-226	0.377 ± 0.150 (0.200)	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	C:86% T:NA 0.709 ± 0.486 (0.941)	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	C:71% T:79% 1.09 ± 0.636 (1.14)	pCi/L		09/10/20 13:24	
<b>92491455011</b>	<b>GWC-17</b>					
	pH	4.31	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.074	mg/L	0.010	08/21/20 20:05	
EPA 6020B	Beryllium	0.0016J	mg/L	0.0030	08/21/20 20:05	
EPA 6020B	Chromium	0.0011J	mg/L	0.010	08/21/20 20:05	
EPA 6020B	Cobalt	0.0025J	mg/L	0.0050	08/21/20 20:05	
EPA 6020B	Lead	0.00014J	mg/L	0.0050	08/21/20 20:05	
EPA 6020B	Lithium	0.0065J	mg/L	0.030	08/21/20 20:05	
EPA 6020B	Molybdenum	0.00092J	mg/L	0.010	08/21/20 20:05	
EPA 6020B	Selenium	0.0020J	mg/L	0.010	08/21/20 20:05	
EPA 9315	Radium-226	1.97 ± 0.377 (0.171)	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	C:93% T:NA 1.14 ± 0.669 (1.24)	pCi/L		09/09/20 15:10	
		C:71% T:60%				

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92491455011</b>	<b>GWC-17</b>					
Total Radium Calculation	Total Radium	3.11 ± 1.05 (1.41)	pCi/L		09/10/20 13:24	
EPA 300.0 Rev 2.1 1993	Fluoride	0.51	mg/L	0.10	08/21/20 01:02	
<b>92491455012</b>	<b>GWC-20</b>					
	pH	5.89	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.30	mg/L	0.0050	08/21/20 20:11	
EPA 6020B	Barium	0.38	mg/L	0.010	08/21/20 20:11	
EPA 6020B	Chromium	0.0011J	mg/L	0.010	08/21/20 20:11	
EPA 6020B	Molybdenum	0.097	mg/L	0.010	08/21/20 20:11	
EPA 9315	Radium-226	3.09 ± 0.537 (0.138)	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	C:97% T:NA 3.77 ± 0.976 (0.980)	pCi/L		09/09/20 15:10	
		C:69% T:77%				
Total Radium Calculation	Total Radium	6.86 ± 1.51 (1.12)	pCi/L		09/10/20 13:24	
<b>92491455013</b>	<b>GWC-11</b>					
	pH	4.41	Std. Units		08/20/20 17:18	
EPA 6020B	Antimony	0.00064J	mg/L	0.0030	08/25/20 16:20	
EPA 6020B	Barium	0.12	mg/L	0.010	08/25/20 16:20	
EPA 6020B	Cadmium	0.00058J	mg/L	0.0025	08/25/20 16:20	
EPA 6020B	Chromium	0.0015J	mg/L	0.010	08/25/20 16:20	
EPA 6020B	Cobalt	0.00040J	mg/L	0.0050	08/25/20 16:20	
EPA 6020B	Lead	0.00035J	mg/L	0.0050	08/26/20 16:32	
EPA 6020B	Molybdenum	0.00077J	mg/L	0.010	08/25/20 16:20	
EPA 6020B	Selenium	0.0028J	mg/L	0.010	08/25/20 16:20	
EPA 6020B	Thallium	0.00021J	mg/L	0.0010	08/26/20 16:32	
EPA 9315	Radium-226	3.22 ± 0.562 (0.179)	pCi/L		09/02/20 17:59	
EPA 9320	Radium-228	C:89% T:NA 3.54 ± 1.00 (1.17)	pCi/L		09/09/20 15:10	
		C:58% T:80%				
Total Radium Calculation	Total Radium	6.76 ± 1.56 (1.35)	pCi/L		09/10/20 13:24	
<b>92491455014</b>	<b>GWC-22</b>					
	pH	4.52	Std. Units		08/20/20 17:18	
EPA 6020B	Antimony	0.0022J	mg/L	0.0030	08/25/20 16:43	
EPA 6020B	Barium	0.085	mg/L	0.010	08/25/20 16:43	
EPA 6020B	Beryllium	0.000076J	mg/L	0.0030	08/25/20 16:43	
EPA 6020B	Cadmium	0.00024J	mg/L	0.0025	08/25/20 16:43	
EPA 6020B	Chromium	0.00056J	mg/L	0.010	08/25/20 16:43	
EPA 6020B	Lead	0.00072J	mg/L	0.0050	08/26/20 16:49	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92491455014</b>	<b>GWC-22</b>					
EPA 6020B	Thallium	0.00017J	mg/L	0.0010	08/26/20 16:49	
EPA 9315	Radium-226	4.29 ± 0.717 (0.153) C:87% T:NA	pCi/L		09/02/20 17:59	
EPA 9320	Radium-228	3.36 ± 0.984 (1.23) C:68% T:68%	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	7.65 ± 1.70 (1.38)	pCi/L		09/10/20 13:24	
<b>92491455015</b>	<b>EB-2-8-18-20</b>					
EPA 6020B	Antimony	0.00059J	mg/L	0.0030	08/25/20 16:48	
EPA 9315	Radium-226	0.0983 ± 0.0893 (0.156) C:82% T:NA	pCi/L		09/02/20 17:59	
EPA 9320	Radium-228	-0.000828 ± 0.364 (0.850) C:64% T:88%	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	0.0983 ± 0.453 (1.01)	pCi/L		09/10/20 13:24	
<b>92491455016</b>	<b>DUP-2</b>					
EPA 6020B	Antimony	0.00062J	mg/L	0.0030	08/25/20 16:54	
EPA 6020B	Barium	0.083	mg/L	0.010	08/25/20 16:54	
EPA 6020B	Beryllium	0.000063J	mg/L	0.0030	08/25/20 16:54	
EPA 6020B	Cadmium	0.00019J	mg/L	0.0025	08/25/20 16:54	
EPA 6020B	Chromium	0.00070J	mg/L	0.010	08/25/20 16:54	
EPA 6020B	Lead	0.00066J	mg/L	0.0050	08/26/20 17:00	
EPA 9315	Radium-226	4.34 ± 0.723 (0.166) C:90% T:NA	pCi/L		09/02/20 17:59	
EPA 9320	Radium-228	5.03 ± 1.20 (0.992) C:68% T:75%	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	9.37 ± 1.92 (1.16)	pCi/L		09/10/20 13:24	
<b>92491455017</b>	<b>FB-1-8-19-20</b>					
EPA 6020B	Antimony	0.0019J	mg/L	0.0030	08/27/20 15:43	
EPA 9315	Radium-226	0.0591 ± 0.0951 (0.185) C:94% T:NA	pCi/L		09/03/20 16:47	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92491455017</b>	<b>FB-1-8-19-20</b>					
EPA 9320	Radium-228	0.0611 ± 0.357 (0.819) C:66% T:80%	pCi/L		09/09/20 12:02	
Total Radium Calculation	Total Radium	0.120 ± 0.452 (1.00)	pCi/L		09/10/20 15:11	
<b>92491455018</b>	<b>FB-2-8-19-20</b>					
EPA 6020B	Antimony	0.00060J	mg/L	0.0030	08/27/20 15:48	
EPA 9315	Radium-226	-0.0223 ± 0.145 (0.305) C:87% T:NA	pCi/L		09/03/20 16:47	
EPA 9320	Radium-228	0.820 ± 0.441 (0.761) C:62% T:78%	pCi/L		09/09/20 12:02	
Total Radium Calculation	Total Radium	0.820 ± 0.586 (1.07)	pCi/L		09/10/20 15:11	
<b>92491455019</b>	<b>GWC-1</b>					
	pH	5.73	Std. Units		08/20/20 17:18	
EPA 6020B	Antimony	0.00061J	mg/L	0.0030	08/27/20 15:54	
EPA 6020B	Arsenic	0.0070	mg/L	0.0050	08/27/20 15:54	
EPA 6020B	Barium	0.057	mg/L	0.010	08/27/20 15:54	
EPA 6020B	Chromium	0.0028J	mg/L	0.010	08/27/20 15:54	
EPA 6020B	Molybdenum	0.061	mg/L	0.010	08/27/20 15:54	
EPA 6020B	Selenium	0.0020J	mg/L	0.010	08/27/20 15:54	
EPA 9315	Radium-226	1.08 ± 0.260 (0.235) C:87% T:NA	pCi/L		09/03/20 16:47	
EPA 9320	Radium-228	0.830 ± 0.488 (0.892) C:63% T:77%	pCi/L		09/09/20 12:02	
Total Radium Calculation	Total Radium	1.91 ± 0.748 (1.13)	pCi/L		09/10/20 15:11	
<b>92491455020</b>	<b>GWC-9</b>					
	pH	4.58	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.17	mg/L	0.010	08/27/20 16:00	
EPA 6020B	Beryllium	0.00022J	mg/L	0.0030	08/27/20 16:00	
EPA 6020B	Chromium	0.0013J	mg/L	0.010	08/27/20 16:00	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	08/27/20 16:00	
EPA 6020B	Lead	0.000096J	mg/L	0.0050	08/27/20 16:00	
EPA 6020B	Lithium	0.0019J	mg/L	0.030	08/27/20 16:00	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92491455020</b>	<b>GWC-9</b>					
EPA 9315	Radium-226	1.20 ± 0.267 (0.192)	pCi/L		09/03/20 16:47	
EPA 9320	Radium-228	C:90% T:NA 1.14 ± 0.521 (0.849)	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	C:59% T:83% 2.34 ± 0.788 (1.04)	pCi/L		09/10/20 15:11	
EPA 300.0 Rev 2.1 1993	Fluoride	0.092J	mg/L	0.10	08/21/20 23:45	
<b>92491455021</b>	<b>GWB-5R</b>					
	pH	5.14	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.0019J	mg/L	0.0050	08/27/20 16:25	
EPA 6020B	Barium	0.10	mg/L	0.010	08/27/20 16:25	
EPA 6020B	Chromium	0.0012J	mg/L	0.010	08/27/20 16:25	
EPA 6020B	Lead	0.000079J	mg/L	0.0050	08/27/20 16:25	
EPA 9315	Radium-226	1.97 ± 0.388 (0.210)	pCi/L		09/03/20 16:47	
EPA 9320	Radium-228	C:82% T:NA 0.521 ± 0.444 (0.882)	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	C:65% T:73% 2.49 ± 0.832 (1.09)	pCi/L		09/10/20 15:11	
<b>92491455022</b>	<b>GWA-7</b>					
	pH	5.81	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.0060J	mg/L	0.025	08/27/20 16:30	D3
EPA 6020B	Barium	0.10	mg/L	0.050	08/27/20 16:30	
EPA 6020B	Chromium	0.015J	mg/L	0.050	08/27/20 16:30	D3
EPA 6020B	Cobalt	0.0021J	mg/L	0.025	08/27/20 16:30	D3
EPA 6020B	Lead	0.0044J	mg/L	0.025	08/27/20 16:30	D3
EPA 9315	Radium-226	4.22 ± 1.13 (0.672)	pCi/L		09/10/20 15:09	
EPA 9320	Radium-228	C:90% T:NA 1.23 ± 0.583 (0.978)	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	C:66% T:89% 5.45 ± 1.71 (1.65)	pCi/L		09/11/20 13:22	
EPA 300.0 Rev 2.1 1993	Fluoride	0.21	mg/L	0.10	08/22/20 23:51	
<b>92491455023</b>	<b>GWB-4R</b>					
	pH	5.70	Std. Units		08/20/20 17:18	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92491455023</b>	<b>GWB-4R</b>					
EPA 6020B	Arsenic	0.0033J	mg/L	0.0050	08/27/20 16:36	
EPA 6020B	Barium	0.076	mg/L	0.010	08/27/20 16:36	
EPA 6020B	Chromium	0.0022J	mg/L	0.010	08/27/20 16:36	
EPA 6020B	Cobalt	0.00072J	mg/L	0.0050	08/27/20 16:36	
EPA 6020B	Lead	0.00048J	mg/L	0.0050	08/27/20 16:36	
EPA 6020B	Lithium	0.014J	mg/L	0.030	08/27/20 16:36	
EPA 6020B	Molybdenum	0.16	mg/L	0.010	08/27/20 16:36	
EPA 9315	Radium-226	1.89 ± 0.368 (0.222)	pCi/L		09/03/20 18:44	
EPA 9320	Radium-228	C:94% T:NA 1.21 ± 0.552 (0.915) C:67% T:77%	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	3.10 ± 0.920 (1.14)	pCi/L		09/10/20 15:11	
EPA 300.0 Rev 2.1 1993	Fluoride	0.17	mg/L	0.10	08/23/20 00:06	
<b>92491455024</b>	<b>GWB-6R</b>					
	pH	5.21	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.0036J	mg/L	0.0050	08/27/20 16:42	
EPA 6020B	Barium	0.064	mg/L	0.010	08/27/20 16:42	
EPA 6020B	Beryllium	0.000050J	mg/L	0.0030	08/27/20 16:42	
EPA 6020B	Chromium	0.0037J	mg/L	0.010	08/27/20 16:42	
EPA 6020B	Lead	0.00014J	mg/L	0.0050	08/27/20 16:42	
EPA 6020B	Molybdenum	0.0010J	mg/L	0.010	08/27/20 16:42	
EPA 9315	Radium-226	3.78 ± 0.640 (0.184)	pCi/L		09/03/20 18:45	
EPA 9320	Radium-228	C:88% T:NA 0.754 ± 0.462 (0.836) C:61% T:79%	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	4.53 ± 1.10 (1.02)	pCi/L		09/10/20 15:11	

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## ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: DUP-1		Lab ID: 92491455001		Collected: 08/17/20 00:00		Received: 08/19/20 12:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA							
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 18:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 18:57	7440-38-2	
Barium	<b>0.023</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 18:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 18:57	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 18:57	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 18:57	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 18:57	7440-48-4	
Lead	<b>0.000073J</b>	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 18:57	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 18:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 18:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 18:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 18:57	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA							
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:08	7439-97-6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville							
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 21:54	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: EB-1-8-18-20      Lab ID: 92491455002      Collected: 08/18/20 00:00      Received: 08/19/20 12:45      Matrix: Water										
Parameters	Results	Units	Report Limit		MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>										
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA										
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:02	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:02	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:02	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:02	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:02	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:02	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:02	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:02	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:02	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:02	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:02	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:02	7440-28-0		
<b>7470 Mercury</b>										
Analytical Method: EPA 7470A    Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA										
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:10	7439-97-6		
<b>300.0 IC Anions 28 Days</b>										
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville										
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 22:07	16984-48-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: GWA-8		Lab ID: 92491455003		Collected: 08/17/20 14:59		Received: 08/19/20 12:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.23	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:08	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:08	7440-38-2	
Barium	0.051	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:08	7440-39-3	
Beryllium	0.00019J	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:08	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:08	7440-43-9	
Chromium	0.00082J	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:08	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:08	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:08	7439-92-1	
Lithium	0.0010J	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:08	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:08	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:08	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:08	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:13	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.079J	mg/L	0.10	0.050	1		08/20/20 22:47	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWC-13</b>		Lab ID: <b>92491455004</b>		Collected: 08/17/20 16:16	Received: 08/19/20 12:45	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>4.65</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:14	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:14	7440-38-2	
Barium	<b>0.024</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:14	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:14	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:14	7440-43-9	
Chromium	<b>0.00077J</b>	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:14	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:14	7440-48-4	
Lead	<b>0.000076J</b>	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:14	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:14	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:14	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:14	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:14	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:15	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 23:01	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWC-12</b>		Lab ID: <b>92491455005</b>		Collected: 08/17/20 17:25	Received: 08/19/20 12:45	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>3.94</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:20	7440-38-2	
Barium	<b>0.018</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:20	7440-39-3	
Beryllium	<b>0.00046J</b>	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:20	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:20	7440-43-9	
Chromium	<b>0.0010J</b>	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:20	7440-47-3	
Cobalt	<b>0.00060J</b>	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:20	7440-48-4	
Lead	<b>0.000049J</b>	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:20	7439-92-1	
Lithium	<b>0.00091J</b>	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:20	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:20	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:17	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	<b>0.19</b>	mg/L	0.10	0.050	1		08/20/20 23:14	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWC-16</b>		Lab ID: <b>92491455006</b>		Collected: 08/18/20 09:32	Received: 08/19/20 12:45	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>5.52</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:25	7440-36-0	
Arsenic	<b>0.045</b>	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:25	7440-38-2	
Barium	<b>0.32</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:25	7440-39-3	
Beryllium	<b>0.000068J</b>	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:25	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:25	7440-43-9	
Chromium	<b>0.0012J</b>	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:25	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:25	7440-48-4	
Lead	<b>0.00017J</b>	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:25	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:25	7439-93-2	
Molybdenum	<b>0.15</b>	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:25	7439-98-7	
Selenium	<b>0.0058J</b>	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:25	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:25	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 23:28	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-21**      **Lab ID: 92491455007**      Collected: 08/18/20 10:58      Received: 08/19/20 12:45      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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**Field Data**

Analytical Method:  
Pace Analytical Services - Charlotte

pH	<b>5.82</b>	Std. Units			1		08/20/20 17:18		
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**6020 MET ICPMS**

Analytical Method: EPA 6020B      Preparation Method: EPA 3005A  
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:31	7440-36-0	
Arsenic	<b>0.0059</b>	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:31	7440-38-2	
Barium	<b>0.18</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:31	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:31	7440-43-9	
Chromium	<b>0.0012J</b>	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:31	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:31	7440-48-4	
Lead	<b>0.00027J</b>	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:31	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:31	7439-93-2	
Molybdenum	<b>0.069</b>	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:31	7439-98-7	
Selenium	<b>0.013</b>	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:31	7440-28-0	

**7470 Mercury**

Analytical Method: EPA 7470A      Preparation Method: EPA 7470A  
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:27	7439-97-6	
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**300.0 IC Anions 28 Days**

Analytical Method: EPA 300.0 Rev 2.1 1993  
Pace Analytical Services - Asheville

Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 23:41	16984-48-8	
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## ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-15		Lab ID: 92491455008		Collected: 08/18/20 12:56		Received: 08/19/20 12:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	6.39	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:48	7440-36-0	
Arsenic	0.28	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:48	7440-38-2	
Barium	0.030	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:48	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:48	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:48	7440-43-9	
Chromium	0.0018J	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:48	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:48	7440-48-4	
Lead	0.000090J	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:48	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:48	7439-93-2	
Molybdenum	0.12	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:48	7439-98-7	
Selenium	0.0022J	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:48	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:48	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:29	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 23:55	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWC-14</b>		Lab ID: <b>92491455009</b>		Collected: 08/18/20 14:24		Received: 08/19/20 12:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>5.56</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:54	7440-36-0	
Arsenic	<b>0.0012J</b>	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:54	7440-38-2	
Barium	<b>0.028</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:54	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:54	7440-43-9	
Chromium	<b>0.00059J</b>	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:54	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:54	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:54	7439-93-2	
Molybdenum	<b>0.017</b>	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:54	7439-98-7	
Selenium	<b>0.0029J</b>	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:54	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:32	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 00:35	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: GWC-2      Lab ID: 92491455010      Collected: 08/18/20 15:23      Received: 08/19/20 12:45      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.60	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B      Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 20:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 20:00	7440-38-2	
Barium	0.050	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 20:00	7440-39-3	
Beryllium	0.000051J	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 20:00	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 20:00	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 20:00	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 20:00	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 20:00	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 20:00	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 20:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 20:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 20:00	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A      Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:34	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 00:49	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWC-17</b>		Lab ID: <b>92491455011</b>		Collected: 08/18/20 14:50	Received: 08/19/20 12:45	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>4.31</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 20:05	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 20:05	7440-38-2	
Barium	<b>0.074</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 20:05	7440-39-3	
Beryllium	<b>0.0016J</b>	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 20:05	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 20:05	7440-43-9	
Chromium	<b>0.0011J</b>	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 20:05	7440-47-3	
Cobalt	<b>0.0025J</b>	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 20:05	7440-48-4	
Lead	<b>0.00014J</b>	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 20:05	7439-92-1	
Lithium	<b>0.0065J</b>	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 20:05	7439-93-2	
Molybdenum	<b>0.00092J</b>	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 20:05	7439-98-7	
Selenium	<b>0.0020J</b>	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 20:05	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 20:05	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:36	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	<b>0.51</b>	mg/L	0.10	0.050	1		08/21/20 01:02	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWC-20</b>		Lab ID: <b>92491455012</b>		Collected: 08/18/20 16:36		Received: 08/19/20 12:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>5.89</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 20:11	7440-36-0	
Arsenic	<b>0.30</b>	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 20:11	7440-38-2	
Barium	<b>0.38</b>	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 20:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 20:11	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 20:11	7440-43-9	
Chromium	<b>0.0011J</b>	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 20:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 20:11	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 20:11	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 20:11	7439-93-2	
Molybdenum	<b>0.097</b>	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 20:11	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 20:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 20:11	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:39	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 01:43	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: GWC-11		Lab ID: 92491455013		Collected: 08/18/20 10:45		Received: 08/19/20 12:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	4.41	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00064J	mg/L	0.0030	0.00028	1	08/24/20 15:05	08/25/20 16:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/24/20 15:05	08/25/20 16:20	7440-38-2	
Barium	0.12	mg/L	0.010	0.00071	1	08/24/20 15:05	08/25/20 16:20	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/24/20 15:05	08/25/20 16:20	7440-41-7	
Cadmium	0.00058J	mg/L	0.0025	0.00012	1	08/24/20 15:05	08/25/20 16:20	7440-43-9	
Chromium	0.0015J	mg/L	0.010	0.00055	1	08/24/20 15:05	08/25/20 16:20	7440-47-3	
Cobalt	0.00040J	mg/L	0.0050	0.00038	1	08/24/20 15:05	08/25/20 16:20	7440-48-4	
Lead	0.00035J	mg/L	0.0050	0.000036	1	08/24/20 15:05	08/26/20 16:32	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:05	08/25/20 16:20	7439-93-2	
Molybdenum	0.00077J	mg/L	0.010	0.00069	1	08/24/20 15:05	08/25/20 16:20	7439-98-7	
Selenium	0.0028J	mg/L	0.010	0.0016	1	08/24/20 15:05	08/25/20 16:20	7782-49-2	
Thallium	0.00021J	mg/L	0.0010	0.00014	1	08/24/20 15:05	08/26/20 16:32	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:38	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 02:23	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-22**      **Lab ID: 92491455014**      Collected: 08/18/20 14:30      Received: 08/19/20 12:45      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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**Field Data**

Analytical Method:  
Pace Analytical Services - Charlotte

pH	4.52	Std. Units			1		08/20/20 17:18		
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**6020 MET ICPMS**

Analytical Method: EPA 6020B      Preparation Method: EPA 3005A  
Pace Analytical Services - Peachtree Corners, GA

Antimony	0.0022J	mg/L	0.0030	0.00028	1	08/24/20 15:05	08/25/20 16:43	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/24/20 15:05	08/25/20 16:43	7440-38-2	
Barium	0.085	mg/L	0.010	0.00071	1	08/24/20 15:05	08/25/20 16:43	7440-39-3	
Beryllium	0.000076J	mg/L	0.0030	0.000046	1	08/24/20 15:05	08/25/20 16:43	7440-41-7	
Cadmium	0.00024J	mg/L	0.0025	0.00012	1	08/24/20 15:05	08/25/20 16:43	7440-43-9	
Chromium	0.00056J	mg/L	0.010	0.00055	1	08/24/20 15:05	08/25/20 16:43	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:05	08/25/20 16:43	7440-48-4	
Lead	0.00072J	mg/L	0.0050	0.000036	1	08/24/20 15:05	08/26/20 16:49	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:05	08/25/20 16:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:05	08/25/20 16:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:05	08/25/20 16:43	7782-49-2	
Thallium	0.00017J	mg/L	0.0010	0.00014	1	08/24/20 15:05	08/26/20 16:49	7440-28-0	

**7470 Mercury**

Analytical Method: EPA 7470A      Preparation Method: EPA 7470A  
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:40	7439-97-6	
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**300.0 IC Anions 28 Days**

Analytical Method: EPA 300.0 Rev 2.1 1993  
Pace Analytical Services - Asheville

Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 02:37	16984-48-8	
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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: EB-2-8-18-20      Lab ID: 92491455015      Collected: 08/18/20 16:50      Received: 08/19/20 12:45      Matrix: Water										
Parameters	Results	Units	Report Limit		MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>										
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA										
Antimony	0.00059J	mg/L	0.0030	0.00028	1	08/24/20 15:05	08/25/20 16:48	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	08/24/20 15:05	08/25/20 16:48	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	08/24/20 15:05	08/25/20 16:48	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	08/24/20 15:05	08/25/20 16:48	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:05	08/25/20 16:48	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	08/24/20 15:05	08/25/20 16:48	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:05	08/25/20 16:48	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	08/24/20 15:05	08/26/20 16:55	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:05	08/25/20 16:48	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:05	08/25/20 16:48	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:05	08/25/20 16:48	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:05	08/26/20 16:55	7440-28-0		
<b>7470 Mercury</b>										
Analytical Method: EPA 7470A    Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA										
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:47	7439-97-6		
<b>300.0 IC Anions 28 Days</b>										
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville										
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 03:17	16984-48-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: DUP-2      Lab ID: 92491455016      Collected: 08/18/20 00:00      Received: 08/19/20 12:45      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.00062J	mg/L	0.0030	0.00028	1	08/24/20 15:05	08/25/20 16:54	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/24/20 15:05	08/25/20 16:54	7440-38-2	
Barium	0.083	mg/L	0.010	0.00071	1	08/24/20 15:05	08/25/20 16:54	7440-39-3	
Beryllium	0.000063J	mg/L	0.0030	0.000046	1	08/24/20 15:05	08/25/20 16:54	7440-41-7	
Cadmium	0.00019J	mg/L	0.0025	0.00012	1	08/24/20 15:05	08/25/20 16:54	7440-43-9	
Chromium	0.00070J	mg/L	0.010	0.00055	1	08/24/20 15:05	08/25/20 16:54	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:05	08/25/20 16:54	7440-48-4	
Lead	0.00066J	mg/L	0.0050	0.000036	1	08/24/20 15:05	08/26/20 17:00	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:05	08/25/20 16:54	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:05	08/25/20 16:54	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:05	08/25/20 16:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:05	08/26/20 17:00	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A    Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:50	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 03:31	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>FB-1-8-19-20</b> Lab ID: <b>92491455017</b> Collected: 08/19/20 10:30      Received: 08/20/20 12:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.0019J</b>	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 15:43	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 15:43	7440-38-2	
Barium	ND	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 15:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 15:43	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 15:43	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 15:43	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 15:43	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 15:43	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 15:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 15:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 15:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 15:43	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A    Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:02	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 23:05	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>FB-2-8-19-20</b> Lab ID: <b>92491455018</b> Collected: 08/19/20 09:00      Received: 08/20/20 12:20      Matrix: Water										
Parameters	Results	Units	Report Limit		MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>										
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA										
Antimony	<b>0.00060J</b>	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 15:48	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 15:48	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 15:48	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 15:48	7440-41-7		
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 15:48	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 15:48	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 15:48	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 15:48	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 15:48	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 15:48	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 15:48	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 15:48	7440-28-0		
<b>7470 Mercury</b>										
Analytical Method: EPA 7470A    Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA										
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:04	7439-97-6		
<b>300.0 IC Anions 28 Days</b>										
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville										
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 23:18	16984-48-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-1**      **Lab ID: 92491455019**      Collected: 08/19/20 09:35      Received: 08/20/20 12:20      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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**Field Data**

Analytical Method:  
Pace Analytical Services - Charlotte

pH	<b>5.73</b>	Std. Units			1		08/20/20 17:18		
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**6020 MET ICPMS**

Analytical Method: EPA 6020B      Preparation Method: EPA 3005A  
Pace Analytical Services - Peachtree Corners, GA

Antimony	<b>0.00061J</b>	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 15:54	7440-36-0	
Arsenic	<b>0.0070</b>	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 15:54	7440-38-2	
Barium	<b>0.057</b>	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 15:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 15:54	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 15:54	7440-43-9	
Chromium	<b>0.0028J</b>	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 15:54	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 15:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 15:54	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 15:54	7439-93-2	
Molybdenum	<b>0.061</b>	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 15:54	7439-98-7	
Selenium	<b>0.0020J</b>	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 15:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 15:54	7440-28-0	

**7470 Mercury**

Analytical Method: EPA 7470A      Preparation Method: EPA 7470A  
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:06	7439-97-6	
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**300.0 IC Anions 28 Days**

Analytical Method: EPA 300.0 Rev 2.1 1993  
Pace Analytical Services - Asheville

Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 23:32	16984-48-8	
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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-9**      **Lab ID: 92491455020**      Collected: 08/19/20 09:20      Received: 08/20/20 12:20      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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**Field Data**

Analytical Method:  
Pace Analytical Services - Charlotte

pH	<b>4.58</b>	Std. Units			1		08/20/20 17:18		
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**6020 MET ICPMS**

Analytical Method: EPA 6020B      Preparation Method: EPA 3005A  
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 16:00	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 16:00	7440-38-2	
Barium	<b>0.17</b>	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 16:00	7440-39-3	
Beryllium	<b>0.00022J</b>	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 16:00	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 16:00	7440-43-9	
Chromium	<b>0.0013J</b>	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 16:00	7440-47-3	
Cobalt	<b>0.0011J</b>	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 16:00	7440-48-4	
Lead	<b>0.000096J</b>	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 16:00	7439-92-1	
Lithium	<b>0.0019J</b>	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 16:00	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 16:00	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 16:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 16:00	7440-28-0	

**7470 Mercury**

Analytical Method: EPA 7470A      Preparation Method: EPA 7470A  
Pace Analytical Services - Peachtree Corners, GA

Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:09	7439-97-6	
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**300.0 IC Anions 28 Days**

Analytical Method: EPA 300.0 Rev 2.1 1993  
Pace Analytical Services - Asheville

Fluoride	<b>0.092J</b>	mg/L	0.10	0.050	1		08/21/20 23:45	16984-48-8	
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### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWB-5R</b>		Lab ID: <b>92491455021</b>		Collected: 08/19/20 11:58		Received: 08/20/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>5.14</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 16:25	7440-36-0	
Arsenic	<b>0.0019J</b>	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 16:25	7440-38-2	
Barium	<b>0.10</b>	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 16:25	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 16:25	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 16:25	7440-43-9	
Chromium	<b>0.0012J</b>	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 16:25	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 16:25	7440-48-4	
Lead	<b>0.000079J</b>	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 16:25	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 16:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 16:25	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 16:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 16:25	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:16	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 23:59	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: GWA-7		Lab ID: 92491455022		Collected: 08/19/20 10:30		Received: 08/20/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.81	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.015	0.0014	5	08/24/20 15:10	08/27/20 16:30	7440-36-0	D3
Arsenic	0.0060J	mg/L	0.025	0.0039	5	08/24/20 15:10	08/27/20 16:30	7440-38-2	D3
Barium	0.10	mg/L	0.050	0.0036	5	08/24/20 15:10	08/27/20 16:30	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00023	5	08/24/20 15:10	08/27/20 16:30	7440-41-7	D3
Cadmium	ND	mg/L	0.012	0.00059	5	08/24/20 15:10	08/27/20 16:30	7440-43-9	D3
Chromium	0.015J	mg/L	0.050	0.0028	5	08/24/20 15:10	08/27/20 16:30	7440-47-3	D3
Cobalt	0.0021J	mg/L	0.025	0.0019	5	08/24/20 15:10	08/27/20 16:30	7440-48-4	D3
Lead	0.0044J	mg/L	0.025	0.00018	5	08/24/20 15:10	08/27/20 16:30	7439-92-1	D3
Lithium	ND	mg/L	0.15	0.0040	5	08/24/20 15:10	08/27/20 16:30	7439-93-2	D3
Molybdenum	ND	mg/L	0.050	0.0034	5	08/24/20 15:10	08/27/20 16:30	7439-98-7	D3
Selenium	ND	mg/L	0.050	0.0078	5	08/24/20 15:10	08/27/20 16:30	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00072	5	08/24/20 15:10	08/27/20 16:30	7440-28-0	D3
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:18	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	0.21	mg/L	0.10	0.050	1		08/22/20 23:51	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWB-4R</b>		Lab ID: <b>92491455023</b>		Collected: 08/19/20 11:45		Received: 08/20/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>5.70</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 16:36	7440-36-0	
Arsenic	<b>0.0033J</b>	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 16:36	7440-38-2	
Barium	<b>0.076</b>	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 16:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 16:36	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 16:36	7440-43-9	
Chromium	<b>0.0022J</b>	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 16:36	7440-47-3	
Cobalt	<b>0.00072J</b>	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 16:36	7440-48-4	
Lead	<b>0.00048J</b>	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 16:36	7439-92-1	
Lithium	<b>0.014J</b>	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 16:36	7439-93-2	
Molybdenum	<b>0.16</b>	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 16:36	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 16:36	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 16:36	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:20	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	<b>0.17</b>	mg/L	0.10	0.050	1		08/23/20 00:06	16984-48-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Sample: <b>GWB-6R</b>		Lab ID: <b>92491455024</b>		Collected: 08/19/20 14:00		Received: 08/20/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>5.21</b>	Std. Units			1		08/20/20 17:18		
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 16:42	7440-36-0	
Arsenic	<b>0.0036J</b>	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 16:42	7440-38-2	
Barium	<b>0.064</b>	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 16:42	7440-39-3	
Beryllium	<b>0.000050J</b>	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 16:42	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 16:42	7440-43-9	
Chromium	<b>0.0037J</b>	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 16:42	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 16:42	7440-48-4	
Lead	<b>0.00014J</b>	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 16:42	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 16:42	7439-93-2	
Molybdenum	<b>0.0010J</b>	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 16:42	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 16:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 16:42	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:23	7439-97-6	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993									
Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/23/20 00:21	16984-48-8	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch: 561324 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020 MET  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92491455001, 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012

METHOD BLANK: 2977587 Matrix: Water  
Associated Lab Samples: 92491455001, 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/21/20 17:31	
Arsenic	mg/L	ND	0.0050	0.00078	08/21/20 17:31	
Barium	mg/L	ND	0.010	0.00071	08/21/20 17:31	
Beryllium	mg/L	ND	0.0030	0.000046	08/21/20 17:31	
Cadmium	mg/L	ND	0.0025	0.00012	08/21/20 17:31	
Chromium	mg/L	ND	0.010	0.00055	08/21/20 17:31	
Cobalt	mg/L	ND	0.0050	0.00038	08/21/20 17:31	
Lead	mg/L	ND	0.0050	0.000036	08/21/20 17:31	
Lithium	mg/L	ND	0.030	0.00081	08/21/20 17:31	
Molybdenum	mg/L	ND	0.010	0.00069	08/21/20 17:31	
Selenium	mg/L	ND	0.010	0.0016	08/21/20 17:31	
Thallium	mg/L	ND	0.0010	0.00014	08/21/20 17:31	

LABORATORY CONTROL SAMPLE: 2977588

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	103	80-120	
Arsenic	mg/L	0.1	0.094	94	80-120	
Barium	mg/L	0.1	0.096	96	80-120	
Beryllium	mg/L	0.1	0.097	97	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.096	96	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977589 2977590

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		292491389001 Result	Spike Conc.	Spike Conc.	Result								
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	106	105	75-125	1	20		
Arsenic	mg/L	ND	0.1	0.1	0.094	0.095	94	95	75-125	2	20		
Barium	mg/L	0.022	0.1	0.1	0.13	0.12	108	96	75-125	9	20		

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Parameter	Units	2977589		2977590		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92491389001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Beryllium	mg/L	ND	0.1	0.1	0.095	0.097	95	97	75-125	2	20		
Cadmium	mg/L	ND	0.1	0.1	0.097	0.10	97	100	75-125	3	20		
Chromium	mg/L	0.0069J	0.1	0.1	0.11	0.11	102	101	75-125	1	20		
Cobalt	mg/L	0.00048J	0.1	0.1	0.10	0.099	99	99	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	1	20		
Lithium	mg/L	0.00095J	0.1	0.1	0.098	0.098	97	97	75-125	0	20		
Molybdenum	mg/L	0.0015J	0.1	0.1	0.10	0.10	99	101	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.095	0.091	94	90	75-125	4	20		
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20		

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch: 561963 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020 MET  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016

METHOD BLANK: 2980652 Matrix: Water  
Associated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/25/20 16:08	
Arsenic	mg/L	ND	0.0050	0.00078	08/25/20 16:08	
Barium	mg/L	ND	0.010	0.00071	08/25/20 16:08	
Beryllium	mg/L	ND	0.0030	0.000046	08/25/20 16:08	
Cadmium	mg/L	ND	0.0025	0.00012	08/25/20 16:08	
Chromium	mg/L	ND	0.010	0.00055	08/25/20 16:08	
Cobalt	mg/L	ND	0.0050	0.00038	08/25/20 16:08	
Lead	mg/L	ND	0.0050	0.000036	08/26/20 16:20	
Lithium	mg/L	ND	0.030	0.00081	08/25/20 16:08	
Molybdenum	mg/L	ND	0.010	0.00069	08/25/20 16:08	
Selenium	mg/L	ND	0.010	0.0016	08/25/20 16:08	
Thallium	mg/L	ND	0.0010	0.00014	08/26/20 16:20	

LABORATORY CONTROL SAMPLE: 2980653

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.098	98	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.097	97	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980654 2980655

Parameter	Units	2980654		2980655		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Antimony	mg/L	0.00064J	0.1	0.1	0.10	0.10	101	99	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Barium	mg/L	0.12	0.1	0.1	0.24	0.23	115	114	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.099	98	99	75-125	0	20	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Parameter	Units	2980654		2980655		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92491455013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Cadmium	mg/L	0.00058J	0.1	0.1	0.096	0.096	95	95	75-125	0	20	
Chromium	mg/L	0.0015J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Cobalt	mg/L	0.00040J	0.1	0.1	0.10	0.10	99	99	75-125	0	20	
Lead	mg/L	0.00035J	0.1	0.1	0.094	0.093	94	93	75-125	1	20	
Lithium	mg/L	ND	0.1	0.1	0.096	0.098	96	97	75-125	1	20	
Molybdenum	mg/L	0.00077J	0.1	0.1	0.10	0.10	102	99	75-125	2	20	
Selenium	mg/L	0.0028J	0.1	0.1	0.10	0.10	99	99	75-125	0	20	
Thallium	mg/L	0.00021J	0.1	0.1	0.094	0.093	94	93	75-125	1	20	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch: 561964 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020 MET  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024

METHOD BLANK: 2980659 Matrix: Water  
Associated Lab Samples: 92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	08/27/20 15:08	
Arsenic	mg/L	ND	0.0050	0.00078	08/27/20 15:08	
Barium	mg/L	ND	0.010	0.00071	08/27/20 15:08	
Beryllium	mg/L	ND	0.0030	0.000046	08/27/20 15:08	
Cadmium	mg/L	ND	0.0025	0.00012	08/27/20 15:08	
Chromium	mg/L	ND	0.010	0.00055	08/27/20 15:08	
Cobalt	mg/L	ND	0.0050	0.00038	08/27/20 15:08	
Lead	mg/L	ND	0.0050	0.000036	08/27/20 15:08	
Lithium	mg/L	ND	0.030	0.00081	08/27/20 15:08	
Molybdenum	mg/L	ND	0.010	0.00069	08/27/20 15:08	
Selenium	mg/L	ND	0.010	0.0016	08/27/20 15:08	
Thallium	mg/L	ND	0.0010	0.00014	08/27/20 15:08	

LABORATORY CONTROL SAMPLE: 2980660

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.096	96	80-120	
Thallium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980661 2980662

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Spike Conc.	Result	Result								
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	103	102	75-125	1	20		
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20		
Barium	mg/L	0.047	0.1	0.1	0.14	0.14	98	97	75-125	0	20		

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980661		2980662		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92491663009 Result	MS Spike Conc.	MSD Spike Conc.									
Beryllium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	20		
Cadmium	mg/L	ND	0.1	0.1	0.10	0.098	100	98	75-125	2	20		
Chromium	mg/L	0.012	0.1	0.1	0.12	0.11	106	102	75-125	4	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	103	102	75-125	1	20		
Lead	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20		
Lithium	mg/L	0.0010J	0.1	0.1	0.10	0.099	98	98	75-125	0	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	103	100	75-125	2	20		
Selenium	mg/L	0.0030J	0.1	0.1	0.10	0.10	99	102	75-125	3	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20		

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

QC Batch:	561377	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92491455001, 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012

METHOD BLANK: 2977870 Matrix: Water

Associated Lab Samples: 92491455001, 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000078	08/21/20 12:32	

LABORATORY CONTROL SAMPLE: 2977871

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0027	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977872 2977873

Parameter	Units	92491389001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0026	0.0026	104	106	75-125	2	20	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch:	561894	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016, 92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024

METHOD BLANK: 2980088 Matrix: Water  
Associated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016, 92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000078	08/25/20 08:19	

LABORATORY CONTROL SAMPLE: 2980089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980090 2980091

Parameter	Units	92491616002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0023	0.0026	90	102	75-125	12	20	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch: 561236 Analysis Method: EPA 300.0 Rev 2.1 1993  
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92491455001, 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011

METHOD BLANK: 2977010 Matrix: Water  
Associated Lab Samples: 92491455001, 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/20/20 16:29	

LABORATORY CONTROL SAMPLE: 2977011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977012 2977013

