

December 2020 Grumman Road Private Industrial Landfill



Assessment of Corrective Measures

Prepared for Georgia Power Company

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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 x 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 finegrained 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 x 10⁻⁴ and 1.3 x 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 x 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 nearsurface 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 applicate 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).
- 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, barriers 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 objective 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

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Tables

Table 1 Microcosm Results Summary

			Specific			Dissolved	
	Incubation		Conductance	ORP	Dissolved	Manganese	Dissolved Iron
Microcosm Configuration	Time (days)	рН	(µS/cm)	(mV)	Arsenic (µg/L)	(µg/L)	(µg/L)
	2	6.78	2,290	190	36.9	37.7	170
Soil (T4-18') and Clifton Landfill Leachate-	4	6.97	2,350	210	40.3	45.1	130
Impacted Groundwater (GWA-7)	8	7.07	2,320	190	48.1	55.1	95
impacted Groundwater (GWA 7)	16	6.91	2,320	120	47	56.9	93
	38	7.18	2,260		48.3	51.2	74
	2	6.70	2,210	210	89.2	32.3	570
Ask (UDCD 7) and Clifton Londfill Loophate	4	6.85	2,260	280	90.9	40.5	470
Ash (UDGR-7) and Clifton Landfill Leachate- Impacted Groundwater (GWA-7)	8	6.81	2,230	280	148	60.3	1,010
impacted Groundwater (GWA-7)	16	6.72	2,210	230	185	84.5	1,130
	38	7.14	2,160	30	172	93.9	670
	2	6.02	103	270	20.7	11.3	25 U
	4	6.39	136		19.4	14	25 U
Ash (UDGR-7) and Unimpacted Groundwater (GWC-13)	8	6.21	108	320	23.8	24.9	25 U
(GWC-13)	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 ¹	03/10/1997	779975.87	960770.83	46.82	49.58	32.82	22.82	27.00	Sidegradient
GWB-5R ²	03/11/1997	780294.37	960686.46	45.31	47.82	31.31	21.31	26.50	Sidegradient
GWB-6R ²	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 ¹	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 ³	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 3Summary 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)

										We	ll 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
Su	Ibstance	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
	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	0.00024 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	0.00056 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
endix	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	0.51	< 0.050	< 0.050	< 0.050
App	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	0.0065 J	<0.00081	<0.00081	<0.00081
	Mercury	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.000078	<0.000078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078
	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 4bSummary of Groundwater Analytical Data (September/October 2020)

										We	li 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
Su	Ibstance	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
	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
Appendix	Fluoride	0.069 J	<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
App	рН	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
	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	0.00024 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
Appendix IV	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
App	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	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
Note 1	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.

	Regulatory Citation for Criteria:		40 CFR 257.96(0	C)(1)	
Corrective Measure	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	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)	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	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)	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. 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.

	Regulatory Citation for Criteria:		40 CFR 257.96(C	.)(1)
Corrective Measure	Description	Performance	Reliability	Ease or Difficu
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 be relatively eas MNA are already additional wells to monitor prog
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 involv with augers, and constraints, ease considered mod
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 containment usi easy, primarily c the TreeWells®

culty of Implementation	Potential Impacts of Remedy
n of MNA at the Site will asy. Most of the wells for dy in place, though a few s may need to be installed ogress in critical areas.	Potential impacts of the remedy will be negligible because MNA is non- intrusive and produces no effluents or emissions.
olves trenching or mixing nd due to space se of implementation is oderate to difficult.	Alteration of subsurface hydraulics (flow) may be a potential impact of this remedy.
n of hydraulic sing trees will be relatively consisting of constructing and planting the trees.	No potential impacts have been identified.

	Regulatory Citation for Criteria:	40 CFR 257.96(C)(1)					
Corrective Measure	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.		

	Regulatory Citation for Criteria:	40 CFR 257.96(C)(2)	40 CFR 2	257.96(
Corrective Measure	Description	Time to Begin/Complete Remedy	Institutional Requirements	Oth
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	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.	
Geochemical Approaches (oxygenation by physical means such as air sparging or Waterloo emitters)	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	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	Grour mode requir uninte consti do no
Geochemical Approaches (adsorption to, or coprecipitation with iron compounds via injection of treatment chemicals)	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 treatment chemicals.	
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 comp for an gener manag
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 indus Follov passiv

6(C)(3)	
Other Environmental or Public Health Requirements	Relative Cost
	Low to Medium
oundwater and/or geochemical deling and monitoring may be uired to demonstrate that ntended impacts (e.g., release of astituents) are not occurring and not extend off site.	Medium, due to mechanical equipment and possible use of oxygen
	Low to Medium
ove-ground treatment nponents may need to be present an extended period of time, nerating residuals requiring nagement and disposal.	High
ere would be a small disruption of ustrial area during construction. lowing installation, the remedy is ssive.	Medium, due to mobilization and use of large equipment, and possibly a cement batch plant and associated equipment such as pumps.

	Regulatory Citation for Criteria:	40 CFR 257.96(C)(2)	40 CFR 25	57.96
Corrective Measure	Description	Time to Begin/Complete Remedy	Institutional Requirements	Ot
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.	Li re None identified ir th re	
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 indu: Follo passi selec treat geoc (pos: relea down
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 reme cons expe indu Follc pass exter

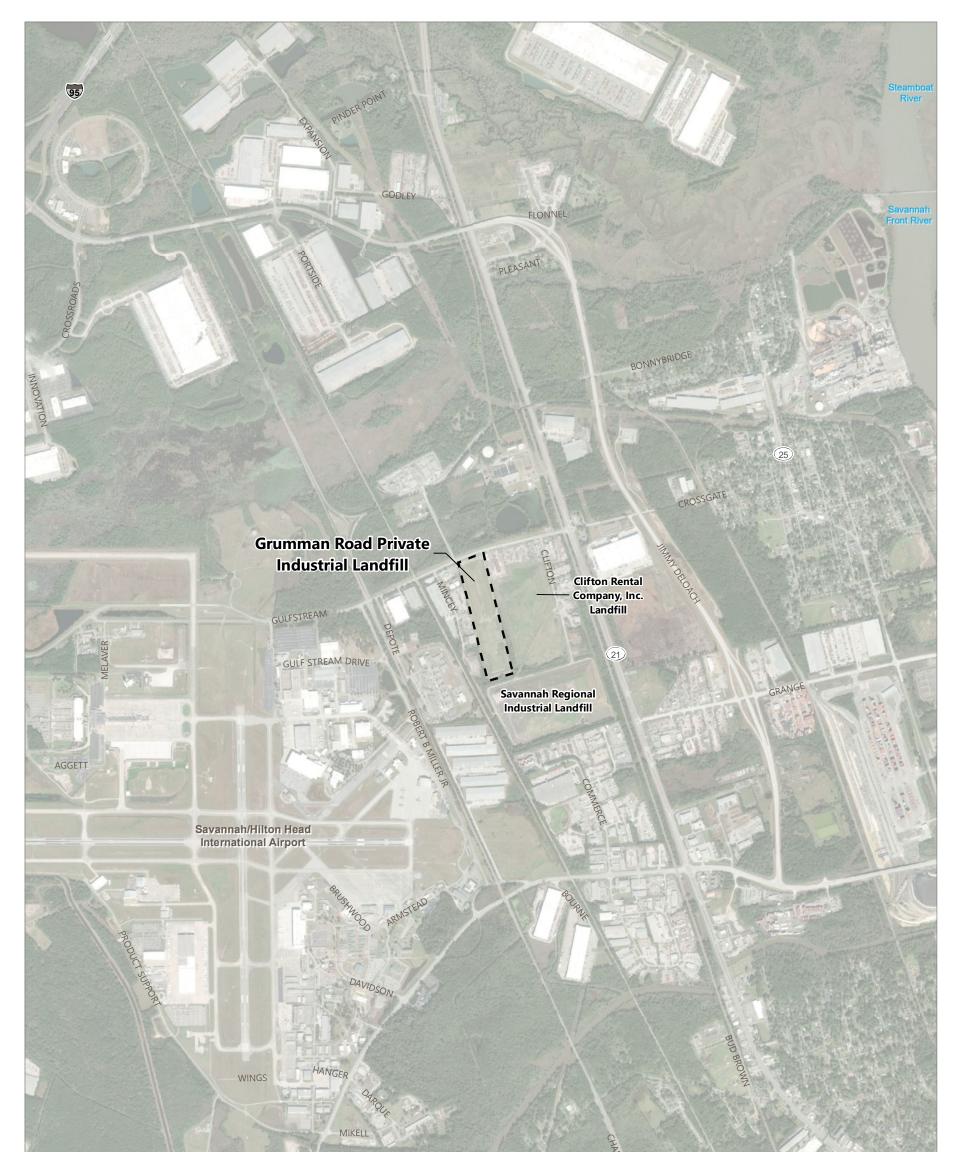
6(C)(3) Other Environmental or Public Health Requirements	Relative Cost
le to no physical disruption to nediation areas and no adverse astruction related impacts are bected on the surrounding ustrial area. Following installation, remedy is passive and does not uire external energy.	Low
ere would be a small disruption of ustrial area during construction. lowing installation, the remedy is sive. If reactive media are not ected carefully through laboratory atability studies, groundwater ochemistry could be altered ssibly resulting in unintended eases of constituents wngradient of the wall).	Medium
le to no physical disruption to nediation areas and no adverse astruction-related impacts are bected on the surrounding ustrial area. lowing installation, the remedy is asive and does not require ernal energy.	Low

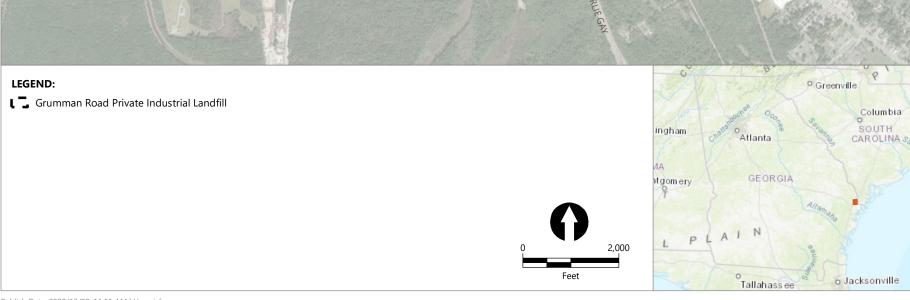
	Regulatory Citation for Criteria:	40 CFR 257.96(C)(2)	40 CFR 2		
Corrective Measure	Description	Time to Begin/Complete Remedy	Institutional Requirements	Other Environmental or Public Health Requirements	Relative Cost
Subsurface Vertical Barrier Walls (if/as needed as a component of PRB walls or possibly 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