Parameter	Units	92490037006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.055J	2.5	2.5	2.7	2.4	107	94	90-110	12	10	R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977014 2977015

Parameter	Units	92491455002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.4	2.3	95	92	90-110	4	10	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch: 561238 Analysis Method: EPA 300.0 Rev 2.1 1993  
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92491455012, 92491455013, 92491455014, 92491455015, 92491455016

METHOD BLANK: 2977016 Matrix: Water  
Associated Lab Samples: 92491455012, 92491455013, 92491455014, 92491455015, 92491455016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/21/20 01:16	

LABORATORY CONTROL SAMPLE: 2977017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977018 2977019

Parameter	Units	92491455012		2977018		2977019		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result				
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	98	99	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2977020 2977021

Parameter	Units	92490037060		2977020		2977021		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result				
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	97	100	90-110	3	10

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch: 561506 Analysis Method: EPA 300.0 Rev 2.1 1993  
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92491455017, 92491455018, 92491455019, 92491455020, 92491455021

METHOD BLANK: 2978310 Matrix: Water  
Associated Lab Samples: 92491455017, 92491455018, 92491455019, 92491455020, 92491455021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/21/20 17:28	

LABORATORY CONTROL SAMPLE: 2978311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2978312 2978313

Parameter	Units	2978312		2978313		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92491393004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	0.17	2.5	2.5	3.0	3.0	112	112	90-110	0	10 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2978314 2978315

Parameter	Units	2978314		2978315		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92491663005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Fluoride	mg/L	0.060J	2.5	2.5	2.7	2.7	105	106	90-110	1	10

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch: 561764 Analysis Method: EPA 300.0 Rev 2.1 1993  
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92491455022, 92491455023, 92491455024

METHOD BLANK: 2979652 Matrix: Water  
Associated Lab Samples: 92491455022, 92491455023, 92491455024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	08/22/20 16:53	

LABORATORY CONTROL SAMPLE: 2979653

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979654 2979655

Parameter	Units	92491912001		MS		MSD		% Rec		Max		Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	106	108	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2979656 2979657

Parameter	Units	92491692001		MS		MSD		% Rec		Max		Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	107	109	90-110	2	10	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: DUP-1**      **Lab ID: 92491455001**      Collected: 08/17/20 00:00      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>0.475 ± 0.356 (0.629)</b> <b>C:87% T:NA</b>	pCi/L	09/02/20 07:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.401 ± 0.482 (1.01)</b> <b>C:62% T:77%</b>	pCi/L	09/09/20 13:44	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.876 ± 0.838 (1.64)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: EB-1-8-18-20**      **Lab ID: 92491455002**      Collected: 08/18/20 00:00      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.181 ± 0.115 (0.185)</b> <b>C:86% T:NA</b>	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.645 ± 0.510 (1.01)</b> <b>C:65% T:81%</b>	pCi/L	09/09/20 13:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.826 ± 0.625 (1.20)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWA-8**      **Lab ID: 92491455003**      Collected: 08/17/20 14:59      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.64 ± 0.340 (0.198)</b> <b>C:81% T:NA</b>	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.987 ± 0.488 (0.830)</b> <b>C:63% T:79%</b>	pCi/L	09/09/20 12:06	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.63 ± 0.828 (1.03)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-13**      **Lab ID: 92491455004**      Collected: 08/17/20 16:16      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.429 ± 0.150 (0.162)</b> <b>C:83% T:NA</b>	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.986 ± 0.510 (0.897)</b> <b>C:68% T:80%</b>	pCi/L	09/09/20 15:09	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.42 ± 0.660 (1.06)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-12**      **Lab ID: 92491455005**      Collected: 08/17/20 17:25      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.630 ± 0.176 (0.152)</b> <b>C:88% T:NA</b>	pCi/L	09/02/20 18:00	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.62 ± 0.620 (0.917)</b> <b>C:70% T:70%</b>	pCi/L	09/09/20 15:09	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.25 ± 0.796 (1.07)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-16**      **Lab ID: 92491455006**      Collected: 08/18/20 09:32      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>2.61 ± 0.460 (0.136)</b> <b>C:101% T:NA</b>	pCi/L	09/02/20 18:00	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.63 ± 0.625 (0.970)</b> <b>C:69% T:82%</b>	pCi/L	09/09/20 15:09	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>4.24 ± 1.09 (1.11)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-21**      **Lab ID: 92491455007**      Collected: 08/18/20 10:58      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.89 ± 0.372 (0.243)</b> <b>C:96% T:NA</b>	pCi/L	09/02/20 18:00	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.38 ± 0.583 (0.956)</b> <b>C:69% T:81%</b>	pCi/L	09/09/20 15:09	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>3.27 ± 0.955 (1.20)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-15**      **Lab ID: 92491455008**      Collected: 08/18/20 12:56      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.285 ± 0.129 (0.182)</b> <b>C:94% T:NA</b>	pCi/L	09/02/20 18:00	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.55 ± 0.588 (0.892)</b> <b>C:66% T:87%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.84 ± 0.717 (1.07)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-14**      **Lab ID: 92491455009**      Collected: 08/18/20 14:24      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.388 ± 0.152 (0.201)</b> <b>C:84% T:NA</b>	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.343 ± 0.564 (1.23)</b> <b>C:69% T:66%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.731 ± 0.716 (1.43)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-2**      **Lab ID: 92491455010**      Collected: 08/18/20 15:23      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>0.377 ± 0.150 (0.200)</b> <b>C:86% T:NA</b>	pCi/L	09/02/20 18:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.709 ± 0.486 (0.941)</b> <b>C:71% T:79%</b>	pCi/L	09/09/20 15:10	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.09 ± 0.636 (1.14)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-17**      **Lab ID: 92491455011**      Collected: 08/18/20 14:50      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.97 ± 0.377 (0.171)</b> <b>C:93% T:NA</b>	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.14 ± 0.669 (1.24)</b> <b>C:71% T:60%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>3.11 ± 1.05 (1.41)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-20**      **Lab ID: 92491455012**      Collected: 08/18/20 16:36      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>3.09 ± 0.537 (0.138)</b> <b>C:97% T:NA</b>	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>3.77 ± 0.976 (0.980)</b> <b>C:69% T:77%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>6.86 ± 1.51 (1.12)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-11**      **Lab ID: 92491455013**      Collected: 08/18/20 10:45      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>3.22 ± 0.562 (0.179)</b> <b>C:89% T:NA</b>	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>3.54 ± 1.00 (1.17)</b> <b>C:58% T:80%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>6.76 ± 1.56 (1.35)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-22**      **Lab ID: 92491455014**      Collected: 08/18/20 14:30      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>4.29 ± 0.717 (0.153)</b> <b>C:87% T:NA</b>	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>3.36 ± 0.984 (1.23)</b> <b>C:68% T:68%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>7.65 ± 1.70 (1.38)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: EB-2-8-18-20</b> <b>Lab ID: 92491455015</b> Collected: 08/18/20 16:50      Received: 08/19/20 12:45      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.0983 ± 0.0893 (0.156)</b> <b>C:82% T:NA</b>	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>-0.000828 ± 0.364 (0.850)</b> <b>C:64% T:88%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.0983 ± 0.453 (1.01)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: DUP-2**      **Lab ID: 92491455016**      Collected: 08/18/20 00:00      Received: 08/19/20 12:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>4.34 ± 0.723 (0.166)</b> <b>C:90% T:NA</b>	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>5.03 ± 1.20 (0.992)</b> <b>C:68% T:75%</b>	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>9.37 ± 1.92 (1.16)</b>	pCi/L	09/10/20 13:24	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: FB-1-8-19-20**      **Lab ID: 92491455017**      Collected: 08/19/20 10:30      Received: 08/20/20 12:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.0591 ± 0.0951 (0.185)</b> <b>C:94% T:NA</b>	pCi/L	09/03/20 16:47	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.0611 ± 0.357 (0.819)</b> <b>C:66% T:80%</b>	pCi/L	09/09/20 12:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.120 ± 0.452 (1.00)</b>	pCi/L	09/10/20 15:11	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: FB-2-8-19-20**      **Lab ID: 92491455018**      Collected: 08/19/20 09:00      Received: 08/20/20 12:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>-0.0223 ± 0.145 (0.305)</b> <b>C:87% T:NA</b>	pCi/L	09/03/20 16:47	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.820 ± 0.441 (0.761)</b> <b>C:62% T:78%</b>	pCi/L	09/09/20 12:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.820 ± 0.586 (1.07)</b>	pCi/L	09/10/20 15:11	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-1**      **Lab ID: 92491455019**      Collected: 08/19/20 09:35      Received: 08/20/20 12:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.08 ± 0.260 (0.235)</b> <b>C:87% T:NA</b>	pCi/L	09/03/20 16:47	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.830 ± 0.488 (0.892)</b> <b>C:63% T:77%</b>	pCi/L	09/09/20 12:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.91 ± 0.748 (1.13)</b>	pCi/L	09/10/20 15:11	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWC-9**      **Lab ID: 92491455020**      Collected: 08/19/20 09:20      Received: 08/20/20 12:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.20 ± 0.267 (0.192)</b> <b>C:90% T:NA</b>	pCi/L	09/03/20 16:47	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.14 ± 0.521 (0.849)</b> <b>C:59% T:83%</b>	pCi/L	09/09/20 15:08	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.34 ± 0.788 (1.04)</b>	pCi/L	09/10/20 15:11	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: GWB-5R</b> <b>Lab ID: 92491455021</b> Collected: 08/19/20 11:58      Received: 08/20/20 12:20      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>1.97 ± 0.388 (0.210)</b> <b>C:82% T:NA</b>	pCi/L	09/03/20 16:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.521 ± 0.444 (0.882)</b> <b>C:65% T:73%</b>	pCi/L	09/09/20 15:08	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>2.49 ± 0.832 (1.09)</b>	pCi/L	09/10/20 15:11	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWA-7**      **Lab ID: 92491455022**      Collected: 08/19/20 10:30      Received: 08/20/20 12:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>4.22 ± 1.13 (0.672)</b> <b>C:90% T:NA</b>	pCi/L	09/10/20 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.23 ± 0.583 (0.978)</b> <b>C:66% T:89%</b>	pCi/L	09/09/20 15:08	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>5.45 ± 1.71 (1.65)</b>	pCi/L	09/11/20 13:22	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWB-4R**      **Lab ID: 92491455023**      Collected: 08/19/20 11:45      Received: 08/20/20 12:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.89 ± 0.368 (0.222)</b> <b>C:94% T:NA</b>	pCi/L	09/03/20 18:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.21 ± 0.552 (0.915)</b> <b>C:67% T:77%</b>	pCi/L	09/09/20 15:08	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>3.10 ± 0.920 (1.14)</b>	pCi/L	09/10/20 15:11	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

**Sample: GWB-6R**      **Lab ID: 92491455024**      Collected: 08/19/20 14:00      Received: 08/20/20 12:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>3.78 ± 0.640 (0.184)</b> <b>C:88% T:NA</b>	pCi/L	09/03/20 18:45	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.754 ± 0.462 (0.836)</b> <b>C:61% T:79%</b>	pCi/L	09/09/20 15:08	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>4.53 ± 1.10 (1.02)</b>	pCi/L	09/10/20 15:11	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

QC Batch: 411435

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92491455001, 92491455002, 92491455003

METHOD BLANK: 1990342

Matrix: Water

Associated Lab Samples: 92491455001, 92491455002, 92491455003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.664 ± 0.374 (0.672) C:70% T:89%	pCi/L	09/09/20 12:03	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

QC Batch:	411439	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024		

METHOD BLANK:	1990347	Matrix:	Water
Associated Lab Samples:	92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.274 ± 0.326 (0.685) C:63% T:88%	pCi/L	09/09/20 12:01	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

QC Batch: 411373

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92491455001

METHOD BLANK: 1989993

Matrix: Water

Associated Lab Samples: 92491455001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0671 ± 0.195 (0.481) C:88% T:NA	pCi/L	09/02/20 07:31	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

QC Batch: 411436

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012, 92491455013, 92491455014, 92491455015, 92491455016

METHOD BLANK: 1990343

Matrix: Water

Associated Lab Samples: 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012, 92491455013, 92491455014, 92491455015, 92491455016

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.245 ± 0.335 (0.716) C:71% T:90%	pCi/L	09/09/20 15:09	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

QC Batch: 411375

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024

METHOD BLANK: 1989998

Matrix: Water

Associated Lab Samples: 92491455017, 92491455018, 92491455019, 92491455020, 92491455021, 92491455022, 92491455023, 92491455024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.135 ± 0.115 (0.203) C:91% T:NA	pCi/L	09/03/20 16:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

QC Batch: 411374

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012, 92491455013, 92491455014, 92491455015, 92491455016

METHOD BLANK: 1989996

Matrix: Water

Associated Lab Samples: 92491455002, 92491455003, 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012, 92491455013, 92491455014, 92491455015, 92491455016

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.241 ± 0.165 (0.285) C:87% T:NA	pCi/L	09/02/20 18:01	

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## QUALIFIERS

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.  
ND - Not Detected at or above adjusted reporting limit.  
TNTC - Too Numerous To Count  
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.  
MDL - Adjusted Method Detection Limit.  
PQL - Practical Quantitation Limit.  
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.  
S - Surrogate  
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.  
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.  
LCS(D) - Laboratory Control Sample (Duplicate)  
MS(D) - Matrix Spike (Duplicate)  
DUP - Sample Duplicate  
RPD - Relative Percent Difference  
NC - Not Calculable.  
SG - Silica Gel - Clean-Up  
U - Indicates the compound was analyzed for, but not detected.  
Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.  
A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.  
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.  
Act - Activity  
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).  
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)  
(MDC) - Minimum Detectable Concentration  
Trac - Tracer Recovery (%)  
Carr - Carrier Recovery (%)  
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.  
TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.  
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.  
R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92491455003	GWA-8				
92491455004	GWC-13				
92491455005	GWC-12				
92491455006	GWC-16				
92491455007	GWC-21				
92491455008	GWC-15				
92491455009	GWC-14				
92491455010	GWC-2				
92491455011	GWC-17				
92491455012	GWC-20				
92491455013	GWC-11				
92491455014	GWC-22				
92491455019	GWC-1				
92491455020	GWC-9				
92491455021	GWB-5R				
92491455022	GWA-7				
92491455023	GWB-4R				
92491455024	GWB-6R				
92491455001	DUP-1	EPA 3005A	561324	EPA 6020B	561396
92491455002	EB-1-8-18-20	EPA 3005A	561324	EPA 6020B	561396
92491455003	GWA-8	EPA 3005A	561324	EPA 6020B	561396
92491455004	GWC-13	EPA 3005A	561324	EPA 6020B	561396
92491455005	GWC-12	EPA 3005A	561324	EPA 6020B	561396
92491455006	GWC-16	EPA 3005A	561324	EPA 6020B	561396
92491455007	GWC-21	EPA 3005A	561324	EPA 6020B	561396
92491455008	GWC-15	EPA 3005A	561324	EPA 6020B	561396
92491455009	GWC-14	EPA 3005A	561324	EPA 6020B	561396
92491455010	GWC-2	EPA 3005A	561324	EPA 6020B	561396
92491455011	GWC-17	EPA 3005A	561324	EPA 6020B	561396
92491455012	GWC-20	EPA 3005A	561324	EPA 6020B	561396
92491455013	GWC-11	EPA 3005A	561963	EPA 6020B	562039
92491455014	GWC-22	EPA 3005A	561963	EPA 6020B	562039
92491455015	EB-2-8-18-20	EPA 3005A	561963	EPA 6020B	562039
92491455016	DUP-2	EPA 3005A	561963	EPA 6020B	562039
92491455017	FB-1-8-19-20	EPA 3005A	561964	EPA 6020B	562041
92491455018	FB-2-8-19-20	EPA 3005A	561964	EPA 6020B	562041
92491455019	GWC-1	EPA 3005A	561964	EPA 6020B	562041
92491455020	GWC-9	EPA 3005A	561964	EPA 6020B	562041
92491455021	GWB-5R	EPA 3005A	561964	EPA 6020B	562041
92491455022	GWA-7	EPA 3005A	561964	EPA 6020B	562041
92491455023	GWB-4R	EPA 3005A	561964	EPA 6020B	562041
92491455024	GWB-6R	EPA 3005A	561964	EPA 6020B	562041
92491455001	DUP-1	EPA 7470A	561377	EPA 7470A	561555
92491455002	EB-1-8-18-20	EPA 7470A	561377	EPA 7470A	561555
92491455003	GWA-8	EPA 7470A	561377	EPA 7470A	561555
92491455004	GWC-13	EPA 7470A	561377	EPA 7470A	561555
92491455005	GWC-12	EPA 7470A	561377	EPA 7470A	561555

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92491455006	GWC-16	EPA 7470A	561377	EPA 7470A	561555
92491455007	GWC-21	EPA 7470A	561377	EPA 7470A	561555
92491455008	GWC-15	EPA 7470A	561377	EPA 7470A	561555
92491455009	GWC-14	EPA 7470A	561377	EPA 7470A	561555
92491455010	GWC-2	EPA 7470A	561377	EPA 7470A	561555
92491455011	GWC-17	EPA 7470A	561377	EPA 7470A	561555
92491455012	GWC-20	EPA 7470A	561377	EPA 7470A	561555
92491455013	GWC-11	EPA 7470A	561894	EPA 7470A	562048
92491455014	GWC-22	EPA 7470A	561894	EPA 7470A	562048
92491455015	EB-2-8-18-20	EPA 7470A	561894	EPA 7470A	562048
92491455016	DUP-2	EPA 7470A	561894	EPA 7470A	562048
92491455017	FB-1-8-19-20	EPA 7470A	561894	EPA 7470A	562048
92491455018	FB-2-8-19-20	EPA 7470A	561894	EPA 7470A	562048
92491455019	GWC-1	EPA 7470A	561894	EPA 7470A	562048
92491455020	GWC-9	EPA 7470A	561894	EPA 7470A	562048
92491455021	GWB-5R	EPA 7470A	561894	EPA 7470A	562048
92491455022	GWA-7	EPA 7470A	561894	EPA 7470A	562048
92491455023	GWB-4R	EPA 7470A	561894	EPA 7470A	562048
92491455024	GWB-6R	EPA 7470A	561894	EPA 7470A	562048
92491455001	DUP-1	EPA 9315	411373		
92491455002	EB-1-8-18-20	EPA 9315	411374		
92491455003	GWA-8	EPA 9315	411374		
92491455004	GWC-13	EPA 9315	411374		
92491455005	GWC-12	EPA 9315	411374		
92491455006	GWC-16	EPA 9315	411374		
92491455007	GWC-21	EPA 9315	411374		
92491455008	GWC-15	EPA 9315	411374		
92491455009	GWC-14	EPA 9315	411374		
92491455010	GWC-2	EPA 9315	411374		
92491455011	GWC-17	EPA 9315	411374		
92491455012	GWC-20	EPA 9315	411374		
92491455013	GWC-11	EPA 9315	411374		
92491455014	GWC-22	EPA 9315	411374		
92491455015	EB-2-8-18-20	EPA 9315	411374		
92491455016	DUP-2	EPA 9315	411374		
92491455017	FB-1-8-19-20	EPA 9315	411375		
92491455018	FB-2-8-19-20	EPA 9315	411375		
92491455019	GWC-1	EPA 9315	411375		
92491455020	GWC-9	EPA 9315	411375		
92491455021	GWB-5R	EPA 9315	411375		
92491455022	GWA-7	EPA 9315	411375		
92491455023	GWB-4R	EPA 9315	411375		
92491455024	GWB-6R	EPA 9315	411375		
92491455001	DUP-1	EPA 9320	411435		
92491455002	EB-1-8-18-20	EPA 9320	411435		
92491455003	GWA-8	EPA 9320	411435		

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92491455004	GWC-13	EPA 9320	411436		
92491455005	GWC-12	EPA 9320	411436		
92491455006	GWC-16	EPA 9320	411436		
92491455007	GWC-21	EPA 9320	411436		
92491455008	GWC-15	EPA 9320	411436		
92491455009	GWC-14	EPA 9320	411436		
92491455010	GWC-2	EPA 9320	411436		
92491455011	GWC-17	EPA 9320	411436		
92491455012	GWC-20	EPA 9320	411436		
92491455013	GWC-11	EPA 9320	411436		
92491455014	GWC-22	EPA 9320	411436		
92491455015	EB-2-8-18-20	EPA 9320	411436		
92491455016	DUP-2	EPA 9320	411436		
92491455017	FB-1-8-19-20	EPA 9320	411439		
92491455018	FB-2-8-19-20	EPA 9320	411439		
92491455019	GWC-1	EPA 9320	411439		
92491455020	GWC-9	EPA 9320	411439		
92491455021	GWB-5R	EPA 9320	411439		
92491455022	GWA-7	EPA 9320	411439		
92491455023	GWB-4R	EPA 9320	411439		
92491455024	GWB-6R	EPA 9320	411439		
92491455001	DUP-1	Total Radium Calculation	413343		
92491455002	EB-1-8-18-20	Total Radium Calculation	413343		
92491455003	GWA-8	Total Radium Calculation	413343		
92491455004	GWC-13	Total Radium Calculation	413343		
92491455005	GWC-12	Total Radium Calculation	413343		
92491455006	GWC-16	Total Radium Calculation	413343		
92491455007	GWC-21	Total Radium Calculation	413343		
92491455008	GWC-15	Total Radium Calculation	413343		
92491455009	GWC-14	Total Radium Calculation	413343		
92491455010	GWC-2	Total Radium Calculation	413343		
92491455011	GWC-17	Total Radium Calculation	413343		
92491455012	GWC-20	Total Radium Calculation	413343		
92491455013	GWC-11	Total Radium Calculation	413343		
92491455014	GWC-22	Total Radium Calculation	413343		
92491455015	EB-2-8-18-20	Total Radium Calculation	413343		
92491455016	DUP-2	Total Radium Calculation	413343		
92491455017	FB-1-8-19-20	Total Radium Calculation	413382		
92491455018	FB-2-8-19-20	Total Radium Calculation	413382		
92491455019	GWC-1	Total Radium Calculation	413382		
92491455020	GWC-9	Total Radium Calculation	413382		
92491455021	GWB-5R	Total Radium Calculation	413382		
92491455022	GWA-7	Total Radium Calculation	413546		
92491455023	GWB-4R	Total Radium Calculation	413382		
92491455024	GWB-6R	Total Radium Calculation	413382		
92491455001	DUP-1	EPA 300.0 Rev 2.1 1993	561236		

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SCAN EVENT 2020  
Pace Project No.: 92491455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92491455002	EB-1-8-18-20	EPA 300.0 Rev 2.1 1993	561236		
92491455003	GWA-8	EPA 300.0 Rev 2.1 1993	561236		
92491455004	GWC-13	EPA 300.0 Rev 2.1 1993	561236		
92491455005	GWC-12	EPA 300.0 Rev 2.1 1993	561236		
92491455006	GWC-16	EPA 300.0 Rev 2.1 1993	561236		
92491455007	GWC-21	EPA 300.0 Rev 2.1 1993	561236		
92491455008	GWC-15	EPA 300.0 Rev 2.1 1993	561236		
92491455009	GWC-14	EPA 300.0 Rev 2.1 1993	561236		
92491455010	GWC-2	EPA 300.0 Rev 2.1 1993	561236		
92491455011	GWC-17	EPA 300.0 Rev 2.1 1993	561236		
92491455012	GWC-20	EPA 300.0 Rev 2.1 1993	561238		
92491455013	GWC-11	EPA 300.0 Rev 2.1 1993	561238		
92491455014	GWC-22	EPA 300.0 Rev 2.1 1993	561238		
92491455015	EB-2-8-18-20	EPA 300.0 Rev 2.1 1993	561238		
92491455016	DUP-2	EPA 300.0 Rev 2.1 1993	561238		
92491455017	FB-1-8-19-20	EPA 300.0 Rev 2.1 1993	561506		
92491455018	FB-2-8-19-20	EPA 300.0 Rev 2.1 1993	561506		
92491455019	GWC-1	EPA 300.0 Rev 2.1 1993	561506		
92491455020	GWC-9	EPA 300.0 Rev 2.1 1993	561506		
92491455021	GWB-5R	EPA 300.0 Rev 2.1 1993	561506		
92491455022	GWA-7	EPA 300.0 Rev 2.1 1993	561764		
92491455023	GWB-4R	EPA 300.0 Rev 2.1 1993	561764		
92491455024	GWB-6R	EPA 300.0 Rev 2.1 1993	561764		

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Sample Condition Upon Receipt

WO#: 92491455

Client Name: GA POWER



Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: 8/19/20

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other ZIPLOC

Thermometer Used Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 20/37/13 Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C Comments:

Project:  
Proj. Due Date:  
Proj. Name:

Date and Initials of person examining contents: KRW 8/19/20

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	DUPL, EB-1, GWC-16, GWC-21, metals container w/o label. DUPL pres. also w/o label.	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input type="checkbox"/> No		Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)





**CHAIN-OF-CUSTODY / Analytical Request Document**  
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
Requested Client Information:	Company: GA Power	Required Project Information:	Report To: SCS Contacts	Invoice Information:	Attention: Southern Co.
Address: Atlanta, GA		Copy To: ACC Contacts		Company Name:	
Phone:		Purchase Order No.:		Address:	
Requested Due Date/TAT: 10 Day		Project Name: Gunman Road - Scan Event 2020		Face Quote Reference:	
		Project Number:		Face Proposal Manager:	Kevin Herring
				Face Proposal #:	2926-1
		REGULATORY AGENCY		Requested Analysis Filtered (Y/N)	
		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER CCR		<input type="checkbox"/> Fluoride 300.0 <input type="checkbox"/> App. IV Metals 6020/7470 <input type="checkbox"/> RAD 228/226	
		Site Location: GA		Residual Chlorine (Y/N)	

ITEM #	Valid Matrix Codes MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives							Analysis Test	Fluoride 300.0	App. IV Metals 6020/7470	RAD 228/226	Residual Chlorine (Y/N)	Face Project No./Lab ID																		
			COMPOSITE	COMPOSITE						H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other							Y	N																
1	DUP-1	W/G			8/17/20	1454	4	✓																																
2	Field of 8-18-20 EB-1-8-18-20	W/G			8/18/20	1454	4	✓																																
3	GWA-8	W/G			8/18/20	1454	4	✓																																
4	GWA-10	W/G			8/18/20	1454	4	✓																																
5	GWA-12	W/G			8/18/20	1454	4	✓																																
6	GWA-16a	W/G			8/18/20	1454	4	✓																																
7	GWA-21	W/G			8/18/20	1454	4	✓																																
8	GWA-15	W/G			8/18/20	1454	4	✓																																
9	GWA-14	W/G			8/18/20	1454	4	✓																																
10	GWA-2	W/G			8/18/20	1454	4	✓																																
11	GWA-17	W/G			8/18/20	1454	4	✓																																
12	GWA-20	W/G			8/18/20	1454	4	✓																																

**ADDITIONAL COMMENTS**  
 Please note when the last sample for the event has been taken.

Requester's Signature: [Signature] DATE: 8-18-20 TIME: 0915  
 Accepted by Affiliation: [Signature] DATE: 8-19-20 TIME: 0915

Requester's Name and Signature: [Signature] DATE: 8-19-20

Sampler Name and Signature: [Signature] DATE: 8-19-20

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
2.0	Y	Y	Y

\*Important Note: By signing this form you are accepting Face's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



CHAIN-OF-CUSTODY / Analytical Request Document  
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:  
Company: GA Power  
Address: Atlanta, GA

Section B Required Project Information:  
Report To: SCS Contacts  
Corp To: ACC Contacts

Section C Invoice Information:  
Attention: Southern Co.  
Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Page: 2 of 2

Section D Required Client Information  
Valid Matrix Codes: PARABIO WATER, WATER, WASTE WATER, PRODUCT, SOL/SOLID, OIL, WASTE, AIR, OTHER, TISSUE  
Matrix Code: GWC-11, GWC-22, EB-2-2-18-20, Dep-2  
Sample ID: (A-Z, 0-9, /) - Sample IDs MUST BE UNIQUE  
Purchase Order No.: \_\_\_\_\_  
Project Name: Gurnman Road - Scan Event 2020  
Requested Dur Data/Freq: 10 Day  
Project Number: \_\_\_\_\_  
Requested Analysis Filtered (Y/N): \_\_\_\_\_

REGULATORY AGENCY  
NPDES  GROUND WATER  DRINKING WATER  
UST  RCRA  OTHER  CCR   
Site Location: GA  
STATE: GA

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives							Analysis Test	Y/N	Fluoride 300.0	App. IV Metals 6020/7470	RAD 226/228	Residual Chlorine (Y/N)	pH=				
			DATE	TIME						H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other								As	Pb	Cr	Mn
1	GWC-11		8-18-20	1645	8-18-20	1645	4	✓	✓	✓	✓						✓	✓	✓		pH= 4.41						
2	GWC-22		8-18-20	1430	8-18-20	1430	4	✓	✓	✓	✓						✓	✓	✓		pH= 4.52						
3	EB-2-2-18-20		8-18-20	1650			4	✓	✓	✓	✓						✓	✓	✓		pH= NA						
4	Dep-2						4	✓	✓	✓	✓						✓	✓	✓		pH= NA						
5																					pH=						
6																					pH=						
7																					pH=						
8																					pH=						
9																					pH=						
10																					pH=						
11																					pH=						
12																					pH=						
ADDITIONAL COMMENTS			REMARKS/USE/RY/AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS																	
Please note when the last sample for the event has been taken.					8-19-20	0815	M. STELLER	8-21-20	0815																		

SAMPLER NAME AND SIGNATURE: J. BERRY ROAD  
PRINT Name of SAMPLER: J. BERRY ROAD  
SIGNATURE OF SAMPLER: [Signature]  
DATE Signed (MM/DD/YY): 08/19/20  
Temp in °C: \_\_\_\_\_  
Received on Ice (Y/N): Y  
Custody Sealed Cooler (Y/N): Y  
Samples Intact (Y/N): Y

\*Important Note: By signing this form you are accepting Pace's NET-30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Sample Condition Upon Receipt

WO#: 92491455

Client Name: GA Power

PM: KLH1 Due Date: 09/02/20

CLIENT: GA-GA Power

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 233 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 21°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 8°C

Proj. Due Date: Proj. Name:

Date and Initials of person examining contents: 8/20/20 [Signature]

Table with 16 rows of checklist items (Chain of Custody Present, Chain of Custody Filled Out, etc.) and checkboxes.

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:
Company: GA Power
Address: Atlanta, GA

Section B Required Project Information:
Report To: SCS Contacts
Copy To: ACC Contacts

Section C Invoice Information:
Company Name: Southern Co.
Attention: Southern Co.
Address:
Phone:
E-mail:
Purchase Order No:
Project Name: Guntman Road - Scan Event 2020
Requested Due Date/TIME: 10 Day

Table with columns: ITEM #, Valid Matrix Codes, MATRIX CODE, SAMPLE TYPE, DATE, TIME, SAMPLE TEMP AT COLLECTION, # OF CONTAINERS, Preservatives, Analysis Test, Residual Chlorine, and SAMPLE CONDITIONS.

ADDITIONAL COMMENTS:
REQUINISHED BY / AFFILIATION:
ACCEPTED BY / AFFILIATION:
SAMPLER NAME AND SIGNATURE:
PRINT Name of SAMPLER:
SIGNATURE OF SAMPLER:
Temp in °C
Received on Ice (Y/N)
Custody Sealed Cooler (Y/N)
Samples Intact (Y/N)



# Quality Control Sample Performance Assessment



**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-228  
Analyst: LAL  
Date: 9/3/2020  
Worklist: 55839  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1989998
MB concentration:	0.135
MB Counting Uncertainty:	0.113
MB MDC:	0.203
MB Numerical Performance Indicator:	2.34
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCS (Y or N)?	N
LCS55839	LCS55839
Count Date:	9/4/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.502
Target Conc. (pCi/L, g, F):	4.785
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.098
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.782
Numerical Performance Indicator:	-1.72
Percent Recovery:	85.64%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92491393012
Duplicate Sample I.D.:	92491393012DUP
Sample Result (pCi/L, g, F):	0.684
Sample Duplicate Result (pCi/L, g, F):	0.375
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.377
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.254
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	(1.32) <i>CL</i>
Duplicate RPD:	57.84%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

\*\*\* Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*\*\*Batch must be re-processed due to unacceptable precision. N/A  
AM 9/4/2020

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (pCi/L, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
MS Spike Uncertainty (calculated):	
MSD Spike Uncertainty (calculated):	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	
MSD Numerical Performance Indicator:	
MS Percent Recovery:	
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

AM 9/4/2020

*Over time*

# Quality Control Sample Performance Assessment



**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-228  
Analyst: LAL  
Date: 9/3/2020  
Worklist: 55839  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1989998
MB concentration:	0.135
M/B Counting Uncertainty:	0.113
MB MDC:	0.203
MB Numerical Performance Indicator:	2.34
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSS-5539	LCSD55839
Count Date:	9/4/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.502
Target Conc. (pCi/L, g, F):	4.785
Uncertainty (Calculated):	0.057
Result (pCi/L, g, F):	4.098
LCs/LCSD Counting Uncertainty (pCi/L, g, F):	0.782
Numerical Performance Indicator:	-1.72
Percent Recovery:	85.64%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92491663008
Duplicate Sample I.D.:	92491663008DUP
Sample Result (pCi/L, g, F):	0.467
Sample Result Counting Uncertainty (pCi/L, g, F):	0.143
Sample Duplicate Result (pCi/L, g, F):	0.359
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.256
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	0.728
Duplicate RPD:	26.34%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

\*\*\*Batch must be re-prepped due to unacceptable precision: N/A

Comments:

Enter Duplicate sample IDs if other than LCS/LCSD in the space below:  
92491663008  
92491663008DUP

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc. (pCi/L, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
MS Spike Uncertainty (calculated):	
MSD Spike Uncertainty (calculated):	
Sample Result:	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Result:	
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	
MSD Numerical Performance Indicator:	
MS Percent Recovery:	
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	
MS/MSD Upper % Recovery Limits:	
MS/MSD Lower % Recovery Limits:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
Duplicate Numerical Performance Indicator (Based on the Percent Recoveries):	
MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	

9/4/2020  
TAR\_55839\_W.xls  
Total Alpha Radium (R104-3 11Feb2019).xls  
Quality

# Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226  
Analyst: LAL  
Date: 9/1/2020  
Worklist: 55837  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1909993
MB Concentration:	0.067
M/B Counting Uncertainty:	0.195
MB MDC:	0.481
MB Numerical Performance Indicator:	0.67
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
Count Date:	9/2/2020
Spike ID:	LCSD55837
Decay Corrected Spike Concentration (pCi/mL):	19.033
Volume Used (mL):	24.045
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.508
Uncertainty (Calculated):	4.738
Result (pCi/L, g, F):	0.057
Percent Recovery:	5.286
Status vs Numerical Indicator:	111.58%
Upper % Recovery Limits:	N/A
Lower % Recovery Limits:	Pass
	125%
	75%

Duplicate Sample Assessment	
Sample ID:	92490963004
Duplicate Sample ID:	92490963004DUP
Sample Result (pCi/L, g, F):	0.116
Sample Duplicate Result (pCi/L, g, F):	0.301
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.448
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.277
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-1.591
Duplicate RPD:	117.70%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***
% RPD Limit:	25%

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*\*\*Batch numbers as preppted not to unacceptable precision. N/A

LAM 9/2/2020

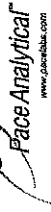
MS/MSD 1	MS/MSD 2
<p>Sample Matrix Spike Control Assessment</p> <p>Sample Collection Date: Sample I.D.: Sample MS I.D.: Sample MSD I.D.: Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):</p> <p>Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MS Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:</p>	

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D.: Sample MS I.D.: Sample MSD I.D.: Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:</p>

LAM 9/2/2020

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# Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: LAL  
Date: 9/1/2020  
Worklist: 55837  
Matrix: DW

**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Method Blank Assessment	
MB Sample ID	1969993
MB Concentration:	0.067
M/B Counting Uncertainty:	0.195
MB MDC:	0.481
MB Numerical Performance Indicator:	0.67
MB Status vs Numerical Indicator:	N/A
MB Status vs MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	Y	N
Count Date:	9/2/2020	LCS55837
Spike I.D.:	19-033	9/2/2020
Decay Corrected Spike Concentration (pCi/mL):	24.045	19-033
Volume Used (mL):	0.10	24.045
Aliquot Volume (L, g, F):	0.501	0.10
Target Conc. (pCi/L, g, F):	4.738	0.501
Uncertainty (Calculated):	0.057	4.797
Result (pCi/L, g, F):	5.286	0.058
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.868	4.329
Numerical Performance Indicator:	1.24	0.805
Percent Recovery:	111.58%	-1.13
Status vs Numerical Indicator:	N/A	90.26%
Upper % Recovery Limits:	Pass	N/A
Lower % Recovery Limits:	75%	Pass

Duplicate Sample Assessment	LCS (Y or N)?	
	Y	N
Sample I.D.:	LCS55837	LCS55837
Duplicate Sample I.D.:	LCS55837	LCS55837
Sample Result (pCi/L, g, F):	5.286	5.286
Sample Result Counting Uncertainty (pCi/L, g, F):	0.868	0.868
Sample Duplicate Result (pCi/L, g, F):	4.329	4.329
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.805	0.805
Are sample and/or duplicate results below RL?	NO	NO
Duplicate Numerical Performance Indicator:	1.584	1.584
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	21.13%	21.13%
Duplicate Status vs Numerical Indicator:	N/A	N/A
Duplicate Status vs RPD:	Pass	Pass
% RPD Limit:	25%	25%

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MSD Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

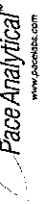
Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Percent Recovery: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

*09/01/2020*  
*09/01/2020*

*LAM9/2/2020*



# Quality Control Sample Performance Assessment



**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-226  
 Analyst: LAL  
 Date: 9/2/2020  
 Worklist: 55838  
 Matrix: DW

Method Blank Assessment	
MB Sample ID	1989996
MB Concentration:	0.241
M/B Counting Uncertainty:	0.161
MB MDC:	0.285
MB Numerical Performance Indicator:	2.94
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	Count Date:	LCSD55838
Decay Corrected Spike Concentration (pCi/mL):	9/2/2020	
Volume Used (mL):	19.033	
Aliquot Volume (L, g, F):	24.045	
Target Conc. (pCi/L, g, F):	0.10	
Uncertainty (Calculated):	0.501	
Result (pCi/L, g, F):	4.798	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.058	
Numerical Performance Indicator:	4.336	
Percent Recovery:	0.343	
Status vs Numerical Indicator:	-2.60	
Upper % Recovery Limits:	90.37%	
Lower % Recovery Limits:	N/A	
	Pass	
	125%	
	75%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92491663005
Duplicate Sample I.D.:	92491663005DUP
Sample Result (pCi/L, g, F):	0.117
Sample Result Counting Uncertainty (pCi/L, g, F):	0.110
Sample Duplicate Result (pCi/L, g, F):	0.098
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.087
Ave sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	0.253
Duplicate RPD:	16.83%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc.(pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

Jan 9/3/2020  
 Cu a. b. w

# Quality Control Sample Performance Assessment



**Analyst: Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-226  
Analyst: LAL  
Date: 9/2/2020  
Worklist: 55838  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1989996
MB concentration:	0.241
M/B Counting Uncertainty:	0.161
MB MDC:	0.285
MB Numerical Performance Indicator:	2.94
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSID (Y or N)?	Y
LCS55838	LCS055838
Count Date:	9/2/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.045
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.501
Target Conc. (pCi/L, g, F):	4.798
Uncertainty (Calculated):	0.058
Result (pCi/L, g, F):	4.783
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.364
Numerical Performance Indicator:	-2.60
Percent Recovery:	90.37%
Status vs Numerical Indicator:	N/A
Upper % Recovery Limits:	Pass
Lower % Recovery Limits:	125%
	75%

Duplicate Sample Assessment	
Sample I.D.:	LCS55838
Duplicate Sample I.D.:	LCS055838
Sample Result (pCi/L, g, F):	4.336
Sample Duplicate Result (pCi/L, g, F):	0.343
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	4.783
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.364
Ave sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.753
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	11.46%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

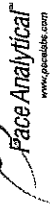
Comments:

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D.</p> <p>Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL):</p> <p>Spike Volume Used in MS (mL):</p> <p>Spike Volume Used in MSD (mL):</p> <p>MS Aliquot (L, g, F):</p> <p>MS Target Conc.(pCi/L, g, F):</p> <p>MSD Aliquot (L, g, F):</p> <p>MSD Target Conc. (pCi/L, g, F):</p> <p>MS Spike Uncertainty (calculated):</p> <p>MSD Spike Uncertainty (calculated):</p> <p>Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F):</p> <p>Matrix Spike Result: Sample Matrix Spike Result: Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):</p> <p>Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result: Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):</p> <p>MS Numerical Performance Indicator: MSD Numerical Performance Indicator:</p> <p>MS Percent Recovery: MSD Percent Recovery:</p> <p>MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator:</p> <p>MS Status vs Recovery: MSD Status vs Recovery:</p> <p>MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:</p>		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D. Sample MS I.D. Sample MSD I.D.</p> <p>Sample Matrix Spike Result: Sample Matrix Spike Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):</p> <p>Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD:</p> <p>MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:</p>

Jan 9/13/2020  
TAR\_55838\_VL.xls  
Total Alpha Radium (R104-3 11Feb2019).xls  
Cee 9.3.20

# Quality Control Sample Performance Assessment



**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-228  
Analyst: VAL  
Date: 9/2/2020  
Worklist: 55851  
Matrix: WT

Method Blank Assessment	
MB Sample ID	1990342
MB concentration:	0.664
MB 2 Sigma CSU:	0.374
MB MDC:	0.672
MB Numerical Performance Indicator:	3.48
MB Status vs Numerical Indicator:	Fail*
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS55851	Y
Count Date:	9/9/2020	LCS55851
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.472	38.472
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.812	0.803
Target Conc. (pCi/L, g, F):	4.737	4.789
Uncertainty (Calculated):	0.232	0.235
Result (pCi/L, g, F):	5.598	4.322
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.288	1.030
Numerical Performance Indicator:	1.29	-0.87
Percent Recovery:	118.17%	90.24%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	LCS/D (Y or N)?	Y
Sample I.D.:	LCS55851	
Duplicate Sample I.D.:	LCS55851	
Sample Result (pCi/L, g, F):	5.598	
Sample Duplicate Result (pCi/L, g, F):	1.288	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	4.322	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.030	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	1.516	
Duplicate Percent Recoveries:	26.80%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
Duplicate Percent Recoveries:
Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:
% RPD Limit:

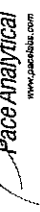
## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*if the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

*On 9.10.20*

# Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228  
Analyst: VAL  
Date: 9/2/2020  
Worklist: 55852  
Matrix: WT

Method Blank Assessment	
MB Sample ID	1990343
MB Concentration:	0.245
M/B 2 Sigma CSU:	0.335
MB MDC:	0.716
MB Numerical Performance Indicator:	1.43
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS55852	Y
Count Date:	9/9/2020	LCS55852
Spike I.D.:	20-030	9/9/2020
Decay Corrected Spike Concentration (pCi/mL):	38.470	20-030
Volume Used (mL):	0.10	38.470
Aliquot Volume (L, g, F):	0.801	0.10
Target Conc. (pCi/L, g, F):	4.804	4.799
Uncertainty (Calculated):	0.235	0.235
Result (pCi/L, g, F):	4.151	5.838
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.079	1.360
Numerical Performance Indicator:	-1.16	1.47
Percent Recovery:	86.42%	121.64%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS55852
Duplicate Sample I.D.:	LCS55852
Sample Result (pCi/L, g, F):	4.151
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.079
Sample Duplicate Result (pCi/L, g, F):	5.838
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.360
Are sample and/or duplicate results below RL?	NO
Duplicate Numerical Performance Indicator:	-1.903
Duplicate (Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	33.85%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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*Handwritten signature/initials*

# Quality Control Sample Performance Assessment

Analyst **Must Manually Enter All Fields Highlighted in Yellow.**



Test: Ra-228  
Analyst: VAL  
Date: 9/2/2020  
Worklist: 55853  
Matrix: WT

Method Blank Assessment	
MB Sample ID	1900347
MB concentration:	0.274
M/B 2 Sigma CSU:	0.326
MB MDC:	0.685
MB Numerical Performance Indicator:	1.65
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS/D55853	Y
Count Date:	9/9/2020	9/9/2020
Spike I.D.:	20-030	20-030
Decay Corrected Spike Concentration (pCi/mL):	38.472	38.472
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.810	0.812
Target Conc. (pCi/L, g, F):	4.748	4.736
Uncertainty (Calculated):	0.233	0.232
Result (pCi/L, g, F):	4.963	5.603
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.118	1.205
Numerical Performance Indicator:	0.37	1.38
Percent Recovery:	104.53%	118.30%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date:</p> <p>Sample I.D.</p> <p>Sample MS I.D.</p> <p>Sample MSD I.D.</p> <p>Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL):</p> <p>Spike Volume Used in MS (mL):</p> <p>Spike Volume Used in MSD (mL):</p> <p>MS Aliquot (L, g, F):</p> <p>MS Target Conc. (pCi/L, g, F):</p> <p>MSD Aliquot (L, g, F):</p> <p>MSD Target Conc. (pCi/L, g, F):</p> <p>MS Spike Uncertainty (calculated):</p> <p>MSD Spike Uncertainty (calculated):</p> <p>Sample Result:</p> <p>Sample Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>MS Numerical Performance Indicator:</p> <p>MSD Numerical Performance Indicator:</p> <p>MS Percent Recovery:</p> <p>MSD Percent Recovery:</p> <p>MS Status vs Numerical Indicator:</p> <p>MSD Status vs Numerical Indicator:</p> <p>MS Status vs Recovery:</p> <p>MSD Status vs Recovery:</p> <p>MS/MSD Upper % Recovery Limits:</p> <p>MS/MSD Lower % Recovery Limits:</p>		

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
<p>Sample I.D.:</p> <p>Duplicate Sample I.D.:</p> <p>Sample Result (pCi/L, g, F):</p> <p>Sample Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Sample Duplicate Result (pCi/L, g, F):</p> <p>Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Are sample and/or duplicate results below RL?</p> <p>Duplicate Numerical Performance Indicator:</p> <p>Duplicate Percent Recoveries) Duplicate RPD:</p> <p>Duplicate Status vs Numerical Indicator:</p> <p>Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>	<p>LCS/D55853</p> <p>LCS/D55853</p> <p>4.963</p> <p>1.118</p> <p>5.603</p> <p>1.205</p> <p>NO</p> <p>-0.762</p> <p>12.36%</p> <p>Pass</p> <p>Pass</p> <p>36%</p>

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D.</p> <p>Sample MS I.D.</p> <p>Sample MSD I.D.</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):</p> <p>Duplicate Numerical Performance Indicator:</p> <p>Duplicate Percent Recoveries) MS/MSD Duplicate RPD:</p> <p>MS/MSD Duplicate Status vs Numerical Indicator:</p> <p>MS/MSD Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

9-10-20

0202/01/10



August 27, 2020

Joju Abraham  
Georgia Power-CCR  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 20, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring  
kevin.herring@pacelabs.com  
1(704)875-9092  
HORIZON Database Administrator

Enclosures

cc: Owens Fuquea, ACC  
Kristen Jurinko  
Matt Malone, Atlantic Coast Consulting  
Betsy McDaniel, Atlantic Coast Consulting  
Evan Perry, Atlantic Coast Consulting  
Ms. Lauren Petty, Southern Co. Services



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

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### **Pace Analytical Services Charlotte**

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

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### **Pace Analytical Services Peachtree Corners**

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
92491818001	GWA-7	Water	08/19/20 10:30	08/20/20 12:20
92491818002	GWB-5R	Water	08/19/20 11:58	08/20/20 12:20

## REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92491818001	GWA-7	EPA 6020B	CW1	12
		EPA 7470A	VB	1
92491818002	GWB-5R	EPA 6020B	CW1	12
		EPA 7470A	VB	1

PASI-C = Pace Analytical Services - Charlotte  
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

**REPORT OF LABORATORY ANALYSIS**

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92491818001</b>	<b>GWA-7</b>					
	pH	5.81	Std. Units		08/20/20 16:59	
EPA 6020B	Antimony, Dissolved	0.00044J	mg/L	0.0030	08/24/20 18:04	
EPA 6020B	Arsenic, Dissolved	0.0024J	mg/L	0.0050	08/24/20 18:04	
EPA 6020B	Barium, Dissolved	0.082	mg/L	0.010	08/24/20 18:04	
EPA 6020B	Beryllium, Dissolved	0.00011J	mg/L	0.0030	08/24/20 18:04	
EPA 6020B	Chromium, Dissolved	0.010	mg/L	0.010	08/24/20 18:04	
EPA 6020B	Cobalt, Dissolved	0.0017J	mg/L	0.0050	08/24/20 18:04	
EPA 6020B	Lead, Dissolved	0.00015J	mg/L	0.0050	08/24/20 18:04	
EPA 6020B	Molybdenum, Dissolved	0.00070J	mg/L	0.010	08/24/20 18:04	
EPA 6020B	Selenium, Dissolved	0.0074J	mg/L	0.010	08/24/20 18:04	
<b>92491818002</b>	<b>GWB-5R</b>					
	pH	5.14	Std. Units		08/20/20 17:00	
EPA 6020B	Arsenic, Dissolved	0.0019J	mg/L	0.0050	08/24/20 18:10	
EPA 6020B	Barium, Dissolved	0.098	mg/L	0.010	08/24/20 18:10	
EPA 6020B	Beryllium, Dissolved	0.000058J	mg/L	0.0030	08/24/20 18:10	
EPA 6020B	Chromium, Dissolved	0.0029J	mg/L	0.010	08/24/20 18:10	
EPA 6020B	Lead, Dissolved	0.00089J	mg/L	0.0050	08/24/20 18:10	
EPA 7470A	Mercury, Dissolved	0.00011J	mg/L	0.00020	08/27/20 10:03	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

Sample: GWA-7		Lab ID: 92491818001		Collected: 08/19/20 10:30		Received: 08/20/20 12:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	5.81	Std. Units			1		08/20/20 16:59		
<b>6020 MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony, Dissolved	0.00044J	mg/L	0.0030	0.00028	1	08/24/20 12:49	08/24/20 18:04	7440-36-0	
Arsenic, Dissolved	0.0024J	mg/L	0.0050	0.00078	1	08/24/20 12:49	08/24/20 18:04	7440-38-2	
Barium, Dissolved	0.082	mg/L	0.010	0.00071	1	08/24/20 12:49	08/24/20 18:04	7440-39-3	
Beryllium, Dissolved	0.00011J	mg/L	0.0030	0.000046	1	08/24/20 12:49	08/24/20 18:04	7440-41-7	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00012	1	08/24/20 12:49	08/24/20 18:04	7440-43-9	
Chromium, Dissolved	0.010	mg/L	0.010	0.00055	1	08/24/20 12:49	08/24/20 18:04	7440-47-3	
Cobalt, Dissolved	0.0017J	mg/L	0.0050	0.00038	1	08/24/20 12:49	08/24/20 18:04	7440-48-4	
Lead, Dissolved	0.00015J	mg/L	0.0050	0.000036	1	08/24/20 12:49	08/24/20 18:04	7439-92-1	
Lithium, Dissolved	ND	mg/L	0.030	0.00081	1	08/24/20 12:49	08/24/20 18:04	7439-93-2	
Molybdenum, Dissolved	0.00070J	mg/L	0.010	0.00069	1	08/24/20 12:49	08/24/20 18:04	7439-98-7	
Selenium, Dissolved	0.0074J	mg/L	0.010	0.0016	1	08/24/20 12:49	08/24/20 18:04	7782-49-2	
Thallium, Dissolved	ND	mg/L	0.0010	0.00014	1	08/24/20 12:49	08/24/20 18:04	7440-28-0	
<b>7470 Mercury, Dissolved</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury, Dissolved	ND	mg/L	0.00020	0.000078	1	08/26/20 12:00	08/27/20 09:53	7439-97-6	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

Sample: <b>GWB-5R</b>		Lab ID: <b>92491818002</b>		Collected: 08/19/20 11:58	Received: 08/20/20 12:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
pH	<b>5.14</b>	Std. Units			1		08/20/20 17:00		
<b>6020 MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Pace Analytical Services - Peachtree Corners, GA									
Antimony, Dissolved	ND	mg/L	0.0030	0.00028	1	08/24/20 12:49	08/24/20 18:10	7440-36-0	
Arsenic, Dissolved	<b>0.0019J</b>	mg/L	0.0050	0.00078	1	08/24/20 12:49	08/24/20 18:10	7440-38-2	
Barium, Dissolved	<b>0.098</b>	mg/L	0.010	0.00071	1	08/24/20 12:49	08/24/20 18:10	7440-39-3	
Beryllium, Dissolved	<b>0.000058J</b>	mg/L	0.0030	0.000046	1	08/24/20 12:49	08/24/20 18:10	7440-41-7	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00012	1	08/24/20 12:49	08/24/20 18:10	7440-43-9	
Chromium, Dissolved	<b>0.0029J</b>	mg/L	0.010	0.00055	1	08/24/20 12:49	08/24/20 18:10	7440-47-3	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00038	1	08/24/20 12:49	08/24/20 18:10	7440-48-4	
Lead, Dissolved	<b>0.00089J</b>	mg/L	0.0050	0.000036	1	08/24/20 12:49	08/24/20 18:10	7439-92-1	
Lithium, Dissolved	ND	mg/L	0.030	0.00081	1	08/24/20 12:49	08/24/20 18:10	7439-93-2	
Molybdenum, Dissolved	ND	mg/L	0.010	0.00069	1	08/24/20 12:49	08/24/20 18:10	7439-98-7	
Selenium, Dissolved	ND	mg/L	0.010	0.0016	1	08/24/20 12:49	08/24/20 18:10	7782-49-2	
Thallium, Dissolved	ND	mg/L	0.0010	0.00014	1	08/24/20 12:49	08/24/20 18:10	7440-28-0	
<b>7470 Mercury, Dissolved</b>									
Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Pace Analytical Services - Peachtree Corners, GA									
Mercury, Dissolved	<b>0.00011J</b>	mg/L	0.00020	0.000078	1	08/26/20 12:00	08/27/20 10:03	7439-97-6	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

QC Batch: 561952      Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A      Analysis Description: 6020 MET Dissolved  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92491818001, 92491818002

METHOD BLANK: 2980579      Matrix: Water  
Associated Lab Samples: 92491818001, 92491818002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	mg/L	ND	0.0030	0.00028	08/24/20 17:24	
Arsenic, Dissolved	mg/L	ND	0.0050	0.00078	08/24/20 17:24	
Barium, Dissolved	mg/L	ND	0.010	0.00071	08/24/20 17:24	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000046	08/24/20 17:24	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00012	08/24/20 17:24	
Chromium, Dissolved	mg/L	ND	0.010	0.00055	08/24/20 17:24	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00038	08/24/20 17:24	
Lead, Dissolved	mg/L	ND	0.0050	0.000036	08/24/20 17:24	
Lithium, Dissolved	mg/L	ND	0.030	0.00081	08/24/20 17:24	
Molybdenum, Dissolved	mg/L	ND	0.010	0.00069	08/24/20 17:24	
Selenium, Dissolved	mg/L	ND	0.010	0.0016	08/24/20 17:24	
Thallium, Dissolved	mg/L	ND	0.0010	0.00014	08/24/20 17:24	

METHOD BLANK: 2980581      Matrix: Water  
Associated Lab Samples: 92491818001, 92491818002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	mg/L	ND	0.0030	0.00028	08/24/20 17:30	
Arsenic, Dissolved	mg/L	ND	0.0050	0.00078	08/24/20 17:30	
Barium, Dissolved	mg/L	ND	0.010	0.00071	08/24/20 17:30	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000046	08/24/20 17:30	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00012	08/24/20 17:30	
Chromium, Dissolved	mg/L	ND	0.010	0.00055	08/24/20 17:30	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00038	08/24/20 17:30	
Lead, Dissolved	mg/L	ND	0.0050	0.000036	08/24/20 17:30	
Lithium, Dissolved	mg/L	ND	0.030	0.00081	08/24/20 17:30	
Molybdenum, Dissolved	mg/L	ND	0.010	0.00069	08/24/20 17:30	
Selenium, Dissolved	mg/L	ND	0.010	0.0016	08/24/20 17:30	
Thallium, Dissolved	mg/L	ND	0.0010	0.00014	08/24/20 17:30	

LABORATORY CONTROL SAMPLE: 2980580

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	mg/L	0.1	0.10	103	80-120	
Arsenic, Dissolved	mg/L	0.1	0.098	98	80-120	
Barium, Dissolved	mg/L	0.1	0.096	96	80-120	
Beryllium, Dissolved	mg/L	0.1	0.099	99	80-120	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

LABORATORY CONTROL SAMPLE: 2980580

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	mg/L	0.1	0.10	100	80-120	
Chromium, Dissolved	mg/L	0.1	0.10	101	80-120	
Cobalt, Dissolved	mg/L	0.1	0.10	101	80-120	
Lead, Dissolved	mg/L	0.1	0.10	101	80-120	
Lithium, Dissolved	mg/L	0.1	0.10	100	80-120	
Molybdenum, Dissolved	mg/L	0.1	0.097	97	80-120	
Selenium, Dissolved	mg/L	0.1	0.097	97	80-120	
Thallium, Dissolved	mg/L	0.1	0.099	99	80-120	

LABORATORY CONTROL SAMPLE: 2980582

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	mg/L	0.1	0.085	85	80-120	
Arsenic, Dissolved	mg/L	0.1	0.10	100	80-120	
Barium, Dissolved	mg/L	0.1	0.097	97	80-120	
Beryllium, Dissolved	mg/L	0.1	0.094	94	80-120	
Cadmium, Dissolved	mg/L	0.1	0.10	103	80-120	
Chromium, Dissolved	mg/L	0.1	0.082	82	80-120	
Cobalt, Dissolved	mg/L	0.1	0.097	97	80-120	
Lead, Dissolved	mg/L	0.1	0.088	88	80-120	
Lithium, Dissolved	mg/L	0.1	0.096	96	80-120	
Molybdenum, Dissolved	mg/L	0.1	0.087	87	80-120	
Selenium, Dissolved	mg/L	0.1	0.10	104	80-120	
Thallium, Dissolved	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2980616 2980617

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92491818002 Result	Spike Conc.	Spike Conc.	Result							Result
Antimony, Dissolved	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Arsenic, Dissolved	mg/L	0.0019J	0.1	0.1	0.099	0.099	97	97	75-125	0	20	
Barium, Dissolved	mg/L	0.098	0.1	0.1	0.21	0.21	109	110	75-125	0	20	
Beryllium, Dissolved	mg/L	0.000058J	0.1	0.1	0.095	0.093	95	93	75-125	1	20	
Cadmium, Dissolved	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Chromium, Dissolved	mg/L	0.0029J	0.1	0.1	0.10	0.10	99	100	75-125	1	20	
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.099	0.097	98	97	75-125	2	20	
Lead, Dissolved	mg/L	0.00089J	0.1	0.1	0.10	0.099	99	99	75-125	1	20	
Lithium, Dissolved	mg/L	ND	0.1	0.1	0.097	0.095	96	94	75-125	2	20	
Molybdenum, Dissolved	mg/L	ND	0.1	0.1	0.099	0.099	98	98	75-125	0	20	
Selenium, Dissolved	mg/L	ND	0.1	0.1	0.090	0.091	88	89	75-125	1	20	
Thallium, Dissolved	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD - SCAN EVENT 2020  
Pace Project No.: 92491818

QC Batch: 562439      Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A      Analysis Description: 7470 Mercury Dissolved  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92491818001, 92491818002

METHOD BLANK: 2982838      Matrix: Water  
Associated Lab Samples: 92491818001, 92491818002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	mg/L	ND	0.00020	0.000078	08/27/20 09:48	

LABORATORY CONTROL SAMPLE: 2982839

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	mg/L	0.0025	0.0025	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2982840      2982841

Parameter	Units	2982840		2982841		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury, Dissolved	mg/L	ND	0.0025	0.0025	0.0023	99	91	75-125	8	20	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92491818001	GWA-7				
92491818002	GWB-5R				
92491818001	GWA-7	EPA 3005A	561952	EPA 6020B	561968
92491818002	GWB-5R	EPA 3005A	561952	EPA 6020B	561968
92491818001	GWA-7	EPA 7470A	562439	EPA 7470A	562584
92491818002	GWB-5R	EPA 7470A	562439	EPA 7470A	562584

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GA Power

WO#: **92491818**



Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no    Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used 233    Type of Ice:  Wet  Blue  None     Samples on ice, cooling process has begun

Cooler Temperature 2.1°C    Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C    Comments: \_\_\_\_\_

Date and initials of person examining contents: SPH/08/11

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

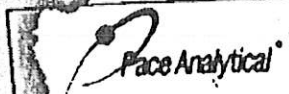
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:  
Bottle Identification Form (BIF)  
Document No.:  
F-CAR-CS-043-Rev.00

Document issued: March 14, 2019  
Page 1 of 1  
Issuing Authority:  
Pace Carolinas Quality Office

**WO#: 92491818**

PM: KLH1

Due Date: 09/03/20

CLIENT: GA-GA Power

\* Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

Bottom half of box is to list number of bottle

Project #

Matrix	Item#															
	BP4U-125 mL Plastic Unpreserved (N/A) (C-)															
	BP3U-250 mL Plastic Unpreserved (N/A)															
	BP2U-500 mL Plastic Unpreserved (N/A)															
	BP1U-1 liter Plastic Unpreserved (N/A)															
	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)															
	BP3N-250 mL plastic HNO3 (pH < 2)															
	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)															
	BP4C-125 mL Plastic NaOH (pH > 12) (C-)															
	WGFU-Wide-mouthed Glass Jar Unpreserved															
	AG1U-1 liter Amber Unpreserved (N/A) (C-)															
	AG1H-1 liter Amber HCl (pH < 2)															
	AG3U-250 mL Amber Unpreserved (N/A) (C-)															
	AG1S-1 liter Amber H2SO4 (pH < 2)															
	AG3S-250 mL Amber H2SO4 (pH < 2)															
	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)															
	DG9H-40 mL VOA HCl (N/A)															
	VG9T-40 mL VOA Na2S2O3 (N/A)															
	VG9U-40 mL VOA Unp (N/A)															
	DG9P-40 mL VOA H3PO4 (N/A)															
	VOAK (6 vials per kit)-VPH/Gas kit (N/A)															
	V/GK (3 vials per kit)-VPH/Gas kit (N/A)															
	SP5T-125 mL Sterile Plastic (N/A - lab)															
	SP2T-250 mL Sterile Plastic (N/A - lab)															
	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)															
	AG8U-100 mL Amber Unpreserved vials (N/A)															
	VSGU-20 mL Scintillation vials (N/A)															

**pH Adjustment Log for Preserved Samples**

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification C  
Out of hold, incorrect preservative, out of temp, incorrect containers.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information. Company: GA Power, Address: Atlanta, GA. Section B Required Project Information. Report To: SCS Contacts, Copy To: ACC Contacts. Section C Invoice Information. Attention: Southern Co., Company Name: Southern Co., Address: ...

REGULATORY AGENCY: NPDES, GROUND WATER, DRINKING WATER. Site Location: UST, RORA, OTHER. STATE: GA. Requested Analysis Filtered (Y/N). Requested Due Date/TAT: 10 Day.

Table with columns: ITEM #, SAMPLE ID (A-Z, 0-9 / -), Valid Matrix Codes, MATRIX CODE, SAMPLE TYPE, DATE, TIME, SAMPLE TEMP AT COLLECT ON, # OF CONTAINERS, Preservatives (Unpreserved, H2SO4, HNO3, HCl, NaOH, Na2S2O3, Methanol, Other), Analysis Test (Fluoride 300.0, App. IV Metals 6020/7470 - F.M.C., RAD 226/228), Residual Chlorine (Y/N), and SAMPLE CONDITIONS (pH=).

ADDITIONAL COMMENTS: Please note when the last sample for the event has been taken. RELINQUISHED BY / AFFILIATION: ACC, DATE: 8/14/20, TIME: 1226. ACCEPTED BY / AFFILIATION: K. W. ... DATE: 8/19/20, TIME: 1226.

SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: Jordan Bristford O. Foye, SIGNATURE of SAMPLER: [Signature]. DATE Signed (MM/DD/YYYY): 08/19/20. Temp in °C, Received on Ice (Y/N), Custody Sealed Cooler (Y/N), Samples Intact (Y/N).

Important Note: By signing this form you are accepting Face's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days. F-ALL-Q-020rev.07, 15-Feb-2007



October 19, 2020

Joju Abraham  
Georgia Power-CCR  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Dear Joju Abraham:

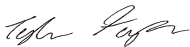
Enclosed are the analytical results for sample(s) received by the laboratory between September 30, 2020 and October 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tyler Forney for  
Kevin Herring  
kevin.herring@pacelabs.com  
1(704)875-9092  
HORIZON Database Administrator

Enclosures

cc: Owens Fuquea, ACC  
Kristen Jurinko  
Matt Malone, Atlantic Coast Consulting  
Betsy McDaniel, Atlantic Coast Consulting  
Evan Perry, Atlantic Coast Consulting  
Ms. Lauren Petty, Southern Co. Services



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

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### **Pace Analytical Services Charlotte**

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078  
Louisiana/NELAP Certification # LA170028  
North Carolina Drinking Water Certification #: 37706  
North Carolina Field Services Certification #: 5342  
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001  
Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
Virginia/VELAP Certification #: 460221

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### **Pace Analytical Services Asheville**

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
Massachusetts Certification #: M-NC030  
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

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### **Pace Analytical Services Peachtree Corners**

110 Technology Pkwy, Peachtree Corners, GA 30092  
Florida DOH Certification #: E87315  
Georgia DW Inorganics Certification #: 812  
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92498084001	GWA-7	Water	09/28/20 15:20	09/30/20 11:47
92498084002	GWC-13	Water	09/28/20 16:40	09/30/20 11:47
92498084003	GWA-8	Water	09/28/20 16:04	09/30/20 11:47
92498084004	GWC-1	Water	09/28/20 17:08	09/30/20 11:47
92498084005	FB-1-9-28-20	Water	09/28/20 16:55	09/30/20 11:47
92498084006	GWC-12	Water	09/29/20 09:35	09/30/20 11:47
92498084007	GWC-11	Water	09/29/20 12:20	09/30/20 11:47
92498084008	GWC-14	Water	09/29/20 14:42	09/30/20 11:47
92498084009	GWC-2	Water	09/29/20 15:05	09/30/20 11:47
92498084010	EB-1-9-29-20	Water	09/29/20 16:20	09/30/20 11:47
92498084011	DUP-1	Water	09/29/20 00:00	09/30/20 11:47
92498084012	GWC-21	Water	09/30/20 10:49	10/02/20 12:22
92498084013	GWC-15	Water	09/30/20 12:30	10/02/20 12:22
92498084014	GWC-16	Water	09/30/20 14:00	10/02/20 12:22
92498084015	GWC-20	Water	09/30/20 16:31	10/02/20 12:22
92498084016	GWB-4R	Water	10/01/20 08:50	10/02/20 12:22
92498084017	EB-2-9-30-20	Water	09/30/20 14:30	10/02/20 12:22
92498084018	DUP-2	Water	09/30/20 00:00	10/02/20 12:22
92498084019	GWC-17	Water	09/30/20 12:00	10/02/20 12:22
92498084020	GWC-22	Water	09/30/20 14:05	10/02/20 12:22
92498084021	GWB-6R	Water	09/30/20 15:35	10/02/20 12:22
92498084022	GWB-5R	Water	09/30/20 17:30	10/02/20 12:22
92498084023	FB-2-9-30-20	Water	09/30/20 15:25	10/02/20 12:22
92498084024	GWC-9	Water	10/01/20 08:21	10/02/20 12:22

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92498084001	GWA-7	EPA 6010D	DRB	1
		EPA 6020B	KH	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084002	GWC-13	EPA 6010D	DRB	1
		EPA 6020B	KH	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084003	GWA-8	EPA 6010D	DRB	1
		EPA 6020B	KH	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084004	GWC-1	EPA 6010D	DRB	1
		EPA 6020B	KH	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084005	FB-1-9-28-20	EPA 6010D	DRB	1
		EPA 6020B	KH	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084006	GWC-12	EPA 6010D	DRB	1
		EPA 6020B	KH	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084007	GWC-11	EPA 6010D	DRB	1
		EPA 6020B	KH	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084008	GWC-14	EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084009	GWC-2	EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084010	EB-1-9-29-20	EPA 6010D	DRB	1

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92498084011	DUP-1	EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
92498084012	GWC-21	SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
92498084013	GWC-15	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084014	GWC-16	EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
92498084015	GWC-20	EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
92498084016	GWB-4R	SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
92498084017	EB-2-9-30-20	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084018	DUP-2	EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
92498084019	GWC-17	EPA 6020B	CW1	15
		EPA 6010D	DRB	1

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92498084020	GWC-22	SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
92498084021	GWB-6R	EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
92498084022	GWB-5R	EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
92498084023	FB-2-9-30-20	EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
92498084024	GWC-9	SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3
		EPA 6010D	DRB	1
		EPA 6020B	CW1	15
		SM 2450C-2011	AW1	1
		EPA 300.0 Rev 2.1 1993	CDC	3