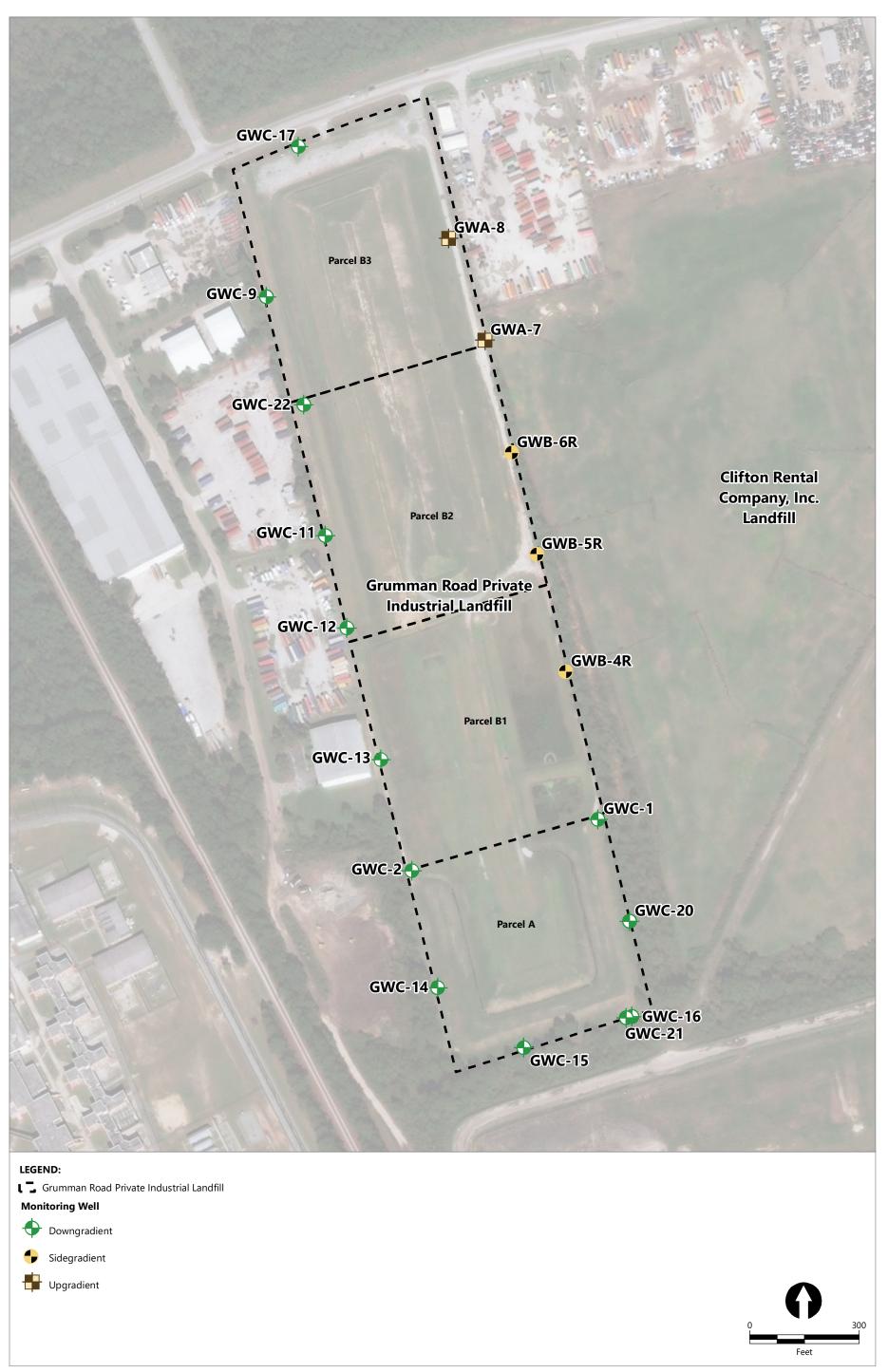




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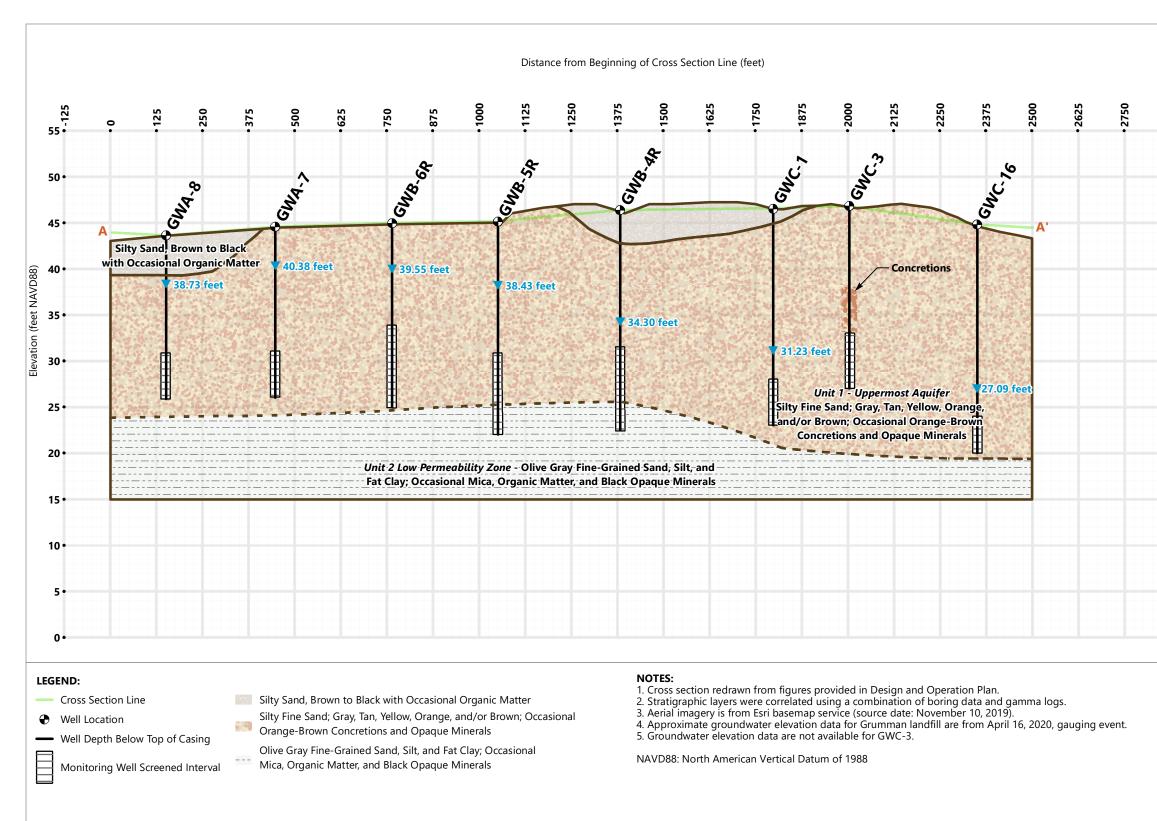
Figure 1 Site Location Map



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Figure 2 Monitoring Well Network Map

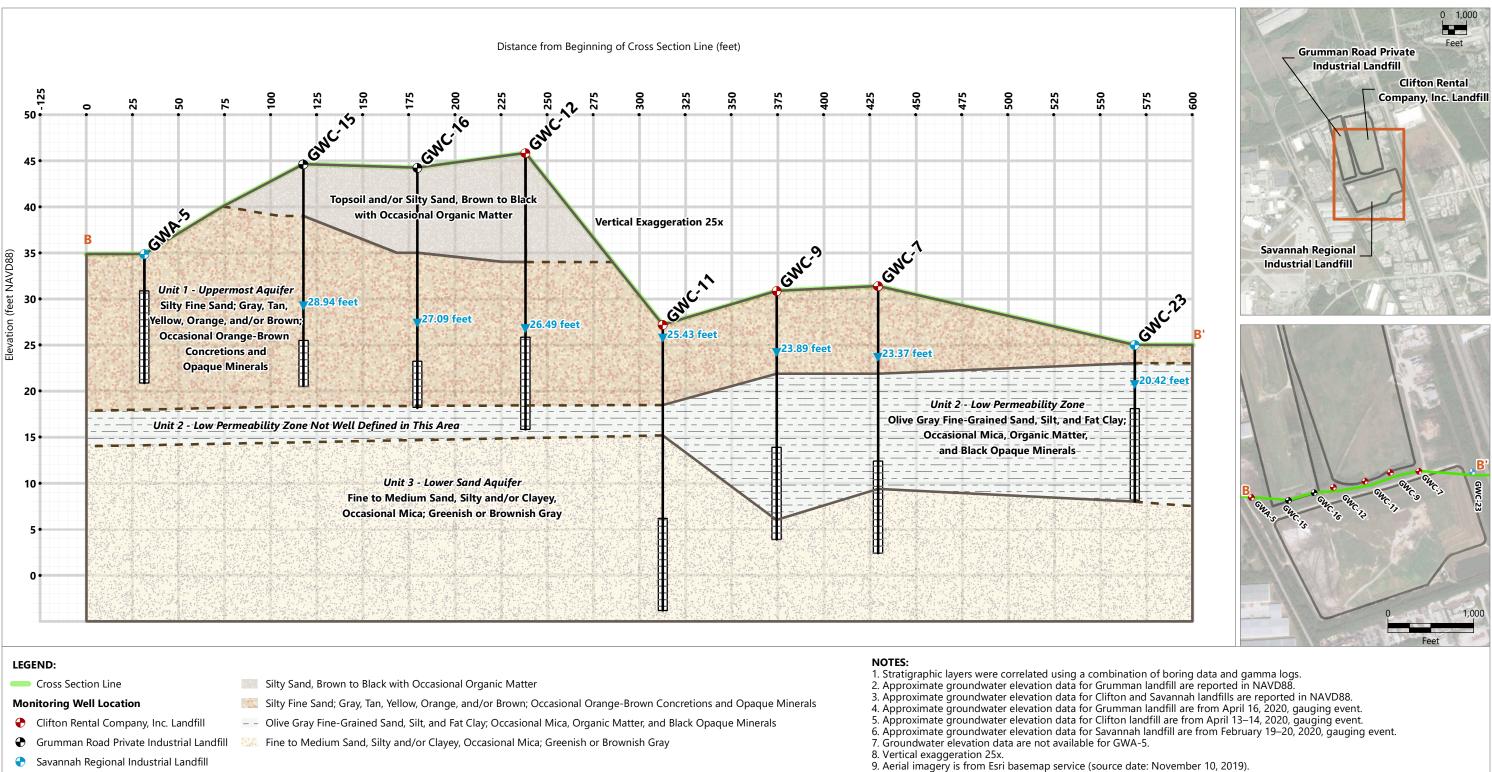


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Figure 3 A to A' Geologic Cross Section Assessment of Corrective Measures Grumman Road Private Industrial Landfill



- Well Depth Below Ground Surface
- Approximate Groundwater Elevation
- Monitoring Well Screened Interval

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:

- L Site Boundary
- Groundwater Contours (NAVD88)

Monitoring Well Location

- Clifton Rental Company, Inc. Landfill
- Grumman Road Private Industrial Landfill Ð
- Savannah Regional Industrial Landfill 0
- → 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.
 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.
 Clifton Rental Company, Inc. Landfill groundwater elevations are from April 13–14, 2020, sampling event.

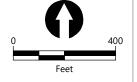
4. Grumman Road Private Industrial Landfill groundwater elevations are from April 16, 2020, sampling event.

5. Savannah Regional Industrial Landfillroundwater 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.

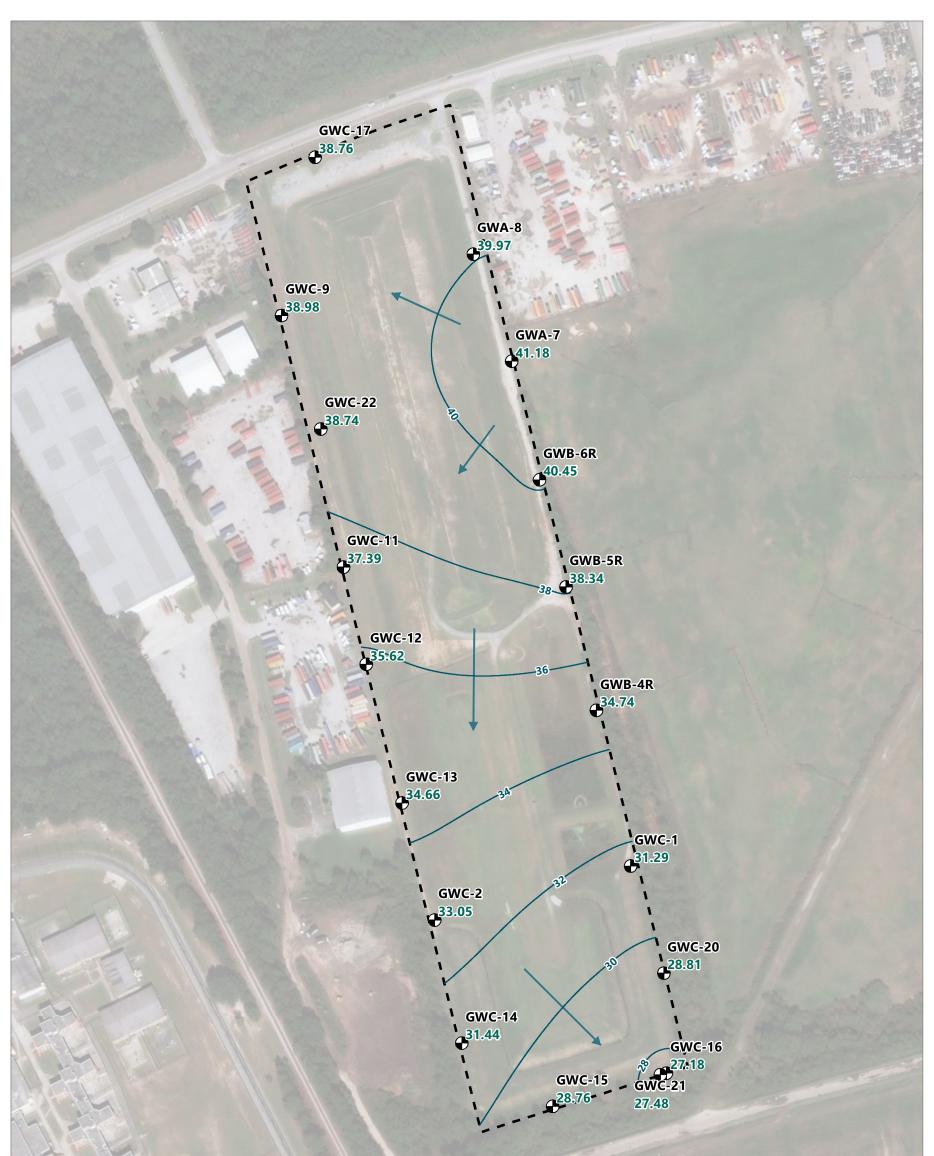
NAVD88: North American Vertical Datum of 1988



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Figure 5 Multi-Site Potentiometric Surface Contour Map - April 2020



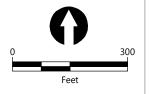


LEGEND:

- L 📮 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.

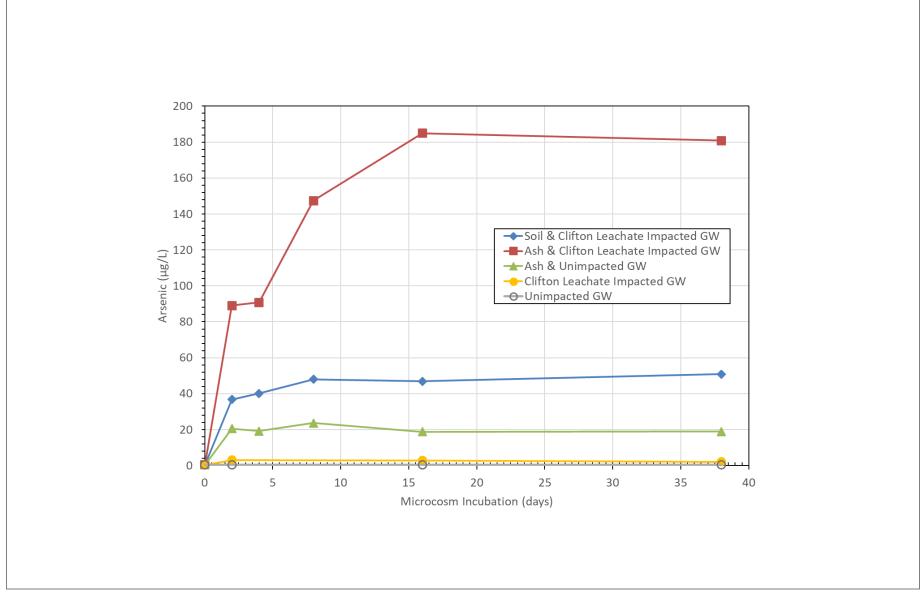
NAVD88: North American Vertical Datum of 1988



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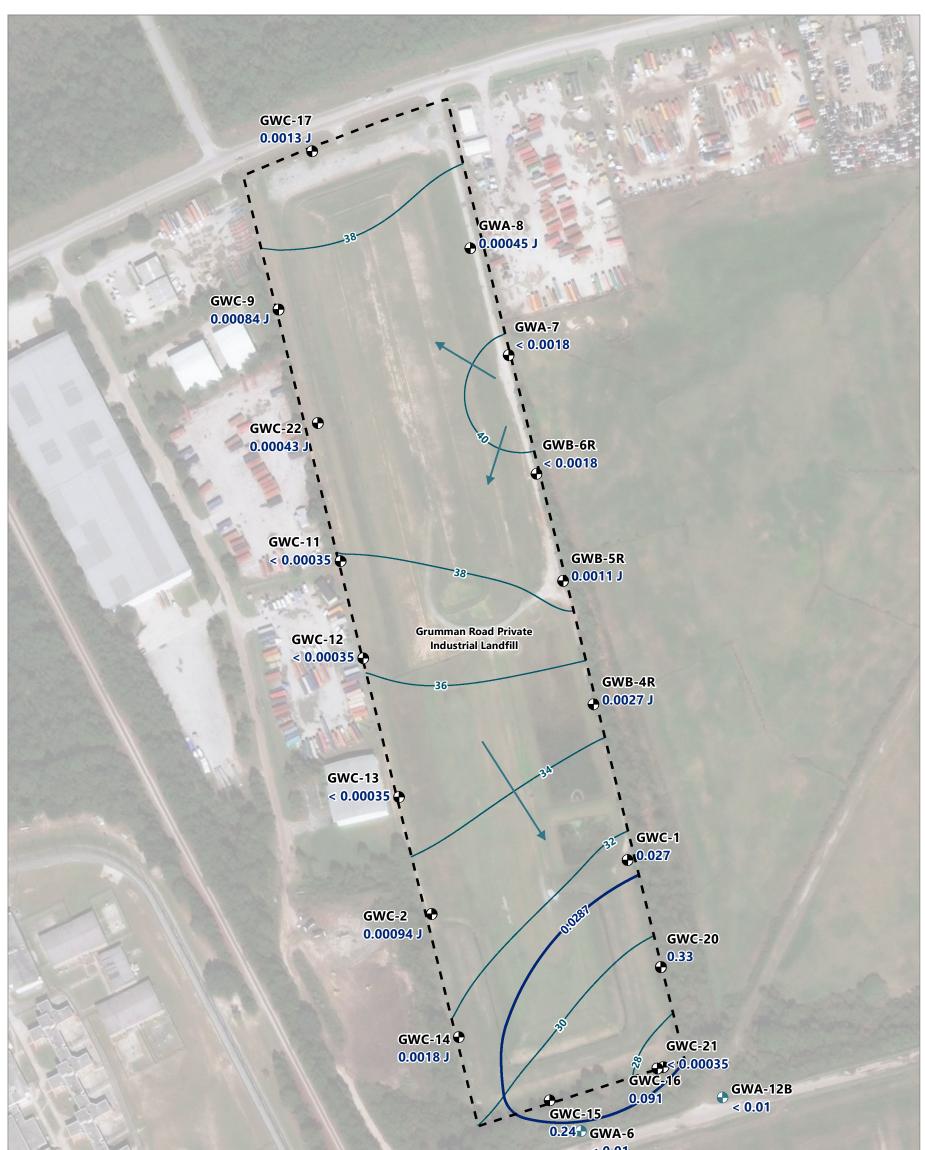
Figure 6 **Potentiometric Surface Contour Map - September 2020**



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



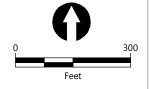


- Monitoring Well
- Savannah Regional Industrial
- Ð Landfill Monitoring Well
- Arsenic Isoconcentration Contour
- → Groundwater Flow Direction
- Groundwater Contours (NAVD88)

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.