PASI-A = Pace Analytical Services - Asheville  
PASI-C = Pace Analytical Services - Charlotte  
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498084001</b>	<b>GWA-7</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	5.86	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	3.3	mg/L	1.0	10/05/20 22:02	
EPA 6020B	Barium	0.095	mg/L	0.050	10/06/20 19:16	
EPA 6020B	Boron	4.6	mg/L	0.20	10/06/20 19:16	
EPA 6020B	Chromium	0.014J	mg/L	0.050	10/06/20 19:16	D3
EPA 6020B	Lead	0.0043J	mg/L	0.025	10/06/20 19:16	D3
EPA 6020B	Selenium	0.010J	mg/L	0.050	10/06/20 19:16	D3
EPA 6020B	Vanadium	0.10	mg/L	0.050	10/06/20 19:16	
EPA 6020B	Zinc	0.16	mg/L	0.050	10/06/20 19:16	
SM 2450C-2011	Total Dissolved Solids	1450	mg/L	50.0	10/02/20 17:27	
EPA 300.0 Rev 2.1 1993	Chloride	113	mg/L	2.0	10/02/20 06:40	
EPA 300.0 Rev 2.1 1993	Fluoride	0.069J	mg/L	0.10	10/01/20 21:43	
EPA 300.0 Rev 2.1 1993	Sulfate	20.0	mg/L	1.0	10/01/20 21:43	
<b>92498084002</b>	<b>GWC-13</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	4.76	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	2.9	mg/L	1.0	10/05/20 22:07	
EPA 6020B	Barium	0.029	mg/L	0.010	10/06/20 19:22	
EPA 6020B	Boron	0.24	mg/L	0.040	10/06/20 19:22	
EPA 6020B	Chromium	0.00062J	mg/L	0.010	10/06/20 19:22	
EPA 6020B	Lead	0.000064J	mg/L	0.0050	10/06/20 19:22	
EPA 6020B	Zinc	0.016	mg/L	0.010	10/06/20 19:22	
SM 2450C-2011	Total Dissolved Solids	60.0	mg/L	10.0	10/02/20 17:27	
EPA 300.0 Rev 2.1 1993	Chloride	4.3	mg/L	1.0	10/01/20 21:58	
EPA 300.0 Rev 2.1 1993	Sulfate	25.6	mg/L	1.0	10/01/20 21:58	
<b>92498084003</b>	<b>GWA-8</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	4.41	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	25.6	mg/L	1.0	10/05/20 22:11	
EPA 6020B	Barium	0.050	mg/L	0.010	10/06/20 19:39	
EPA 6020B	Beryllium	0.00021J	mg/L	0.0030	10/06/20 19:39	
EPA 6020B	Boron	0.15	mg/L	0.040	10/06/20 19:39	
EPA 6020B	Chromium	0.00071J	mg/L	0.010	10/06/20 19:39	
EPA 6020B	Lithium	0.0010J	mg/L	0.030	10/06/20 19:39	
EPA 6020B	Zinc	0.0092J	mg/L	0.010	10/06/20 19:39	
SM 2450C-2011	Total Dissolved Solids	175	mg/L	10.0	10/02/20 17:27	
EPA 300.0 Rev 2.1 1993	Chloride	13.7	mg/L	1.0	10/01/20 22:12	
EPA 300.0 Rev 2.1 1993	Sulfate	93.6	mg/L	2.0	10/02/20 06:55	
<b>92498084004</b>	<b>GWC-1</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	5.79	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	70.7	mg/L	1.0	10/05/20 22:24	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498084004</b>	<b>GWC-1</b>					
EPA 6020B	Antimony	0.00035J	mg/L	0.0030	10/06/20 19:45	
EPA 6020B	Arsenic	0.0058	mg/L	0.0050	10/06/20 19:45	
EPA 6020B	Barium	0.051	mg/L	0.010	10/06/20 19:45	
EPA 6020B	Boron	0.69	mg/L	0.040	10/06/20 19:45	
EPA 6020B	Chromium	0.0024J	mg/L	0.010	10/06/20 19:45	
EPA 6020B	Lead	0.000043J	mg/L	0.0050	10/06/20 19:45	
EPA 6020B	Molybdenum	0.059	mg/L	0.010	10/06/20 19:45	
EPA 6020B	Vanadium	0.0042J	mg/L	0.010	10/06/20 19:45	
EPA 6020B	Zinc	0.0092J	mg/L	0.010	10/06/20 19:45	
SM 2450C-2011	Total Dissolved Solids	373	mg/L	10.0	10/02/20 17:27	
EPA 300.0 Rev 2.1 1993	Chloride	13.8	mg/L	1.0	10/01/20 22:27	
EPA 300.0 Rev 2.1 1993	Sulfate	71.6	mg/L	1.0	10/01/20 22:27	
<b>92498084006</b>	<b>GWC-12</b>					
	Performed by	CUSTOMER			10/12/20 16:37	
	pH	3.95	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	42.0	mg/L	1.0	10/05/20 22:33	
EPA 6020B	Barium	0.018	mg/L	0.010	10/06/20 19:56	
EPA 6020B	Beryllium	0.00043J	mg/L	0.0030	10/06/20 19:56	
EPA 6020B	Boron	4.7	mg/L	0.040	10/06/20 19:56	
EPA 6020B	Chromium	0.00085J	mg/L	0.010	10/06/20 19:56	
EPA 6020B	Cobalt	0.00057J	mg/L	0.0050	10/06/20 19:56	
EPA 6020B	Lead	0.000037J	mg/L	0.0050	10/06/20 19:56	
EPA 6020B	Lithium	0.00086J	mg/L	0.030	10/06/20 19:56	
EPA 6020B	Vanadium	0.0046J	mg/L	0.010	10/06/20 19:56	
EPA 6020B	Zinc	0.0074J	mg/L	0.010	10/06/20 19:56	
SM 2450C-2011	Total Dissolved Solids	440	mg/L	10.0	10/02/20 17:28	
EPA 300.0 Rev 2.1 1993	Chloride	24.3	mg/L	1.0	10/01/20 22:56	
EPA 300.0 Rev 2.1 1993	Fluoride	0.16	mg/L	0.10	10/01/20 22:56	
EPA 300.0 Rev 2.1 1993	Sulfate	237	mg/L	5.0	10/02/20 07:09	
<b>92498084007</b>	<b>GWC-11</b>					
	Performed by	CUSTOMER			10/12/20 16:37	
	pH	4.77	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	123	mg/L	1.0	10/05/20 22:37	
EPA 6020B	Antimony	0.00051J	mg/L	0.0030	10/06/20 20:02	
EPA 6020B	Barium	0.14	mg/L	0.010	10/06/20 20:02	
EPA 6020B	Boron	1.2	mg/L	0.040	10/06/20 20:02	
EPA 6020B	Cadmium	0.00077J	mg/L	0.0025	10/06/20 20:02	
EPA 6020B	Chromium	0.0011J	mg/L	0.010	10/06/20 20:02	
EPA 6020B	Cobalt	0.00055J	mg/L	0.0050	10/06/20 20:02	
EPA 6020B	Lead	0.00032J	mg/L	0.0050	10/06/20 20:02	
EPA 6020B	Selenium	0.0024J	mg/L	0.010	10/06/20 20:02	
EPA 6020B	Thallium	0.00017J	mg/L	0.0010	10/06/20 20:02	
EPA 6020B	Vanadium	0.0023J	mg/L	0.010	10/06/20 20:02	
EPA 6020B	Zinc	0.0031J	mg/L	0.010	10/06/20 20:02	
SM 2450C-2011	Total Dissolved Solids	1100	mg/L	50.0	10/02/20 17:28	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498084007</b>	<b>GWC-11</b>					
EPA 300.0 Rev 2.1 1993	Chloride	143	mg/L	11.0	10/02/20 07:23	
EPA 300.0 Rev 2.1 1993	Sulfate	516	mg/L	11.0	10/02/20 07:23	
<b>92498084008</b>	<b>GWC-14</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	5.69	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	30.8	mg/L	1.0	10/05/20 22:41	
EPA 6020B	Barium	0.026	mg/L	0.010	10/05/20 18:40	
EPA 6020B	Boron	0.053	mg/L	0.040	10/07/20 10:37	
EPA 6020B	Cadmium	0.00012J	mg/L	0.0025	10/05/20 18:40	
EPA 6020B	Molybdenum	0.0089J	mg/L	0.010	10/05/20 18:40	
EPA 6020B	Selenium	0.0051J	mg/L	0.010	10/05/20 18:40	
SM 2450C-2011	Total Dissolved Solids	187	mg/L	10.0	10/02/20 17:28	
EPA 300.0 Rev 2.1 1993	Chloride	10.6	mg/L	1.0	10/01/20 23:25	
EPA 300.0 Rev 2.1 1993	Sulfate	93.5	mg/L	1.0	10/01/20 23:25	M1
<b>92498084009</b>	<b>GWC-2</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	4.60	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	0.18J	mg/L	1.0	10/05/20 22:46	
EPA 6020B	Antimony	0.0016J	mg/L	0.0030	10/05/20 19:03	
EPA 6020B	Barium	0.049	mg/L	0.010	10/05/20 19:03	
EPA 6020B	Beryllium	0.000075J	mg/L	0.0030	10/05/20 19:03	
EPA 6020B	Boron	0.024J	mg/L	0.040	10/05/20 19:03	
EPA 6020B	Zinc	0.056	mg/L	0.010	10/05/20 19:03	
SM 2450C-2011	Total Dissolved Solids	33.0	mg/L	10.0	10/02/20 17:28	
EPA 300.0 Rev 2.1 1993	Chloride	5.4	mg/L	1.0	10/02/20 00:37	
EPA 300.0 Rev 2.1 1993	Sulfate	8.6	mg/L	1.0	10/02/20 00:37	
<b>92498084010</b>	<b>EB-1-9-29-20</b>					
EPA 6020B	Antimony	0.00049J	mg/L	0.0030	10/05/20 19:09	
EPA 300.0 Rev 2.1 1993	Sulfate	1.6	mg/L	1.0	10/02/20 00:51	
<b>92498084011</b>	<b>DUP-1</b>					
EPA 6010D	Calcium	43.1	mg/L	1.0	10/05/20 22:55	
EPA 6020B	Barium	0.017	mg/L	0.010	10/05/20 19:14	
EPA 6020B	Beryllium	0.00040J	mg/L	0.0030	10/05/20 19:14	
EPA 6020B	Boron	4.6	mg/L	0.20	10/07/20 12:11	
EPA 6020B	Chromium	0.00090J	mg/L	0.010	10/05/20 19:14	
EPA 6020B	Cobalt	0.00056J	mg/L	0.0050	10/05/20 19:14	
EPA 6020B	Lead	0.000040J	mg/L	0.0050	10/05/20 19:14	
EPA 6020B	Lithium	0.00088J	mg/L	0.030	10/05/20 19:14	
EPA 6020B	Vanadium	0.0049J	mg/L	0.010	10/05/20 19:14	
SM 2450C-2011	Total Dissolved Solids	434	mg/L	10.0	10/02/20 17:28	
EPA 300.0 Rev 2.1 1993	Chloride	24.4	mg/L	1.0	10/02/20 01:06	
EPA 300.0 Rev 2.1 1993	Fluoride	0.16	mg/L	0.10	10/02/20 01:06	
EPA 300.0 Rev 2.1 1993	Sulfate	241	mg/L	5.0	10/02/20 08:06	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498084012</b>	<b>GWC-21</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	5.82	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	98.4	mg/L	1.0	10/08/20 01:13	
EPA 6020B	Antimony	0.00033J	mg/L	0.0030	10/07/20 17:11	B
EPA 6020B	Arsenic	0.0029J	mg/L	0.0050	10/07/20 17:11	
EPA 6020B	Barium	0.19	mg/L	0.010	10/07/20 17:11	
EPA 6020B	Boron	2.3	mg/L	0.040	10/07/20 17:11	
EPA 6020B	Chromium	0.00067J	mg/L	0.010	10/07/20 17:11	
EPA 6020B	Lead	0.000054J	mg/L	0.0050	10/07/20 17:11	
EPA 6020B	Molybdenum	0.028	mg/L	0.010	10/07/20 17:11	
EPA 6020B	Selenium	0.0061J	mg/L	0.010	10/07/20 17:11	
EPA 6020B	Vanadium	0.0029J	mg/L	0.010	10/07/20 17:11	
EPA 6020B	Zinc	0.0096J	mg/L	0.010	10/07/20 17:11	
SM 2450C-2011	Total Dissolved Solids	634	mg/L	20.0	10/03/20 16:26	
EPA 300.0 Rev 2.1 1993	Chloride	23.7	mg/L	1.0	10/06/20 22:58	
EPA 300.0 Rev 2.1 1993	Sulfate	306	mg/L	7.0	10/07/20 09:18	
<b>92498084013</b>	<b>GWC-15</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	6.71	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	109	mg/L	1.0	10/08/20 01:17	
EPA 6020B	Arsenic	0.24	mg/L	0.0050	10/07/20 17:17	
EPA 6020B	Barium	0.034	mg/L	0.010	10/07/20 17:17	
EPA 6020B	Boron	0.86	mg/L	0.040	10/07/20 17:17	
EPA 6020B	Chromium	0.0016J	mg/L	0.010	10/07/20 17:17	
EPA 6020B	Lead	0.000047J	mg/L	0.0050	10/07/20 17:17	
EPA 6020B	Molybdenum	0.11	mg/L	0.010	10/07/20 17:17	
EPA 6020B	Vanadium	0.0028J	mg/L	0.010	10/07/20 17:17	
EPA 6020B	Zinc	0.032	mg/L	0.010	10/07/20 17:17	
SM 2450C-2011	Total Dissolved Solids	434	mg/L	10.0	10/03/20 16:26	
EPA 300.0 Rev 2.1 1993	Chloride	1.7	mg/L	1.0	10/06/20 23:41	
EPA 300.0 Rev 2.1 1993	Sulfate	18.5	mg/L	1.0	10/06/20 23:41	
<b>92498084014</b>	<b>GWC-16</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	5.47	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	177	mg/L	1.0	10/08/20 01:31	
EPA 6020B	Arsenic	0.044	mg/L	0.0050	10/07/20 17:22	
EPA 6020B	Barium	0.14	mg/L	0.010	10/07/20 17:22	
EPA 6020B	Beryllium	0.000089J	mg/L	0.0030	10/07/20 17:22	
EPA 6020B	Boron	8.1	mg/L	0.040	10/07/20 17:22	
EPA 6020B	Chromium	0.00098J	mg/L	0.010	10/07/20 17:22	
EPA 6020B	Lead	0.000091J	mg/L	0.0050	10/07/20 17:22	
EPA 6020B	Molybdenum	0.15	mg/L	0.010	10/07/20 17:22	
EPA 6020B	Selenium	0.0037J	mg/L	0.010	10/07/20 17:22	
EPA 6020B	Vanadium	0.0028J	mg/L	0.010	10/07/20 17:22	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498084014</b>	<b>GWC-16</b>					
EPA 6020B	Zinc	0.0051J	mg/L	0.010	10/07/20 17:22	
SM 2450C-2011	Total Dissolved Solids	1140	mg/L	50.0	10/03/20 16:26	
EPA 300.0 Rev 2.1 1993	Chloride	39.6	mg/L	1.0	10/07/20 00:24	
EPA 300.0 Rev 2.1 1993	Sulfate	736	mg/L	16.0	10/07/20 09:32	
<b>92498084015</b>	<b>GWC-20</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	6.04	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	292	mg/L	1.0	10/08/20 01:35	
EPA 6020B	Arsenic	0.31	mg/L	0.0050	10/07/20 17:28	
EPA 6020B	Barium	0.35	mg/L	0.010	10/07/20 17:28	
EPA 6020B	Boron	9.9	mg/L	0.040	10/07/20 17:28	
EPA 6020B	Chromium	0.0013J	mg/L	0.010	10/07/20 17:28	
EPA 6020B	Molybdenum	0.33	mg/L	0.010	10/07/20 17:28	
EPA 6020B	Vanadium	0.0029J	mg/L	0.010	10/07/20 17:28	
EPA 6020B	Zinc	0.031	mg/L	0.010	10/07/20 17:28	
SM 2450C-2011	Total Dissolved Solids	1860	mg/L	50.0	10/03/20 16:26	
EPA 300.0 Rev 2.1 1993	Chloride	34.9	mg/L	1.0	10/07/20 00:39	
EPA 300.0 Rev 2.1 1993	Sulfate	956	mg/L	20.0	10/07/20 09:47	
<b>92498084016</b>	<b>GWB-4R</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	5.75	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	48.4	mg/L	1.0	10/08/20 01:40	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	10/07/20 17:34	
EPA 6020B	Barium	0.077	mg/L	0.010	10/07/20 17:34	
EPA 6020B	Boron	5.2	mg/L	0.040	10/07/20 17:34	
EPA 6020B	Chromium	0.0020J	mg/L	0.010	10/07/20 17:34	
EPA 6020B	Cobalt	0.00050J	mg/L	0.0050	10/07/20 17:34	
EPA 6020B	Lead	0.00026J	mg/L	0.0050	10/07/20 17:34	
EPA 6020B	Lithium	0.013J	mg/L	0.030	10/07/20 17:34	
EPA 6020B	Molybdenum	0.15	mg/L	0.010	10/07/20 17:34	
EPA 6020B	Vanadium	0.0047J	mg/L	0.010	10/07/20 17:34	
EPA 6020B	Zinc	0.0064J	mg/L	0.010	10/07/20 17:34	
SM 2450C-2011	Total Dissolved Solids	424	mg/L	10.0	10/03/20 16:28	
EPA 300.0 Rev 2.1 1993	Chloride	15.7	mg/L	1.0	10/07/20 00:53	
EPA 300.0 Rev 2.1 1993	Sulfate	178	mg/L	4.0	10/07/20 10:01	
<b>92498084017</b>	<b>EB-2-9-30-20</b>					
EPA 6010D	Calcium	0.30J	mg/L	1.0	10/08/20 01:44	
EPA 6020B	Boron	0.061	mg/L	0.040	10/07/20 17:39	
EPA 6020B	Zinc	0.0027J	mg/L	0.010	10/07/20 17:39	
<b>92498084018</b>	<b>DUP-2</b>					
EPA 6010D	Calcium	294	mg/L	1.0	10/08/20 01:49	
EPA 6020B	Arsenic	0.29	mg/L	0.0050	10/07/20 17:45	
EPA 6020B	Barium	0.33	mg/L	0.010	10/07/20 17:45	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498084018</b>	<b>DUP-2</b>					
EPA 6020B	Boron	9.8	mg/L	0.040	10/07/20 17:45	
EPA 6020B	Chromium	0.0013J	mg/L	0.010	10/07/20 17:45	
EPA 6020B	Molybdenum	0.31	mg/L	0.010	10/07/20 17:45	
EPA 6020B	Vanadium	0.0030J	mg/L	0.010	10/07/20 17:45	
EPA 6020B	Zinc	0.0062J	mg/L	0.010	10/07/20 17:45	
SM 2450C-2011	Total Dissolved Solids	1720	mg/L	50.0	10/03/20 16:27	
EPA 300.0 Rev 2.1 1993	Chloride	35.4	mg/L	1.0	10/07/20 01:22	
EPA 300.0 Rev 2.1 1993	Fluoride	0.32	mg/L	0.10	10/07/20 01:22	
EPA 300.0 Rev 2.1 1993	Sulfate	969	mg/L	20.0	10/07/20 10:15	
<b>92498084019</b>	<b>GWC-17</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	4.08	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	53.5	mg/L	1.0	10/08/20 01:53	
EPA 6020B	Arsenic	0.0012J	mg/L	0.0050	10/07/20 17:51	
EPA 6020B	Barium	0.035	mg/L	0.010	10/07/20 17:51	
EPA 6020B	Beryllium	0.0013J	mg/L	0.0030	10/07/20 17:51	
EPA 6020B	Boron	0.86	mg/L	0.040	10/07/20 17:51	
EPA 6020B	Chromium	0.00096J	mg/L	0.010	10/07/20 17:51	
EPA 6020B	Cobalt	0.0018J	mg/L	0.0050	10/07/20 17:51	
EPA 6020B	Lead	0.000060J	mg/L	0.0050	10/07/20 17:51	
EPA 6020B	Lithium	0.0041J	mg/L	0.030	10/07/20 17:51	
EPA 6020B	Molybdenum	0.0041J	mg/L	0.010	10/07/20 17:51	
EPA 6020B	Zinc	0.0043J	mg/L	0.010	10/07/20 17:51	
SM 2450C-2011	Total Dissolved Solids	752	mg/L	20.0	10/03/20 16:27	
EPA 300.0 Rev 2.1 1993	Chloride	257	mg/L	6.0	10/07/20 10:29	
EPA 300.0 Rev 2.1 1993	Fluoride	0.15	mg/L	0.10	10/07/20 01:37	
EPA 300.0 Rev 2.1 1993	Sulfate	193	mg/L	6.0	10/07/20 10:29	
<b>92498084020</b>	<b>GWC-22</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	4.63	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	20.9	mg/L	1.0	10/08/20 01:58	
EPA 6020B	Antimony	0.0016J	mg/L	0.0030	10/07/20 18:14	B
EPA 6020B	Barium	0.045	mg/L	0.010	10/07/20 18:14	
EPA 6020B	Boron	0.25	mg/L	0.040	10/07/20 18:14	
EPA 6020B	Cadmium	0.00024J	mg/L	0.0025	10/07/20 18:14	
EPA 6020B	Chromium	0.00064J	mg/L	0.010	10/07/20 18:14	
EPA 6020B	Lead	0.00023J	mg/L	0.0050	10/07/20 18:14	
SM 2450C-2011	Total Dissolved Solids	113	mg/L	10.0	10/03/20 16:27	
EPA 300.0 Rev 2.1 1993	Chloride	8.5	mg/L	1.0	10/07/20 01:51	
EPA 300.0 Rev 2.1 1993	Sulfate	65.5	mg/L	1.0	10/07/20 01:51	
<b>92498084021</b>	<b>GWB-6R</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	5.39	Std. Units		10/12/20 16:37	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498084021</b>	<b>GWB-6R</b>					
EPA 6010D	Calcium	27.5	mg/L	1.0	10/08/20 02:02	
EPA 6020B	Antimony	0.00059J	mg/L	0.0030	10/07/20 18:20	B
EPA 6020B	Arsenic	0.0040J	mg/L	0.0050	10/07/20 18:20	
EPA 6020B	Barium	0.092	mg/L	0.010	10/07/20 18:20	
EPA 6020B	Beryllium	0.000046J	mg/L	0.0030	10/07/20 18:20	
EPA 6020B	Boron	4.2	mg/L	0.040	10/07/20 18:20	
EPA 6020B	Chromium	0.0045J	mg/L	0.010	10/07/20 18:20	
EPA 6020B	Lead	0.000080J	mg/L	0.0050	10/07/20 18:20	
EPA 6020B	Molybdenum	0.00097J	mg/L	0.010	10/07/20 18:20	
EPA 6020B	Selenium	0.0023J	mg/L	0.010	10/07/20 18:20	
EPA 6020B	Vanadium	0.018	mg/L	0.010	10/07/20 18:20	
SM 2450C-2011	Total Dissolved Solids	816	mg/L	20.0	10/03/20 16:27	
EPA 300.0 Rev 2.1 1993	Chloride	53.9	mg/L	1.0	10/07/20 02:35	
EPA 300.0 Rev 2.1 1993	Sulfate	339	mg/L	7.0	10/07/20 10:43	
<b>92498084022</b>	<b>GWB-5R</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	4.99	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	70.4	mg/L	1.0	10/08/20 02:07	
EPA 6020B	Antimony	0.00030J	mg/L	0.0030	10/07/20 18:25	B
EPA 6020B	Arsenic	0.0017J	mg/L	0.0050	10/07/20 18:25	
EPA 6020B	Barium	0.16	mg/L	0.010	10/07/20 18:25	
EPA 6020B	Beryllium	0.000065J	mg/L	0.0030	10/07/20 18:25	
EPA 6020B	Boron	4.0	mg/L	0.040	10/07/20 18:25	
EPA 6020B	Chromium	0.0018J	mg/L	0.010	10/07/20 18:25	
EPA 6020B	Cobalt	0.00056J	mg/L	0.0050	10/07/20 18:25	
EPA 6020B	Lead	0.0012J	mg/L	0.0050	10/07/20 18:25	
EPA 6020B	Vanadium	0.0037J	mg/L	0.010	10/07/20 18:25	
SM 2450C-2011	Total Dissolved Solids	652	mg/L	20.0	10/03/20 16:27	
EPA 300.0 Rev 2.1 1993	Chloride	24.1	mg/L	1.0	10/07/20 02:49	
EPA 300.0 Rev 2.1 1993	Sulfate	339	mg/L	7.0	10/07/20 11:26	
<b>92498084023</b>	<b>FB-2-9-30-20</b>					
EPA 6020B	Boron	0.030J	mg/L	0.040	10/07/20 18:31	
<b>92498084024</b>	<b>GWC-9</b>					
	Performed by	CUSTOME			10/12/20 16:37	
		R				
	pH	4.42	Std. Units		10/12/20 16:37	
EPA 6010D	Calcium	5.5	mg/L	1.0	10/08/20 02:29	
EPA 6020B	Barium	0.15	mg/L	0.010	10/07/20 18:37	
EPA 6020B	Beryllium	0.00020J	mg/L	0.0030	10/07/20 18:37	
EPA 6020B	Boron	0.028J	mg/L	0.040	10/07/20 18:37	
EPA 6020B	Chromium	0.0012J	mg/L	0.010	10/07/20 18:37	
EPA 6020B	Cobalt	0.00099J	mg/L	0.0050	10/07/20 18:37	
EPA 6020B	Lead	0.000038J	mg/L	0.0050	10/07/20 18:37	
EPA 6020B	Lithium	0.0019J	mg/L	0.030	10/07/20 18:37	
EPA 6020B	Zinc	0.025	mg/L	0.010	10/07/20 18:37	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498084024</b>	<b>GWC-9</b>					
SM 2450C-2011	Total Dissolved Solids	111	mg/L	10.0	10/03/20 16:28	
EPA 300.0 Rev 2.1 1993	Chloride	16.8	mg/L	1.0	10/07/20 04:16	
EPA 300.0 Rev 2.1 1993	Sulfate	35.0	mg/L	1.0	10/07/20 04:16	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: GWA-7      Lab ID: 92498084001      Collected: 09/28/20 15:20      Received: 09/30/20 11:47      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>5.86</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D      Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>3.3</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:02	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B      Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.015	0.0014	5	10/02/20 15:00	10/06/20 19:16	7440-36-0	D3
Arsenic	ND	mg/L	0.025	0.0039	5	10/02/20 15:00	10/06/20 19:16	7440-38-2	D3
Barium	<b>0.095</b>	mg/L	0.050	0.0036	5	10/02/20 15:00	10/06/20 19:16	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00023	5	10/02/20 15:00	10/06/20 19:16	7440-41-7	D3
Boron	<b>4.6</b>	mg/L	0.20	0.026	5	10/02/20 15:00	10/06/20 19:16	7440-42-8	
Cadmium	ND	mg/L	0.012	0.00059	5	10/02/20 15:00	10/06/20 19:16	7440-43-9	D3
Chromium	<b>0.014J</b>	mg/L	0.050	0.0028	5	10/02/20 15:00	10/06/20 19:16	7440-47-3	D3
Cobalt	ND	mg/L	0.025	0.0019	5	10/02/20 15:00	10/06/20 19:16	7440-48-4	D3
Lead	<b>0.0043J</b>	mg/L	0.025	0.00018	5	10/02/20 15:00	10/06/20 19:16	7439-92-1	D3
Lithium	ND	mg/L	0.15	0.0040	5	10/02/20 15:00	10/06/20 19:16	7439-93-2	D3
Molybdenum	ND	mg/L	0.050	0.0034	5	10/02/20 15:00	10/06/20 19:16	7439-98-7	D3
Selenium	<b>0.010J</b>	mg/L	0.050	0.0078	5	10/02/20 15:00	10/06/20 19:16	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00072	5	10/02/20 15:00	10/06/20 19:16	7440-28-0	D3
Vanadium	<b>0.10</b>	mg/L	0.050	0.011	5	10/02/20 15:00	10/06/20 19:16	7440-62-2	
Zinc	<b>0.16</b>	mg/L	0.050	0.011	5	10/02/20 15:00	10/06/20 19:16	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>1450</b>	mg/L	50.0	50.0	1		10/02/20 17:27		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>113</b>	mg/L	2.0	1.2	2		10/02/20 06:40	16887-00-6	
Fluoride	<b>0.069J</b>	mg/L	0.10	0.050	1		10/01/20 21:43	16984-48-8	
Sulfate	<b>20.0</b>	mg/L	1.0	0.50	1		10/01/20 21:43	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWC-13</b> Lab ID: <b>92498084002</b> Collected: 09/28/20 16:40      Received: 09/30/20 11:47      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.76</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D      Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>2.9</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:07	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B      Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:22	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 19:22	7440-38-2	
Barium	<b>0.029</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:22	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:22	7440-41-7	
Boron	<b>0.24</b>	mg/L	0.040	0.0052	1	10/02/20 15:00	10/06/20 19:22	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 19:22	7440-43-9	
Chromium	<b>0.00062J</b>	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:22	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:22	7440-48-4	
Lead	<b>0.000064J</b>	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:22	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 19:22	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 19:22	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 19:22	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:22	7440-62-2	
Zinc	<b>0.016</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:22	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>60.0</b>	mg/L	10.0	10.0	1		10/02/20 17:27		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>4.3</b>	mg/L	1.0	0.60	1		10/01/20 21:58	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/01/20 21:58	16984-48-8	
Sulfate	<b>25.6</b>	mg/L	1.0	0.50	1		10/01/20 21:58	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: GWA-8		Lab ID: 92498084003		Collected: 09/28/20 16:04		Received: 09/30/20 11:47		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.41</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>25.6</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:11	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:39	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 19:39	7440-38-2	
Barium	<b>0.050</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:39	7440-39-3	
Beryllium	<b>0.00021J</b>	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:39	7440-41-7	
Boron	<b>0.15</b>	mg/L	0.040	0.0052	1	10/02/20 15:00	10/06/20 19:39	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 19:39	7440-43-9	
Chromium	<b>0.00071J</b>	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:39	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:39	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:39	7439-92-1	
Lithium	<b>0.0010J</b>	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 19:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 19:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 19:39	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:39	7440-62-2	
Zinc	<b>0.0092J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:39	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>175</b>	mg/L	10.0	10.0	1		10/02/20 17:27		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>13.7</b>	mg/L	1.0	0.60	1		10/01/20 22:12	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/01/20 22:12	16984-48-8	
Sulfate	<b>93.6</b>	mg/L	2.0	1.0	2		10/02/20 06:55	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: GWC-1		Lab ID: 92498084004		Collected: 09/28/20 17:08		Received: 09/30/20 11:47		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>5.79</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>70.7</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:24	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.00035J</b>	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:45	7440-36-0	
Arsenic	<b>0.0058</b>	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 19:45	7440-38-2	
Barium	<b>0.051</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:45	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:45	7440-41-7	
Boron	<b>0.69</b>	mg/L	0.040	0.0052	1	10/02/20 15:00	10/06/20 19:45	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 19:45	7440-43-9	
Chromium	<b>0.0024J</b>	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:45	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:45	7440-48-4	
Lead	<b>0.000043J</b>	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:45	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:45	7439-93-2	
Molybdenum	<b>0.059</b>	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 19:45	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 19:45	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 19:45	7440-28-0	
Vanadium	<b>0.0042J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:45	7440-62-2	
Zinc	<b>0.0092J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:45	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>373</b>	mg/L	10.0	10.0	1		10/02/20 17:27		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>13.8</b>	mg/L	1.0	0.60	1		10/01/20 22:27	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/01/20 22:27	16984-48-8	
Sulfate	<b>71.6</b>	mg/L	1.0	0.50	1		10/01/20 22:27	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>FB-1-9-28-20</b>		Lab ID: <b>92498084005</b>		Collected: 09/28/20 16:55	Received: 09/30/20 11:47	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:28	7440-70-2		
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:51	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 19:51	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:51	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:51	7440-41-7		
Boron	ND	mg/L	0.040	0.0052	1	10/02/20 15:00	10/06/20 19:51	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 19:51	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:51	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:51	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:51	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:51	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 19:51	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 19:51	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 19:51	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:51	7440-62-2		
Zinc	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:51	7440-66-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/02/20 17:27			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		10/01/20 22:41	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		10/01/20 22:41	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		10/01/20 22:41	14808-79-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWC-12</b>		Lab ID: <b>92498084006</b>		Collected: 09/29/20 09:35		Received: 09/30/20 11:47		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>3.95</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>42.0</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:33	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:56	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 19:56	7440-38-2	
Barium	<b>0.018</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:56	7440-39-3	
Beryllium	<b>0.00043J</b>	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:56	7440-41-7	
Boron	<b>4.7</b>	mg/L	0.040	0.0052	1	10/02/20 15:00	10/06/20 19:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 19:56	7440-43-9	
Chromium	<b>0.00085J</b>	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:56	7440-47-3	
Cobalt	<b>0.00057J</b>	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:56	7440-48-4	
Lead	<b>0.000037J</b>	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:56	7439-92-1	
Lithium	<b>0.00086J</b>	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 19:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 19:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 19:56	7440-28-0	
Vanadium	<b>0.0046J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:56	7440-62-2	
Zinc	<b>0.0074J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:56	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>440</b>	mg/L	10.0	10.0	1		10/02/20 17:28		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>24.3</b>	mg/L	1.0	0.60	1		10/01/20 22:56	16887-00-6	
Fluoride	<b>0.16</b>	mg/L	0.10	0.050	1		10/01/20 22:56	16984-48-8	
Sulfate	<b>237</b>	mg/L	5.0	2.5	5		10/02/20 07:09	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: GWC-11		Lab ID: 92498084007		Collected: 09/29/20 12:20		Received: 09/30/20 11:47		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.77</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>123</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:37	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.00051J</b>	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 20:02	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 20:02	7440-38-2	
Barium	<b>0.14</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 20:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 20:02	7440-41-7	
Boron	<b>1.2</b>	mg/L	0.040	0.0052	1	10/02/20 15:00	10/06/20 20:02	7440-42-8	
Cadmium	<b>0.00077J</b>	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 20:02	7440-43-9	
Chromium	<b>0.0011J</b>	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 20:02	7440-47-3	
Cobalt	<b>0.00055J</b>	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 20:02	7440-48-4	
Lead	<b>0.00032J</b>	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 20:02	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 20:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/06/20 20:02	7439-98-7	
Selenium	<b>0.0024J</b>	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 20:02	7782-49-2	
Thallium	<b>0.00017J</b>	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 20:02	7440-28-0	
Vanadium	<b>0.0023J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 20:02	7440-62-2	
Zinc	<b>0.0031J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 20:02	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>1100</b>	mg/L	50.0	50.0	1		10/02/20 17:28		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>143</b>	mg/L	11.0	6.6	11		10/02/20 07:23	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/01/20 23:10	16984-48-8	
Sulfate	<b>516</b>	mg/L	11.0	5.5	11		10/02/20 07:23	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWC-14</b>	Lab ID: <b>92498084008</b>	Collected: 09/29/20 14:42	Received: 09/30/20 11:47	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>5.69</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>30.8</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:41	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 18:40	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/05/20 18:40	7440-38-2	
Barium	<b>0.026</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 18:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 18:40	7440-41-7	
Boron	<b>0.053</b>	mg/L	0.040	0.0052	1	10/02/20 15:00	10/07/20 10:37	7440-42-8	
Cadmium	<b>0.00012J</b>	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/05/20 18:40	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 18:40	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 18:40	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 18:40	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 18:40	7439-93-2	
Molybdenum	<b>0.0089J</b>	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 18:40	7439-98-7	
Selenium	<b>0.0051J</b>	mg/L	0.010	0.0016	1	10/02/20 15:00	10/05/20 18:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/05/20 18:40	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 18:40	7440-62-2	
Zinc	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 18:40	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>187</b>	mg/L	10.0	10.0	1		10/02/20 17:28		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>10.6</b>	mg/L	1.0	0.60	1		10/01/20 23:25	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/01/20 23:25	16984-48-8	
Sulfate	<b>93.5</b>	mg/L	1.0	0.50	1		10/01/20 23:25	14808-79-8	M1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: GWC-2		Lab ID: 92498084009		Collected: 09/29/20 15:05		Received: 09/30/20 11:47		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.60</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>0.18J</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:46	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.0016J</b>	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 19:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/05/20 19:03	7440-38-2	
Barium	<b>0.049</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 19:03	7440-39-3	
Beryllium	<b>0.000075J</b>	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 19:03	7440-41-7	
Boron	<b>0.024J</b>	mg/L	0.040	0.0052	1	10/02/20 15:00	10/05/20 19:03	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/05/20 19:03	7440-43-9	
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 19:03	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 19:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 19:03	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 19:03	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 19:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/05/20 19:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/05/20 19:03	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 19:03	7440-62-2	
Zinc	<b>0.056</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 19:03	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>33.0</b>	mg/L	10.0	10.0	1		10/02/20 17:28		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>5.4</b>	mg/L	1.0	0.60	1		10/02/20 00:37	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/02/20 00:37	16984-48-8	
Sulfate	<b>8.6</b>	mg/L	1.0	0.50	1		10/02/20 00:37	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: EB-1-9-29-20		Lab ID: 92498084010		Collected: 09/29/20 16:20		Received: 09/30/20 11:47		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:50	7440-70-2		
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	<b>0.00049J</b>	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 19:09	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/05/20 19:09	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 19:09	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 19:09	7440-41-7		
Boron	ND	mg/L	0.040	0.0052	1	10/02/20 15:00	10/05/20 19:09	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/05/20 19:09	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 19:09	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 19:09	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 19:09	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 19:09	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 19:09	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/05/20 19:09	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/05/20 19:09	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 19:09	7440-62-2		
Zinc	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 19:09	7440-66-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/02/20 17:28			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		10/02/20 00:51	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		10/02/20 00:51	16984-48-8		
Sulfate	<b>1.6</b>	mg/L	1.0	0.50	1		10/02/20 00:51	14808-79-8		

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## ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: DUP-1		Lab ID: 92498084011		Collected: 09/29/20 00:00	Received: 09/30/20 11:47	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	<b>43.1</b>	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:55	7440-70-2		
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/05/20 19:14	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/05/20 19:14	7440-38-2		
Barium	<b>0.017</b>	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 19:14	7440-39-3		
Beryllium	<b>0.00040J</b>	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 19:14	7440-41-7		
Boron	<b>4.6</b>	mg/L	0.20	0.026	5	10/02/20 15:00	10/07/20 12:11	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/05/20 19:14	7440-43-9		
Chromium	<b>0.00090J</b>	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 19:14	7440-47-3		
Cobalt	<b>0.00056J</b>	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 19:14	7440-48-4		
Lead	<b>0.000040J</b>	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 19:14	7439-92-1		
Lithium	<b>0.00088J</b>	mg/L	0.030	0.00081	1	10/02/20 15:00	10/05/20 19:14	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	10/02/20 15:00	10/05/20 19:14	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00	10/05/20 19:14	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/05/20 19:14	7440-28-0		
Vanadium	<b>0.0049J</b>	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 19:14	7440-62-2		
Zinc	ND	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 19:14	7440-66-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	<b>434</b>	mg/L	10.0	10.0	1		10/02/20 17:28			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	<b>24.4</b>	mg/L	1.0	0.60	1		10/02/20 01:06	16887-00-6		
Fluoride	<b>0.16</b>	mg/L	0.10	0.050	1		10/02/20 01:06	16984-48-8		
Sulfate	<b>241</b>	mg/L	5.0	2.5	5		10/02/20 08:06	14808-79-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWC-21</b> Lab ID: <b>92498084012</b> Collected: 09/30/20 10:49 Received: 10/02/20 12:22 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>5.82</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>98.4</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:13	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.00033J</b>	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:11	7440-36-0	B
Arsenic	<b>0.0029J</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:11	7440-38-2	
Barium	<b>0.19</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:11	7440-41-7	
Boron	<b>2.3</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:11	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:11	7440-43-9	
Chromium	<b>0.00067J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:11	7440-48-4	
Lead	<b>0.000054J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:11	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:11	7439-93-2	
Molybdenum	<b>0.028</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:11	7439-98-7	
Selenium	<b>0.0061J</b>	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:11	7440-28-0	
Vanadium	<b>0.0029J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:11	7440-62-2	
Zinc	<b>0.0096J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:11	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>634</b>	mg/L	20.0	20.0	1		10/03/20 16:26		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>23.7</b>	mg/L	1.0	0.60	1		10/06/20 22:58	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/06/20 22:58	16984-48-8	
Sulfate	<b>306</b>	mg/L	7.0	3.5	7		10/07/20 09:18	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWC-15</b>		Lab ID: <b>92498084013</b>		Collected: 09/30/20 12:30		Received: 10/02/20 12:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>6.71</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>109</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:17	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:17	7440-36-0	
Arsenic	<b>0.24</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:17	7440-38-2	
Barium	<b>0.034</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:17	7440-41-7	
Boron	<b>0.86</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:17	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:17	7440-43-9	
Chromium	<b>0.0016J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:17	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:17	7440-48-4	
Lead	<b>0.000047J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:17	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:17	7439-93-2	
Molybdenum	<b>0.11</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:17	7440-28-0	
Vanadium	<b>0.0028J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:17	7440-62-2	
Zinc	<b>0.032</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:17	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>434</b>	mg/L	10.0	10.0	1		10/03/20 16:26		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>1.7</b>	mg/L	1.0	0.60	1		10/06/20 23:41	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/06/20 23:41	16984-48-8	
Sulfate	<b>18.5</b>	mg/L	1.0	0.50	1		10/06/20 23:41	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWC-16</b>		Lab ID: <b>92498084014</b>		Collected: 09/30/20 14:00		Received: 10/02/20 12:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>5.47</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>177</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:31	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:22	7440-36-0	
Arsenic	<b>0.044</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:22	7440-38-2	
Barium	<b>0.14</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:22	7440-39-3	
Beryllium	<b>0.000089J</b>	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:22	7440-41-7	
Boron	<b>8.1</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:22	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:22	7440-43-9	
Chromium	<b>0.00098J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:22	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:22	7440-48-4	
Lead	<b>0.000091J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:22	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:22	7439-93-2	
Molybdenum	<b>0.15</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:22	7439-98-7	
Selenium	<b>0.0037J</b>	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:22	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:22	7440-28-0	
Vanadium	<b>0.0028J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:22	7440-62-2	
Zinc	<b>0.0051J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:22	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>1140</b>	mg/L	50.0	50.0	1		10/03/20 16:26		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>39.6</b>	mg/L	1.0	0.60	1		10/07/20 00:24	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 00:24	16984-48-8	
Sulfate	<b>736</b>	mg/L	16.0	8.0	16		10/07/20 09:32	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWC-20</b>	Lab ID: <b>92498084015</b>	Collected: 09/30/20 16:31	Received: 10/02/20 12:22	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>6.04</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>292</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:35	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:28	7440-36-0	
Arsenic	<b>0.31</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:28	7440-38-2	
Barium	<b>0.35</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:28	7440-41-7	
Boron	<b>9.9</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:28	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:28	7440-43-9	
Chromium	<b>0.0013J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:28	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:28	7440-48-4	
Lead	ND	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:28	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:28	7439-93-2	
Molybdenum	<b>0.33</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:28	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:28	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:28	7440-28-0	
Vanadium	<b>0.0029J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:28	7440-62-2	
Zinc	<b>0.031</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:28	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>1860</b>	mg/L	50.0	50.0	1		10/03/20 16:26		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>34.9</b>	mg/L	1.0	0.60	1		10/07/20 00:39	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 00:39	16984-48-8	
Sulfate	<b>956</b>	mg/L	20.0	10.0	20		10/07/20 09:47	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: <b>GWB-4R</b>		Lab ID: <b>92498084016</b>		Collected: 10/01/20 08:50		Received: 10/02/20 12:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>5.75</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>48.4</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:40	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:34	7440-36-0	
Arsenic	<b>0.0027J</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:34	7440-38-2	
Barium	<b>0.077</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:34	7440-41-7	
Boron	<b>5.2</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:34	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:34	7440-43-9	
Chromium	<b>0.0020J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:34	7440-47-3	
Cobalt	<b>0.00050J</b>	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:34	7440-48-4	
Lead	<b>0.00026J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:34	7439-92-1	
Lithium	<b>0.013J</b>	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:34	7439-93-2	
Molybdenum	<b>0.15</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:34	7440-28-0	
Vanadium	<b>0.0047J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:34	7440-62-2	
Zinc	<b>0.0064J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:34	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>424</b>	mg/L	10.0	10.0	1		10/03/20 16:28		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>15.7</b>	mg/L	1.0	0.60	1		10/07/20 00:53	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 00:53	16984-48-8	
Sulfate	<b>178</b>	mg/L	4.0	2.0	4		10/07/20 10:01	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: EB-2-9-30-20		Lab ID: 92498084017		Collected: 09/30/20 14:30		Received: 10/02/20 12:22		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	<b>0.30J</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:44	7440-70-2		
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:39	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:39	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:39	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:39	7440-41-7		
Boron	<b>0.061</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:39	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:39	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:39	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:39	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:39	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:39	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:39	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:39	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:39	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:39	7440-62-2		
Zinc	<b>0.0027J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:39	7440-66-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/03/20 16:26			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		10/07/20 01:08	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 01:08	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		10/07/20 01:08	14808-79-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: DUP-2		Lab ID: 92498084018		Collected: 09/30/20 00:00		Received: 10/02/20 12:22		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	<b>294</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:49	7440-70-2		
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:45	7440-36-0		
Arsenic	<b>0.29</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:45	7440-38-2		
Barium	<b>0.33</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:45	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:45	7440-41-7		
Boron	<b>9.8</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:45	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:45	7440-43-9		
Chromium	<b>0.0013J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:45	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:45	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:45	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:45	7439-93-2		
Molybdenum	<b>0.31</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:45	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:45	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:45	7440-28-0		
Vanadium	<b>0.0030J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:45	7440-62-2		
Zinc	<b>0.0062J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:45	7440-66-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	<b>1720</b>	mg/L	50.0	50.0	1		10/03/20 16:27			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	<b>35.4</b>	mg/L	1.0	0.60	1		10/07/20 01:22	16887-00-6		
Fluoride	<b>0.32</b>	mg/L	0.10	0.050	1		10/07/20 01:22	16984-48-8		
Sulfate	<b>969</b>	mg/L	20.0	10.0	20		10/07/20 10:15	14808-79-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

**Sample: GWC-17**      **Lab ID: 92498084019**      Collected: 09/30/20 12:00      Received: 10/02/20 12:22      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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**Field Data**

Analytical Method:  
Pace Analytical Services - Charlotte

Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.08</b>	Std. Units			1		10/12/20 16:37		

**6010D ATL ICP**

Analytical Method: EPA 6010D      Preparation Method: EPA 3010A  
Pace Analytical Services - Peachtree Corners, GA

Calcium	<b>53.5</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:53	7440-70-2	
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**6020 MET ICPMS**

Analytical Method: EPA 6020B      Preparation Method: EPA 3005A  
Pace Analytical Services - Peachtree Corners, GA

Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:51	7440-36-0	
Arsenic	<b>0.0012J</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:51	7440-38-2	
Barium	<b>0.035</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:51	7440-39-3	
Beryllium	<b>0.0013J</b>	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:51	7440-41-7	
Boron	<b>0.86</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:51	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:51	7440-43-9	
Chromium	<b>0.00096J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:51	7440-47-3	
Cobalt	<b>0.0018J</b>	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:51	7440-48-4	
Lead	<b>0.000060J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:51	7439-92-1	
Lithium	<b>0.0041J</b>	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:51	7439-93-2	
Molybdenum	<b>0.0041J</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:51	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 17:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:51	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:51	7440-62-2	
Zinc	<b>0.0043J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:51	7440-66-6	

**2540C Total Dissolved Solids**

Analytical Method: SM 2450C-2011  
Pace Analytical Services - Peachtree Corners, GA

Total Dissolved Solids	<b>752</b>	mg/L	20.0	20.0	1		10/03/20 16:27		
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**300.0 IC Anions 28 Days**

Analytical Method: EPA 300.0 Rev 2.1 1993  
Pace Analytical Services - Asheville

Chloride	<b>257</b>	mg/L	6.0	3.6	6		10/07/20 10:29	16887-00-6	
Fluoride	<b>0.15</b>	mg/L	0.10	0.050	1		10/07/20 01:37	16984-48-8	
Sulfate	<b>193</b>	mg/L	6.0	3.0	6		10/07/20 10:29	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: <b>GWC-22</b>		Lab ID: <b>92498084020</b>		Collected: 09/30/20 14:05		Received: 10/02/20 12:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.63</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>20.9</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:58	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.0016J</b>	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:14	7440-36-0	B
Arsenic	ND	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:14	7440-38-2	
Barium	<b>0.045</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 18:14	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 18:14	7440-41-7	
Boron	<b>0.25</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 18:14	7440-42-8	
Cadmium	<b>0.00024J</b>	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 18:14	7440-43-9	
Chromium	<b>0.00064J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 18:14	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 18:14	7440-48-4	
Lead	<b>0.00023J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 18:14	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 18:14	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 18:14	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 18:14	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 18:14	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:14	7440-62-2	
Zinc	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:14	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>113</b>	mg/L	10.0	10.0	1		10/03/20 16:27		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>8.5</b>	mg/L	1.0	0.60	1		10/07/20 01:51	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 01:51	16984-48-8	
Sulfate	<b>65.5</b>	mg/L	1.0	0.50	1		10/07/20 01:51	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWB-6R</b>		Lab ID: <b>92498084021</b>		Collected: 09/30/20 15:35		Received: 10/02/20 12:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>5.39</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>27.5</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:02	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.00059J</b>	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:20	7440-36-0	B
Arsenic	<b>0.0040J</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:20	7440-38-2	
Barium	<b>0.092</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 18:20	7440-39-3	
Beryllium	<b>0.000046J</b>	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 18:20	7440-41-7	
Boron	<b>4.2</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 18:20	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 18:20	7440-43-9	
Chromium	<b>0.0045J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 18:20	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 18:20	7440-48-4	
Lead	<b>0.000080J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 18:20	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 18:20	7439-93-2	
Molybdenum	<b>0.00097J</b>	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 18:20	7439-98-7	
Selenium	<b>0.0023J</b>	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 18:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 18:20	7440-28-0	
Vanadium	<b>0.018</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:20	7440-62-2	
Zinc	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:20	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>816</b>	mg/L	20.0	20.0	1		10/03/20 16:27		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>53.9</b>	mg/L	1.0	0.60	1		10/07/20 02:35	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 02:35	16984-48-8	
Sulfate	<b>339</b>	mg/L	7.0	3.5	7		10/07/20 10:43	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>GWB-5R</b>	Lab ID: <b>92498084022</b>	Collected: 09/30/20 17:30		Received: 10/02/20 12:22		Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.99</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>70.4</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:07	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	<b>0.00030J</b>	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:25	7440-36-0	B
Arsenic	<b>0.0017J</b>	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:25	7440-38-2	
Barium	<b>0.16</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 18:25	7440-39-3	
Beryllium	<b>0.000065J</b>	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 18:25	7440-41-7	
Boron	<b>4.0</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 18:25	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 18:25	7440-43-9	
Chromium	<b>0.0018J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 18:25	7440-47-3	
Cobalt	<b>0.00056J</b>	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 18:25	7440-48-4	
Lead	<b>0.0012J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 18:25	7439-92-1	
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 18:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 18:25	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 18:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 18:25	7440-28-0	
Vanadium	<b>0.0037J</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:25	7440-62-2	
Zinc	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:25	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>652</b>	mg/L	20.0	20.0	1		10/03/20 16:27		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>24.1</b>	mg/L	1.0	0.60	1		10/07/20 02:49	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 02:49	16984-48-8	
Sulfate	<b>339</b>	mg/L	7.0	3.5	7		10/07/20 11:26	14808-79-8	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: <b>FB-2-9-30-20</b>		Lab ID: <b>92498084023</b>		Collected: 09/30/20 15:25		Received: 10/02/20 12:22		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:11	7440-70-2		
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:31	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:31	7440-38-2		
Barium	ND	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 18:31	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 18:31	7440-41-7		
Boron	<b>0.030J</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 18:31	7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 18:31	7440-43-9		
Chromium	ND	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 18:31	7440-47-3		
Cobalt	ND	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 18:31	7440-48-4		
Lead	ND	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 18:31	7439-92-1		
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 18:31	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 18:31	7439-98-7		
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 18:31	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 18:31	7440-28-0		
Vanadium	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:31	7440-62-2		
Zinc	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:31	7440-66-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/03/20 16:27			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		10/07/20 03:32	16887-00-6		
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 03:32	16984-48-8		
Sulfate	ND	mg/L	1.0	0.50	1		10/07/20 03:32	14808-79-8		

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Sample: GWC-9		Lab ID: 92498084024		Collected: 10/01/20 08:21		Received: 10/02/20 12:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/12/20 16:37		
pH	<b>4.42</b>	Std. Units			1		10/12/20 16:37		
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium	<b>5.5</b>	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:29	7440-70-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:37	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:37	7440-38-2	
Barium	<b>0.15</b>	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 18:37	7440-39-3	
Beryllium	<b>0.00020J</b>	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 18:37	7440-41-7	
Boron	<b>0.028J</b>	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 18:37	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 18:37	7440-43-9	
Chromium	<b>0.0012J</b>	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 18:37	7440-47-3	
Cobalt	<b>0.00099J</b>	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 18:37	7440-48-4	
Lead	<b>0.000038J</b>	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 18:37	7439-92-1	
Lithium	<b>0.0019J</b>	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 18:37	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 18:37	7439-98-7	
Selenium	ND	mg/L	0.010	0.0016	1	10/05/20 17:15	10/07/20 18:37	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 18:37	7440-28-0	
Vanadium	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:37	7440-62-2	
Zinc	<b>0.025</b>	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:37	7440-66-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA									
Total Dissolved Solids	<b>111</b>	mg/L	10.0	10.0	1		10/03/20 16:28		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville									
Chloride	<b>16.8</b>	mg/L	1.0	0.60	1		10/07/20 04:16	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		10/07/20 04:16	16984-48-8	
Sulfate	<b>35.0</b>	mg/L	1.0	0.50	1		10/07/20 04:16	14808-79-8	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

QC Batch: 570380

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

Analysis Description: 6010D ATL

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005, 92498084006, 92498084007, 92498084008, 92498084009, 92498084010, 92498084011

METHOD BLANK: 3021700

Matrix: Water

Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005, 92498084006, 92498084007, 92498084008, 92498084009, 92498084010, 92498084011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/05/20 20:52	