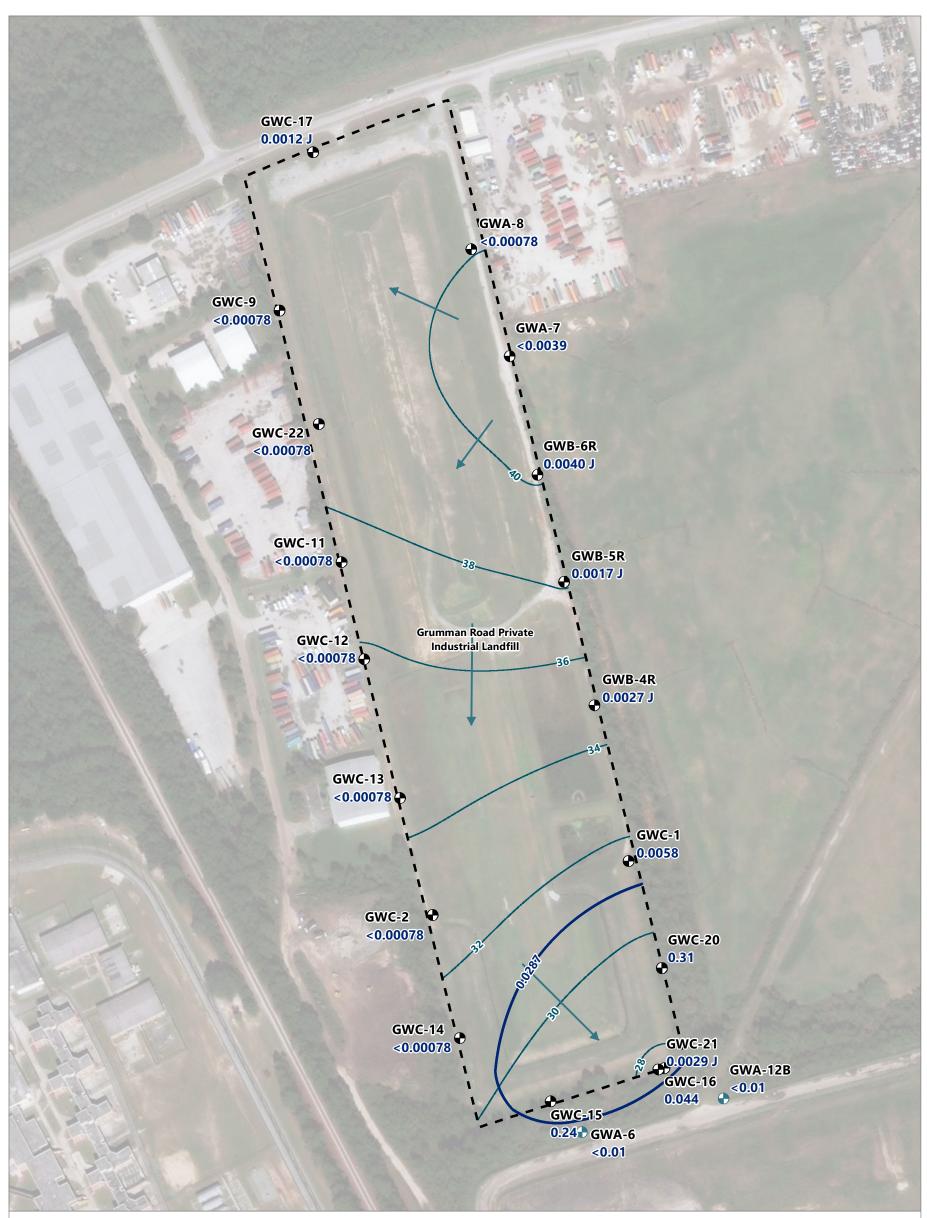
Concentrations are reported in mg/L.
 Site background concentration for arsenic is 0.0287 mg/L and is the site-specific groundwater protection standard.
 The groundwater protection standard was calculated using data through the April 2020 sampling event.
 GWC-21 was not used to create the isocontour.
 Groundwater elevations are in feet NAVD88.
 Aerial imagery is from Esri basemap service (source date: November 10, 2019).



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Figure 8 Isoconcentration Map: Arsenic - April 2020

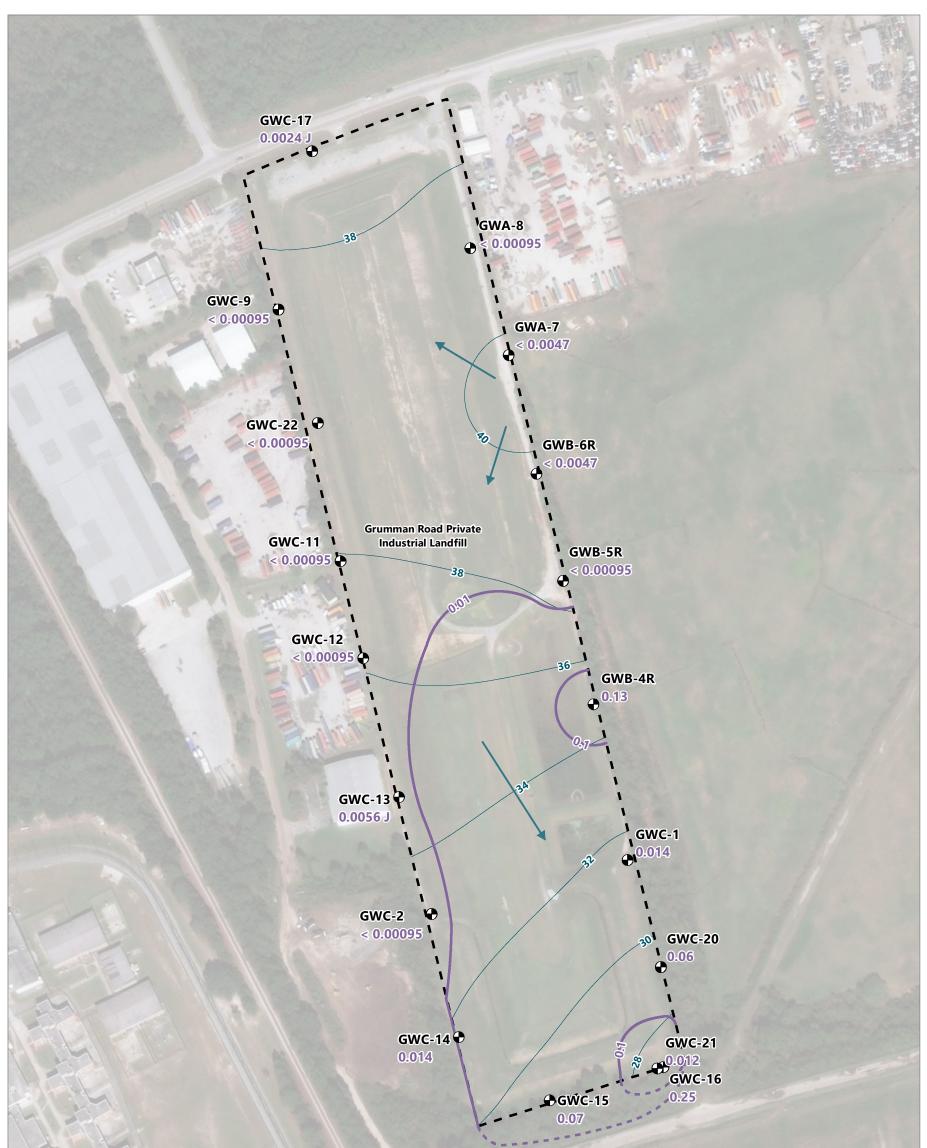


LEGEND:	NOTES:
L _ Site Boundary	<: Indicates the constituent was analyzed for but not detected above the method detection limit. mg/L: milligrams per liter
Monitoring Well	J: Reported value is an estimate because concentration is less than reporting limit and greater than the method detection limit.
Savannah Regional Industrial Landfill Monitoring Well	1. Grumman Road Private Industrial Landfill arsenic and groundwater elevation data are from the September/October 2020 sampling event.
- Arsenic Isoconcentration Contour	 Savannah Regional Industrial Landfill arsenic and groundwater elevation data are from February 2020 sampling event. Groundwater elevation contour lines were provided by Atlantic Coast Consulting, Inc. Concentrations are reported in mg/L.
Groundwater Flow Direction	5. Site background concentration for arsenic is 0.0287 mg/L and is the site-specific groundwater protection standard.
— Groundwater Contours (NAVD88)	 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).
	Feet

Publish Date: 2020/12/02, 1:22 PM | User: jsfox Filepath: \\orcas\GIS\Jobs\SouthernCompany_1114\GrummanRoad\Maps\2020_09\AQ_SCS_GrummanRoad_Figure09_As_IsoconcentrationMap_2020_0910.mxd



Figure 9 Isoconcentration Map: Arsenic - September/October 2020



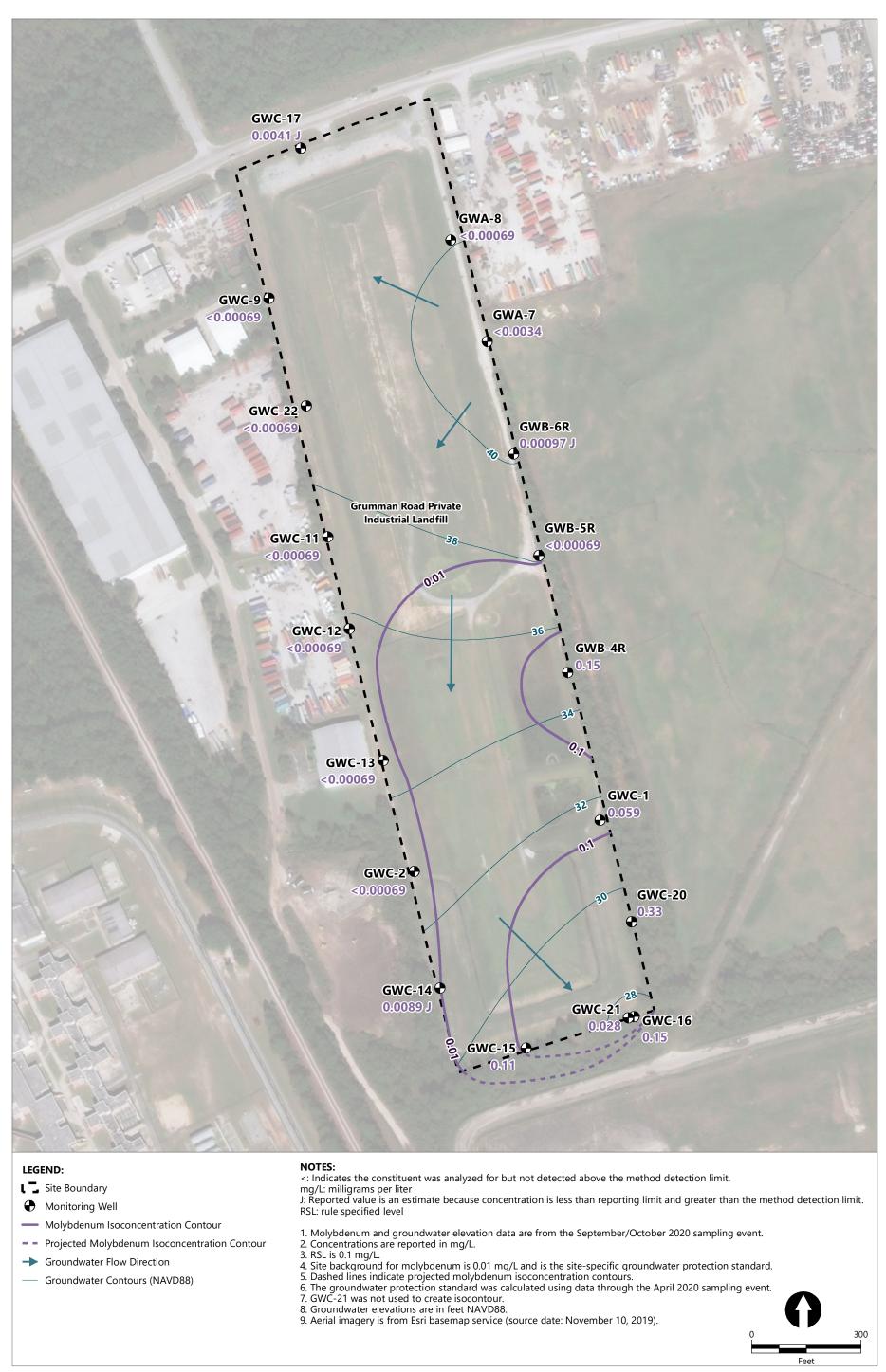


LEGEND: L Site Boundary Monitoring Well Molybdenum Isoconcentration Contour	NOTES: <: Indicates the constituent was analyzed for but not detected above the method detection limit. mg/L: milligrams per liter J: Reported value is an estimate because concentration is less than reporting limit and greater than the method detection limit. RSL: rule specified level	
 Projected Molybdenum Isoconcentration Contour Groundwater Flow Direction Groundwater Contours (NAVD88) 	 Molybdenum and groundwater elevation data are from the April 2020 sampling event. Concentrations are reported in mg/L. RSL is 0.1 mg/L. Site background for molybdenum is 0.01 mg/L and is the site-specific groundwater protection standard. Dashed lines indicate projected molybdenum isoconcentration contours. The groundwater protection standard was calculated using data through the April 2020 sampling event. GWC-21 was not used to create isocontour. Groundwater elevations are in feet NAVD88. Aerial imagery is from Esri basemap service (source date: November 10, 2019). 	300

Publish Date: 2020/12/02, 3:31 PM | User: jsfox Filepath: \\orcas\GIS\Jobs\SouthernCompany_1114\GrummanRoad\Maps\2020_09\AQ_SCS_GrummanRoad_Figure10_Mo_IsoconcentrationMap_2020_04.mxd



Figure 10 Isoconcentration Map: Molybdenum - April 2020



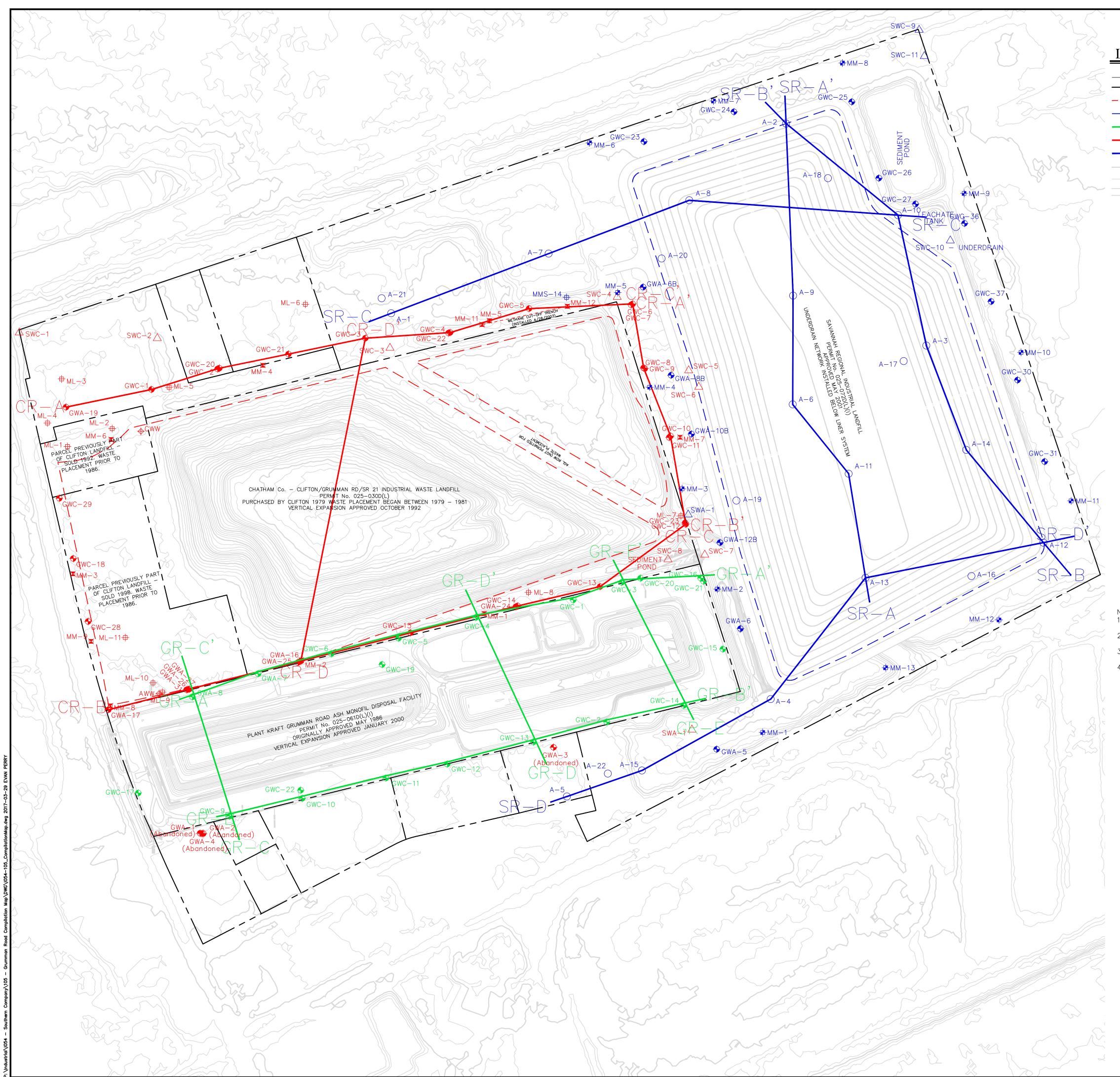
Publish Date: 2020/12/02, 4:18 PM | User: jsfox

Filepath: \\orcas\GIS\Jobs\SouthernCompany_1114\GrummanRoad\Maps\2020_09\AQ_SCS_GrummanRoad_Figure11_Mo_IsoconcentrationMap_2020_0910.mxd