LABORATORY CONTROL SAMPLE: 3021701

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021764 3021765

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497532027 Result	Spike Conc.	Spike Conc.	Result						
Calcium	mg/L	50.1	1	1	52.4	50.7	224	54	75-125	3	20 M1

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

QC Batch: 571010

Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A

Analysis Description: 6010D ATL

Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022, 92498084023, 92498084024

METHOD BLANK: 3024605

Matrix: Water

Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022, 92498084023, 92498084024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.070	10/08/20 00:10	

LABORATORY CONTROL SAMPLE: 3024606

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024607 3024608

Parameter	Units	92498544001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	162	1	1	165	163	305	111	75-125	1	20	M1

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

QC Batch: 570626 Analysis Method: EPA 6020B  
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET  
 Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005, 92498084006, 92498084007

METHOD BLANK: 3022872

Matrix: Water

Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005, 92498084006, 92498084007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/06/20 17:21	
Arsenic	mg/L	ND	0.0050	0.00078	10/06/20 17:21	
Barium	mg/L	ND	0.010	0.00071	10/06/20 17:21	
Beryllium	mg/L	ND	0.0030	0.000046	10/06/20 17:21	
Boron	mg/L	ND	0.040	0.0052	10/06/20 17:21	
Cadmium	mg/L	ND	0.0025	0.00012	10/06/20 17:21	
Chromium	mg/L	ND	0.010	0.00055	10/06/20 17:21	
Cobalt	mg/L	ND	0.0050	0.00038	10/06/20 17:21	
Lead	mg/L	ND	0.0050	0.000036	10/06/20 17:21	
Lithium	mg/L	ND	0.030	0.00081	10/06/20 17:21	
Molybdenum	mg/L	ND	0.010	0.00069	10/06/20 17:21	
Selenium	mg/L	ND	0.010	0.0016	10/06/20 17:21	
Thallium	mg/L	ND	0.0010	0.00014	10/06/20 17:21	
Vanadium	mg/L	ND	0.010	0.0022	10/06/20 17:21	
Zinc	mg/L	ND	0.010	0.0022	10/06/20 17:21	

LABORATORY CONTROL SAMPLE: 3022873

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.12	116	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.094	94	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	
Vanadium	mg/L	0.1	0.099	99	80-120	
Zinc	mg/L	0.1	0.096	96	80-120	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Parameter	Units	92496914020		3022874		3022875		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Antimony	mg/L	ND	0.1	0.1	0.12	0.12	115	116	75-125	0	20			
Arsenic	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	2	20			
Barium	mg/L	0.15	0.1	0.1	0.25	0.25	102	99	75-125	1	20			
Beryllium	mg/L	0.00010J	0.1	0.1	0.095	0.096	95	96	75-125	1	20			
Boron	mg/L	0.17	1	1	1.1	1.1	94	95	75-125	1	20			
Cadmium	mg/L	ND	0.1	0.1	0.095	0.097	95	97	75-125	2	20			
Chromium	mg/L	0.00063J	0.1	0.1	0.10	0.10	100	100	75-125	0	20			
Cobalt	mg/L	ND	0.1	0.1	0.097	0.099	97	98	75-125	1	20			
Lead	mg/L	0.00014J	0.1	0.1	0.094	0.096	94	96	75-125	2	20			
Lithium	mg/L	0.019J	0.1	0.1	0.11	0.11	92	96	75-125	3	20			
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	99	100	75-125	1	20			
Selenium	mg/L	ND	0.1	0.1	0.093	0.095	93	95	75-125	3	20			
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20			
Vanadium	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20			
Zinc	mg/L	0.0033J	0.1	0.1	0.095	0.096	91	92	75-125	1	20			

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

QC Batch: 570627 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020 MET  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92498084008, 92498084009, 92498084010, 92498084011

METHOD BLANK: 3022878 Matrix: Water  
Associated Lab Samples: 92498084008, 92498084009, 92498084010, 92498084011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00028	10/05/20 18:29	
Arsenic	mg/L	ND	0.0050	0.00078	10/05/20 18:29	
Barium	mg/L	ND	0.010	0.00071	10/05/20 18:29	
Beryllium	mg/L	ND	0.0030	0.000046	10/05/20 18:29	
Boron	mg/L	ND	0.040	0.0052	10/05/20 18:29	
Cadmium	mg/L	ND	0.0025	0.00012	10/05/20 18:29	
Chromium	mg/L	ND	0.010	0.00055	10/05/20 18:29	
Cobalt	mg/L	ND	0.0050	0.00038	10/05/20 18:29	
Lead	mg/L	ND	0.0050	0.000036	10/05/20 18:29	
Lithium	mg/L	ND	0.030	0.00081	10/05/20 18:29	
Molybdenum	mg/L	ND	0.010	0.00069	10/05/20 18:29	
Selenium	mg/L	ND	0.010	0.0016	10/05/20 18:29	
Thallium	mg/L	ND	0.0010	0.00014	10/05/20 18:29	
Vanadium	mg/L	ND	0.010	0.0022	10/05/20 18:29	
Zinc	mg/L	ND	0.010	0.0022	10/05/20 18:29	

LABORATORY CONTROL SAMPLE: 3022879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.096	96	80-120	
Barium	mg/L	0.1	0.096	96	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.096	96	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.098	98	80-120	
Vanadium	mg/L	0.1	0.10	100	80-120	
Zinc	mg/L	0.1	0.10	100	80-120	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Parameter	Units	3022880		3022881		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498084008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.095	102	95	75-125	7	20
Arsenic	mg/L	ND	0.1	0.1	0.10	0.095	100	95	75-125	6	20
Barium	mg/L	0.026	0.1	0.1	0.13	0.12	101	91	75-125	9	20
Beryllium	mg/L	ND	0.1	0.1	0.099	0.096	99	96	75-125	4	20
Boron	mg/L	0.053	1	1	1.1	1.1	105	103	75-125	2	20
Cadmium	mg/L	0.00012J	0.1	0.1	0.10	0.094	99	94	75-125	6	20
Chromium	mg/L	ND	0.1	0.1	0.10	0.096	103	95	75-125	8	20
Cobalt	mg/L	ND	0.1	0.1	0.10	0.093	100	93	75-125	7	20
Lead	mg/L	ND	0.1	0.1	0.099	0.094	99	94	75-125	5	20
Lithium	mg/L	ND	0.1	0.1	0.10	0.096	100	96	75-125	4	20
Molybdenum	mg/L	0.0089J	0.1	0.1	0.11	0.10	100	93	75-125	7	20
Selenium	mg/L	0.0051J	0.1	0.1	0.11	0.099	101	94	75-125	6	20
Thallium	mg/L	ND	0.1	0.1	0.10	0.094	100	93	75-125	6	20
Vanadium	mg/L	ND	0.1	0.1	0.11	0.099	104	97	75-125	6	20
Zinc	mg/L	ND	0.1	0.1	0.099	0.093	99	92	75-125	7	20

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

QC Batch: 571011 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020 MET  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022, 92498084023, 92498084024

METHOD BLANK: 3024610 Matrix: Water  
Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022, 92498084023, 92498084024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00045J	0.0030	0.00028	10/07/20 15:45	
Arsenic	mg/L	ND	0.0050	0.00078	10/07/20 15:45	
Barium	mg/L	ND	0.010	0.00071	10/07/20 15:45	
Beryllium	mg/L	ND	0.0030	0.000046	10/07/20 15:45	
Boron	mg/L	ND	0.040	0.0052	10/07/20 15:45	
Cadmium	mg/L	ND	0.0025	0.00012	10/07/20 15:45	
Chromium	mg/L	ND	0.010	0.00055	10/07/20 15:45	
Cobalt	mg/L	ND	0.0050	0.00038	10/07/20 15:45	
Lead	mg/L	ND	0.0050	0.000036	10/07/20 15:45	
Lithium	mg/L	ND	0.030	0.00081	10/07/20 15:45	
Molybdenum	mg/L	ND	0.010	0.00069	10/07/20 15:45	
Selenium	mg/L	ND	0.010	0.0016	10/07/20 15:45	
Thallium	mg/L	ND	0.0010	0.00014	10/07/20 15:45	
Vanadium	mg/L	ND	0.010	0.0022	10/07/20 15:45	
Zinc	mg/L	ND	0.010	0.0022	10/07/20 15:45	

LABORATORY CONTROL SAMPLE: 3024611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.12	115	80-120	
Arsenic	mg/L	0.1	0.095	95	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.094	94	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	
Vanadium	mg/L	0.1	0.099	99	80-120	
Zinc	mg/L	0.1	0.099	99	80-120	

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**QUALITY CONTROL DATA**

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Parameter	Units	3024612		3024613		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498544002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Antimony	mg/L	0.00056J	0.1	0.1	0.11	0.11	114	111	75-125	2	20
Arsenic	mg/L	ND	0.1	0.1	0.096	0.096	95	96	75-125	0	20
Barium	mg/L	0.058	0.1	0.1	0.16	0.16	101	100	75-125	1	20
Beryllium	mg/L	ND	0.1	0.1	0.096	0.092	96	92	75-125	4	20
Boron	mg/L	0.025J	1	1	0.93	0.90	90	88	75-125	3	20
Cadmium	mg/L	ND	0.1	0.1	0.095	0.096	95	96	75-125	1	20
Chromium	mg/L	0.0014J	0.1	0.1	0.099	0.097	98	96	75-125	2	20
Cobalt	mg/L	ND	0.1	0.1	0.099	0.096	98	96	75-125	3	20
Lead	mg/L	0.00021J	0.1	0.1	0.097	0.096	97	96	75-125	1	20
Lithium	mg/L	ND	0.1	0.1	0.097	0.095	96	94	75-125	3	20
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	102	99	75-125	3	20
Selenium	mg/L	0.0018J	0.1	0.1	0.092	0.094	90	92	75-125	2	20
Thallium	mg/L	ND	0.1	0.1	0.098	0.097	98	96	75-125	1	20
Vanadium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	0	20
Zinc	mg/L	0.0023J	0.1	0.1	0.096	0.094	93	92	75-125	2	20

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

QC Batch:	570638	Analysis Method:	SM 2450C-2011
QC Batch Method:	SM 2450C-2011	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005

METHOD BLANK: 3022933 Matrix: Water

Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/02/20 17:24	

LABORATORY CONTROL SAMPLE: 3022934

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	419	105	84-108	

SAMPLE DUPLICATE: 3022936

Parameter	Units	92497532034 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 3023295

Parameter	Units	92497532027 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	243	245	1	10	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

QC Batch: 570640 Analysis Method: SM 2450C-2011  
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92498084006, 92498084007, 92498084008, 92498084009, 92498084010, 92498084011

METHOD BLANK: 3022941 Matrix: Water  
Associated Lab Samples: 92498084006, 92498084007, 92498084008, 92498084009, 92498084010, 92498084011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/02/20 17:27	

LABORATORY CONTROL SAMPLE: 3022942

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	430	108	84-108	

SAMPLE DUPLICATE: 3022943

Parameter	Units	92498367001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	65.0	71.0	9	10	

SAMPLE DUPLICATE: 3022944

Parameter	Units	92497532037 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	908	862	5	10	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

QC Batch: 570756 Analysis Method: SM 2450C-2011  
QC Batch Method: SM 2450C-2011 Analysis Description: 2540C Total Dissolved Solids  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022, 92498084023, 92498084024

METHOD BLANK: 3023513 Matrix: Water  
Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022, 92498084023, 92498084024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	10/03/20 16:26	

LABORATORY CONTROL SAMPLE: 3023514

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	430	108	84-108	

SAMPLE DUPLICATE: 3023515

Parameter	Units	92498084012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	634	636	0	10	

SAMPLE DUPLICATE: 3023516

Parameter	Units	92498084023 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

QC Batch: 570217 Analysis Method: EPA 300.0 Rev 2.1 1993  
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005, 92498084006, 92498084007, 92498084008, 92498084009, 92498084010, 92498084011

METHOD BLANK: 3020447 Matrix: Water  
Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005, 92498084006, 92498084007, 92498084008, 92498084009, 92498084010, 92498084011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/01/20 19:33	
Fluoride	mg/L	ND	0.10	0.050	10/01/20 19:33	
Sulfate	mg/L	ND	1.0	0.50	10/01/20 19:33	

LABORATORY CONTROL SAMPLE: 3020448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	51.6	103	90-110	
Fluoride	mg/L	2.5	2.7	110	90-110	
Sulfate	mg/L	50	50.5	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020449 3020450

Parameter	Units	92497532033		3020450		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	8.1	50	50	62.3	61.6	108	107	90-110	1	10
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	107	106	90-110	1	10
Sulfate	mg/L	66.2	50	50	111	110	89	88	90-110	0	10 M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020451 3020452

Parameter	Units	92498084008		3020452		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	10.6	50	50	64.0	64.3	107	107	90-110	0	10
Fluoride	mg/L	ND	2.5	2.5	2.3	2.3	91	93	90-110	3	10
Sulfate	mg/L	93.5	50	50	134	134	82	81	90-110	0	10 M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

QC Batch: 571106 Analysis Method: EPA 300.0 Rev 2.1 1993  
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022

METHOD BLANK: 3024838 Matrix: Water  
Associated Lab Samples: 92498084012, 92498084013, 92498084014, 92498084015, 92498084016, 92498084017, 92498084018, 92498084019, 92498084020, 92498084021, 92498084022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/06/20 19:21	
Fluoride	mg/L	ND	0.10	0.050	10/06/20 19:21	
Sulfate	mg/L	ND	1.0	0.50	10/06/20 19:21	

LABORATORY CONTROL SAMPLE: 3024839

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.5	99	90-110	
Fluoride	mg/L	2.5	2.3	91	90-110	
Sulfate	mg/L	50	49.4	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024840 3024841

Parameter	Units	3024840		3024841		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	265	50	50	309	313	87	96	90-110	1	10 M6
Fluoride	mg/L	8.8	2.5	2.5	13.4	13.5	182	185	90-110	1	10 M6
Sulfate	mg/L	28.4	50	50	78.6	79.5	100	102	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024842 3024843

Parameter	Units	3024842		3024843		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	1.7	50	50	53.9	54.3	104	105	90-110	1	10
Fluoride	mg/L	ND	2.5	2.5	2.5	2.6	102	103	90-110	1	10
Sulfate	mg/L	18.5	50	50	69.7	70.2	102	103	90-110	1	10

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

QC Batch: 571109 Analysis Method: EPA 300.0 Rev 2.1 1993  
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498084023, 92498084024

METHOD BLANK: 3024847 Matrix: Water  
Associated Lab Samples: 92498084023, 92498084024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	10/07/20 03:04	
Fluoride	mg/L	ND	0.10	0.050	10/07/20 03:04	
Sulfate	mg/L	ND	1.0	0.50	10/07/20 03:04	

LABORATORY CONTROL SAMPLE: 3024848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.1	98	90-110	
Fluoride	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	50	48.5	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024849 3024850

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498084023 Result	Spike Conc.	Spike Conc.	Result								
Chloride	mg/L	ND	50	50	52.3	52.3	105	105	90-110	0	10		
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	100	101	90-110	1	10		
Sulfate	mg/L	ND	50	50	51.4	51.4	103	103	90-110	0	10		

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498084001	GWA-7				
92498084002	GWC-13				
92498084003	GWA-8				
92498084004	GWC-1				
92498084006	GWC-12				
92498084007	GWC-11				
92498084008	GWC-14				
92498084009	GWC-2				
92498084012	GWC-21				
92498084013	GWC-15				
92498084014	GWC-16				
92498084015	GWC-20				
92498084016	GWB-4R				
92498084019	GWC-17				
92498084020	GWC-22				
92498084021	GWB-6R				
92498084022	GWB-5R				
92498084024	GWC-9				
92498084001	GWA-7	EPA 3010A	570380	EPA 6010D	570413
92498084002	GWC-13	EPA 3010A	570380	EPA 6010D	570413
92498084003	GWA-8	EPA 3010A	570380	EPA 6010D	570413
92498084004	GWC-1	EPA 3010A	570380	EPA 6010D	570413
92498084005	FB-1-9-28-20	EPA 3010A	570380	EPA 6010D	570413
92498084006	GWC-12	EPA 3010A	570380	EPA 6010D	570413
92498084007	GWC-11	EPA 3010A	570380	EPA 6010D	570413
92498084008	GWC-14	EPA 3010A	570380	EPA 6010D	570413
92498084009	GWC-2	EPA 3010A	570380	EPA 6010D	570413
92498084010	EB-1-9-29-20	EPA 3010A	570380	EPA 6010D	570413
92498084011	DUP-1	EPA 3010A	570380	EPA 6010D	570413
92498084012	GWC-21	EPA 3010A	571010	EPA 6010D	571031
92498084013	GWC-15	EPA 3010A	571010	EPA 6010D	571031
92498084014	GWC-16	EPA 3010A	571010	EPA 6010D	571031
92498084015	GWC-20	EPA 3010A	571010	EPA 6010D	571031
92498084016	GWB-4R	EPA 3010A	571010	EPA 6010D	571031
92498084017	EB-2-9-30-20	EPA 3010A	571010	EPA 6010D	571031
92498084018	DUP-2	EPA 3010A	571010	EPA 6010D	571031
92498084019	GWC-17	EPA 3010A	571010	EPA 6010D	571031
92498084020	GWC-22	EPA 3010A	571010	EPA 6010D	571031
92498084021	GWB-6R	EPA 3010A	571010	EPA 6010D	571031
92498084022	GWB-5R	EPA 3010A	571010	EPA 6010D	571031
92498084023	FB-2-9-30-20	EPA 3010A	571010	EPA 6010D	571031
92498084024	GWC-9	EPA 3010A	571010	EPA 6010D	571031
92498084001	GWA-7	EPA 3005A	570626	EPA 6020B	570683
92498084002	GWC-13	EPA 3005A	570626	EPA 6020B	570683
92498084003	GWA-8	EPA 3005A	570626	EPA 6020B	570683
92498084004	GWC-1	EPA 3005A	570626	EPA 6020B	570683
92498084005	FB-1-9-28-20	EPA 3005A	570626	EPA 6020B	570683

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498084006	GWC-12	EPA 3005A	570626	EPA 6020B	570683
92498084007	GWC-11	EPA 3005A	570626	EPA 6020B	570683
92498084008	GWC-14	EPA 3005A	570627	EPA 6020B	570682
92498084009	GWC-2	EPA 3005A	570627	EPA 6020B	570682
92498084010	EB-1-9-29-20	EPA 3005A	570627	EPA 6020B	570682
92498084011	DUP-1	EPA 3005A	570627	EPA 6020B	570682
92498084012	GWC-21	EPA 3005A	571011	EPA 6020B	571032
92498084013	GWC-15	EPA 3005A	571011	EPA 6020B	571032
92498084014	GWC-16	EPA 3005A	571011	EPA 6020B	571032
92498084015	GWC-20	EPA 3005A	571011	EPA 6020B	571032
92498084016	GWB-4R	EPA 3005A	571011	EPA 6020B	571032
92498084017	EB-2-9-30-20	EPA 3005A	571011	EPA 6020B	571032
92498084018	DUP-2	EPA 3005A	571011	EPA 6020B	571032
92498084019	GWC-17	EPA 3005A	571011	EPA 6020B	571032
92498084020	GWC-22	EPA 3005A	571011	EPA 6020B	571032
92498084021	GWB-6R	EPA 3005A	571011	EPA 6020B	571032
92498084022	GWB-5R	EPA 3005A	571011	EPA 6020B	571032
92498084023	FB-2-9-30-20	EPA 3005A	571011	EPA 6020B	571032
92498084024	GWC-9	EPA 3005A	571011	EPA 6020B	571032
92498084001	GWA-7	SM 2450C-2011	570638		
92498084002	GWC-13	SM 2450C-2011	570638		
92498084003	GWA-8	SM 2450C-2011	570638		
92498084004	GWC-1	SM 2450C-2011	570638		
92498084005	FB-1-9-28-20	SM 2450C-2011	570638		
92498084006	GWC-12	SM 2450C-2011	570640		
92498084007	GWC-11	SM 2450C-2011	570640		
92498084008	GWC-14	SM 2450C-2011	570640		
92498084009	GWC-2	SM 2450C-2011	570640		
92498084010	EB-1-9-29-20	SM 2450C-2011	570640		
92498084011	DUP-1	SM 2450C-2011	570640		
92498084012	GWC-21	SM 2450C-2011	570756		
92498084013	GWC-15	SM 2450C-2011	570756		
92498084014	GWC-16	SM 2450C-2011	570756		
92498084015	GWC-20	SM 2450C-2011	570756		
92498084016	GWB-4R	SM 2450C-2011	570756		
92498084017	EB-2-9-30-20	SM 2450C-2011	570756		
92498084018	DUP-2	SM 2450C-2011	570756		
92498084019	GWC-17	SM 2450C-2011	570756		
92498084020	GWC-22	SM 2450C-2011	570756		
92498084021	GWB-6R	SM 2450C-2011	570756		
92498084022	GWB-5R	SM 2450C-2011	570756		
92498084023	FB-2-9-30-20	SM 2450C-2011	570756		
92498084024	GWC-9	SM 2450C-2011	570756		
92498084001	GWA-7	EPA 300.0 Rev 2.1 1993	570217		
92498084002	GWC-13	EPA 300.0 Rev 2.1 1993	570217		
92498084003	GWA-8	EPA 300.0 Rev 2.1 1993	570217		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SEMI ANNUAL  
Pace Project No.: 92498084

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498084004	GWC-1	EPA 300.0 Rev 2.1 1993	570217		
92498084005	FB-1-9-28-20	EPA 300.0 Rev 2.1 1993	570217		
92498084006	GWC-12	EPA 300.0 Rev 2.1 1993	570217		
92498084007	GWC-11	EPA 300.0 Rev 2.1 1993	570217		
92498084008	GWC-14	EPA 300.0 Rev 2.1 1993	570217		
92498084009	GWC-2	EPA 300.0 Rev 2.1 1993	570217		
92498084010	EB-1-9-29-20	EPA 300.0 Rev 2.1 1993	570217		
92498084011	DUP-1	EPA 300.0 Rev 2.1 1993	570217		
92498084012	GWC-21	EPA 300.0 Rev 2.1 1993	571106		
92498084013	GWC-15	EPA 300.0 Rev 2.1 1993	571106		
92498084014	GWC-16	EPA 300.0 Rev 2.1 1993	571106		
92498084015	GWC-20	EPA 300.0 Rev 2.1 1993	571106		
92498084016	GWB-4R	EPA 300.0 Rev 2.1 1993	571106		
92498084017	EB-2-9-30-20	EPA 300.0 Rev 2.1 1993	571106		
92498084018	DUP-2	EPA 300.0 Rev 2.1 1993	571106		
92498084019	GWC-17	EPA 300.0 Rev 2.1 1993	571106		
92498084020	GWC-22	EPA 300.0 Rev 2.1 1993	571106		
92498084021	GWB-6R	EPA 300.0 Rev 2.1 1993	571106		
92498084022	GWB-5R	EPA 300.0 Rev 2.1 1993	571106		
92498084023	FB-2-9-30-20	EPA 300.0 Rev 2.1 1993	571109		
92498084024	GWC-9	EPA 300.0 Rev 2.1 1993	571109		

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**Sample Condition Upon Receipt**

Face Analytical

Client Name: BA Power

WO#: **92498084**



Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no    Seals intact:  yes  no    Proj. Name: \_\_\_\_\_

Packing Material:  Bubble Wrap  Bubble Bags  None  Other Ziplock

Thermometer Used 230    Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 3.7    Biological Tissue is Frozen: Yes No    Date and Initials of person examining contents: CO  
Temp should be above freezing to 6°C    Comments: \_\_\_\_\_

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>CO</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

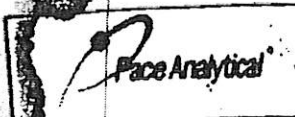
Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:  
**Bottle Identification Form (BIF)**  
 Document No.:  
 F-CAR-CS-043-Rev.00

Document issued: March 14, 2019  
 Page 1 of 1  
 Issuing Authority:

Project #

**W0# : 92498084**

PM: KLH1

Due Date: 10/14/20

CLIENT: GA-GA Power

• Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

• Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP9A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG8U-100 mL Amber Unpreserved vials (N/A)	VS9U-20 mL Scintillation vials (N/A)	
	1																											
	2																											
	3																											
	4																											
	5																											
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											

**pH Adjustment Log for Preserved Samples**

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. Out of hold, incorrect preservative, out of temp, incorrect containers.



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information:	<b>Section B</b> Required Project Information:	<b>Section C</b> Invoice Information:	Page: _____ of _____
Company: GA Power	Report To: SCS Contacts	Attention: Southern Co.	
Address: Atlanta, GA	Copy To: ACC Contacts	Company Name:	
		Address:	
		Pace Quote Reference:	
		Pace Project Manager:	
		Pace Profile #: 2926-1	

<b>REGULATORY AGENCY</b>	NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/>
	UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>
Site Location STATE: GA	

ITEM #	Valid Matrix Codes MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./Lab ID.
			DATE	TIME							
1	GW A-7	WT G	9-28-20	15:20	9	Unpreserved	✓	✓	✓	✓	PH= 5.86
2	GW C-13	WT G	9-28-20	16:40	9	Unpreserved	✓	✓	✓	✓	PH= 4.76
3	GW A-8	WT G	9-28-20	16:04	9	Unpreserved	✓	✓	✓	✓	PH= 4.41
4	GW C-1	WT G	9-28-20	17:08	9	Unpreserved	✓	✓	✓	✓	PH= 5.79
5	FB-1-9-28-20	WT G	9-28-20	16:55	9	Unpreserved	✓	✓	✓	✓	PH= N/A
6	GW C-12	WT G	9-24-20	09:35	9	Unpreserved	✓	✓	✓	✓	PH= 5.95
7	GW C-11	WT G	9-24-20	12:20	9	Unpreserved	✓	✓	✓	✓	PH= 4.77
8	GW C-14	WT G	9-24-20	14:42	9	Unpreserved	✓	✓	✓	✓	PH= 5.69
9	GW C-2	WT G	9-24-20	15:25	9	Unpreserved	✓	✓	✓	✓	PH= 4.60
10	FB-1-9-24-20	WT G	9-24-20	16:20	9	Unpreserved	✓	✓	✓	✓	PH= N/A
11	DVP-1	WT G	9-29-20	—	9	Unpreserved	✓	✓	✓	✓	PH= N/A
12											

<b>ADDITIONAL COMMENTS</b>	<b>REINQUISHED BY / AFFILIATION</b>	<b>DATE</b>	<b>TIME</b>	<b>ACCEPTED BY / AFFILIATION</b>	<b>DATE</b>	<b>TIME</b>	<b>SAMPLE CONDITIONS</b>
Please note when the last sample for the event has been taken.	ACC	9-30-20	0745	MILK STEAK	9-30-20	12:45	Temp in °C: 3.7 Received on Ice (Y/N): Y Custody Sealed Cooler (Y/N): Y Samples Intact (Y/N): Y

<b>SAMPLER NAME AND SIGNATURE</b>	<b>PRINT Name of SAMPLER:</b> Jordan Bristed	<b>DATE Signed (MM/DD/YY):</b> 09/30/20
	<b>SIGNATURE of SAMPLER:</b> [Signature]	

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-FALL-Q-020/rev.07, 15-Feb-2007





# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: GA Power	Address: Atlanta, GA	Report To: SCS Contacts	Copy To: ACC Contacts	Attention: Southern Co.	Company Name:
Email To: SCS Contacts	Phone: / Fax:	Purchase Order No.:	Project Name: Gunman Road - Semi-Annual	Address:	Site Location: GA
Requested Due Date/TAT: 10 Day	Project Number:	Reference: Kevin Herring	Pace Project Manager: Pace Profile # 2926-1	REGULATORY AGENCY: NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/>	UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab ID.	
				DATE	TIME								DATE
1	GWC-21			9-30-20	1049		5	Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	TDS Chloride/Fluoride/Sulfate 300.0 App. III + IV + State Metals * RAD 226/228			62468054	
2	GWC-15			9-30-20	1230		5						
3	GWC-16			9-30-20	1400		5						
4	GWC-20			9-30-20	1631		5						
5	GWB-4R			10-1-20	0850		5						
6	GB-2-9-30-20			9-30-20	1430		5						
7	WPR-2			9-30-20			5						
8													
9													
10													
11													
12													

Additional Comments: *Relinquished by Affiliation*

Relinquished By / Affiliation: *John Bell HCC* DATE: *10-2-20* TIME: *12:22*

Accepted By / Affiliation: *M. W. ...* DATE: *10-2-20* TIME: *10:00*

Temp in °C: \_\_\_\_\_ Received on Ice (Y/N): \_\_\_\_\_ Custody Sealed Cooler (Y/N): \_\_\_\_\_ Samples Intact (N/A): \_\_\_\_\_

Sampler Name and Signature: \_\_\_\_\_ PRINT Name of Sampler: \_\_\_\_\_ SIGNATURE of SAMPLER: \_\_\_\_\_ DATE Signed (MM/DD/YY): *10-2-20*

Important Note: By signing this form, you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007





# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A** Required Client Information  
 Company: GA Power  
 Address: Atlanta, GA

**Section B** Required Project Information:  
 Report To: SCS Contacts  
 Copy To: ACC Contacts

**Section C** Invoice Information:  
 Attention: Southern Co.  
 Company Name  
 Address:  
 Parcel Code  
 Reference  
 Pace Project Manager  
 Pace Profile #: 2926-1

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER CCP  
 Site Location: GA  
 STATE: GA

ITEM #	Section D Required Client Information  SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Valid Matrix Codes MATRIX CODE CODE DW WT WW P SL WP AR OT TS	Valid Matrix DRINKING WATER WASTE WATER WASTEWATER PRODUCT SOLVENT OIL WASTE AIR OTHER TISSUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./Lab ID. 622648864
						COMPOSITE	DATE								
1	GW-C-17	WT G			G		9-30-20	1200	11	✓	✓	✓	✓	✓	4.08
2	GW-C-22	WT G			G		9-30-20	1405	9	✓	✓	✓	✓	✓	4.63
3	GW-B-6R	WT G			G		9-30-20	1555	9	✓	✓	✓	✓	✓	5.59
4	GW-B-5R	WT G			G		9-30-20	1730	9	✓	✓	✓	✓	✓	4.44
5	FB-2-4-30-20	WT G			G		9-30-20	1525	9	✓	✓	✓	✓	✓	4.44
6	GW-C-9	WT G			G		10-1-20	0821	9	✓	✓	✓	✓	✓	4.44
7															
8															
9															
10															
11															
12															

**ADDITIONAL COMMENTS**  
 Relinquished when the last sample for the event has been taken.  
 Pace Project No./Lab ID.  
 10-2-20 1222 K. Williams for Pace 10/2/20

**RELINQUISHED BY / AFFILIATION**  
 K. Williams for Pace 10/2/20

**ACCEPTED BY / AFFILIATION**  
 K. Williams for Pace 10/2/20

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Jordan Begislow / Taylor or Gayle  
 SIGNATURE of SAMPLER: Taylor Begislow 10-2-20

**DATE** 10-2-20  
**TIME** 1222

**TEMPERATURE**  
 Temp in °C  
 Received on Ice (Y/N)  
 Custody Sealed Cooler (Y/N)  
 Samples Intact (Y/N)

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

October 20, 2020

Joju Abraham  
Georgia Power-CCR  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 30, 2020 and October 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Peachtree Corners, GA

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring  
kevin.herring@pacelabs.com  
1(704)875-9092  
HORIZON Database Administrator

Enclosures

cc: Owens Fuquea, ACC  
Kristen Jurinko  
Matt Malone, Atlantic Coast Consulting  
Betsy McDaniel, Atlantic Coast Consulting  
Evan Perry, Atlantic Coast Consulting  
Ms. Lauren Petty, Southern Co. Services



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

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### **Pace Analytical Services Asheville**

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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### **Pace Analytical Services Peachtree Corners**

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92498088001	GWA-7	Water	09/28/20 15:20	09/30/20 11:47
92498088002	GWC-13	Water	09/28/20 16:40	09/30/20 11:47
92498088003	GWA-8	Water	09/28/20 16:04	09/30/20 11:47
92498088004	GWC-1	Water	09/28/20 17:08	09/30/20 11:47
92498088005	GWC-12	Water	09/29/20 09:35	09/30/20 11:47
92498088006	GWC-11	Water	09/29/20 12:20	09/30/20 11:47
92498088007	GWC-14	Water	09/29/20 14:42	09/30/20 11:47
92498088008	GWC-2	Water	09/29/20 15:55	09/30/20 11:47
92498088009	GWC-21	Water	09/30/20 10:49	10/02/20 12:22
92498088010	GWC-15	Water	09/30/20 12:30	10/02/20 12:22
92498088011	GWC-16	Water	09/30/20 14:00	10/02/20 12:22
92498088012	GWC-20	Water	09/30/20 16:31	10/02/20 12:22
92498088013	GWB-4R	Water	10/01/20 08:50	10/02/20 12:22
92498088014	GWC-17	Water	09/30/20 12:00	10/02/20 12:22
92498088015	GWC-22	Water	09/30/20 14:05	10/02/20 12:22
92498088016	GWB-6R	Water	09/30/20 15:35	10/02/20 12:22
92498088017	GWB-5R	Water	09/30/20 17:30	10/02/20 12:22
92498088018	GWC-9	Water	10/01/20 08:21	10/02/20 12:22

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92498088001	GWA-7	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088002	GWC-13	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088003	GWA-8	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088004	GWC-1	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088005	GWC-12	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088006	GWC-11	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088007	GWC-14	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088008	GWC-2	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92498088009	GWC-21	EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
92498088010	GWC-15	EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
92498088011	GWC-16	SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
92498088012	GWC-20	EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
92498088013	GWB-4R	SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
92498088014	GWC-17	EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
92498088015	GWC-22	EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92498088016	GWB-6R	SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
92498088017	GWB-5R	SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
92498088018	GWC-9	SM 5310B-2011	ECH	1
		EPA 6010D	DRB	5
		SM 2320B-2011	ECH	3
		EPA 350.1 Rev 2.0 1993	KDF1	1
		EPA 351.2 Rev 2.0 1993	MFO	1
		SM 5310B-2011	ECH	1