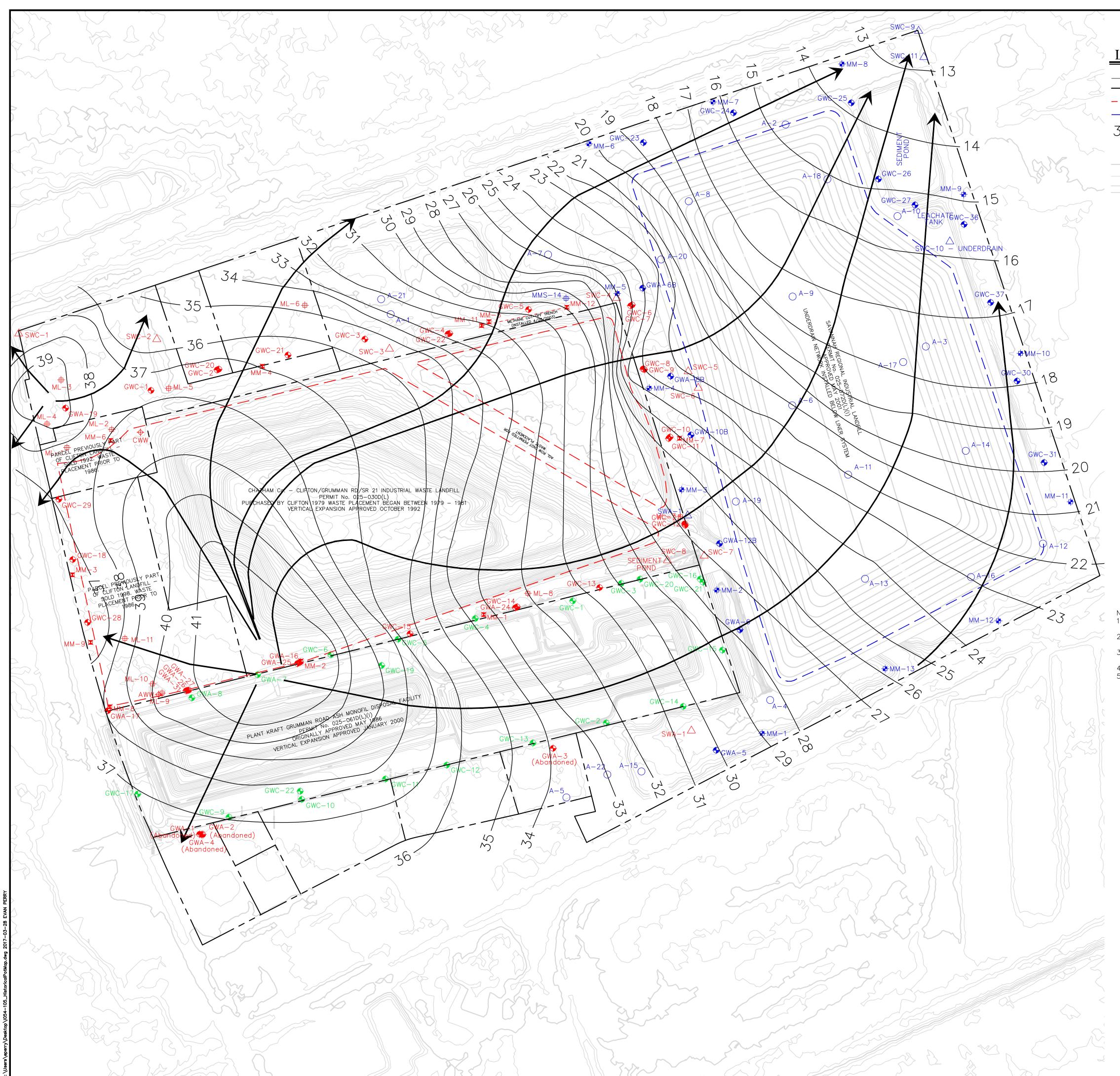


Figure 11 Isoconcentration Map: Molybdenum - September/October 2020

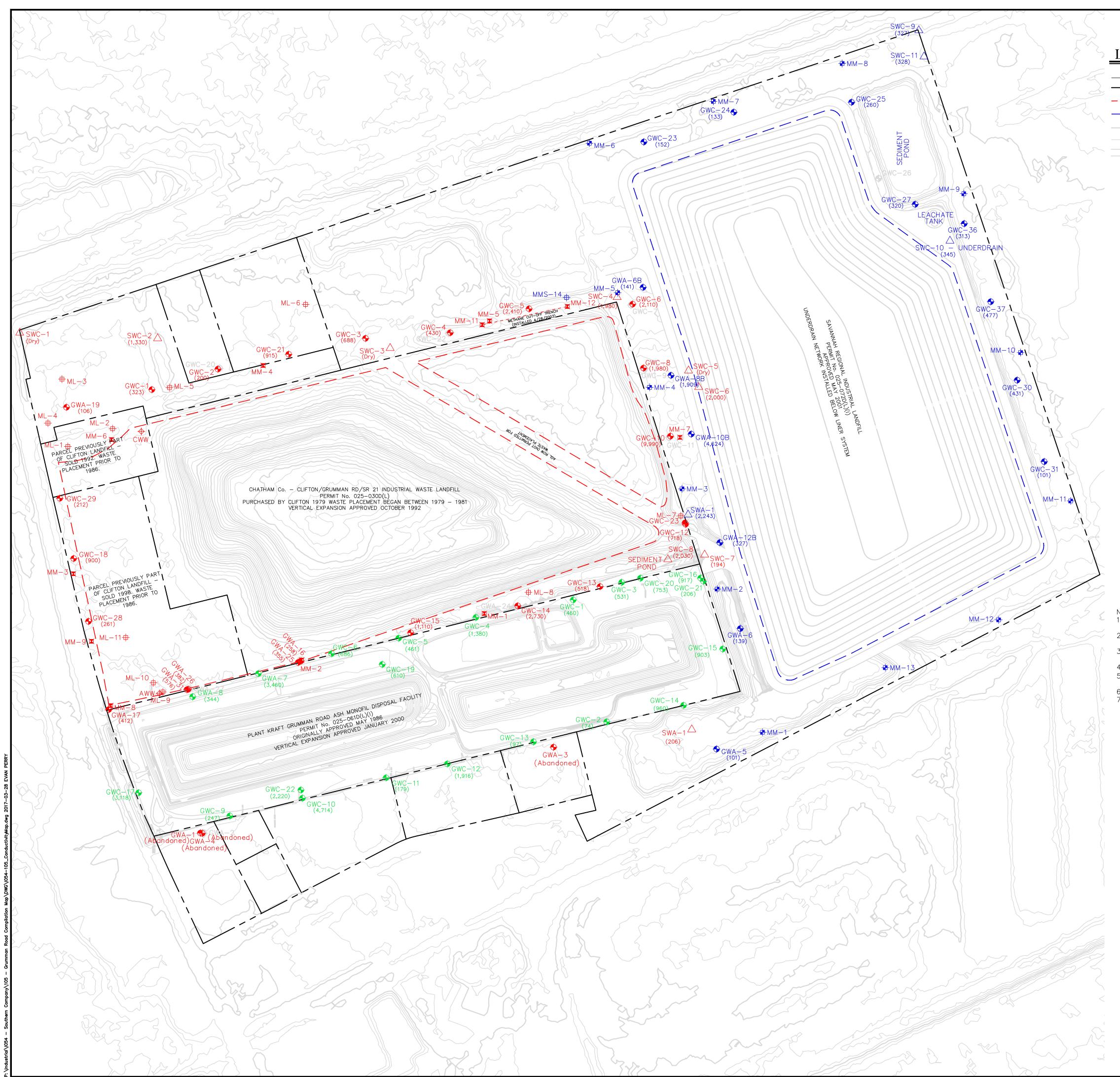
Appendix A Historical Figures from Design and Operation Plan



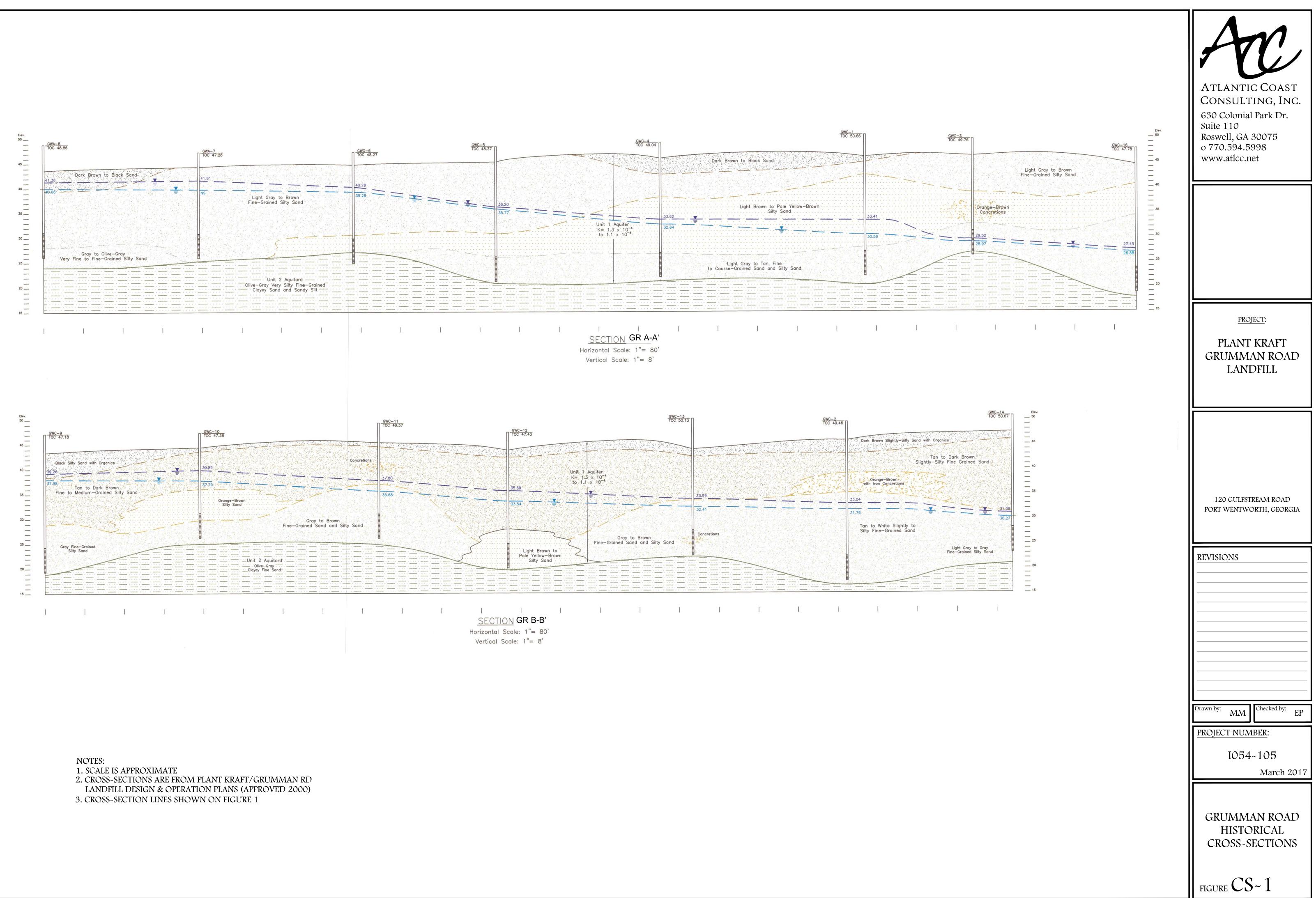
EGEND		
EXISTING	DESCRIPTION	
	 APROXIMATE PROPERTY BOUNDARY APPROXIMATE LIMITS OF WASTE (CLIFTON RD) 	ATLANTIC COAST
	- APPROXIMATE LIMITS OF WASTE (SRIL)	CONSULTING, INC.
	 CROSS-SECTION (GRUMMAN RD - FIG. CS-1) CROSS-SECTION (CLIFTON RD - FIG. CS-2a/b) 	630 Colonial Park Dr.
	 CROSS-SECTION (SRIL - FIG. CS-3) 	Suite 110 Roswell CA 30075
-100-	PROMINENT TOPOGRAPHIC CONTOUR	Roswell, GA 30075 o 770.594.5998
GWA−8B	EXISTING ROAD	www.atlcc.net
⊕ GWC−1	GROUNDWATER MONITORING WELL (GRUMMAN RD) GROUNDWATER MONITORING WELL (CLIFTON RD)	
₩ MM7	METHANE MONITORING WELL (CLIFTON RD)	
中 ML6	METHANE MONITORING STRUCTURE (CLIFTON RD)	
<pre></pre>	POTABLE WELL (CLIFTON RD) SURFACE WATER MONITORING POINT (CLIFTON RD)	
⊕ GWA−8B	GROUNDWATER MONITORING WELL (SRIL)	
╋ MM−1 ⊕ MMS−14	METHANE MONITORING WELL (SRIL) METHANE MONITORING STRUCTURE (SRIL)	
∕SWC-9	GROUNDWATER MONITORING WELL (SRIL)	
○A-1	SITE ACCEPTABILITY INVESTIGATION BORING (SRIL)	
		PROJECT:
		PLANT KRAFT GRUMMAN ROAD
		LANDFILL
		120 GULFSTREAM ROAD
IOTES: . SRIL IS THE SAVANNAH REV	GIONAL INDUSTRIAL LANDFILL, CURRENTLY OWNED AND	PORT WENTWORTH, GEORGIA
OPERATED BY REPUBLIC WA TOPOGRAPHIC SURFACE AN	ASTE. D APPROXIMATE PROPERTY BOUNDARIES ARE FROM	
5. FINAL GRADE CONTOURS AN SRIL TOPOGRAPHIC INFORM		REVISIONS
MUNITURING LUCATIONS ARI	E APPROXIMATE, BASED ON D&O PLAN DRAWINGS.	
		Drawn by: MM Checked by: EP
		PROJECT NUMBER:
		I054~105
		March 2017
	Δη	FNWIDANN APNTAT
		ENVIRONMENTAL MONITORING
		NETWORK
200 0 100 2	00 400 800	COMPILATION MAP
SCALE:	1'' = 200' (IN FEET)	figure 1

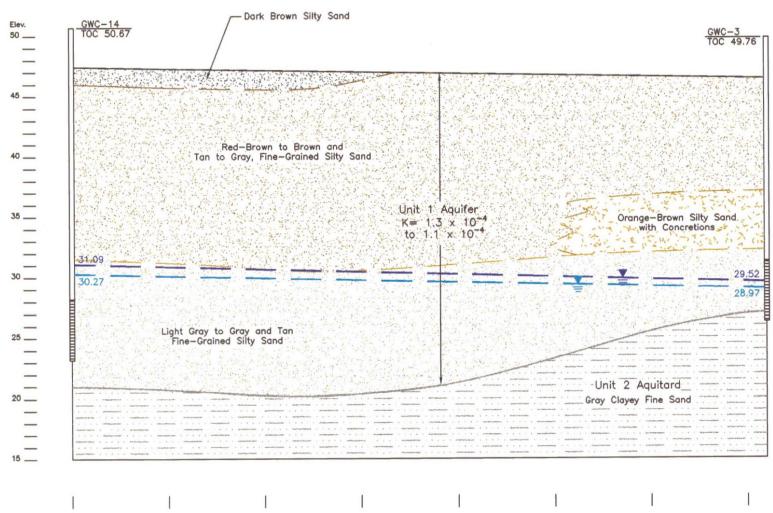


		An
EXISTING EXISTING 35 CWA-8B CWA-8B CWA-8B CWC-1 MM7 ML6 AWW CSWA-1	DESCRIPTION APROXIMATE PROPERTY BOUNDARY APPROXIMATE LIMITS OF WASTE (CLIFTON RD) APPROXIMATE LIMITS OF WASTE (SRIL) POTENTIOMETRIC LINES GROUNDWATER FLOW DIRECTION PROMINENT TOPOGRAPHIC CONTOUR INTERMEDIATE TOPOGRAPHIC CONTOUR EXISTING ROAD GROUNDWATER MONITORING WELL (GRUMMAN RD) GROUNDWATER MONITORING WELL (CLIFTON RD) METHANE MONITORING STRUCTURE (CLIFTON RD) POTABLE WELL (CLIFTON RD) SURFACE WATER MONITORING POINT (CLIFTON RD)	ATLANTIC COAST CONSULTING, INC. 630 Colonial Park Dr. Suite 110 Roswell, GA 30075 o 770.594.5998 www.atlcc.net
 GWA-8B MM-1 MMS-14 △SWC-9 ○A-1 	GROUNDWATER MONITORING WELL (SRIL) METHANE MONITORING WELL (SRIL) METHANE MONITORING STRUCTURE (SRIL) GROUNDWATER MONITORING WELL (SRIL) SITE ACCEPTABILITY INVESTIGATION BORING (SRIL)	
		<u>PROJECT</u> : PLANT KRAFT GRUMMAN ROAD LANDFILL
OPERATED BY REPUBLIC WAST 2. TOPOGRAPHIC SURFACE AND A SAVANNAH GEOGRAPHIC INFOR	APPROXIMATE PROPERTY BOUNDARIES ARE FROM MATION SERVICES, MARCH 2017.	120 GULFSTREAM ROAD PORT WENTWORTH, GEORGIA
SRIL TOPOGRAPHIC INFORMATIO 4. MONITORING LOCATIONS ARE A 5. POTENTIOMETRIC SURFACE DEF	ROAD LAYOUT FROM D&O PLAN WERE USED FOR ON. PPROXIMATE, BASED ON D&O PLAN DRAWINGS. RIVED FROM SHEET 22 OF HORIZONTAL EXPANSION DESIGN & OPERATION PLAN, DATED MARCH 25, 1998.	REVISIONS
		Drawn by: MM Checked by: EP PROJECT NUMBER: I054~105 March 2017
Z 200 0 100 200	400 800	HISTORICAL POTENTIOMETRIC SURFACE MAP
SCALE: 1"	= 200' (IN FEET)	figure 2