PASI-A = Pace Analytical Services - Asheville

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID	Client Sample ID	Result	Units	Report Limit	Analyzed	Qualifiers
Method	Parameters					
<b>92498088001</b>	<b>GWA-7</b>					
EPA 6010D	Iron	2.3	mg/L	0.040	10/05/20 22:02	
EPA 6010D	Magnesium	0.73	mg/L	0.050	10/05/20 22:02	
EPA 6010D	Manganese	0.014J	mg/L	0.040	10/05/20 22:02	
EPA 6010D	Potassium	8.3	mg/L	0.20	10/05/20 22:02	
EPA 6010D	Sodium	415	mg/L	10.0	10/06/20 16:10	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	775	mg/L	5.0	10/08/20 20:44	
SM 2320B-2011	Alkalinity, Total as CaCO3	775	mg/L	5.0	10/08/20 20:44	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	1.0	mg/L	0.10	10/07/20 12:28	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	4.2	mg/L	0.50	10/14/20 00:09	
SM 5310B-2011	Total Organic Carbon	236	mg/L	50.0	10/08/20 03:06	
<b>92498088002</b>	<b>GWC-13</b>					
EPA 6010D	Iron	0.30	mg/L	0.040	10/05/20 22:07	
EPA 6010D	Magnesium	6.3	mg/L	0.050	10/05/20 22:07	
EPA 6010D	Manganese	0.0043J	mg/L	0.040	10/05/20 22:07	
EPA 6010D	Potassium	1.7	mg/L	0.20	10/05/20 22:07	
EPA 6010D	Sodium	3.5	mg/L	1.0	10/05/20 22:07	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.28J	mg/L	0.50	10/14/20 00:13	M1
SM 5310B-2011	Total Organic Carbon	1.4	mg/L	1.0	10/08/20 03:59	
<b>92498088003</b>	<b>GWA-8</b>					
EPA 6010D	Iron	4.5	mg/L	0.040	10/05/20 22:11	
EPA 6010D	Magnesium	3.6	mg/L	0.050	10/05/20 22:11	
EPA 6010D	Manganese	0.020J	mg/L	0.040	10/05/20 22:11	
EPA 6010D	Potassium	3.2	mg/L	0.20	10/05/20 22:11	
EPA 6010D	Sodium	14.8	mg/L	1.0	10/05/20 22:11	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.93	mg/L	0.10	10/07/20 12:34	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	1.2	mg/L	0.50	10/14/20 00:16	
SM 5310B-2011	Total Organic Carbon	5.3	mg/L	1.0	10/08/20 04:14	
<b>92498088004</b>	<b>GWC-1</b>					
EPA 6010D	Iron	0.16	mg/L	0.040	10/05/20 22:24	
EPA 6010D	Magnesium	14.8	mg/L	0.050	10/05/20 22:24	
EPA 6010D	Manganese	0.051	mg/L	0.040	10/05/20 22:24	
EPA 6010D	Potassium	9.0	mg/L	0.20	10/05/20 22:24	
EPA 6010D	Sodium	11.8	mg/L	1.0	10/05/20 22:24	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	10/08/20 21:04	
SM 2320B-2011	Alkalinity, Total as CaCO3	164	mg/L	5.0	10/08/20 21:04	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.51	mg/L	0.10	10/07/20 12:35	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	1.3	mg/L	0.50	10/14/20 00:17	
SM 5310B-2011	Total Organic Carbon	47.6	mg/L	1.0	10/08/20 04:32	
<b>92498088005</b>	<b>GWC-12</b>					
EPA 6010D	Iron	2.2	mg/L	0.040	10/05/20 22:33	
EPA 6010D	Magnesium	13.4	mg/L	0.050	10/05/20 22:33	
EPA 6010D	Manganese	0.071	mg/L	0.040	10/05/20 22:33	
EPA 6010D	Potassium	6.5	mg/L	0.20	10/05/20 22:33	
EPA 6010D	Sodium	43.0	mg/L	1.0	10/05/20 22:33	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	1.3	mg/L	0.10	10/07/20 12:37	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498088005</b>	<b>GWC-12</b>					
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	1.4	mg/L	0.50	10/14/20 00:20	
SM 5310B-2011	Total Organic Carbon	5.8	mg/L	1.0	10/08/20 04:53	
<b>92498088006</b>	<b>GWC-11</b>					
EPA 6010D	Iron	0.64	mg/L	0.040	10/05/20 22:37	
EPA 6010D	Magnesium	50.8	mg/L	0.050	10/05/20 22:37	
EPA 6010D	Manganese	0.037J	mg/L	0.040	10/05/20 22:37	
EPA 6010D	Potassium	25.7	mg/L	0.20	10/05/20 22:37	
EPA 6010D	Sodium	184	mg/L	1.0	10/05/20 22:37	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.73	mg/L	0.10	10/15/20 10:36	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.90	mg/L	0.50	10/14/20 00:22	
SM 5310B-2011	Total Organic Carbon	5.0	mg/L	1.0	10/14/20 19:52	
<b>92498088007</b>	<b>GWC-14</b>					
EPA 6010D	Iron	0.39	mg/L	0.040	10/05/20 22:41	
EPA 6010D	Magnesium	7.4	mg/L	0.050	10/05/20 22:41	
EPA 6010D	Manganese	0.16	mg/L	0.040	10/05/20 22:41	
EPA 6010D	Potassium	2.7	mg/L	0.20	10/05/20 22:41	
EPA 6010D	Sodium	13.3	mg/L	1.0	10/05/20 22:41	
SM 2320B-2011	Alkalinity, Bicarbonate (CaCO <sub>3</sub> )	31.0	mg/L	5.0	10/08/20 21:34	
SM 2320B-2011	Alkalinity, Total as CaCO <sub>3</sub>	31.0	mg/L	5.0	10/08/20 21:34	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.24	mg/L	0.10	10/07/20 12:38	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.38J	mg/L	0.50	10/14/20 00:23	
SM 5310B-2011	Total Organic Carbon	3.9	mg/L	1.0	10/08/20 05:13	
<b>92498088008</b>	<b>GWC-2</b>					
EPA 6010D	Iron	1.0	mg/L	0.040	10/05/20 22:46	
EPA 6010D	Magnesium	0.77	mg/L	0.050	10/05/20 22:46	
EPA 6010D	Manganese	0.0052J	mg/L	0.040	10/05/20 22:46	
EPA 6010D	Potassium	0.58	mg/L	0.20	10/05/20 22:46	
EPA 6010D	Sodium	6.5	mg/L	1.0	10/05/20 22:46	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.13	mg/L	0.10	10/07/20 12:40	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.29J	mg/L	0.50	10/14/20 01:04	
SM 5310B-2011	Total Organic Carbon	0.88J	mg/L	1.0	10/08/20 06:06	
<b>92498088009</b>	<b>GWC-21</b>					
EPA 6010D	Iron	0.050	mg/L	0.040	10/08/20 01:13	
EPA 6010D	Magnesium	19.6	mg/L	0.050	10/08/20 01:13	
EPA 6010D	Manganese	0.061	mg/L	0.040	10/08/20 01:13	
EPA 6010D	Potassium	10.2	mg/L	0.20	10/08/20 01:13	
EPA 6010D	Sodium	38.0	mg/L	1.0	10/08/20 01:13	
SM 2320B-2011	Alkalinity, Bicarbonate (CaCO <sub>3</sub> )	54.9	mg/L	5.0	10/09/20 16:15	
SM 2320B-2011	Alkalinity, Total as CaCO <sub>3</sub>	54.9	mg/L	5.0	10/09/20 16:15	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.17	mg/L	0.10	10/09/20 09:38	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.53	mg/L	0.50	10/16/20 01:32	
SM 5310B-2011	Total Organic Carbon	7.7	mg/L	1.0	10/14/20 23:33	
<b>92498088010</b>	<b>GWC-15</b>					
EPA 6010D	Iron	0.14	mg/L	0.040	10/08/20 01:17	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498088010</b>	<b>GWC-15</b>					
EPA 6010D	Magnesium	16.2	mg/L	0.050	10/08/20 01:17	
EPA 6010D	Manganese	0.26	mg/L	0.040	10/08/20 01:17	
EPA 6010D	Potassium	11.6	mg/L	0.20	10/08/20 01:17	
EPA 6010D	Sodium	6.1	mg/L	1.0	10/08/20 01:17	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	349	mg/L	5.0	10/12/20 17:07	
SM 2320B-2011	Alkalinity, Total as CaCO3	349	mg/L	5.0	10/12/20 17:07	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.27	mg/L	0.10	10/09/20 09:40	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.98	mg/L	0.50	10/16/20 01:33	
SM 5310B-2011	Total Organic Carbon	33.8	mg/L	1.0	10/14/20 23:51	M1
<b>92498088011</b>	<b>GWC-16</b>					
EPA 6010D	Iron	0.48	mg/L	0.040	10/08/20 01:31	
EPA 6010D	Magnesium	53.5	mg/L	0.050	10/08/20 01:31	
EPA 6010D	Manganese	0.11	mg/L	0.040	10/08/20 01:31	
EPA 6010D	Potassium	19.1	mg/L	0.20	10/08/20 01:31	
EPA 6010D	Sodium	91.8	mg/L	1.0	10/08/20 01:31	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	45.5	mg/L	5.0	10/09/20 16:39	
SM 2320B-2011	Alkalinity, Total as CaCO3	45.5	mg/L	5.0	10/09/20 16:39	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.57	mg/L	0.10	10/09/20 09:41	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	1.1	mg/L	0.50	10/16/20 01:34	
SM 5310B-2011	Total Organic Carbon	19.5	mg/L	1.0	10/15/20 00:47	
<b>92498088012</b>	<b>GWC-20</b>					
EPA 6010D	Iron	0.38	mg/L	0.040	10/08/20 01:35	
EPA 6010D	Magnesium	88.5	mg/L	0.050	10/08/20 01:35	
EPA 6010D	Manganese	0.074	mg/L	0.040	10/08/20 01:35	
EPA 6010D	Potassium	22.9	mg/L	0.20	10/08/20 01:35	
EPA 6010D	Sodium	98.5	mg/L	1.0	10/08/20 01:35	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	229	mg/L	5.0	10/09/20 16:48	
SM 2320B-2011	Alkalinity, Total as CaCO3	229	mg/L	5.0	10/09/20 16:48	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	1.1	mg/L	0.10	10/09/20 09:43	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	1.6	mg/L	0.50	10/16/20 01:35	
SM 5310B-2011	Total Organic Carbon	27.1	mg/L	1.0	10/15/20 01:42	
<b>92498088013</b>	<b>GWB-4R</b>					
EPA 6010D	Iron	4.6	mg/L	0.040	10/08/20 01:40	
EPA 6010D	Magnesium	10.8	mg/L	0.050	10/08/20 01:40	
EPA 6010D	Manganese	0.15	mg/L	0.040	10/08/20 01:40	
EPA 6010D	Potassium	18.4	mg/L	0.20	10/08/20 01:40	
EPA 6010D	Sodium	47.8	mg/L	1.0	10/08/20 01:40	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	84.0	mg/L	5.0	10/09/20 18:48	
SM 2320B-2011	Alkalinity, Total as CaCO3	84.0	mg/L	5.0	10/09/20 18:48	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	2.3	mg/L	0.10	10/09/20 09:44	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	2.8	mg/L	0.50	10/16/20 01:38	
SM 5310B-2011	Total Organic Carbon	23.4	mg/L	1.0	10/15/20 02:02	
<b>92498088014</b>	<b>GWC-17</b>					
EPA 6010D	Iron	14.1	mg/L	0.040	10/08/20 01:53	
EPA 6010D	Magnesium	31.4	mg/L	0.050	10/08/20 01:53	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498088014</b>	<b>GWC-17</b>					
EPA 6010D	Manganese	0.12	mg/L	0.040	10/08/20 01:53	
EPA 6010D	Potassium	4.8	mg/L	0.20	10/08/20 01:53	
EPA 6010D	Sodium	141	mg/L	1.0	10/08/20 01:53	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	15.2	mg/L	5.0	10/09/20 17:04	
SM 2320B-2011	Alkalinity, Total as CaCO3	15.2	mg/L	5.0	10/09/20 17:04	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	1.8	mg/L	0.10	10/09/20 09:45	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	2.3	mg/L	0.50	10/16/20 01:39	
SM 5310B-2011	Total Organic Carbon	7.4	mg/L	1.0	10/15/20 02:21	
<b>92498088015</b>	<b>GWC-22</b>					
EPA 6010D	Iron	0.18	mg/L	0.040	10/08/20 01:58	
EPA 6010D	Magnesium	3.0	mg/L	0.050	10/08/20 01:58	
EPA 6010D	Manganese	0.0097J	mg/L	0.040	10/08/20 01:58	
EPA 6010D	Potassium	4.3	mg/L	0.20	10/08/20 01:58	
EPA 6010D	Sodium	4.5	mg/L	1.0	10/08/20 01:58	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.36J	mg/L	0.50	10/16/20 01:41	
SM 5310B-2011	Total Organic Carbon	2.1	mg/L	1.0	10/15/20 02:39	
<b>92498088016</b>	<b>GWB-6R</b>					
EPA 6010D	Iron	2.9	mg/L	0.040	10/08/20 02:02	
EPA 6010D	Magnesium	5.8	mg/L	0.050	10/08/20 02:02	
EPA 6010D	Manganese	0.069	mg/L	0.040	10/08/20 02:02	
EPA 6010D	Potassium	25.6	mg/L	0.20	10/08/20 02:02	
EPA 6010D	Sodium	189	mg/L	1.0	10/08/20 02:02	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	95.2	mg/L	5.0	10/09/20 17:14	
SM 2320B-2011	Alkalinity, Total as CaCO3	95.2	mg/L	5.0	10/09/20 17:14	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	1.2	mg/L	0.10	10/09/20 09:51	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	2.2	mg/L	0.50	10/16/20 01:44	
SM 5310B-2011	Total Organic Carbon	49.3	mg/L	1.0	10/15/20 02:55	
<b>92498088017</b>	<b>GWB-5R</b>					
EPA 6010D	Iron	7.2	mg/L	0.040	10/08/20 02:07	
EPA 6010D	Magnesium	30.7	mg/L	0.050	10/08/20 02:07	
EPA 6010D	Manganese	0.24	mg/L	0.040	10/08/20 02:07	
EPA 6010D	Potassium	14.5	mg/L	0.20	10/08/20 02:07	
EPA 6010D	Sodium	47.3	mg/L	1.0	10/08/20 02:07	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	26.2	mg/L	5.0	10/09/20 17:21	
SM 2320B-2011	Alkalinity, Total as CaCO3	26.2	mg/L	5.0	10/09/20 17:21	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	1.3	mg/L	0.10	10/09/20 09:53	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	1.7	mg/L	0.50	10/16/20 01:45	
SM 5310B-2011	Total Organic Carbon	10.6	mg/L	1.0	10/15/20 03:14	
<b>92498088018</b>	<b>GWC-9</b>					
EPA 6010D	Iron	6.4	mg/L	0.040	10/08/20 02:29	
EPA 6010D	Magnesium	2.6	mg/L	0.050	10/08/20 02:29	
EPA 6010D	Manganese	0.035J	mg/L	0.040	10/08/20 02:29	
EPA 6010D	Potassium	1.4	mg/L	0.20	10/08/20 02:29	
EPA 6010D	Sodium	12.7	mg/L	1.0	10/08/20 02:29	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	0.43	mg/L	0.10	10/09/20 09:54	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498088018</b>	<b>GWC-9</b>					
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	0.77	mg/L	0.50	10/16/20 01:46	
SM 5310B-2011	Total Organic Carbon	4.7	mg/L	1.0	10/15/20 03:35	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: GWA-7		Lab ID: 92498088001		Collected: 09/28/20 15:20		Received: 09/30/20 11:47		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>2.3</b>	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:02	7439-89-6	
Magnesium	<b>0.73</b>	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:02	7439-95-4	
Manganese	<b>0.014J</b>	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:02	7439-96-5	
Potassium	<b>8.3</b>	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:02	7440-09-7	
Sodium	<b>415</b>	mg/L	10.0	2.6	10	10/01/20 18:53	10/06/20 16:10	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity, Bicarbonate (CaCO <sub>3</sub> )	<b>775</b>	mg/L	5.0	5.0	1		10/08/20 20:44		
Alkalinity, Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/08/20 20:44		
Alkalinity, Total as CaCO <sub>3</sub>	<b>775</b>	mg/L	5.0	5.0	1		10/08/20 20:44		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	<b>1.0</b>	mg/L	0.10	0.070	1		10/07/20 12:28	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>4.2</b>	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:09	7727-37-9	
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>236</b>	mg/L	50.0	25.0	50		10/08/20 03:06	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-13</b>		Lab ID: <b>92498088002</b>		Collected: 09/28/20 16:40	Received: 09/30/20 11:47	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>0.30</b>	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:07	7439-89-6	
Magnesium	<b>6.3</b>	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:07	7439-95-4	
Manganese	<b>0.0043J</b>	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:07	7439-96-5	
Potassium	<b>1.7</b>	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:07	7440-09-7	
Sodium	<b>3.5</b>	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:07	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 20:55		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 20:55		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		10/08/20 20:55		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	ND	mg/L	0.10	0.070	1		10/07/20 12:32	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>0.28J</b>	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:13	7727-37-9	M1
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>1.4</b>	mg/L	1.0	0.50	1		10/08/20 03:59	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: GWA-8      Lab ID: 92498088003      Collected: 09/28/20 16:04      Received: 09/30/20 11:47      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	4.5	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:11	7439-89-6	
Magnesium	3.6	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:11	7439-95-4	
Manganese	0.020J	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:11	7439-96-5	
Potassium	3.2	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:11	7440-09-7	
Sodium	14.8	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:11	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:00		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:00		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		10/08/20 21:00		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	0.93	mg/L	0.10	0.070	1		10/07/20 12:34	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	1.2	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:16	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	5.3	mg/L	1.0	0.50	1		10/08/20 04:14	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: GWC-1      Lab ID: 92498088004      Collected: 09/28/20 17:08      Received: 09/30/20 11:47      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	0.16	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:24	7439-89-6	
Magnesium	14.8	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:24	7439-95-4	
Manganese	0.051	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:24	7439-96-5	
Potassium	9.0	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:24	7440-09-7	
Sodium	11.8	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:24	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	164	mg/L	5.0	5.0	1		10/08/20 21:04		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:04		
Alkalinity, Total as CaCO3	164	mg/L	5.0	5.0	1		10/08/20 21:04		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	0.51	mg/L	0.10	0.070	1		10/07/20 12:35	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	1.3	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:17	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	47.6	mg/L	1.0	0.50	1		10/08/20 04:32	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-12</b> Lab ID: <b>92498088005</b> Collected: 09/29/20 09:35      Received: 09/30/20 11:47      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	<b>2.2</b>	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:33	7439-89-6	
Magnesium	<b>13.4</b>	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:33	7439-95-4	
Manganese	<b>0.071</b>	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:33	7439-96-5	
Potassium	<b>6.5</b>	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:33	7440-09-7	
Sodium	<b>43.0</b>	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:33	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:19		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:19		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		10/08/20 21:19		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	<b>1.3</b>	mg/L	0.10	0.070	1		10/07/20 12:37	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	<b>1.4</b>	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:20	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	<b>5.8</b>	mg/L	1.0	0.50	1		10/08/20 04:53	7440-44-0	

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## ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: GWC-11		Lab ID: 92498088006		Collected: 09/29/20 12:20		Received: 09/30/20 11:47		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A									
Pace Analytical Services - Peachtree Corners, GA									
Iron	<b>0.64</b>	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:37	7439-89-6	
Magnesium	<b>50.8</b>	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:37	7439-95-4	
Manganese	<b>0.037J</b>	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:37	7439-96-5	
Potassium	<b>25.7</b>	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:37	7440-09-7	
Sodium	<b>184</b>	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:37	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011									
Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/08/20 21:23		
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/08/20 21:23		
Alkalinity, Total as CaCO <sub>3</sub>	ND	mg/L	5.0	5.0	1		10/08/20 21:23		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993									
Pace Analytical Services - Asheville									
Nitrogen, Ammonia	<b>0.73</b>	mg/L	0.10	0.070	1		10/15/20 10:36	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993									
Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	<b>0.90</b>	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:22	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011									
Pace Analytical Services - Asheville									
Total Organic Carbon	<b>5.0</b>	mg/L	1.0	0.50	1		10/14/20 19:52	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-14</b>		Lab ID: <b>92498088007</b>		Collected: 09/29/20 14:42	Received: 09/30/20 11:47	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>0.39</b>	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:41	7439-89-6	
Magnesium	<b>7.4</b>	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:41	7439-95-4	
Manganese	<b>0.16</b>	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:41	7439-96-5	
Potassium	<b>2.7</b>	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:41	7440-09-7	
Sodium	<b>13.3</b>	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:41	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO3)	<b>31.0</b>	mg/L	5.0	5.0	1		10/08/20 21:34		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:34		
Alkalinity, Total as CaCO3	<b>31.0</b>	mg/L	5.0	5.0	1		10/08/20 21:34		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	<b>0.24</b>	mg/L	0.10	0.070	1		10/07/20 12:38	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>0.38J</b>	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:23	7727-37-9	
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>3.9</b>	mg/L	1.0	0.50	1		10/08/20 05:13	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-2</b> Lab ID: <b>92498088008</b> Collected: 09/29/20 15:55      Received: 09/30/20 11:47      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	<b>1.0</b>	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:46	7439-89-6	
Magnesium	<b>0.77</b>	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:46	7439-95-4	
Manganese	<b>0.0052J</b>	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:46	7439-96-5	
Potassium	<b>0.58</b>	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:46	7440-09-7	
Sodium	<b>6.5</b>	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:46	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:41		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:41		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		10/08/20 21:41		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	<b>0.13</b>	mg/L	0.10	0.070	1		10/07/20 12:40	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	<b>0.29J</b>	mg/L	0.50	0.25	1	10/13/20 12:41	10/14/20 01:04	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	<b>0.88J</b>	mg/L	1.0	0.50	1		10/08/20 06:06	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-21</b> Lab ID: <b>92498088009</b> Collected: 09/30/20 10:49 Received: 10/02/20 12:22 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	<b>0.050</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:13	7439-89-6	
Magnesium	<b>19.6</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:13	7439-95-4	
Manganese	<b>0.061</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:13	7439-96-5	
Potassium	<b>10.2</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:13	7440-09-7	
Sodium	<b>38.0</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:13	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	<b>54.9</b>	mg/L	5.0	5.0	1		10/09/20 16:15		
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/09/20 16:15		
Alkalinity, Total as CaCO <sub>3</sub>	<b>54.9</b>	mg/L	5.0	5.0	1		10/09/20 16:15		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	<b>0.17</b>	mg/L	0.10	0.070	1		10/09/20 09:38	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	<b>0.53</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:32	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	<b>7.7</b>	mg/L	1.0	0.50	1		10/14/20 23:33	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-15</b> Lab ID: <b>92498088010</b> Collected: 09/30/20 12:30      Received: 10/02/20 12:22      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	<b>0.14</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:17	7439-89-6	
Magnesium	<b>16.2</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:17	7439-95-4	
Manganese	<b>0.26</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:17	7439-96-5	
Potassium	<b>11.6</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:17	7440-09-7	
Sodium	<b>6.1</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:17	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	<b>349</b>	mg/L	5.0	5.0	1		10/12/20 17:07		
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/12/20 17:07		
Alkalinity, Total as CaCO <sub>3</sub>	<b>349</b>	mg/L	5.0	5.0	1		10/12/20 17:07		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	<b>0.27</b>	mg/L	0.10	0.070	1		10/09/20 09:40	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	<b>0.98</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:33	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	<b>33.8</b>	mg/L	1.0	0.50	1		10/14/20 23:51	7440-44-0	M1

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-16</b> Lab ID: <b>92498088011</b> Collected: 09/30/20 14:00      Received: 10/02/20 12:22      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	<b>0.48</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:31	7439-89-6	
Magnesium	<b>53.5</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:31	7439-95-4	
Manganese	<b>0.11</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:31	7439-96-5	
Potassium	<b>19.1</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:31	7440-09-7	
Sodium	<b>91.8</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:31	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	<b>45.5</b>	mg/L	5.0	5.0	1		10/09/20 16:39		
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/09/20 16:39		
Alkalinity, Total as CaCO <sub>3</sub>	<b>45.5</b>	mg/L	5.0	5.0	1		10/09/20 16:39		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	<b>0.57</b>	mg/L	0.10	0.070	1		10/09/20 09:41	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	<b>1.1</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:34	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	<b>19.5</b>	mg/L	1.0	0.50	1		10/15/20 00:47	7440-44-0	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-20</b>		Lab ID: <b>92498088012</b>		Collected: 09/30/20 16:31	Received: 10/02/20 12:22	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>0.38</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:35	7439-89-6	
Magnesium	<b>88.5</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:35	7439-95-4	
Manganese	<b>0.074</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:35	7439-96-5	
Potassium	<b>22.9</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:35	7440-09-7	
Sodium	<b>98.5</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:35	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO3)	<b>229</b>	mg/L	5.0	5.0	1		10/09/20 16:48		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 16:48		
Alkalinity, Total as CaCO3	<b>229</b>	mg/L	5.0	5.0	1		10/09/20 16:48		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	<b>1.1</b>	mg/L	0.10	0.070	1		10/09/20 09:43	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>1.6</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:35	7727-37-9	
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>27.1</b>	mg/L	1.0	0.50	1		10/15/20 01:42	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWB-4R</b>		Lab ID: <b>92498088013</b>		Collected: 10/01/20 08:50	Received: 10/02/20 12:22	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>4.6</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:40	7439-89-6	
Magnesium	<b>10.8</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:40	7439-95-4	
Manganese	<b>0.15</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:40	7439-96-5	
Potassium	<b>18.4</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:40	7440-09-7	
Sodium	<b>47.8</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:40	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	<b>84.0</b>	mg/L	5.0	5.0	1		10/09/20 18:48		
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/09/20 18:48		
Alkalinity, Total as CaCO <sub>3</sub>	<b>84.0</b>	mg/L	5.0	5.0	1		10/09/20 18:48		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	<b>2.3</b>	mg/L	0.10	0.070	1		10/09/20 09:44	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>2.8</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:38	7727-37-9	
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>23.4</b>	mg/L	1.0	0.50	1		10/15/20 02:02	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-17</b> Lab ID: <b>92498088014</b> Collected: 09/30/20 12:00      Received: 10/02/20 12:22      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	14.1	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:53	7439-89-6	
Magnesium	31.4	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:53	7439-95-4	
Manganese	0.12	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:53	7439-96-5	
Potassium	4.8	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:53	7440-09-7	
Sodium	141	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:53	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	15.2	mg/L	5.0	5.0	1		10/09/20 17:04		
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/09/20 17:04		
Alkalinity, Total as CaCO <sub>3</sub>	15.2	mg/L	5.0	5.0	1		10/09/20 17:04		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	1.8	mg/L	0.10	0.070	1		10/09/20 09:45	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	2.3	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:39	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	7.4	mg/L	1.0	0.50	1		10/15/20 02:21	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: GWC-22		Lab ID: 92498088015		Collected: 09/30/20 14:05	Received: 10/02/20 12:22	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>0.18</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:58	7439-89-6	
Magnesium	<b>3.0</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:58	7439-95-4	
Manganese	<b>0.0097J</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:58	7439-96-5	
Potassium	<b>4.3</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:58	7440-09-7	
Sodium	<b>4.5</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:58	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 17:10		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 17:10		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		10/09/20 17:10		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	ND	mg/L	0.10	0.070	1		10/09/20 09:47	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>0.36J</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:41	7727-37-9	
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>2.1</b>	mg/L	1.0	0.50	1		10/15/20 02:39	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWB-6R</b>		Lab ID: <b>92498088016</b>		Collected: 09/30/20 15:35	Received: 10/02/20 12:22	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>2.9</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 02:02	7439-89-6	
Magnesium	<b>5.8</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 02:02	7439-95-4	
Manganese	<b>0.069</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 02:02	7439-96-5	
Potassium	<b>25.6</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 02:02	7440-09-7	
Sodium	<b>189</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 02:02	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO3)	<b>95.2</b>	mg/L	5.0	5.0	1		10/09/20 17:14		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 17:14		
Alkalinity, Total as CaCO3	<b>95.2</b>	mg/L	5.0	5.0	1		10/09/20 17:14		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	<b>1.2</b>	mg/L	0.10	0.070	1		10/09/20 09:51	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>2.2</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:44	7727-37-9	
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>49.3</b>	mg/L	1.0	0.50	1		10/15/20 02:55	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWB-5R</b> Lab ID: <b>92498088017</b> Collected: 09/30/20 17:30      Received: 10/02/20 12:22      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Iron	<b>7.2</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 02:07	7439-89-6	
Magnesium	<b>30.7</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 02:07	7439-95-4	
Manganese	<b>0.24</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 02:07	7439-96-5	
Potassium	<b>14.5</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 02:07	7440-09-7	
Sodium	<b>47.3</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 02:07	7440-23-5	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville									
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	<b>26.2</b>	mg/L	5.0	5.0	1		10/09/20 17:21		
Alkalinity,Carbonate (CaCO <sub>3</sub> )	ND	mg/L	5.0	5.0	1		10/09/20 17:21		
Alkalinity, Total as CaCO <sub>3</sub>	<b>26.2</b>	mg/L	5.0	5.0	1		10/09/20 17:21		
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Ammonia	<b>1.3</b>	mg/L	0.10	0.070	1		10/09/20 09:53	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Rev 2.0 1993    Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville									
Nitrogen, Kjeldahl, Total	<b>1.7</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:45	7727-37-9	
<b>5310B TOC</b>									
Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville									
Total Organic Carbon	<b>10.6</b>	mg/L	1.0	0.50	1		10/15/20 03:14	7440-44-0	

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Sample: <b>GWC-9</b>		Lab ID: <b>92498088018</b>		Collected: 10/01/20 08:21	Received: 10/02/20 12:22	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D ATL ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA							
Iron	<b>6.4</b>	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 02:29	7439-89-6	
Magnesium	<b>2.6</b>	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 02:29	7439-95-4	
Manganese	<b>0.035J</b>	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 02:29	7439-96-5	
Potassium	<b>1.4</b>	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 02:29	7440-09-7	
Sodium	<b>12.7</b>	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 02:29	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville							
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 14:45		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 14:45		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		10/09/20 14:45		
<b>350.1 Ammonia</b>		Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Ammonia	<b>0.43</b>	mg/L	0.10	0.070	1		10/09/20 09:54	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>		Analytical Method: EPA 351.2 Rev 2.0 1993 Preparation Method: EPA 351.2 Rev 2.0 1993 Pace Analytical Services - Asheville							
Nitrogen, Kjeldahl, Total	<b>0.77</b>	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:46	7727-37-9	
<b>5310B TOC</b>		Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville							
Total Organic Carbon	<b>4.7</b>	mg/L	1.0	0.50	1		10/15/20 03:35	7440-44-0	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 570380 Analysis Method: EPA 6010D  
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088006, 92498088007, 92498088008

METHOD BLANK: 3021700 Matrix: Water  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088006, 92498088007, 92498088008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.016	10/05/20 20:52	
Magnesium	mg/L	ND	0.050	0.0076	10/05/20 20:52	
Manganese	mg/L	ND	0.040	0.0017	10/05/20 20:52	
Potassium	mg/L	ND	0.20	0.056	10/05/20 20:52	
Sodium	mg/L	0.31J	1.0	0.26	10/05/20 20:52	

LABORATORY CONTROL SAMPLE: 3021701

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	0.95	95	80-120	
Magnesium	mg/L	1	0.98	98	80-120	
Manganese	mg/L	1	0.95	95	80-120	
Potassium	mg/L	1	0.97	97	80-120	
Sodium	mg/L	1	1.2	117	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021764 3021765

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92497532027	Result	Spike Conc.	Spike Conc.								
Iron	mg/L	ND	1	1	1	0.99	99	97	75-125	2	20		
Magnesium	mg/L	18.7	1	1	20.0	19.6	123	90	75-125	2	20		
Manganese	mg/L	ND	1	1	1.0	0.97	99	97	75-125	2	20		
Potassium	mg/L	3.0	1	1	4.2	4.1	118	102	75-125	4	20		
Sodium	mg/L	2.7	1	1	3.7	3.6	98	92	75-125	2	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 571010 Analysis Method: EPA 6010D  
QC Batch Method: EPA 3010A Analysis Description: 6010D ATL  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

METHOD BLANK: 3024605 Matrix: Water  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	mg/L	ND	0.040	0.016	10/08/20 00:10	
Magnesium	mg/L	ND	0.050	0.0076	10/08/20 00:10	
Manganese	mg/L	ND	0.040	0.0017	10/08/20 00:10	
Potassium	mg/L	0.068J	0.20	0.056	10/08/20 00:10	
Sodium	mg/L	ND	1.0	0.26	10/08/20 00:10	

LABORATORY CONTROL SAMPLE: 3024606

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	mg/L	1	1.0	104	80-120	
Magnesium	mg/L	1	1.1	105	80-120	
Manganese	mg/L	1	1.0	102	80-120	
Potassium	mg/L	1	1.1	108	80-120	
Sodium	mg/L	1	1.1	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024607 3024608

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498544001 Result	Spike Conc.	Spike Conc.	MS Result						
Iron	mg/L	0.11	1	1	1.1	1.1	103	103	75-125	0	20
Magnesium	mg/L	43.8	1	1	45.4	44.9	156	108	75-125	1	20 M1
Manganese	mg/L	0.33	1	1	1.3	1.3	98	98	75-125	0	20
Potassium	mg/L	4.9	1	1	6.0	6.0	108	106	75-125	0	20
Sodium	mg/L	23.2	1	1	24.7	24.3	146	113	75-125	1	20 M1

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 571655 Analysis Method: SM 2320B-2011  
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088006, 92498088007, 92498088008

METHOD BLANK: 3027877 Matrix: Water  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088006, 92498088007, 92498088008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	10/08/20 18:28	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	10/08/20 18:28	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	10/08/20 18:28	

LABORATORY CONTROL SAMPLE: 3027878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	50.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3027879 3027880

Parameter	Units	3027879		3027880		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Alkalinity, Total as CaCO3	mg/L	57.8	50	108	50	100	103	80-120	1	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3029635 3029636

Parameter	Units	3029635		3029636		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Alkalinity, Total as CaCO3	mg/L	313	50	353	50	79	90	80-120	2	25	M1

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 572121 Analysis Method: SM 2320B-2011  
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

METHOD BLANK: 3030120 Matrix: Water  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	ND	5.0	5.0	10/09/20 13:19	
Alkalinity,Bicarbonate (CaCO <sub>3</sub> )	mg/L	ND	5.0	5.0	10/09/20 13:19	
Alkalinity,Carbonate (CaCO <sub>3</sub> )	mg/L	ND	5.0	5.0	10/09/20 13:19	

LABORATORY CONTROL SAMPLE: 3030121

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	50	51.9	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3030122 3030123

Parameter	Units	3030122		3030123		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	437	50	481	50	88	92	80-120	0	25			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3030124 3030125

Parameter	Units	3030124		3030125		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.								
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	76.2	50	129	50	106	106	80-120	0	25			

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 572122 Analysis Method: SM 2320B-2011  
QC Batch Method: SM 2320B-2011 Analysis Description: 2320B Alkalinity  
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92498088013

METHOD BLANK: 3030131 Matrix: Water  
Associated Lab Samples: 92498088013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	10/09/20 17:29	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	10/09/20 17:29	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	10/09/20 17:29	

LABORATORY CONTROL SAMPLE: 3030132

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	51.7	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3030133 3030134

Parameter	Units	92499296001		3030134		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO3	mg/L	90.0	50	50	139	143	99	107	80-120	3	25

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3030135 3030136

Parameter	Units	92499192001		3030136		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Alkalinity, Total as CaCO3	mg/L	349	50	50	404	388	110	80	80-120	4	25

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

QC Batch:	571180	Analysis Method:	EPA 350.1 Rev 2.0 1993
QC Batch Method:	EPA 350.1 Rev 2.0 1993	Analysis Description:	350.1 Ammonia
		Laboratory:	Pace Analytical Services - Asheville

Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088007, 92498088008

METHOD BLANK: 3025287 Matrix: Water  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088007, 92498088008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.070	10/07/20 12:18	

LABORATORY CONTROL SAMPLE: 3025288

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3025289 3025290

Parameter	Units	92498086001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	28.1	5	5	32.5	33.0	88	98	90-110	1	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3025291 3025292

Parameter	Units	92498088001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	1.0	5	5	5.6	5.6	91	91	90-110	0	10	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 571731 Analysis Method: EPA 350.1 Rev 2.0 1993  
QC Batch Method: EPA 350.1 Rev 2.0 1993 Analysis Description: 350.1 Ammonia  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

METHOD BLANK: 3028180 Matrix: Water  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.070	10/09/20 09:23	

LABORATORY CONTROL SAMPLE: 3028181

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028182 3028183

Parameter	Units	92498461002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	15.3	5	5	19.7	19.4	88	82	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028184 3028185

Parameter	Units	92498581001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	4.6	4.6	91	92	90-110	0	10	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 573187 Analysis Method: EPA 350.1 Rev 2.0 1993  
QC Batch Method: EPA 350.1 Rev 2.0 1993 Analysis Description: 350.1 Ammonia  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088006

METHOD BLANK: 3035056 Matrix: Water  
Associated Lab Samples: 92498088006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	ND	0.10	0.070	10/15/20 10:34	

LABORATORY CONTROL SAMPLE: 3035057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3035058 3035059

Parameter	Units	92499540001		3035058		3035059		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	98	99	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3035060 3035061

Parameter	Units	92499540002		3035060		3035061		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Nitrogen, Ammonia	mg/L	ND	5	5	4.9	4.9	98	98	90-110	0	10	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 572501 Analysis Method: EPA 351.2 Rev 2.0 1993  
QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088006, 92498088007

METHOD BLANK: 3031974 Matrix: Water  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088006, 92498088007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	0.25	10/14/20 00:07	

LABORATORY CONTROL SAMPLE: 3031975

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.5	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3031976 3031977

Parameter	Units	92498088001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	4.2	10	10	13.9	13.8	96	96	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3031978 3031979

Parameter	Units	92498088002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	0.28J	10	10	9.1	9.1	88	88	90-110	0	10 M1	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 572713 Analysis Method: EPA 351.2 Rev 2.0 1993  
QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN  
Laboratory: Pace Analytical Services - Asheville

Associated Lab Samples: 92498088008

METHOD BLANK: 3033044 Matrix: Water  
Associated Lab Samples: 92498088008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	0.25	10/14/20 01:02	

LABORATORY CONTROL SAMPLE: 3033045

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	9.6	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3033046 3033047

Parameter	Units	92498088008		3033046		3033047		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Nitrogen, Kjeldahl, Total	mg/L	0.29J	10	10	9.6	9.3	93	90	3	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3033048 3033049

Parameter	Units	92498865004		3033048		3033049		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Nitrogen, Kjeldahl, Total	mg/L	ND	10	10	9.2	10.2	88	98	10	10 M1	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 573043 Analysis Method: EPA 351.2 Rev 2.0 1993  
QC Batch Method: EPA 351.2 Rev 2.0 1993 Analysis Description: 351.2 TKN  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

METHOD BLANK: 3034356 Matrix: Water  
Associated Lab Samples: 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	ND	0.50	0.25	10/16/20 01:17	

LABORATORY CONTROL SAMPLE: 3034357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3034358 3034359

Parameter	Units	92498418001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	3.3	10	10	14.1	13.8	108	105	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3034360 3034361

Parameter	Units	92498088012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	1.6	10	10	12.3	12.1	107	105	90-110	1	10	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 571179 Analysis Method: SM 5310B-2011  
QC Batch Method: SM 5310B-2011 Analysis Description: 5310B TOC  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088007, 92498088008

METHOD BLANK: 3025279 Matrix: Water  
Associated Lab Samples: 92498088001, 92498088002, 92498088003, 92498088004, 92498088005, 92498088007, 92498088008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/08/20 00:44	

LABORATORY CONTROL SAMPLE: 3025280

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.7	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3025281 3025282

Parameter	Units	3025281		3025282		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498025001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	1.6	25	25	27.1	27.5	102	104	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3025283 3025284

Parameter	Units	3025283		3025284		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498088007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Total Organic Carbon	mg/L	3.9	25	25	30.0	30.2	104	105	90-110	1	10

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

QC Batch: 573106 Analysis Method: SM 5310B-2011  
QC Batch Method: SM 5310B-2011 Analysis Description: 5310B TOC  
Laboratory: Pace Analytical Services - Asheville  
Associated Lab Samples: 92498088006, 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

METHOD BLANK: 3034530 Matrix: Water  
Associated Lab Samples: 92498088006, 92498088009, 92498088010, 92498088011, 92498088012, 92498088013, 92498088014, 92498088015, 92498088016, 92498088017, 92498088018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.50	10/14/20 19:17	

LABORATORY CONTROL SAMPLE: 3034531

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	26.4	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3034532 3034533

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498088006 Result	Spike Conc.	Spike Conc.	Result						
Total Organic Carbon	mg/L	5.0	25	25	30.3	30.8	101	103	90-110	2	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3034534 3034535

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92498088010 Result	Spike Conc.	Spike Conc.	Result						
Total Organic Carbon	mg/L	33.8	25	25	56.2	56.6	89	91	90-110	1	10 M1

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## QUALIFIERS

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD INDICATORS  
Pace Project No.: 92498088

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498088001	GWA-7	EPA 3010A	570380	EPA 6010D	570413
92498088002	GWC-13	EPA 3010A	570380	EPA 6010D	570413
92498088003	GWA-8	EPA 3010A	570380	EPA 6010D	570413
92498088004	GWC-1	EPA 3010A	570380	EPA 6010D	570413
92498088005	GWC-12	EPA 3010A	570380	EPA 6010D	570413
92498088006	GWC-11	EPA 3010A	570380	EPA 6010D	570413
92498088007	GWC-14	EPA 3010A	570380	EPA 6010D	570413
92498088008	GWC-2	EPA 3010A	570380	EPA 6010D	570413
92498088009	GWC-21	EPA 3010A	571010	EPA 6010D	571031
92498088010	GWC-15	EPA 3010A	571010	EPA 6010D	571031
92498088011	GWC-16	EPA 3010A	571010	EPA 6010D	571031
92498088012	GWC-20	EPA 3010A	571010	EPA 6010D	571031
92498088013	GWB-4R	EPA 3010A	571010	EPA 6010D	571031
92498088014	GWC-17	EPA 3010A	571010	EPA 6010D	571031
92498088015	GWC-22	EPA 3010A	571010	EPA 6010D	571031
92498088016	GWB-6R	EPA 3010A	571010	EPA 6010D	571031
92498088017	GWB-5R	EPA 3010A	571010	EPA 6010D	571031
92498088018	GWC-9	EPA 3010A	571010	EPA 6010D	571031
92498088001	GWA-7	SM 2320B-2011	571655		
92498088002	GWC-13	SM 2320B-2011	571655		
92498088003	GWA-8	SM 2320B-2011	571655		
92498088004	GWC-1	SM 2320B-2011	571655		
92498088005	GWC-12	SM 2320B-2011	571655		
92498088006	GWC-11	SM 2320B-2011	571655		
92498088007	GWC-14	SM 2320B-2011	571655		
92498088008	GWC-2	SM 2320B-2011	571655		
92498088009	GWC-21	SM 2320B-2011	572121		
92498088010	GWC-15	SM 2320B-2011	572121		
92498088011	GWC-16	SM 2320B-2011	572121		
92498088012	GWC-20	SM 2320B-2011	572121		
92498088013	GWB-4R	SM 2320B-2011	572122		
92498088014	GWC-17	SM 2320B-2011	572121		
92498088015	GWC-22	SM 2320B-2011	572121		
92498088016	GWB-6R	SM 2320B-2011	572121		
92498088017	GWB-5R	SM 2320B-2011	572121		
92498088018	GWC-9	SM 2320B-2011	572121		
92498088001	GWA-7	EPA 350.1 Rev 2.0 1993	571180		
92498088002	GWC-13	EPA 350.1 Rev 2.0 1993	571180		
92498088003	GWA-8	EPA 350.1 Rev 2.0 1993	571180		
92498088004	GWC-1	EPA 350.1 Rev 2.0 1993	571180		
92498088005	GWC-12	EPA 350.1 Rev 2.0 1993	571180		
92498088006	GWC-11	EPA 350.1 Rev 2.0 1993	573187		
92498088007	GWC-14	EPA 350.1 Rev 2.0 1993	571180		
92498088008	GWC-2	EPA 350.1 Rev 2.0 1993	571180		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498088009	GWC-21	EPA 350.1 Rev 2.0 1993	571731		
92498088010	GWC-15	EPA 350.1 Rev 2.0 1993	571731		
92498088011	GWC-16	EPA 350.1 Rev 2.0 1993	571731		
92498088012	GWC-20	EPA 350.1 Rev 2.0 1993	571731		
92498088013	GWB-4R	EPA 350.1 Rev 2.0 1993	571731		
92498088014	GWC-17	EPA 350.1 Rev 2.0 1993	571731		
92498088015	GWC-22	EPA 350.1 Rev 2.0 1993	571731		
92498088016	GWB-6R	EPA 350.1 Rev 2.0 1993	571731		
92498088017	GWB-5R	EPA 350.1 Rev 2.0 1993	571731		
92498088018	GWC-9	EPA 350.1 Rev 2.0 1993	571731		
92498088001	GWA-7	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
92498088002	GWC-13	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
92498088003	GWA-8	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
92498088004	GWC-1	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
92498088005	GWC-12	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
92498088006	GWC-11	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
92498088007	GWC-14	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
92498088008	GWC-2	EPA 351.2 Rev 2.0 1993	572713	EPA 351.2 Rev 2.0 1993	572980
92498088009	GWC-21	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088010	GWC-15	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088011	GWC-16	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088012	GWC-20	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088013	GWB-4R	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088014	GWC-17	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088015	GWC-22	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088016	GWB-6R	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088017	GWB-5R	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088018	GWC-9	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
92498088001	GWA-7	SM 5310B-2011	571179		
92498088002	GWC-13	SM 5310B-2011	571179		
92498088003	GWA-8	SM 5310B-2011	571179		
92498088004	GWC-1	SM 5310B-2011	571179		
92498088005	GWC-12	SM 5310B-2011	571179		
92498088006	GWC-11	SM 5310B-2011	573106		
92498088007	GWC-14	SM 5310B-2011	571179		
92498088008	GWC-2	SM 5310B-2011	571179		
92498088009	GWC-21	SM 5310B-2011	573106		
92498088010	GWC-15	SM 5310B-2011	573106		
92498088011	GWC-16	SM 5310B-2011	573106		
92498088012	GWC-20	SM 5310B-2011	573106		
92498088013	GWB-4R	SM 5310B-2011	573106		
92498088014	GWC-17	SM 5310B-2011	573106		
92498088015	GWC-22	SM 5310B-2011	573106		
92498088016	GWB-6R	SM 5310B-2011	573106		
92498088017	GWB-5R	SM 5310B-2011	573106		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

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<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
92498088018	GWC-9	SM 5310B-2011	573106		

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### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: BA Power

WO#: **92498088**



Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other EZip lock

Thermometer Used 230 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 3.7 Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: CO

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>CO</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:  
Bottle Identification Form (BIF)  
Document No.:  
F-CAR-CS-043-Rev.00

Document Issued: March 14, 2019  
Page 1 of 1  
Issuing Authority:  
Pace Carolinas Quality Office

Project #

WO#: 92498088

PM: KLH1

Due Date: 10/14/20

CLIENT: GA-GA Power

Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic 2N Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA N=25203 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	RADs	BP9A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG6U-100 mL Amber Unpreserved vials (N/A)	V5GU-20 mL Scintillation vials (N/A)	
	1																				3								
	2																					3							
	3																					3							
	4																					3							
	5																					3							
	6																					3							
	7																					3							
	8																					3							
	9																					3							
	10																					3							
	11																					3							
	12																					3							

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. Out of hold, incorrect preservative, out of temp, incorrect containers.





## CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Client Information: Company: GA Power Address: Atlanta, GA Contact: SCS Contacts Project Name: SCS Contacts Project No.: 10 Day	<b>Section B</b> Required Project Information: Report To: SCS Contacts Copy To: ACC Contacts Purchase Order No.: Project Name: Gunman Road - Semi-Annual Project Number:
<b>Section C</b> Invoice Information: Attention: Southern Co. Company Name: Address: Reference: Pace Project Manager Pace Order #: 2925-1	Requested Analysis Filtered (Y/N) <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> CCR Site Location: GA STATE:

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX DIRTYING WATER WATER WASTE WATER PRODUCT SOLID SLURRY OTHER TISSUE	CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLE CONDITIONS
						COMPOSITE	COMPOSITE							
1	GWA-7		WT G	WT G	G	9-28-20	1520	9	✓	✓	✓	✓	✓	Not needed (SB)
2	GW C-13		WT G	WT G	G	9-28-20	1640	9	✓	✓	✓	✓	✓	Not needed (SB)
3	GW A-8		WT G	WT G	G	9-28-20	1624	9	✓	✓	✓	✓	✓	Not needed (SB)
4	GW C-1		WT G	WT G	G	9-28-20	1708	9	✓	✓	✓	✓	✓	Not needed (SB)
5	<del>GW C-1</del>		WT G	WT G	G	9-28-20	1855	9	✓	✓	✓	✓	✓	Not needed (SB)
6	GW C-12		WT G	WT G	G	9-29-20	0935	9	✓	✓	✓	✓	✓	Not needed (SB)
7	GW C-11		WT G	WT G	G	9-29-20	1220	9	✓	✓	✓	✓	✓	Not needed (SB)
8	GW C-14		WT G	WT G	G	9-29-20	1442	9	✓	✓	✓	✓	✓	Not needed (SB)
9	GW C-2		WT G	WT G	G	9-29-20	1535	9	✓	✓	✓	✓	✓	Not needed (SB)
10	<del>GW C-2</del>		WT G	WT G	G	9-29-20	1620	9	✓	✓	✓	✓	✓	Not needed (SB)
11	<del>DUP-1</del>		WT G	WT G	G	9-29-20	1620	9	✓	✓	✓	✓	✓	Not needed (SB)
12	<del>DUP-1</del>		WT G	WT G	G	9-29-20	1620	9	✓	✓	✓	✓	✓	Not needed (SB)

Section D Required Client Information	Section E Valid Matrix Codes	Section F Sample Information	Section G Analysis Test	Section H Preservatives	Section I Analysis Test	Section J Requested Analysis Filtered (Y/N)	Section K Regulatory Agency	Section L Other
Matrix Code: WT G Sample Type: G=GRAB C=COMP Date: 9-28-20 Time: 1520 Temp: 9 # of Containers: 9 Preservatives: H2SO4, HNO3, HCl, NaOH, Na2S2O3, Methanol, Other	Analysis Test: Alkalinity (total, carb, bicarb), Ammonia / TKN, TOC, Salts Metals *	Filtered: <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> CCR	Residual Chlorine (Y/N): Pace Project No./ Lab ID: 9240608	Sample Conditions: Not needed (SB)	Regulatory Agency: GA	Other:	Temperature: Received on Ice: Custody Sealed Cooler: Samples Intact (N/A):	

<b>Section A</b> Client Information: Company: GA Power Address: Atlanta, GA Contact: SCS Contacts Project Name: SCS Contacts Project No.: 10 Day	<b>Section B</b> Required Project Information: Report To: SCS Contacts Copy To: ACC Contacts Purchase Order No.: Project Name: Gunman Road - Semi-Annual Project Number:
<b>Section C</b> Invoice Information: Attention: Southern Co. Company Name: Address: Reference: Pace Project Manager Pace Order #: 2925-1	Requested Analysis Filtered (Y/N) <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/> CCR Site Location: GA STATE:

Temp in °C \_\_\_\_\_  
 Received on Ice (Y/N) \_\_\_\_\_  
 Custody Sealed Cooler (Y/N) \_\_\_\_\_  
 Samples Intact (N/A) \_\_\_\_\_

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07 15-Feb-2007



**CHAIN-OF-CUSTODY / Analytical Request Document**  
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**  
 Required Client Information:

**Section B**  
 Required Project Information:

**Section C**  
 Invoice Information:

Page: 2 of 3

**Section A**  
 Company: GA Power  
 Address: Atlanta, GA

**Section B**  
 Report To: SCS Contacts  
 Copy To: ACC Contacts  
 Purchase Order No.:  
 Project Name: Gumman Road - Semi-Annual  
 Project Number:  
 Requested Due Date/TAT: 10 Day

**Section C**  
 Attention: Southern Co.  
 Company Name:  
 Address:  
 Invoice Code:  
 Reference: Kevin Herring  
 Pace Project Manager:  
 Pace Profile #: 2926-1

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  
 Site Location: GA  
 STATE:

ITEM #	Section D Required Client Information  Valid Matrix Codes DRINKING WATER DW WASTEWATER WW WASTE WATER WWT POTABLE WATER SW SOIL/SOLID SL OIL OL WIPE WIP AIR AIR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLE CONDITIONS
				COMPOSITE	COMPOSITE							
		DATE	TIME	DATE	TIME		Unpreserved	Alkalinity (total, carb, bicarb)				
1	GWC-21	9-30-20	10:49				✓	✓	✓	✓	005	
2	GWC-15	9-30-20	12:30				✓	✓	✓	✓	010	
3	GWC-16	9-30-20	14:00				✓	✓	✓	✓	011	
4	GWC-20	9-30-20	16:31				✓	✓	✓	✓	012	
5	GWB-42	10-1-20	08:50				✓	✓	✓	✓	000	
6												
7												
8												
9												
10												
11												
12												

**ADDITIONAL COMMENTS**

RELINQUISHED BY / AFFILIATION: *Taylor Goble / ACC* DATE: 10-1-20 TIME: 12:22  
 ACCEPTED BY / AFFILIATION: *J. W. [Signature]* DATE: [Blank] TIME: [Blank]

Please note when the last sample for the event has been taken.

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: *Taylor Goble*  
 SIGNATURE of SAMPLER: *[Signature]* DATE Signed (MM/DD/YYYY): 10-2-20  
 Temp in °C: \_\_\_\_\_  
 Received on Ice (Y/N): \_\_\_\_\_  
 Custody Sealed Cooler (Y/N): \_\_\_\_\_  
 Samples Intact (Y/N): \_\_\_\_\_

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.  
 F-ALL-Q-020REV.07, 15-Feb-2007

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**

Required Client Information:

Company: GA Power  
Address: Atlanta, GA

Requested Date/TAT: 10 Day

**Section B**

Required Project Information:

Report To: SCS Contacts  
Copy To: ACC Contacts

Purchase Order No.:  
Project Name: Gwinman Road  
Requested Date/TAT: 10 Day

**Section C**

Invoice Information:

Attention: Southern Co.  
Company Name:  
Address:  
Pace Queue Reference: Kevin Herring  
Pace Profile #: 2926-1

**REGULATORY AGENCY**

NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER ccc  
 Site Location: GA  
 STATE: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes MATERIALS OPENING WATER DW WATER WWT WASTE WATER WW PRODUCT SL SOL/SOLID DL OIL WIP WVP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE	COMPOSITE			H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other				
1	GW-C-17		WT 6	G	DATE	TIME	DATE	TIME	11	✓	✓	✓	✓	✓	✓	✓	✓	✓	6/8
2	GW-C-22		WT 6	G	DATE	TIME	DATE	TIME	9	✓	✓	✓	✓	✓	✓	✓	✓	✓	6/8
3	GW-B-6R		WT 6	G	DATE	TIME	DATE	TIME	9	✓	✓	✓	✓	✓	✓	✓	✓	✓	6/8
4	GW-B-5K		WT 6	G	DATE	TIME	DATE	TIME	9	✓	✓	✓	✓	✓	✓	✓	✓	✓	6/8
5	GW-C-9		WT 6	G	DATE	TIME	DATE	TIME	9	✓	✓	✓	✓	✓	✓	✓	✓	✓	6/8
6																			
7																			
8																			
9																			
10																			
11																			
12																			

**ADDITIONAL COMMENTS**

Please note when the last sample for the event has been taken.

*Last sample taken*

**RELINQUISHED BY / AFFILIATION** DATE TIME

*Taylor Gable* 10-2-20 1222

**ACCEPTED BY / AFFILIATION** DATE TIME

*R. Manning* 10-2-20 1222

**SAMPLE CONDITIONS**

Temp in °C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: *Jorday Perissey / Taylor Gable*

SIGNATURE of SAMPLER: *Taylor Gable* DATE Signed (MM/DD/YYYY): 10-2-20

October 19, 2020

Joju Abraham  
Georgia Power-CCR  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 30, 2020 and October 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

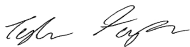
The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

This report was revised 10/15/20 to change the reportable units for Ca to mg/L per client request.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tyler Forney for  
Kevin Herring  
kevin.herring@pacelabs.com  
1(704)875-9092  
HORIZON Database Administrator

Enclosures

cc: Owens Fuquea, ACC  
Kristen Jurinko  
Matt Malone, Atlantic Coast Consulting  
Betsy McDaniel, Atlantic Coast Consulting  
Evan Perry, Atlantic Coast Consulting  
Ms. Lauren Petty, Southern Co. Services



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

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### **Pace Analytical Services Charlotte**

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078

Louisiana/NELAP Certification # LA170028

North Carolina Drinking Water Certification #: 37706

North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627

Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

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### **Pace Analytical Services Peachtree Corners**

110 Technology Pkwy, Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92498079001	GWA-7 FILTERED	Water	09/28/20 15:20	09/30/20 11:47
92498079002	GWB-5R FILTERED	Water	09/30/20 17:30	10/02/20 12:22

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92498079001	GWA-7 FILTERED	EPA 6010D	DRB	1
		EPA 6020B	CW1	15
92498079002	GWB-5R FILTERED	EPA 6010D	DRB	1
		EPA 6020B	CW1	15

PASI-C = Pace Analytical Services - Charlotte

PASI-GA = Pace Analytical Services - Peachtree Corners, GA

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498079001</b>	<b>GWA-7 FILTERED</b>					
	Performed by	CUSTOME			09/30/20 15:08	
		R				
	pH	5.86	Std. Units		09/30/20 15:08	
EPA 6010D	Calcium, Dissolved	3.0	mg/L	1.0	10/06/20 18:57	
EPA 6020B	Antimony, Dissolved	0.0020J	mg/L	0.015	10/02/20 16:41	D3
EPA 6020B	Barium, Dissolved	0.079	mg/L	0.050	10/02/20 16:41	
EPA 6020B	Boron, Dissolved	4.6	mg/L	0.20	10/02/20 16:41	
EPA 6020B	Chromium, Dissolved	0.010J	mg/L	0.050	10/02/20 16:41	D3
EPA 6020B	Lead, Dissolved	0.00019J	mg/L	0.025	10/02/20 16:41	D3
EPA 6020B	Selenium, Dissolved	0.014J	mg/L	0.050	10/02/20 16:41	D3
EPA 6020B	Vanadium, Dissolved	0.10	mg/L	0.050	10/02/20 16:41	
EPA 6020B	Zinc, Dissolved	0.084	mg/L	0.050	10/02/20 16:41	
<b>92498079002</b>	<b>GWB-5R FILTERED</b>					
	Performed by	CUSTOME			10/02/20 15:06	
		R				
	pH	4.99	Std. Units		10/02/20 15:06	
EPA 6010D	Calcium, Dissolved	66.3	mg/L	1.0	10/06/20 19:16	
EPA 6020B	Arsenic, Dissolved	0.0014J	mg/L	0.0050	10/07/20 20:12	
EPA 6020B	Barium, Dissolved	0.15	mg/L	0.010	10/07/20 20:12	
EPA 6020B	Boron, Dissolved	3.9	mg/L	0.040	10/07/20 20:12	
EPA 6020B	Chromium, Dissolved	0.00085J	mg/L	0.010	10/07/20 20:12	
EPA 6020B	Cobalt, Dissolved	0.00047J	mg/L	0.0050	10/07/20 20:12	
EPA 6020B	Vanadium, Dissolved	0.0025J	mg/L	0.010	10/07/20 20:12	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

Sample: <b>GWA-7 FILTERED</b> Lab ID: <b>92498079001</b> Collected: 09/28/20 15:20      Received: 09/30/20 11:47      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		09/30/20 15:08		
pH	<b>5.86</b>	Std. Units			1		09/30/20 15:08		
<b>6010 MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium, Dissolved	<b>3.0</b>	mg/L	1.0	0.070	1	10/05/20 15:44	10/06/20 18:57	7440-70-2	
<b>6020 MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony, Dissolved	<b>0.0020J</b>	mg/L	0.015	0.0014	5	10/01/20 14:57	10/02/20 16:41	7440-36-0	D3
Arsenic, Dissolved	ND	mg/L	0.025	0.0039	5	10/01/20 14:57	10/02/20 16:41	7440-38-2	D3
Barium, Dissolved	<b>0.079</b>	mg/L	0.050	0.0036	5	10/01/20 14:57	10/02/20 16:41	7440-39-3	
Beryllium, Dissolved	ND	mg/L	0.015	0.00023	5	10/01/20 14:57	10/02/20 16:41	7440-41-7	D3
Boron, Dissolved	<b>4.6</b>	mg/L	0.20	0.026	5	10/01/20 14:57	10/02/20 16:41	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.012	0.00059	5	10/01/20 14:57	10/02/20 16:41	7440-43-9	D3
Chromium, Dissolved	<b>0.010J</b>	mg/L	0.050	0.0028	5	10/01/20 14:57	10/02/20 16:41	7440-47-3	D3
Cobalt, Dissolved	ND	mg/L	0.025	0.0019	5	10/01/20 14:57	10/02/20 16:41	7440-48-4	D3
Lead, Dissolved	<b>0.00019J</b>	mg/L	0.025	0.00018	5	10/01/20 14:57	10/02/20 16:41	7439-92-1	D3
Lithium, Dissolved	ND	mg/L	0.15	0.0040	5	10/01/20 14:57	10/02/20 16:41	7439-93-2	D3
Molybdenum, Dissolved	ND	mg/L	0.050	0.0034	5	10/01/20 14:57	10/02/20 16:41	7439-98-7	D3
Selenium, Dissolved	<b>0.014J</b>	mg/L	0.050	0.0078	5	10/01/20 14:57	10/02/20 16:41	7782-49-2	D3
Thallium, Dissolved	ND	mg/L	0.0050	0.00072	5	10/01/20 14:57	10/02/20 16:41	7440-28-0	D3
Vanadium, Dissolved	<b>0.10</b>	mg/L	0.050	0.011	5	10/01/20 14:57	10/02/20 16:41	7440-62-2	
Zinc, Dissolved	<b>0.084</b>	mg/L	0.050	0.011	5	10/01/20 14:57	10/02/20 16:41	7440-66-6	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

**Sample: GWB-5R FILTERED**      **Lab ID: 92498079002**      Collected: 09/30/20 17:30      Received: 10/02/20 12:22      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Charlotte									
Performed by	<b>CUSTOMER</b>				1		10/02/20 15:06		
pH	<b>4.99</b>	Std. Units			1		10/02/20 15:06		
<b>6010 MET ICP, Dissolved</b>									
Analytical Method: EPA 6010D    Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA									
Calcium, Dissolved	<b>66.3</b>	mg/L	1.0	0.070	1	10/05/20 15:44	10/06/20 19:16	7440-70-2	
<b>6020 MET ICPMS, Dissolved</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA									
Antimony, Dissolved	ND	mg/L	0.0030	0.00028	1	10/07/20 15:26	10/07/20 20:12	7440-36-0	
Arsenic, Dissolved	<b>0.0014J</b>	mg/L	0.0050	0.00078	1	10/07/20 15:26	10/07/20 20:12	7440-38-2	
Barium, Dissolved	<b>0.15</b>	mg/L	0.010	0.00071	1	10/07/20 15:26	10/07/20 20:12	7440-39-3	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000046	1	10/07/20 15:26	10/07/20 20:12	7440-41-7	
Boron, Dissolved	<b>3.9</b>	mg/L	0.040	0.0052	1	10/07/20 15:26	10/07/20 20:12	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00012	1	10/07/20 15:26	10/07/20 20:12	7440-43-9	
Chromium, Dissolved	<b>0.00085J</b>	mg/L	0.010	0.00055	1	10/07/20 15:26	10/07/20 20:12	7440-47-3	
Cobalt, Dissolved	<b>0.00047J</b>	mg/L	0.0050	0.00038	1	10/07/20 15:26	10/07/20 20:12	7440-48-4	
Lead, Dissolved	ND	mg/L	0.0050	0.000036	1	10/07/20 15:26	10/07/20 20:12	7439-92-1	
Lithium, Dissolved	ND	mg/L	0.030	0.00081	1	10/07/20 15:26	10/07/20 20:12	7439-93-2	
Molybdenum, Dissolved	ND	mg/L	0.010	0.00069	1	10/07/20 15:26	10/07/20 20:12	7439-98-7	
Selenium, Dissolved	ND	mg/L	0.010	0.0016	1	10/07/20 15:26	10/07/20 20:12	7782-49-2	
Thallium, Dissolved	ND	mg/L	0.0010	0.00014	1	10/07/20 15:26	10/07/20 20:12	7440-28-0	
Vanadium, Dissolved	<b>0.0025J</b>	mg/L	0.010	0.0022	1	10/07/20 15:26	10/07/20 20:12	7440-62-2	
Zinc, Dissolved	ND	mg/L	0.010	0.0022	1	10/07/20 15:26	10/07/20 20:12	7440-66-6	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

QC Batch: 570950	Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A	Analysis Description: 6010 MET Filtered Diss.
	Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92498079001, 92498079002

METHOD BLANK: 3024402 Matrix: Water

Associated Lab Samples: 92498079001, 92498079002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	1.0	0.070	10/06/20 18:48	

LABORATORY CONTROL SAMPLE: 3024403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	1	0.96J	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024456 3024457

Parameter	Units	3024456		3024457		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Calcium, Dissolved	mg/L	66.3	1	67.3	67.3	97	102	75-125	0	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

QC Batch: 570318      Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A      Analysis Description: 6020 MET Dissolved  
Laboratory: Pace Analytical Services - Peachtree Corners, GA  
Associated Lab Samples: 92498079001

METHOD BLANK: 3021080      Matrix: Water  
Associated Lab Samples: 92498079001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	mg/L	ND	0.0030	0.00028	10/02/20 16:01	
Arsenic, Dissolved	mg/L	ND	0.0050	0.00078	10/02/20 16:01	
Barium, Dissolved	mg/L	ND	0.010	0.00071	10/02/20 16:01	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000046	10/02/20 16:01	
Boron, Dissolved	mg/L	ND	0.040	0.0052	10/02/20 16:01	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00012	10/02/20 16:01	
Chromium, Dissolved	mg/L	ND	0.010	0.00055	10/02/20 16:01	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00038	10/02/20 16:01	
Lead, Dissolved	mg/L	ND	0.0050	0.000036	10/02/20 16:01	
Lithium, Dissolved	mg/L	ND	0.030	0.00081	10/02/20 16:01	
Molybdenum, Dissolved	mg/L	ND	0.010	0.00069	10/02/20 16:01	
Selenium, Dissolved	mg/L	ND	0.010	0.0016	10/02/20 16:01	
Thallium, Dissolved	mg/L	ND	0.0010	0.00014	10/02/20 16:01	
Vanadium, Dissolved	mg/L	ND	0.010	0.0022	10/02/20 16:01	
Zinc, Dissolved	mg/L	ND	0.010	0.0022	10/02/20 16:01	

LABORATORY CONTROL SAMPLE: 3021081

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	mg/L	0.1	0.098	98	80-120	
Arsenic, Dissolved	mg/L	0.1	0.096	96	80-120	
Barium, Dissolved	mg/L	0.1	0.098	98	80-120	
Beryllium, Dissolved	mg/L	0.1	0.096	96	80-120	
Boron, Dissolved	mg/L	1	0.96	96	80-120	
Cadmium, Dissolved	mg/L	0.1	0.097	97	80-120	
Chromium, Dissolved	mg/L	0.1	0.099	99	80-120	
Cobalt, Dissolved	mg/L	0.1	0.099	99	80-120	
Lead, Dissolved	mg/L	0.1	0.097	97	80-120	
Lithium, Dissolved	mg/L	0.1	0.098	98	80-120	
Molybdenum, Dissolved	mg/L	0.1	0.096	96	80-120	
Selenium, Dissolved	mg/L	0.1	0.090	90	80-120	
Thallium, Dissolved	mg/L	0.1	0.099	99	80-120	
Vanadium, Dissolved	mg/L	0.1	0.10	100	80-120	
Zinc, Dissolved	mg/L	0.1	0.098	98	80-120	

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

Parameter	Units	3021082		3021083		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92497893001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Antimony, Dissolved	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Arsenic, Dissolved	mg/L	ND	0.1	0.1	0.094	0.097	94	97	75-125	3	20	
Barium, Dissolved	mg/L	30.4 ug/L	0.1	0.1	0.13	0.13	100	100	75-125	0	20	
Beryllium, Dissolved	mg/L	ND	0.1	0.1	0.096	0.098	95	98	75-125	2	20	
Boron, Dissolved	mg/L	ND	1	1	0.95	0.98	94	97	75-125	3	20	
Cadmium, Dissolved	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	0	20	
Chromium, Dissolved	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.10	0.10	100	102	75-125	1	20	
Lead, Dissolved	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	1	20	
Lithium, Dissolved	mg/L	ND	0.1	0.1	0.11	0.11	96	100	75-125	3	20	
Molybdenum, Dissolved	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Selenium, Dissolved	mg/L	ND	0.1	0.1	0.091	0.095	90	93	75-125	4	20	
Thallium, Dissolved	mg/L	ND	0.1	0.1	0.098	0.097	98	97	75-125	1	20	
Vanadium, Dissolved	mg/L	ND	0.1	0.1	0.10	0.10	102	103	75-125	1	20	
Zinc, Dissolved	mg/L	ND	0.1	0.1	0.11	0.11	98	100	75-125	1	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
 Pace Project No.: 92498079

QC Batch: 571522      Analysis Method: EPA 6020B  
 QC Batch Method: EPA 3005A      Analysis Description: 6020 MET Dissolved  
 Laboratory: Pace Analytical Services - Peachtree Corners, GA

Associated Lab Samples: 92498079002

METHOD BLANK: 3026976      Matrix: Water  
 Associated Lab Samples: 92498079002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	mg/L	0.00029J	0.0030	0.00028	10/07/20 17:53	
Arsenic, Dissolved	mg/L	ND	0.0050	0.00078	10/07/20 17:53	
Barium, Dissolved	mg/L	ND	0.010	0.00071	10/07/20 17:53	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000046	10/07/20 17:53	
Boron, Dissolved	mg/L	ND	0.040	0.0052	10/07/20 17:53	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00012	10/07/20 17:53	
Chromium, Dissolved	mg/L	ND	0.010	0.00055	10/07/20 17:53	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00038	10/07/20 17:53	
Lead, Dissolved	mg/L	ND	0.0050	0.000036	10/07/20 17:53	
Lithium, Dissolved	mg/L	ND	0.030	0.00081	10/07/20 17:53	
Molybdenum, Dissolved	mg/L	ND	0.010	0.00069	10/07/20 17:53	
Selenium, Dissolved	mg/L	ND	0.010	0.0016	10/07/20 17:53	
Thallium, Dissolved	mg/L	ND	0.0010	0.00014	10/07/20 17:53	
Vanadium, Dissolved	mg/L	ND	0.010	0.0022	10/07/20 17:53	
Zinc, Dissolved	mg/L	ND	0.010	0.0022	10/07/20 17:53	

METHOD BLANK: 3026985      Matrix: Water  
 Associated Lab Samples: 92498079002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	mg/L	ND	0.0030	0.00028	10/07/20 17:59	
Arsenic, Dissolved	mg/L	ND	0.0050	0.00078	10/07/20 17:59	
Barium, Dissolved	mg/L	ND	0.010	0.00071	10/07/20 17:59	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000046	10/07/20 17:59	
Boron, Dissolved	mg/L	ND	0.040	0.0052	10/07/20 17:59	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00012	10/07/20 17:59	
Chromium, Dissolved	mg/L	ND	0.010	0.00055	10/07/20 17:59	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00038	10/07/20 17:59	
Lead, Dissolved	mg/L	ND	0.0050	0.000036	10/07/20 17:59	
Lithium, Dissolved	mg/L	ND	0.030	0.00081	10/07/20 17:59	
Molybdenum, Dissolved	mg/L	ND	0.010	0.00069	10/07/20 17:59	
Selenium, Dissolved	mg/L	ND	0.010	0.0016	10/07/20 17:59	
Thallium, Dissolved	mg/L	ND	0.0010	0.00014	10/07/20 17:59	
Vanadium, Dissolved	mg/L	ND	0.010	0.0022	10/07/20 17:59	
Zinc, Dissolved	mg/L	ND	0.010	0.0022	10/07/20 17:59	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

LABORATORY CONTROL SAMPLE: 3026977

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	mg/L	0.1	0.11	109	80-120	
Arsenic, Dissolved	mg/L	0.1	0.099	99	80-120	
Barium, Dissolved	mg/L	0.1	0.097	97	80-120	
Beryllium, Dissolved	mg/L	0.1	0.099	99	80-120	
Boron, Dissolved	mg/L	1	0.97	97	80-120	
Cadmium, Dissolved	mg/L	0.1	0.098	98	80-120	
Chromium, Dissolved	mg/L	0.1	0.090	90	80-120	
Cobalt, Dissolved	mg/L	0.1	0.094	94	80-120	
Lead, Dissolved	mg/L	0.1	0.098	98	80-120	
Lithium, Dissolved	mg/L	0.1	0.099	99	80-120	
Molybdenum, Dissolved	mg/L	0.1	0.096	96	80-120	
Selenium, Dissolved	mg/L	0.1	0.097	97	80-120	
Thallium, Dissolved	mg/L	0.1	0.097	97	80-120	
Vanadium, Dissolved	mg/L	0.1	0.094	94	80-120	
Zinc, Dissolved	mg/L	0.1	0.096	96	80-120	

LABORATORY CONTROL SAMPLE: 3026986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	mg/L	0.1	0.11	111	80-120	
Arsenic, Dissolved	mg/L	0.1	0.10	100	80-120	
Barium, Dissolved	mg/L	0.1	0.10	100	80-120	
Beryllium, Dissolved	mg/L	0.1	0.10	102	80-120	
Boron, Dissolved	mg/L	1	1.0	103	80-120	
Cadmium, Dissolved	mg/L	0.1	0.099	99	80-120	
Chromium, Dissolved	mg/L	0.1	0.097	97	80-120	
Cobalt, Dissolved	mg/L	0.1	0.097	97	80-120	
Lead, Dissolved	mg/L	0.1	0.10	101	80-120	
Lithium, Dissolved	mg/L	0.1	0.10	100	80-120	
Molybdenum, Dissolved	mg/L	0.1	0.10	101	80-120	
Selenium, Dissolved	mg/L	0.1	0.098	98	80-120	
Thallium, Dissolved	mg/L	0.1	0.099	99	80-120	
Vanadium, Dissolved	mg/L	0.1	0.098	98	80-120	
Zinc, Dissolved	mg/L	0.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3026978 3026979

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92498079002 Result	Spike Conc.	Spike Conc.	MS Result							
Antimony, Dissolved	mg/L	ND	0.1	0.1	0.11	0.11	114	113	75-125	1	20	
Arsenic, Dissolved	mg/L	0.0014J	0.1	0.1	0.10	0.10	102	101	75-125	2	20	
Barium, Dissolved	mg/L	0.15	0.1	0.1	0.26	0.26	114	109	75-125	2	20	
Beryllium, Dissolved	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	2	20	
Boron, Dissolved	mg/L	3.9	1	1	5.0	4.9	110	99	75-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: GRUMMAN ROAD SEMI ANNUAL FILT.  
Pace Project No.: 92498079

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3026978												3026979	
Parameter	Units	92498079002 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Cadmium, Dissolved	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	1	20		
Chromium, Dissolved	mg/L	0.00085J	0.1	0.1	0.099	0.10	98	102	75-125	4	20		
Cobalt, Dissolved	mg/L	0.00047J	0.1	0.1	0.098	0.097	98	96	75-125	2	20		
Lead, Dissolved	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	2	20		
Lithium, Dissolved	mg/L	ND	0.1	0.1	0.097	0.098	97	98	75-125	1	20		
Molybdenum, Dissolved	mg/L	ND	0.1	0.1	0.11	0.11	108	105	75-125	2	20		
Selenium, Dissolved	mg/L	ND	0.1	0.1	0.096	0.095	96	94	75-125	1	20		
Thallium, Dissolved	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20		
Vanadium, Dissolved	mg/L	0.0025J	0.1	0.1	0.10	0.11	100	106	75-125	6	20		
Zinc, Dissolved	mg/L	ND	0.1	0.1	0.096	0.097	95	96	75-125	1	20		

SAMPLE DUPLICATE: 3026987

Parameter	Units	92497981005	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
Antimony, Dissolved	mg/L		ND		20	
Arsenic, Dissolved	mg/L	67.2 ug/L	0.068	1	20	
Barium, Dissolved	mg/L	100 ug/L	0.091		20	
Beryllium, Dissolved	mg/L		ND		20	
Boron, Dissolved	mg/L		0.96		20	
Cadmium, Dissolved	mg/L	ND	ND		20	
Chromium, Dissolved	mg/L	ND	ND		20	
Cobalt, Dissolved	mg/L		0.0029J		20	
Lead, Dissolved	mg/L	ND	ND		20	
Lithium, Dissolved	mg/L		0.0040J		20	
Molybdenum, Dissolved	mg/L		0.015		20	
Selenium, Dissolved	mg/L	ND	ND		20	
Thallium, Dissolved	mg/L		ND		20	
Vanadium, Dissolved	mg/L		ND		20	
Zinc, Dissolved	mg/L		0.0074J		20	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498079001	GWA-7 FILTERED				
92498079002	GWB-5R FILTERED				
92498079001	GWA-7 FILTERED	EPA 3010A	570950	EPA 6010D	570976
92498079002	GWB-5R FILTERED	EPA 3010A	570950	EPA 6010D	570976
92498079001	GWA-7 FILTERED	EPA 3005A	570318	EPA 6020B	570369
92498079002	GWB-5R FILTERED	EPA 3005A	571522	EPA 6020B	571615

### REPORT OF LABORATORY ANALYSIS

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**Sample Condition Upon Receipt**

Face Analytical

Client Name: BA Power

WO#: **92498079**



Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Oth:

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no    Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other EZ:lock

Thermometer Used 230    Type of Ice:  Ice Blue None  Samples on ice, cooling process has begun

Cooler Temperature 3.7    Biological Tissue is Frozen: Yes No

Tamp should be above freezing to 6°C

Date and initials of person examining contents: CO

Comments: \_\_\_\_\_

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>CO</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required?    Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A  
 Client Information:  
 Agency: **GA POWER**  
 Address: **Atlanta, GA**  
 Requested Project Information:  
 Report to: **SCS CONTACTS**  
 Copy to: **ACC CONTACTS**  
 Company Name: **SOUTHWEST CO.**  
 Invoice Information:  
 Client/Job: **SCS CONTACTS**  
 Address: \_\_\_\_\_  
 City/State: \_\_\_\_\_  
 Reference: \_\_\_\_\_  
 Name: **Kevin Harring**  
 Project Number: \_\_\_\_\_  
 Meter/Tag #: **2926-1**  
 Requested Analysis Filtered (Y/N): \_\_\_\_\_  
 REGULATORY AGENCY:  
 NIDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER CCA  
 State: **GA**  
 Page: **1** of **7**

ITEM #	Section B Requester Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTEWATER WW WASTE WATER WTW PRETREAT PT CONSTRUCTION CON WINE AIR OTHER TIS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives						Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	pH= <b>5.26</b>
					COMPOSITE	COMPOSITE			H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol				
1			WT 6		DATE	TIME	DATE	TIME	✓									
					9-28-20	1520												
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

ADDITIONAL COMMENTS: \_\_\_\_\_  
 REMUNISHED BY / AFFILIATION: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 ACCEPTED BY / AFFILIATION: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 SAMPLE CONDITIONS:  
 Temp in °C \_\_\_\_\_  
 Received on Ice (Y/N) \_\_\_\_\_  
 Custody Sealed Cooler (Y/N) \_\_\_\_\_  
 Samples Intact (Y/N) \_\_\_\_\_  
 Discolored Metals  
 Separate Report for Pb Metals  
 Analyzed by: ACC DATE: 9-30-20 TIME: 0945  
 Analyzed by: MKG DATE: 9-30-20 TIME: 0345  
 Analyzed by: [Signature] DATE: 9/30/20 TIME: 1147

SAMPLER NAME AND SIGNATURE  
 PRINT NAME OF SAMPLER: \_\_\_\_\_  
 SIGNATURE OF SAMPLER: \_\_\_\_\_  
 DATE SIGNED (MM/DD/YYYY): 9/30/20

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.  
 F-ALL-Q-020rev 07, 15-Feb-2007



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b> Required Client Information: Company: GA Power Address: Atlanta, GA		<b>Section B</b> Required Project Information: Report To: SCS Contacts Copy To: ACC Contacts		<b>Section C</b> Invoice Information: Attention: Southern Co. Company Name:	
Email To: SCS Contacts Phone: _____ Requested Due Date/TAT: 10 Day		Purchase Order No.: _____ Project Name: Gunman Road - Semi-Annual Project Number: _____		Address: _____ Site Code: _____ Contract: Kevin Herring Manager: _____ Price Profile #: 2926-1	
REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>			Site Location: _____ STATE: GA		

ITEM #	Section D Required Client Information	VALID Matrix Codes MATRIX CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Analysis Test	Requested Analyte Filtered (Y/N)	Residual Chlorine (Y/N)	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
			DATE	TIME			DATE	TIME							
1	SAMPLE ID (A-Z, 0-9, /, ) Sample IDs MUST BE UNIQUE		9-20	1730		1									
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

ADDITIONAL COMMENTS Please note when the test sample for the event has been taken lost sample taken		RELINQUISHED BY / AFFILIATION DATE: 10-2-20 TIME: 12:22 ACCEPTED BY / AFFILIATION DATE: 10-2-20 TIME: 12:22	
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: _____ SIGNATURE of SAMPLER: _____		DATE SIGNED (MM/DD/YYYY): 10-2-20	

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-C-020rev.07, 15-Feb-2007

October 26, 2020

Joju Abraham  
Georgia Power-CCR  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between September 30, 2020 and October 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kevin Herring  
kevin.herring@pacelabs.com  
1(704)875-9092  
HORIZON Database Administrator

Enclosures

cc: Owens Fuquea, ACC  
Kristen Jurinko  
Matt Malone, Atlantic Coast Consulting  
Betsy McDaniel, Atlantic Coast Consulting  
Evan Perry, Atlantic Coast Consulting  
Ms. Lauren Petty, Southern Co. Services



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

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### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92498068001	GWA-7	Water	09/28/20 15:20	09/30/20 11:47
92498068002	GWC-13	Water	09/28/20 16:40	09/30/20 11:47
92498068003	GWA-8	Water	09/28/20 16:04	09/30/20 11:47
92498068004	GWC-1	Water	09/28/20 17:08	09/30/20 11:47
92498068005	FB-1-9-28-20	Water	09/28/20 16:55	09/30/20 11:47
92498068006	GWC-12	Water	09/29/20 09:35	09/30/20 11:47
92498068007	GWC-11	Water	09/29/20 12:20	09/30/20 11:47
92498068008	GWC-14	Water	09/29/20 14:42	09/30/20 11:47
92498068009	GWC-2	Water	09/29/20 15:05	09/30/20 11:47
92498068010	EB-1-9-29-20	Water	09/29/20 16:20	09/30/20 11:47
92498068011	DUP-1	Water	09/29/20 00:00	09/30/20 11:47
92498068012	GWC-21	Water	09/30/20 10:49	10/02/20 12:22
92498068013	GWC-15	Water	09/30/20 12:30	10/02/20 12:22
92498068014	GWC-16	Water	09/30/20 14:00	10/02/20 12:22
92498068015	GWC-20	Water	09/30/20 16:31	10/02/20 12:22
92498068016	GWB-4R	Water	10/01/20 08:50	10/02/20 12:22
92498068017	EB-2-9-30-20	Water	09/30/20 14:30	10/02/20 12:22
92498068018	DUP-2	Water	09/30/20 00:00	10/02/20 12:22
92498068019	GWC-17	Water	09/30/20 12:00	10/02/20 12:22
92498068020	GWC-22	Water	09/30/20 14:05	10/02/20 12:22
92498068021	GWB-6R	Water	09/30/20 15:35	10/02/20 12:22
92498068022	GWB-5R	Water	09/30/20 17:30	10/02/20 12:22
92498068023	FB-2-9-30-20	Water	09/30/20 15:25	10/02/20 12:22
92498068024	GWC-9	Water	10/01/20 08:21	10/02/20 12:22

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92498068001	GWA-7	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068002	GWC-13	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068003	GWA-8	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068004	GWC-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068005	FB-1-9-28-20	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068006	GWC-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068007	GWC-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068008	GWC-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068009	GWC-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068010	EB-1-9-29-20	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068011	DUP-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068012	GWC-21	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068013	GWC-15	EPA 9315	LAL	1	PASI-PA

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### SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92498068014	GWC-16	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068015	GWC-20	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068016	GWB-4R	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068017	EB-2-9-30-20	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068018	DUP-2	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068019	GWC-17	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068020	GWC-22	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068021	GWB-6R	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068022	GWB-5R	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068023	FB-2-9-30-20	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
92498068024	GWC-9	EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498068001</b>	<b>GWA-7</b>					
EPA 9315	Radium-226	22.2 ± 4.27 (0.964)	pCi/L		10/15/20 06:56	
EPA 9320	Radium-228	C:93% T:NA 0.156 ± 0.471 (1.06)	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	C:71% T:81% 22.4 ± 4.74 (2.02)	pCi/L		10/21/20 12:22	
<b>92498068002</b>	<b>GWC-13</b>					
EPA 9315	Radium-226	0.676 ± 0.337 (0.373)	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	C:85% T:NA 0.606 ± 0.395 (0.737)	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	C:71% T:79% 1.28 ± 0.732 (1.11)	pCi/L		10/21/20 12:22	
<b>92498068003</b>	<b>GWA-8</b>					
EPA 9315	Radium-226	0.929 ± 0.400 (0.425)	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	C:85% T:NA 1.15 ± 0.522 (0.868)	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	C:70% T:78% 2.08 ± 0.922 (1.29)	pCi/L		10/21/20 12:22	
<b>92498068004</b>	<b>GWC-1</b>					
EPA 9315	Radium-226	0.727 ± 0.357 (0.460)	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	C:89% T:NA 0.564 ± 0.409 (0.795)	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	C:75% T:78% 1.29 ± 0.766 (1.26)	pCi/L		10/21/20 12:22	

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498068005</b>	<b>FB-1-9-28-20</b>					
EPA 9315	Radium-226	-0.0334 ± 0.133 (0.422) C:90% T:NA	pCi/L		10/15/20 06:55	
EPA 9320	Radium-228	0.886 ± 0.502 (0.919) C:68% T:78%	pCi/L		10/21/20 11:33	
Total Radium Calculation	Total Radium	0.886 ± 0.635 (1.34)	pCi/L		10/22/20 10:20	
<b>92498068006</b>	<b>GWC-12</b>					
EPA 9315	Radium-226	0.494 ± 0.318 (0.495) C:84% T:NA	pCi/L		10/15/20 06:58	
EPA 9320	Radium-228	0.351 ± 0.443 (0.942) C:73% T:78%	pCi/L		10/21/20 11:33	
Total Radium Calculation	Total Radium	0.845 ± 0.761 (1.44)	pCi/L		10/22/20 10:20	
<b>92498068007</b>	<b>GWC-11</b>					
EPA 9315	Radium-226	3.84 ± 0.898 (0.428) C:88% T:NA	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	4.46 ± 1.05 (0.851) C:68% T:81%	pCi/L		10/21/20 11:33	
Total Radium Calculation	Total Radium	8.30 ± 1.95 (1.28)	pCi/L		10/22/20 10:20	
<b>92498068008</b>	<b>GWC-14</b>					
EPA 9315	Radium-226	0.331 ± 0.258 (0.431) C:83% T:NA	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	-0.233 ± 0.396 (0.960) C:69% T:80%	pCi/L		10/21/20 11:33	
Total Radium Calculation	Total Radium	0.331 ± 0.654 (1.39)	pCi/L		10/22/20 10:20	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498068009</b>	<b>GWC-2</b>					
EPA 9315	Radium-226	0.553 ± 0.323 (0.494) C:88% T:NA	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	0.450 ± 0.417 (0.853) C:73% T:84%	pCi/L		10/21/20 11:44	
Total Radium Calculation	Total Radium	1.00 ± 0.740 (1.35)	pCi/L		10/22/20 10:20	
<b>92498068010</b>	<b>EB-1-9-29-20</b>					
EPA 9315	Radium-226	0.00561 ± 0.156 (0.435) C:92% T:NA	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	0.149 ± 0.376 (0.838) C:73% T:83%	pCi/L		10/21/20 11:34	
Total Radium Calculation	Total Radium	0.155 ± 0.532 (1.27)	pCi/L		10/22/20 10:20	
<b>92498068011</b>	<b>DUP-1</b>					
EPA 9315	Radium-226	0.259 ± 0.219 (0.372) C:92% T:NA	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	1.42 ± 0.529 (0.789) C:69% T:84%	pCi/L		10/21/20 11:34	
Total Radium Calculation	Total Radium	1.68 ± 0.748 (1.16)	pCi/L		10/22/20 10:20	
<b>92498068012</b>	<b>GWC-21</b>					
EPA 9315	Radium-226	2.88 ± 0.770 (0.501) C:76% T:NA	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	0.945 ± 0.535 (0.993) C:69% T:79%	pCi/L		10/21/20 11:35	
Total Radium Calculation	Total Radium	3.83 ± 1.31 (1.49)	pCi/L		10/22/20 10:20	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498068013</b>	<b>GWC-15</b>					
EPA 9315	Radium-226	0.709 ± 0.358 (0.518)	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	C:97% T:NA 1.43 ± 0.547 (0.848)	pCi/L		10/21/20 11:45	
Total Radium Calculation	Total Radium	C:71% T:86% 2.14 ± 0.905 (1.37)	pCi/L		10/22/20 10:20	
<b>92498068014</b>	<b>GWC-16</b>					
EPA 9315	Radium-226	1.69 ± 0.552 (0.449)	pCi/L		10/16/20 06:44	
EPA 9320	Radium-228	C:86% T:NA 0.781 ± 0.435 (0.789)	pCi/L		10/21/20 11:45	
Total Radium Calculation	Total Radium	C:74% T:82% 2.47 ± 0.987 (1.24)	pCi/L		10/22/20 10:20	
<b>92498068015</b>	<b>GWC-20</b>					
EPA 9315	Radium-226	3.50 ± 0.843 (0.419)	pCi/L		10/16/20 06:44	
EPA 9320	Radium-228	C:93% T:NA 2.12 ± 0.638 (0.795)	pCi/L		10/21/20 11:35	
Total Radium Calculation	Total Radium	C:66% T:93% 5.62 ± 1.48 (1.21)	pCi/L		10/22/20 10:20	
<b>92498068016</b>	<b>GWB-4R</b>					
EPA 9315	Radium-226	1.57 ± 0.530 (0.422)	pCi/L		10/16/20 06:44	
EPA 9320	Radium-228	C:84% T:NA 1.03 ± 0.451 (0.721)	pCi/L		10/21/20 11:30	
Total Radium Calculation	Total Radium	C:68% T:81% 2.60 ± 0.981 (1.14)	pCi/L		10/22/20 10:20	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498068017</b>	<b>EB-2-9-30-20</b>					
EPA 9315	Radium-226	0.132 ± 0.292 (0.685) C:88% T:NA	pCi/L		10/16/20 06:44	
EPA 9320	Radium-228	0.612 ± 0.386 (0.710) C:71% T:75%	pCi/L		10/21/20 11:30	
Total Radium Calculation	Total Radium	0.744 ± 0.678 (1.40)	pCi/L		10/22/20 10:20	
<b>92498068018</b>	<b>DUP-2</b>					
EPA 9315	Radium-226	3.50 ± 0.853 (0.441) C:96% T:NA	pCi/L		10/16/20 06:44	
EPA 9320	Radium-228	3.29 ± 0.864 (0.988) C:77% T:84%	pCi/L		10/21/20 11:36	
Total Radium Calculation	Total Radium	6.79 ± 1.72 (1.43)	pCi/L		10/22/20 10:20	
<b>92498068019</b>	<b>GWC-17</b>					
EPA 9315	Radium-226	1.06 ± 0.448 (0.493) C:83% T:NA	pCi/L		10/16/20 06:45	
EPA 9320	Radium-228	2.03 ± 0.646 (0.909) C:75% T:88%	pCi/L		10/21/20 11:36	
Total Radium Calculation	Total Radium	3.09 ± 1.09 (1.40)	pCi/L		10/22/20 10:20	
<b>92498068020</b>	<b>GWC-22</b>					
EPA 9315	Radium-226	0.820 ± 0.408 (0.485) C:78% T:NA	pCi/L		10/16/20 06:45	
EPA 9320	Radium-228	1.97 ± 0.700 (1.08) C:74% T:79%	pCi/L		10/21/20 11:36	
Total Radium Calculation	Total Radium	2.79 ± 1.11 (1.57)	pCi/L		10/22/20 10:20	

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### SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>92498068021</b>	<b>GWB-6R</b>					
EPA 9315	Radium-226	3.02 ± 0.796 (0.521) C:90% T:NA	pCi/L		10/16/20 07:29	
EPA 9320	Radium-228	3.37 ± 0.979 (1.28) C:73% T:70%	pCi/L		10/21/20 11:36	
Total Radium Calculation	Total Radium	6.39 ± 1.78 (1.80)	pCi/L		10/22/20 10:20	
<b>92498068022</b>	<b>GWB-5R</b>					
EPA 9315	Radium-226	2.69 ± 0.719 (0.494) C:89% T:NA	pCi/L		10/16/20 08:56	
EPA 9320	Radium-228	1.76 ± 0.671 (1.03) C:70% T:85%	pCi/L		10/21/20 13:22	
Total Radium Calculation	Total Radium	4.45 ± 1.39 (1.52)	pCi/L		10/22/20 10:20	
<b>92498068023</b>	<b>FB-2-9-30-20</b>					
EPA 9315	Radium-226	0.0614 ± 0.242 (0.609) C:79% T:NA	pCi/L		10/16/20 06:51	
EPA 9320	Radium-228	0.534 ± 0.477 (0.974) C:71% T:83%	pCi/L		10/21/20 12:17	
Total Radium Calculation	Total Radium	0.595 ± 0.719 (1.58)	pCi/L		10/22/20 10:20	
<b>92498068024</b>	<b>GWC-9</b>					
EPA 9315	Radium-226	1.20 ± 0.475 (0.488) C:83% T:NA	pCi/L		10/16/20 06:51	
EPA 9320	Radium-228	2.10 ± 0.972 (1.72) C:68% T:77%	pCi/L		10/21/20 14:38	
Total Radium Calculation	Total Radium	3.30 ± 1.45 (2.21)	pCi/L		10/22/20 10:25	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWA-7**      **Lab ID: 92498068001**      Collected: 09/28/20 15:20      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>22.2 ± 4.27 (0.964)</b> <b>C:93% T:NA</b>	pCi/L	10/15/20 06:56	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.156 ± 0.471 (1.06)</b> <b>C:71% T:81%</b>	pCi/L	10/16/20 14:43	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>22.4 ± 4.74 (2.02)</b>	pCi/L	10/21/20 12:22	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-13**      **Lab ID: 92498068002**      Collected: 09/28/20 16:40      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>0.676 ± 0.337 (0.373)</b> <b>C:85% T:NA</b>	pCi/L	10/15/20 06:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.606 ± 0.395 (0.737)</b> <b>C:71% T:79%</b>	pCi/L	10/16/20 14:43	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.28 ± 0.732 (1.11)</b>	pCi/L	10/21/20 12:22	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWA-8**      **Lab ID: 92498068003**      Collected: 09/28/20 16:04      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.929 ± 0.400 (0.425)</b> <b>C:85% T:NA</b>	pCi/L	10/15/20 06:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.15 ± 0.522 (0.868)</b> <b>C:70% T:78%</b>	pCi/L	10/16/20 14:43	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.08 ± 0.922 (1.29)</b>	pCi/L	10/21/20 12:22	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-1**      **Lab ID: 92498068004**      Collected: 09/28/20 17:08      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>0.727 ± 0.357 (0.460)</b> <b>C:89% T:NA</b>	pCi/L	10/15/20 06:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.564 ± 0.409 (0.795)</b> <b>C:75% T:78%</b>	pCi/L	10/16/20 14:43	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.29 ± 0.766 (1.26)</b>	pCi/L	10/21/20 12:22	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: FB-1-9-28-20**      **Lab ID: 92498068005**      Collected: 09/28/20 16:55      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>-0.0334 ± 0.133 (0.422)</b> <b>C:90% T:NA</b>	pCi/L	10/15/20 06:55	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.886 ± 0.502 (0.919)</b> <b>C:68% T:78%</b>	pCi/L	10/21/20 11:33	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.886 ± 0.635 (1.34)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-12**      **Lab ID: 92498068006**      Collected: 09/29/20 09:35      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>0.494 ± 0.318 (0.495)</b> <b>C:84% T:NA</b>	pCi/L	10/15/20 06:58	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.351 ± 0.443 (0.942)</b> <b>C:73% T:78%</b>	pCi/L	10/21/20 11:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.845 ± 0.761 (1.44)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-11**      **Lab ID: 92498068007**      Collected: 09/29/20 12:20      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>3.84 ± 0.898 (0.428)</b> <b>C:88% T:NA</b>	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>4.46 ± 1.05 (0.851)</b> <b>C:68% T:81%</b>	pCi/L	10/21/20 11:33	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>8.30 ± 1.95 (1.28)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-14**      **Lab ID: 92498068008**      Collected: 09/29/20 14:42      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.331 ± 0.258 (0.431)</b> <b>C:83% T:NA</b>	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>-0.233 ± 0.396 (0.960)</b> <b>C:69% T:80%</b>	pCi/L	10/21/20 11:33	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.331 ± 0.654 (1.39)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-2**      **Lab ID: 92498068009**      Collected: 09/29/20 15:05      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.553 ± 0.323 (0.494)</b> <b>C:88% T:NA</b>	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.450 ± 0.417 (0.853)</b> <b>C:73% T:84%</b>	pCi/L	10/21/20 11:44	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.00 ± 0.740 (1.35)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: EB-1-9-29-20**      **Lab ID: 92498068010**      Collected: 09/29/20 16:20      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.00561 ± 0.156 (0.435)</b> <b>C:92% T:NA</b>	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.149 ± 0.376 (0.838)</b> <b>C:73% T:83%</b>	pCi/L	10/21/20 11:34	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.155 ± 0.532 (1.27)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: DUP-1**      **Lab ID: 92498068011**      Collected: 09/29/20 00:00      Received: 09/30/20 11:47      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.259 ± 0.219 (0.372)</b> <b>C:92% T:NA</b>	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.42 ± 0.529 (0.789)</b> <b>C:69% T:84%</b>	pCi/L	10/21/20 11:34	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.68 ± 0.748 (1.16)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-21**      **Lab ID: 92498068012**      Collected: 09/30/20 10:49      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>2.88 ± 0.770 (0.501)</b> <b>C:76% T:NA</b>	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.945 ± 0.535 (0.993)</b> <b>C:69% T:79%</b>	pCi/L	10/21/20 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>3.83 ± 1.31 (1.49)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-15**      **Lab ID: 92498068013**      Collected: 09/30/20 12:30      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.709 ± 0.358 (0.518)</b> <b>C:97% T:NA</b>	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.43 ± 0.547 (0.848)</b> <b>C:71% T:86%</b>	pCi/L	10/21/20 11:45	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.14 ± 0.905 (1.37)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-16**      **Lab ID: 92498068014**      Collected: 09/30/20 14:00      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>1.69 ± 0.552 (0.449)</b> <b>C:86% T:NA</b>	pCi/L	10/16/20 06:44	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.781 ± 0.435 (0.789)</b> <b>C:74% T:82%</b>	pCi/L	10/21/20 11:45	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>2.47 ± 0.987 (1.24)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-20**      **Lab ID: 92498068015**      Collected: 09/30/20 16:31      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>3.50 ± 0.843 (0.419)</b> <b>C:93% T:NA</b>	pCi/L	10/16/20 06:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>2.12 ± 0.638 (0.795)</b> <b>C:66% T:93%</b>	pCi/L	10/21/20 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>5.62 ± 1.48 (1.21)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWB-4R**      **Lab ID: 92498068016**      Collected: 10/01/20 08:50      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.57 ± 0.530 (0.422)</b> <b>C:84% T:NA</b>	pCi/L	10/16/20 06:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.03 ± 0.451 (0.721)</b> <b>C:68% T:81%</b>	pCi/L	10/21/20 11:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.60 ± 0.981 (1.14)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: EB-2-9-30-20**      **Lab ID: 92498068017**      Collected: 09/30/20 14:30      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>0.132 ± 0.292 (0.685)</b> <b>C:88% T:NA</b>	pCi/L	10/16/20 06:44	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>0.612 ± 0.386 (0.710)</b> <b>C:71% T:75%</b>	pCi/L	10/21/20 11:30	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.744 ± 0.678 (1.40)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: DUP-2**      **Lab ID: 92498068018**      Collected: 09/30/20 00:00      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>3.50 ± 0.853 (0.441)</b> <b>C:96% T:NA</b>	pCi/L	10/16/20 06:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>3.29 ± 0.864 (0.988)</b> <b>C:77% T:84%</b>	pCi/L	10/21/20 11:36	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>6.79 ± 1.72 (1.43)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-17**      **Lab ID: 92498068019**      Collected: 09/30/20 12:00      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.06 ± 0.448 (0.493)</b> <b>C:83% T:NA</b>	pCi/L	10/16/20 06:45	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>2.03 ± 0.646 (0.909)</b> <b>C:75% T:88%</b>	pCi/L	10/21/20 11:36	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>3.09 ± 1.09 (1.40)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-22**      **Lab ID: 92498068020**      Collected: 09/30/20 14:05      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 9315	<b>0.820 ± 0.408 (0.485)</b> <b>C:78% T:NA</b>	pCi/L	10/16/20 06:45	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 9320	<b>1.97 ± 0.700 (1.08)</b> <b>C:74% T:79%</b>	pCi/L	10/21/20 11:36	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>2.79 ± 1.11 (1.57)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWB-6R**      **Lab ID: 92498068021**      Collected: 09/30/20 15:35      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>3.02 ± 0.796 (0.521)</b> <b>C:90% T:NA</b>	pCi/L	10/16/20 07:29	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>3.37 ± 0.979 (1.28)</b> <b>C:73% T:70%</b>	pCi/L	10/21/20 11:36	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>6.39 ± 1.78 (1.80)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWB-5R**      **Lab ID: 92498068022**      Collected: 09/30/20 17:30      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>2.69 ± 0.719 (0.494)</b> <b>C:89% T:NA</b>	pCi/L	10/16/20 08:56	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>1.76 ± 0.671 (1.03)</b> <b>C:70% T:85%</b>	pCi/L	10/21/20 13:22	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>4.45 ± 1.39 (1.52)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: FB-2-9-30-20**      **Lab ID: 92498068023**      Collected: 09/30/20 15:25      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>0.0614 ± 0.242 (0.609)</b> <b>C:79% T:NA</b>	pCi/L	10/16/20 06:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>0.534 ± 0.477 (0.974)</b> <b>C:71% T:83%</b>	pCi/L	10/21/20 12:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.595 ± 0.719 (1.58)</b>	pCi/L	10/22/20 10:20	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

**Sample: GWC-9**      **Lab ID: 92498068024**      Collected: 10/01/20 08:21      Received: 10/02/20 12:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	<b>1.20 ± 0.475 (0.488)</b> <b>C:83% T:NA</b>	pCi/L	10/16/20 06:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	<b>2.10 ± 0.972 (1.72)</b> <b>C:68% T:77%</b>	pCi/L	10/21/20 14:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>3.30 ± 1.45 (2.21)</b>	pCi/L	10/22/20 10:25	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

QC Batch:	418039	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92498068024

METHOD BLANK:	2021122	Matrix:	Water
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Associated Lab Samples: 92498068024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.318 ± 0.365 (0.768) C:69% T:89%	pCi/L	10/21/20 11:32	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

QC Batch: 418038 Analysis Method: EPA 9320

QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92498068005, 92498068006, 92498068007, 92498068008, 92498068009, 92498068010, 92498068011,  
92498068012, 92498068013, 92498068014, 92498068015, 92498068016, 92498068017, 92498068018,  
92498068019, 92498068020, 92498068021, 92498068022, 92498068023

METHOD BLANK: 2021121 Matrix: Water

Associated Lab Samples: 92498068005, 92498068006, 92498068007, 92498068008, 92498068009, 92498068010, 92498068011,  
92498068012, 92498068013, 92498068014, 92498068015, 92498068016, 92498068017, 92498068018,  
92498068019, 92498068020, 92498068021, 92498068022, 92498068023

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.180 ± 0.316 (0.690) C:70% T:90%	pCi/L	10/21/20 11:33	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

QC Batch:	418032	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	92498068001, 92498068002, 92498068003, 92498068004, 92498068005, 92498068006, 92498068007, 92498068008, 92498068009, 92498068010, 92498068011, 92498068012, 92498068013		

METHOD BLANK:	2021109	Matrix:	Water
Associated Lab Samples:	92498068001, 92498068002, 92498068003, 92498068004, 92498068005, 92498068006, 92498068007, 92498068008, 92498068009, 92498068010, 92498068011, 92498068012, 92498068013		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.106 ± 0.162 (0.345) C:92% T:NA	pCi/L	10/15/20 07:21	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

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QC Batch:	418033	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 92498068014, 92498068015, 92498068016, 92498068017, 92498068018, 92498068019, 92498068020, 92498068021, 92498068022, 92498068023, 92498068024

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METHOD BLANK: 2021110 Matrix: Water

Associated Lab Samples: 92498068014, 92498068015, 92498068016, 92498068017, 92498068018, 92498068019, 92498068020, 92498068021, 92498068022, 92498068023, 92498068024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0872 ± 0.193 (0.458) C:76% T:NA	pCi/L	10/16/20 06:43	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

QC Batch: 418037

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 92498068001, 92498068002, 92498068003, 92498068004

METHOD BLANK: 2021120

Matrix: Water

Associated Lab Samples: 92498068001, 92498068002, 92498068003, 92498068004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.335 ± 0.463 (0.993) C:71% T:73%	pCi/L	10/16/20 14:41	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498068001	GWA-7	EPA 9315	418032		
92498068002	GWC-13	EPA 9315	418032		
92498068003	GWA-8	EPA 9315	418032		
92498068004	GWC-1	EPA 9315	418032		
92498068005	FB-1-9-28-20	EPA 9315	418032		
92498068006	GWC-12	EPA 9315	418032		
92498068007	GWC-11	EPA 9315	418032		
92498068008	GWC-14	EPA 9315	418032		
92498068009	GWC-2	EPA 9315	418032		
92498068010	EB-1-9-29-20	EPA 9315	418032		
92498068011	DUP-1	EPA 9315	418032		
92498068012	GWC-21	EPA 9315	418032		
92498068013	GWC-15	EPA 9315	418032		
92498068014	GWC-16	EPA 9315	418033		
92498068015	GWC-20	EPA 9315	418033		
92498068016	GWB-4R	EPA 9315	418033		
92498068017	EB-2-9-30-20	EPA 9315	418033		
92498068018	DUP-2	EPA 9315	418033		
92498068019	GWC-17	EPA 9315	418033		
92498068020	GWC-22	EPA 9315	418033		
92498068021	GWB-6R	EPA 9315	418033		
92498068022	GWB-5R	EPA 9315	418033		
92498068023	FB-2-9-30-20	EPA 9315	418033		
92498068024	GWC-9	EPA 9315	418033		
92498068001	GWA-7	EPA 9320	418037		
92498068002	GWC-13	EPA 9320	418037		
92498068003	GWA-8	EPA 9320	418037		
92498068004	GWC-1	EPA 9320	418037		
92498068005	FB-1-9-28-20	EPA 9320	418038		
92498068006	GWC-12	EPA 9320	418038		
92498068007	GWC-11	EPA 9320	418038		
92498068008	GWC-14	EPA 9320	418038		
92498068009	GWC-2	EPA 9320	418038		
92498068010	EB-1-9-29-20	EPA 9320	418038		
92498068011	DUP-1	EPA 9320	418038		
92498068012	GWC-21	EPA 9320	418038		
92498068013	GWC-15	EPA 9320	418038		
92498068014	GWC-16	EPA 9320	418038		
92498068015	GWC-20	EPA 9320	418038		
92498068016	GWB-4R	EPA 9320	418038		
92498068017	EB-2-9-30-20	EPA 9320	418038		
92498068018	DUP-2	EPA 9320	418038		
92498068019	GWC-17	EPA 9320	418038		
92498068020	GWC-22	EPA 9320	418038		
92498068021	GWB-6R	EPA 9320	418038		
92498068022	GWB-5R	EPA 9320	418038		
92498068023	FB-2-9-30-20	EPA 9320	418038		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD SEMI ANNUAL RADS  
Pace Project No.: 92498068

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498068024	GWC-9	EPA 9320	418039		
92498068001	GWA-7	Total Radium Calculation	419547		
92498068002	GWC-13	Total Radium Calculation	419547		
92498068003	GWA-8	Total Radium Calculation	419547		
92498068004	GWC-1	Total Radium Calculation	419547		
92498068005	FB-1-9-28-20	Total Radium Calculation	419736		
92498068006	GWC-12	Total Radium Calculation	419736		
92498068007	GWC-11	Total Radium Calculation	419736		
92498068008	GWC-14	Total Radium Calculation	419736		
92498068009	GWC-2	Total Radium Calculation	419736		
92498068010	EB-1-9-29-20	Total Radium Calculation	419736		
92498068011	DUP-1	Total Radium Calculation	419736		
92498068012	GWC-21	Total Radium Calculation	419736		
92498068013	GWC-15	Total Radium Calculation	419736		
92498068014	GWC-16	Total Radium Calculation	419736		
92498068015	GWC-20	Total Radium Calculation	419736		
92498068016	GWB-4R	Total Radium Calculation	419736		
92498068017	EB-2-9-30-20	Total Radium Calculation	419736		
92498068018	DUP-2	Total Radium Calculation	419736		
92498068019	GWC-17	Total Radium Calculation	419736		
92498068020	GWC-22	Total Radium Calculation	419736		
92498068021	GWB-6R	Total Radium Calculation	419736		
92498068022	GWB-5R	Total Radium Calculation	419736		
92498068023	FB-2-9-30-20	Total Radium Calculation	419736		
92498068024	GWC-9	Total Radium Calculation	419738		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Re

WO#: 92498068

Client Name: BA Power



92498068

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace C

Tracking #: \_\_\_\_\_

Proj. Due Date: \_\_\_\_\_  
Proj. Name: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other Zip lock

Thermometer Used 230 Type of Ice:  Ice Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 3.7 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: CO

		Comments:
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed <u>CO</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:  
Bottle Identification Form (BIF)  
Document No.:  
F-CAR-CS-043-Rev.00

Document Issued: March 14, 2019  
Page 1 of 1  
Issuing Authority:  
Pace Carolinas Quality Office

Project #

WO#: 92498068

PM: KLH1

Due Date: 10/21/20

CLIENT: GA-GA Power

Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/BOIS (water) DOC, LLHg

Bottom half of box is to list number of bottle

Matrix	Item#	BP4U-125 mL Plastic Unpreserved (N/A) (C-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (C-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (C-)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (C-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (C-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(C-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP9A-250 mL plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	
	1																				3							
	2																					3						
	3																					3						
	4																					3						
	5																					3						
	6																					3						
	7																					3						
	8																					3						
	9																					3						
	10																					3						
	11																					3						
	12																					3						

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. Out of hold, incorrect preservative, out of temp, incorrect containers.





# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Agency Information:	
Company:	GA Power	Report To:	SCS Contacts	Attention:	Southern Co.
Address:	Atlanta, GA	Copy To:	ACC Contacts	Company Name:	
Email To:	SCS Contacts	Purchase Order No.:		Address:	
Phone:		Project Name:	Grumman Road - Semi-Annual	Reference:	
Requested Due Date/TAI:	10 Day	Project Number:		See Project Manager:	Kevin Herring
				Material:	
				Pics Profile #:	2926-1

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID S WIDE W AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analyte Filtered (Y/N)	Regulatory Agency	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
				DATE	TIME										
1	GW-A-7	WT 6	G	9-28-20	15:20	9	Unpreserved	✓	✓	✓					
2	GW-C-13	WT 6	G	9-28-20	16:40	9	H <sub>2</sub> SO <sub>4</sub>	✓	✓	✓					
3	GW-A-8	WT 6	G	9-28-20	16:04	9	HNO <sub>3</sub>	✓	✓	✓					
4	GW-C-1	WT 6	G	9-28-20	17:08	9	HCl	✓	✓	✓					
5	FB-1-9-28-20	WT 6	G	9-28-20	16:55	9	NaOH	✓	✓	✓					
6	GW-C-12	WT 6	G	9-29-20	09:35	9	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	✓	✓	✓					
7	GW-C-11	WT 6	G	9-28-20	12:20	9	Methanol	✓	✓	✓					
8	GW-C-14	WT 6	G	9-29-20	14:42	9	Other	✓	✓	✓					
9	GW-C-2	WT 6	G	9-29-20	15:55	9		✓	✓	✓					
10	FB-1-9-24-20	WT 6	G	9-24-20	16:20	9		✓	✓	✓					
11	DVP-1	WT 6	G	9-29-20		9		✓	✓	✓					
12															

ADDITIONAL COMMENTS: \_\_\_\_\_

RELIQUISHED BY / AFFILIATION: ACC DATE: 9-30-20 TIME: 0745

ACCEPTED BY / AFFILIATION: MILLER DATE: 9-30-20 TIME: 0745

Temp in °C: \_\_\_\_\_

Received on Ice (Y/N): \_\_\_\_\_

Custody Sealed Cooler (Y/N): \_\_\_\_\_

Samples Intact (Y/N): \_\_\_\_\_

PRINT Name of SAMPLER: Jacken Bristell

SIGNATURE of SAMPLER: [Signature]

DATE Signed (MM/DD/YYYY): 09/30/20

Temp in °C: \_\_\_\_\_

Received on Ice (Y/N): \_\_\_\_\_

Custody Sealed Cooler (Y/N): \_\_\_\_\_

Samples Intact (Y/N): \_\_\_\_\_

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**  
 Required Client Information:  
 Company: GA Power  
 Address: Atlanta, GA

**Section B**  
 Required Project Information:  
 Report To: SCS Contacts  
 Copy To: ACC Contacts  
 Purchase Order No.:  
 Project Name: Grunman Road - Semi-Annual  
 Project Number:

**Section C**  
 Invoice Information:  
 Attention: Southern Co.  
 Company Name:  
 Address:  
 Reference: Kevin Herring  
 Piece Profile #: 2926-1

REGULATORY AGENCY  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  CCR

Site Location STATE: GA

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Valid Matrix Codes MATRIX CODES DW WT WW P SL OL APP M OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Face Project No./ Lab ID.
					DATE	TIME							
1	GWC-21				9-30-20	1049	5	Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	TDS Chloride/Fluoride/Sulfate 300.0 App. III + IV + State Metals * RAD 226/228			9244888	
2	GWC-15				9-30-20	1230	5						9244888
3	GWC-16				9-30-20	1400	5						9244888
4	GWC-20				9-30-20	1631	5						9244888
5	GWB-4R				10-1-20	0650	5						9244888
6	GWB-2-9-30-20				9-30-20	1430	5						9244888
7	DWP-2				9-30-20		5						9244888
8													
9													
10													
11													
12													

REMOVED BY / AFFILIATION: [Signature] DATE: 10-2-20 TIME: 1222  
 ACCEPTED BY / AFFILIATION: [Signature] DATE: 10-2-20 TIME: 1222

ADDITIONAL COMMENTS: [Blank]

Materials: B, Ca, Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Mn, Se, Ti, V, Zn

SAMPLER NAME AND SIGNATURE: [Signature] DATE: 10-2-20

PRINT Name of SAMPLER: [Signature] DATE Signed: 10-2-20

SIGNATURE OF SAMPLER: [Signature]

Temp in °C: [Blank] Received on Ice (Y/N): [Blank] Custody Sealed Cooler (Y/N): [Blank] Samples Intact (Y/N): [Blank]



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: GA Power Address: Atlanta, GA  
Section B Required Project Information: Report To: SCS Contacts Copy To: ACC Contacts  
Section C Invoice Information: Attention: Southern Co. Company Name: Address: P. Box Office Reference: Pace Project Manager: Kevin Herring Pace Profile #: 2926-1

REGULATORY AGENCY:  NPDES  GROUND WATER  DRINKING WATER  UST  RORA  OTHER COP:   
Requested Date/Time: 10 Day Project Name: Gurnman Road - Semi-Annual Project Number: Site Location: GA State: GA

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)	Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
					COMPOSITE	COMPOSITE									
1	GW-C-17	DRINKING WATER WATER WASTE WATER PRODUCT SOLVENTS SLURRY WASTE AIR OTHER TISSUE	WT G	G	9-30-20	1200		11	✓	✓	✓				
2	GW-C-22		WT G	G	9-30-20	1405		9	✓	✓	✓				
3	GW-B-6R		WT G	G	9-30-20	1535		9	✓	✓	✓				
4	GW-B-5R		WT G	G	9-30-20	1730		9	✓	✓	✓				
5	FB-2-9-30-20		WT G	G	9-30-20	1525		9	✓	✓	✓				
6	GW-C-9		WT G	G	10-1-20	0821		9	✓	✓	✓				
7															
8															
9															
10															
11															
12															

ADDITIONAL COMMENTS: Request Note: When the first sample for the event has been taken. RELINQUISHED BY / AFFILIATION: DATE: 10-2-20 TIME: 1222 ACCEPTED BY / AFFILIATION: DATE: 10/2/20 TIME: 1200

SAMPLER NAME AND SIGNATURE: PRINT NAME OF SAMPLER: Jordan Beckwith Taylor Gyle SIGNATURE OF SAMPLER: DATE SIGNED (MM/DD/YYYY): 10-2-20

Temp in °C: Received on ice (Y/N): Custody Sealed Cooler (Y/N): Samples Intact (Y/N)

Page: 3 of 3

Residual Chlorine (Y/N): Pace Project No./ Lab ID: 62466064

PH values: pH = 4.08, pH = 4.63, pH = 5.39, pH = 4.49, pH = 4.4, pH = 4.42

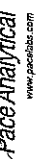
Ext. Lab. pH = 4.08

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

FALL-Q-020REV.07, 15-Feb-2007

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# Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: LAL  
Date: 10/14/2020  
Worklist: 56676  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	2021109
MB Concentration:	0.106
MB Counting Uncertainty:	0.161
MB MDC:	0.345
MB Numerical Performance Indicator:	1.28
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	
	LCS56676	N LCS56676
Count Date:	10/15/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.516	
Target Conc. (pCi/L, g, F):	4.655	
Uncertainty (Calculated):	0.056	
Result (pCi/L, g, F):	4.795	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.767	
Numerical Performance Indicator:	0.36	
Percent Recovery:	103.01%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92497524034
Duplicate Sample I.D.:	92497524034DUP
Sample Result (pCi/L, g, F):	0.130
Sample Result Counting Uncertainty (pCi/L, g, F):	0.179
Sample Duplicate Result (pCi/L, g, F):	0.326
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.264
Ave sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	-1.205
Duplicate RPD:	85.93%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail**
% RPD Limit:	25%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.:		
Sample MS I.D.:		
Sample MSD I.D.:		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
MS Aliquot (L, g, F):		
MS Target Conc. (pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.:
Sample MS I.D.:
Sample MSD I.D.:
Sample Matrix Spike Result:
Sample Matrix Spike Duplicate Result:
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Matrix Spike Duplicate Result:
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Duplicate Numerical Performance Indicator:
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:
MS/ MSD Duplicate Status vs Numerical Indicator:
MS/ MSD Duplicate Status vs RPD:
% RPD Limit:

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*\*\*Batch must be re-prepped due to unacceptable precision.

lan 10/15/2020  
Total Alpha Radium (R104-3 11Feb2019).xls  
10/15/2020



# Quality Control Sample Performance Assessment

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*



Test: Ra-226  
Analyst: LAL  
Date: 10/15/2020  
Worklist: 56677  
Matrix: DW

Method Blank Assessment	
MB Sample ID	2021110
MB concentration:	0.087
M/B Counting Uncertainty:	0.193
MB MDC:	0.458
MB Numerical Performance Indicator:	0.89
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
LCSD56677	LCSD56677
Count Date:	10/16/2020
Spike I.D.:	19-033
Decay Corrected Spike Concentration (pCi/mL):	24.044
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.524
Target Conc. (pCi/L, g, F):	4.586
Uncertainty (Calculated):	0.055
Result (pCi/L, g, F):	3.940
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.731
Numerical Performance Indicator:	-1.73
Percent Recovery:	85.91%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
Upper % Recovery Limits:	125%
Lower % Recovery Limits:	75%

Duplicate Sample Assessment	
Sample I.D.:	92498068019
Duplicate Sample I.D.:	92498068019DUP
Duplicate Result (pCi/L, g, F):	1.060
Sample Result Counting Uncertainty (pCi/L, g, F):	0.421
Sample Duplicate Result (pCi/L, g, F):	0.947
Sample Duplicate Counting Uncertainty (pCi/L, g, F):	0.373
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	0.393
Duplicate RPD:	11.23%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*Handwritten signature and date: 10/16/2020*

*Handwritten date: 10/16/2020*

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
<p>Sample Collection Date:</p> <p>Sample I.D.:</p> <p>Sample MS I.D.:</p> <p>Sample MSD I.D.:</p> <p>Spike I.D.:</p> <p>MS/MSD Decay Corrected Spike Concentration (pCi/mL):</p> <p>Spike Volume Used in MS (mL):</p> <p>Spike Volume Used in MSD (mL):</p> <p>MS Aliquot (L, g, F):</p> <p>MS Target Conc. (pCi/L, g, F):</p> <p>MSD Aliquot (L, g, F):</p> <p>MSD Target Conc. (pCi/L, g, F):</p> <p>MS Spike Uncertainty (calculated):</p> <p>MSD Spike Uncertainty (calculated):</p> <p>Sample Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):</p> <p>MS Numerical Performance Indicator:</p> <p>MSD Numerical Performance Indicator:</p> <p>MS Percent Recovery:</p> <p>MSD Percent Recovery:</p> <p>MS Status vs Numerical Indicator:</p> <p>MSD Status vs Numerical Indicator:</p> <p>MS Status vs Recovery:</p> <p>MSD Status vs Recovery:</p> <p>MS/MSD Upper % Recovery Limits:</p> <p>MS/MSD Lower % Recovery Limits:</p>		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
<p>Sample I.D.:</p> <p>Sample MS I.D.:</p> <p>Sample MSD I.D.:</p> <p>Sample Matrix Spike Result:</p> <p>Matrix Spike Result Counting Uncertainty (pCi/L, g, F):</p> <p>Sample Matrix Spike Duplicate Result:</p> <p>Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):</p> <p>Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):</p> <p>Duplicate Numerical Performance Indicator:</p> <p>(Based on the Percent Recoveries) MS/MSD Duplicate RPD:</p> <p>MS/MSD Duplicate Status vs Numerical Indicator:</p> <p>MS/MSD Duplicate Status vs RPD:</p> <p>% RPD Limit:</p>

# Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: LAL  
Date: 10/15/2020  
Worklist: 56677  
Matrix: DW

<b>Method Blank Assessment</b>	
MB Sample ID	2021110
MB concentration:	0.087
M/B Counting Uncertainty:	0.193
MB MDC:	0.458
MB Numerical Performance Indicator:	0.89
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	
	LCSS56677	N LCSD56677
Count Date:	10/16/2020	
Spike I.D.:	19-033	
Decay Corrected Spike Concentration (pCi/mL):	24.044	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.524	
Target Conc. (pCi/L, g, F):	4.586	
Uncertainty (Calculated):	0.055	
Result (pCi/L, g, F):	3.940	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.731	
Numerical Performance Indicator:	-1.73	
Percent Recovery:	85.91%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	
Upper % Recovery Limits:	125%	
Lower % Recovery Limits:	75%	

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	92498068014
Duplicate Sample I.D.:	92498068014DUP
Sample Result (pCi/L, g, F):	1.691
Sample Result Counting Uncertainty (pCi/L, g, F):	0.495
Sample Duplicate Result (pCi/L, g, F):	1.375
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.433
Are sample and/or duplicate results below RL?	See Below ##
Duplicate Numerical Performance Indicator:	0.942
Duplicate RPD:	20.61%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass
% RPD Limit:	25%

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

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MAN 10/16/2020



# Quality Control Sample Performance Assessment



Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228  
Analyst: VAL  
Date: 10/14/2020  
Worklist: 56680  
Matrix: WT

Method Blank Assessment	
MB Sample ID	2021120
MB concentration:	0.335
MB 2 Sigma CSU:	0.463
MB MDC:	0.993
MB Numerical Performance Indicator:	1.42
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	Y
Count Date:	10/16/2020	LCS/SD/56680	10/16/2020
Spike I.D.:	20-030		20-030
Decay Corrected Spike Concentration (pCi/mL):	38.004		38.004
Volume Used (mL):	0.10		0.10
Aliquot Volume (L, g, F):	0.814		0.821
Target Conc. (pCi/L, g, F):	4.668		4.627
Uncertainty (Calculated):	0.229		0.227
Result (pCi/L, g, F):	3.950		4.745
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.924		1.105
Numerical Performance Indicator:	-1.48		0.20
Percent Recovery:	84.63%		102.54%
Status vs Numerical Indicator:	N/A		N/A
Status vs Recovery:	Pass		Pass
Upper % Recovery Limits:	135%		135%
Lower % Recovery Limits:	60%		60%

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Sample I.D.:	LCS/56680		
Duplicate Sample I.D.:	LCS/SD/56680		
Sample Result (pCi/L, g, F):	3.950		
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.924		
Sample Duplicate Result (pCi/L, g, F):	4.745		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.105		
Are sample and/or duplicate results below RL?	NO		
Duplicate Numerical Performance Indicator:	-1.082		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	19.14%		
Duplicate Status vs Numerical Indicator:	Pass		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	36%		

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

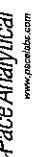
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Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D.: Sample MS I.D.: Sample MSD I.D.: Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result: Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator:		
MS Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D.: Sample MS I.D.: Sample MSD I.D.:
Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

*Handwritten date: 10/14/2020*

# Quality Control Sample Performance Assessment



**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-228  
Analyst: VAL  
Date: 10/14/2020  
Worklist: 56681  
Matrix: WT

Method Blank Assessment	
MB Sample ID	2021121
MB concentration:	0.180
M/B 2 Sigma CSU:	0.316
MB MDC:	0.690
MB Numerical Performance Indicator:	1.12
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
Count Date:		LCSD56681	LCSD56681
Spike I.D.:		10/21/2020	
Decay Corrected Spike Concentration (pCi/mL):		20-030	
Volume Used (mL):		37.943	
Aliquot Volume (L, g, F):		0.10	
Target Conc. (pCi/L, g, F):		0.812	
Uncertainty (Calculated):		4.670	
Result (pCi/L, g, F):		0.229	
LCSD/LCSD 2 Sigma CSU (pCi/L, g, F):		4.367	
Numerical Performance Indicator:		1.004	
Percent Recovery:		-0.58	
Status vs Numerical Indicator:		93.51%	
Upper % Recovery Limits:		N/A	
Lower % Recovery Limits:		Pass	
		135%	
		60%	

Duplicate Sample Assessment	
Sample I.D.:	92498068019
Duplicate Sample I.D.:	92498068019DUP
Sample Result (pCi/L, g, F):	2.028
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.646
Sample Duplicate Result (pCi/L, g, F):	2.044
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.603
Are sample and/or duplicate results below RL?	See Below #
Duplicate Numerical Performance Indicator:	-0.036
Duplicate RPD:	0.80%
Duplicate Status vs Numerical Indicator:	Pass
Duplicate Status vs RPD:	Pass
% RPD Limit:	36%

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated):		
Sample Result: Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment
Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F): Duplicate Numerical Performance Indicator: Duplicate Numerical Performance Indicator (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD: % RPD Limit:

# Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-228  
Analyst: VAL  
Date: 10/14/2020  
Worklist: 56682  
Matrix: WT



Method Blank Assessment	
MB Sample ID	2021122
MB concentration:	0.318
M/B 2 Sigma CSU:	0.365
MB MDC:	0.768
MB Numerical Performance Indicator:	1.70
MB Status vs. Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/MS/MSD	Y
Count Date:	10/21/2020	LCS/MS/MSD	Y
Spike I.D.:	20-030		
Decay Corrected Spike Concentration (pCi/mL):	37.943		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.813		
Target Conc. (pCi/L, g, F):	4.669		
Uncertainty (Calculated):	0.229		
Result (pCi/L, g, F):	4.756		
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.070		
Numerical Performance Indicator:	0.16		
Percent Recovery:	101.86%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		
Upper % Recovery Limits:	135%		
Lower % Recovery Limits:	60%		

Duplicate Sample Assessment		LCS/MS/MSD	Y
Sample I.D.:	LCS/MS/MSD		
Duplicate Sample I.D.:	LCS/MS/MSD		
Sample Result (pCi/L, g, F):	4.756		
Sample Result 2 Sigma CSU (pCi/L, g, F):	1.070		
Sample Duplicate Result (pCi/L, g, F):	5.987		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	1.314		
Are sample and/or duplicate results below RL?	NO		
Duplicate Numerical Performance Indicator:	-1.424		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	22.90%		
Duplicate Status vs Numerical Indicator:	Pass		
Duplicate Status vs RPD:	Pass		
% RPD Limit:	36%		

# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

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Sample Matrix Spike Control Assessment		MS/MSD 1	MS/MSD 2
Sample Collection Date:			
Sample I.D.:			
Sample MS I.D.:			
Sample MSD I.D.:			
Spike I.D.:			
MS/MSD Decay Corrected Spike Concentration (pCi/mL):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc. (pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike Uncertainty (calculated):			
MSD Spike Uncertainty (calculated):			
Sample Result:			
Sample Result 2 Sigma CSU (pCi/L, g, F):			
Sample Matrix Spike Result:			
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):			
Sample Matrix Spike Duplicate Result:			
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):			
MS Numerical Performance Indicator:			
MSD Numerical Performance Indicator:			
MS Percent Recovery:			
MSD Percent Recovery:			
MS Status vs Numerical Indicator:			
MSD Status vs Numerical Indicator:			
MS Status vs Recovery:			
MSD Status vs Recovery:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	
Sample MS I.D.:	
Sample MSD I.D.:	
Sample Matrix Spike Result:	
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	
MS/MSD Duplicate Status vs Numerical Indicator:	
MS/MSD Duplicate Status vs RPD:	
% RPD Limit:	