LEGEND		An
	DESCRIPTION APROXIMATE PROPERTY BOUNDARY	
	- — APPROXIMATE LIMITS OF WASTE (CLIFTON RD) — APPROXIMATE LIMITS OF WASTE (SRIL)	ATLANTIC COAST CONSULTING, INC.
-102	PROMINENT TOPOGRAPHIC CONTOUR INTERMEDIATE TOPOGRAPHIC CONTOUR EXISTING ROAD	630 Colonial Park Dr. Suite 110
 GWA-7 GWC-1 GWC-7 	GROUNDWATER MONITORING WELL (GRUMMAN RD) GROUNDWATER MONITORING WELL (CLIFTON RD) GROUNDWATER MONITORING WELL (DEEPER WELL INSTALLED BELOW CLAY)	Roswell, GA 30075 o 770.594.5998 www.atlcc.net
▼ MM7	METHANE MONITORING WELL (CLIFTON RD) METHANE MONITORING STRUCTURE (CLIFTON RD) POTABLE WELL (CLIFTON RD)	
▲ SWA-1 ♦ GWC-18 ₩ MM-1	SURFACE WATER MONITORING POINT (CLIFTON RD) GROUNDWATER MONITORING WELL (SRIL) METHANE MONITORING WELL (SRIL)	
	METHANE MONITORING STRUCTURE (SRIL) GROUNDWATER MONITORING WELL (SRIL) CONDUCTIVITY (CLIFTON RD) CONDUCTIVITY (GRUMMAN RD)	
(100)	CONDUCTIVITY (SRIL)	
		<u>PROJECT</u> :
		PLANT KRAFT GRUMMAN ROAD LANDFILL
		120 GULFSTREAM ROAD
2. OPERATED BY REPUBLIC 2. TOPOGRAPHIC SURFACE / SAVANNAH GEOGRAPHIC	REGIONAL INDUSTRIAL LANDFILL, CURRENTLY OWNED AND WASTE. AND APPROXIMATE PROPERTY BOUNDARIES ARE FROM INFORMATION SERVICES, MARCH 2017. AND ROAD LAYOUT FROM D&O PLAN WERE USED FOR	PORT WENTWORTH, GEORGIA
SRIL TOPOGRAPHIC INFOR MONITORING LOCATIONS A S. SPECIFIC CONDUCTANCE RECENT MONITORING EVEN	RMATION. ARE APPROXIMATE, BASED ON D&O PLAN DRAWINGS. (MICROSIEMENS PER CENTIMETER) MEASURED IN MOST NT FOR EACH FACILITY.	REVISIONS
7. MOST RECENT AVAILABLE	LS INSTALLED BELOW THE CLAY ARE NOT SHOWN. DATA FOR EACH LANDFILL ARE SHOWN: GRUMMAN (AUG. 2016), AND CLIFTON (JUN. 2009).	
		Drawn by: MM Checked by: EP
		<u>PROJECT NUMBER</u> : I054~105
		March 2017
	Acc	HISTORICAL SPECIFIC CONDUCTANCE
200 0 100	200 400 800	LEVELS MAP
SCALI	E: $1'' = 200'$ (IN FEET)	FIGURE 3





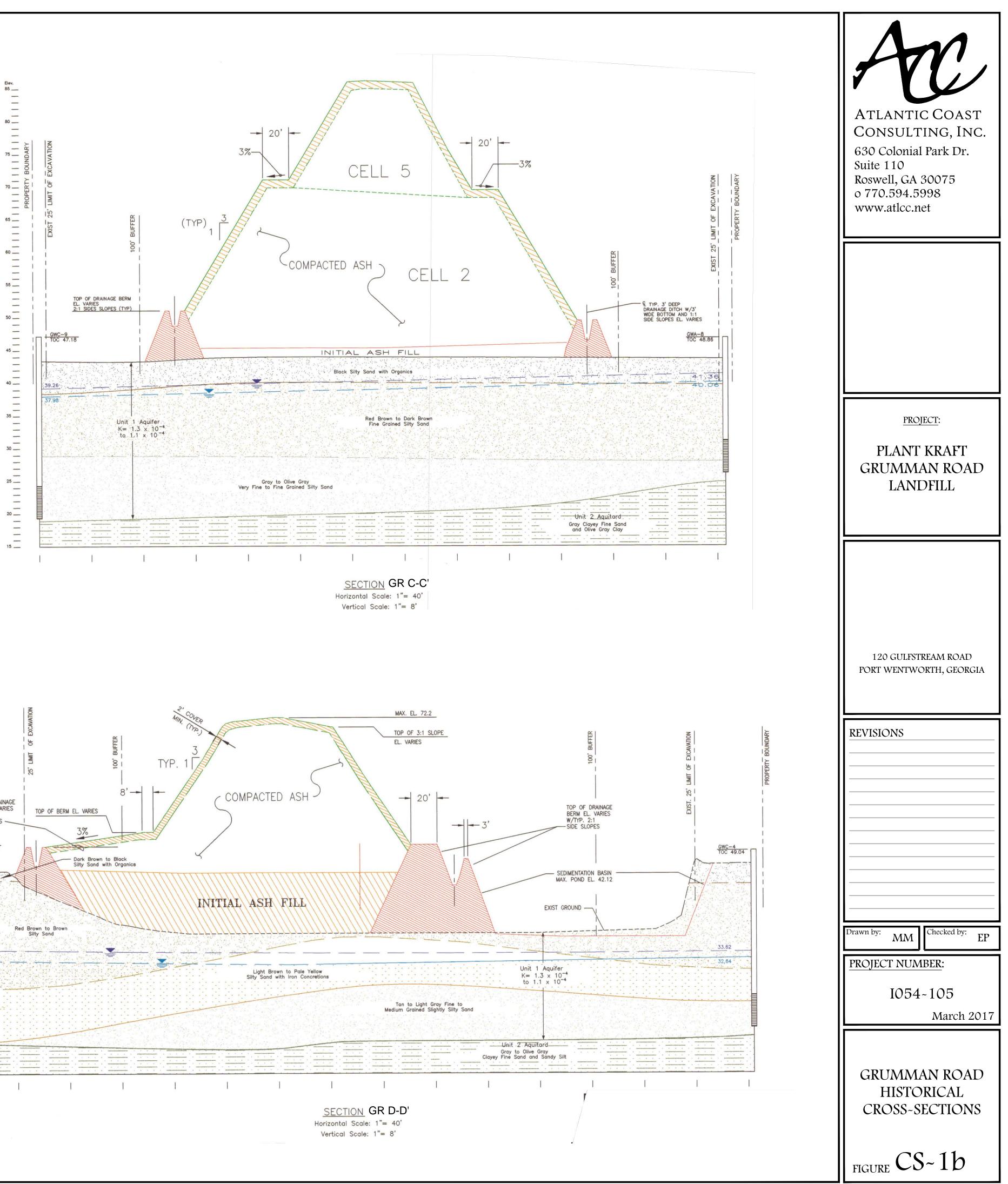
SECTION GR E-E Horizontal Scale: 1"= 80' Vertical Scale: 1"= 8'

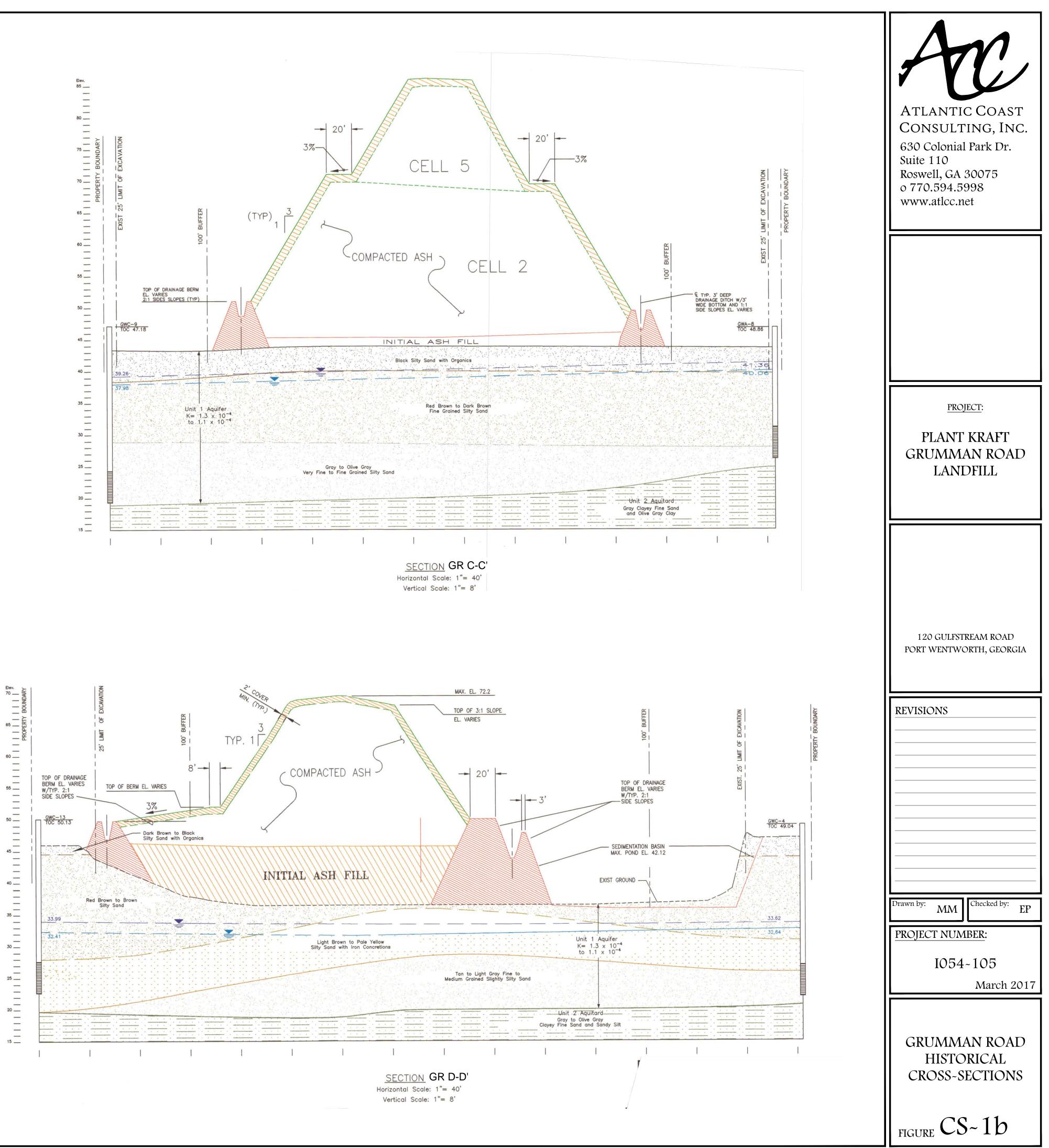
NOTES:

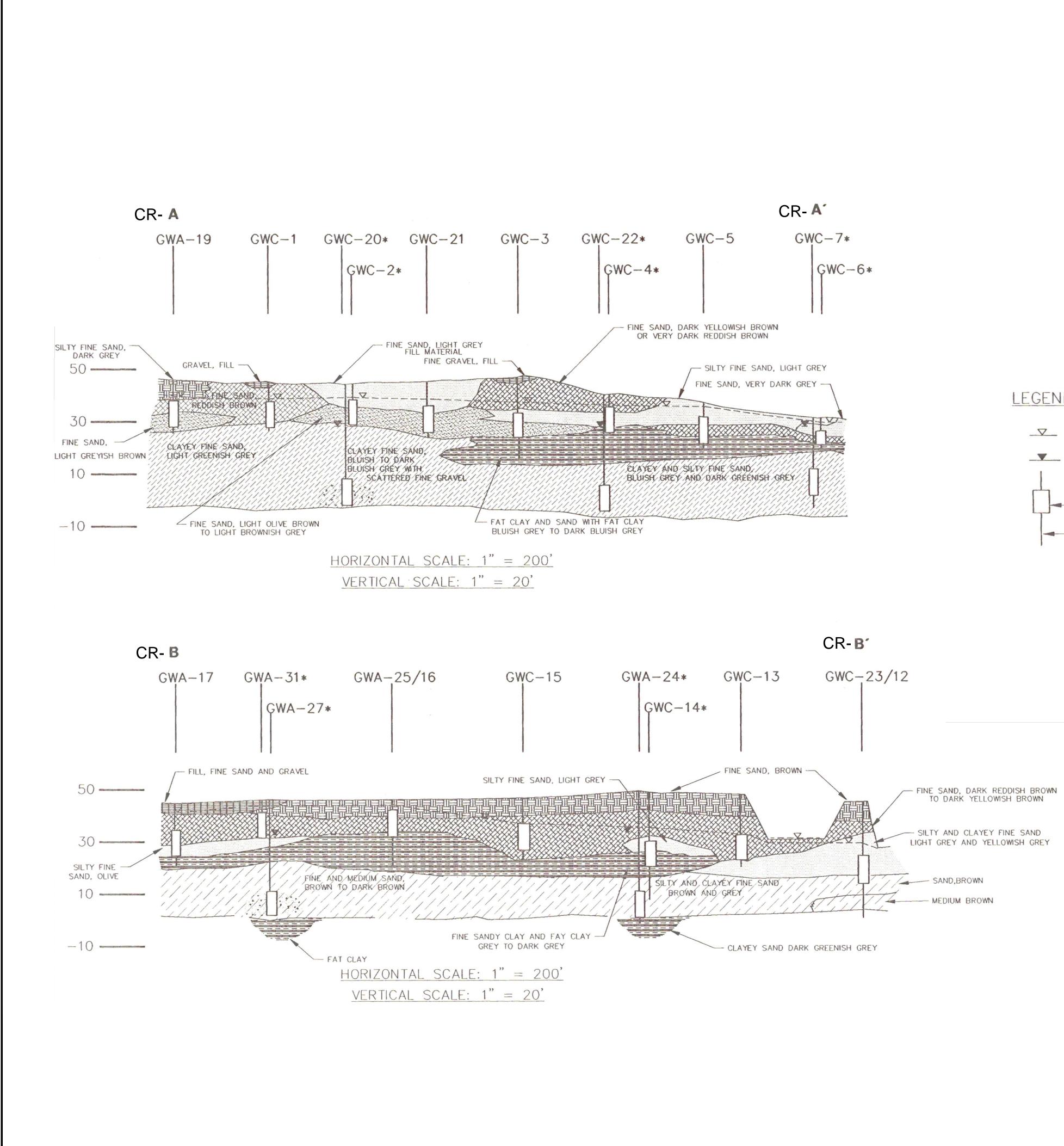
1. SCALE IS APPROXIMATE

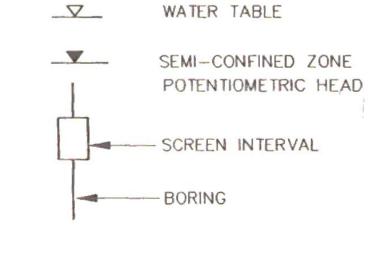
2. CROSS-SECTIONS ARE FROM PLANT KRAFT/GRUMMAN RD LANDFILL DESIGN & OPERATION PLANS (APPROVED 2000)

3. CROSS-SECTION LINES SHOWN ON FIGURE 1

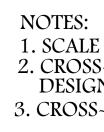




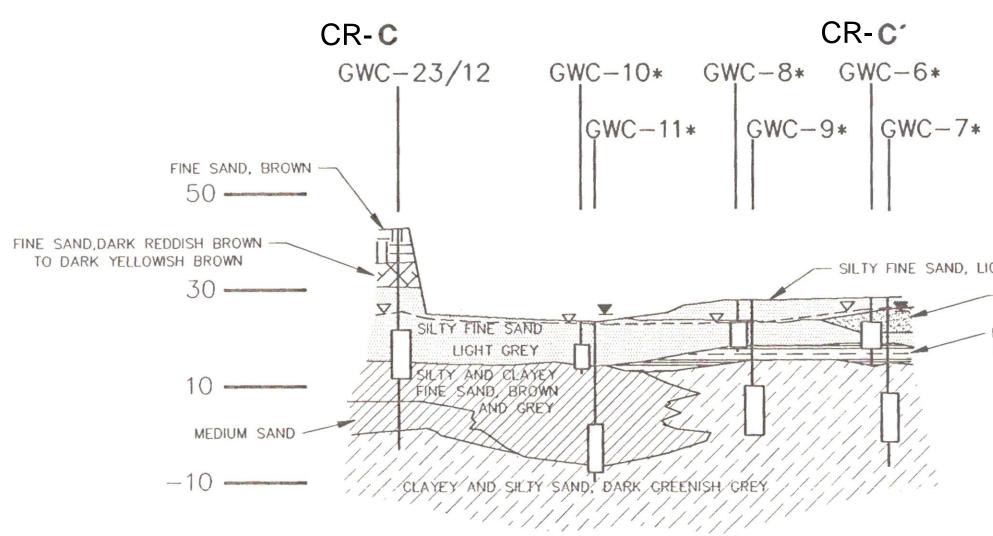




LEGEND



	ATLANTIC COAST CONSULTING, INC. 630 Colonial Park Dr. Suite 110 Roswell, GA 30075 o 770.594.5998 www.atlcc.net
	PROJECT:
GWC-8* GWC-9* ASTERISK BY WELL NAMES DISTANCE BETWEEN MARKED WELLS NOT TO SCALE	PLANT KRAFT GRUMMAN ROAD LANDFILL
	120 GULFSTREAM ROAD PORT WENTWORTH, GEORGIA
	REVISIONS
	Drawn by: MM Checked by: EP
	PROJECT NUMBER: IO54~105 March 2017
IS APPROXIMATE S-SECTIONS ARE FROM CLIFTON LANDFILL N & OPERATION PLANS (APPROVED 1994) -SECTION LINES SHOWN ON FIGURE 1	CLIFTON ROAD HISTORICAL CROSS~SECTIONS
	FIGURE CS~2a



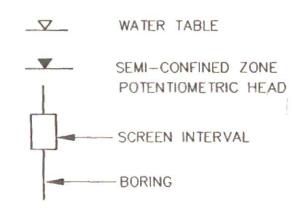
HORIZONTAL SCALE: 1'' = 200'VERTICAL SCALE: 1'' = 20'

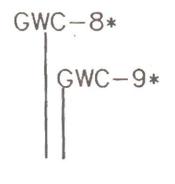
SILTY FINE SAND, LIGHT GREY (FILL)

FINE SAND, VERY DARK GREY

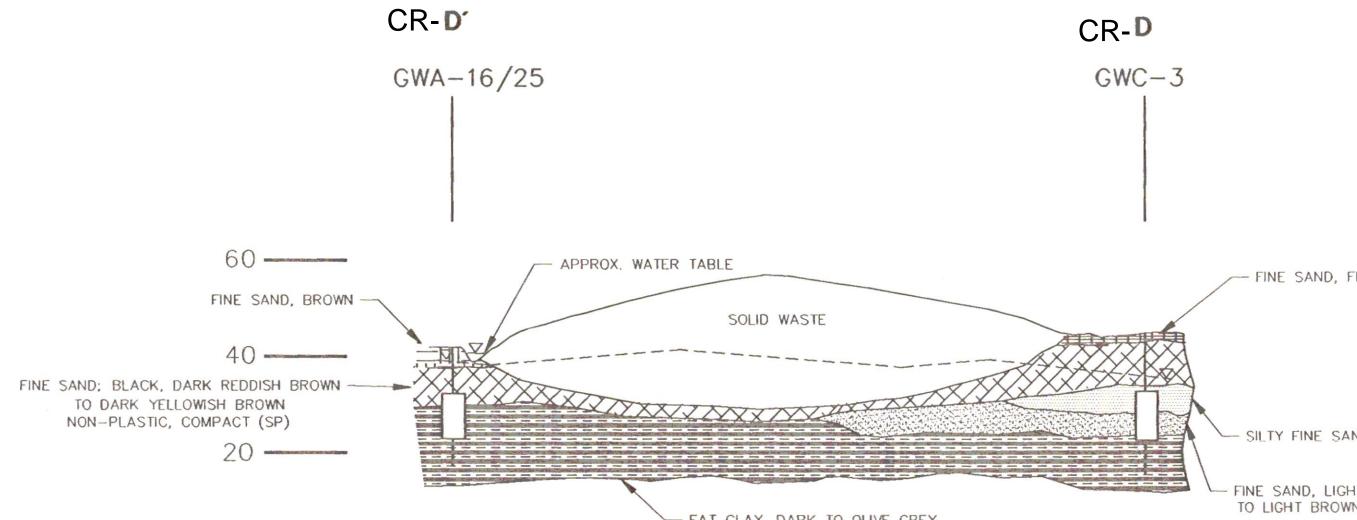
FAT CLAY AND SAND WITH FAT CLAY BLUISH GREY TO DARK BLUISH GREY

LEGEND



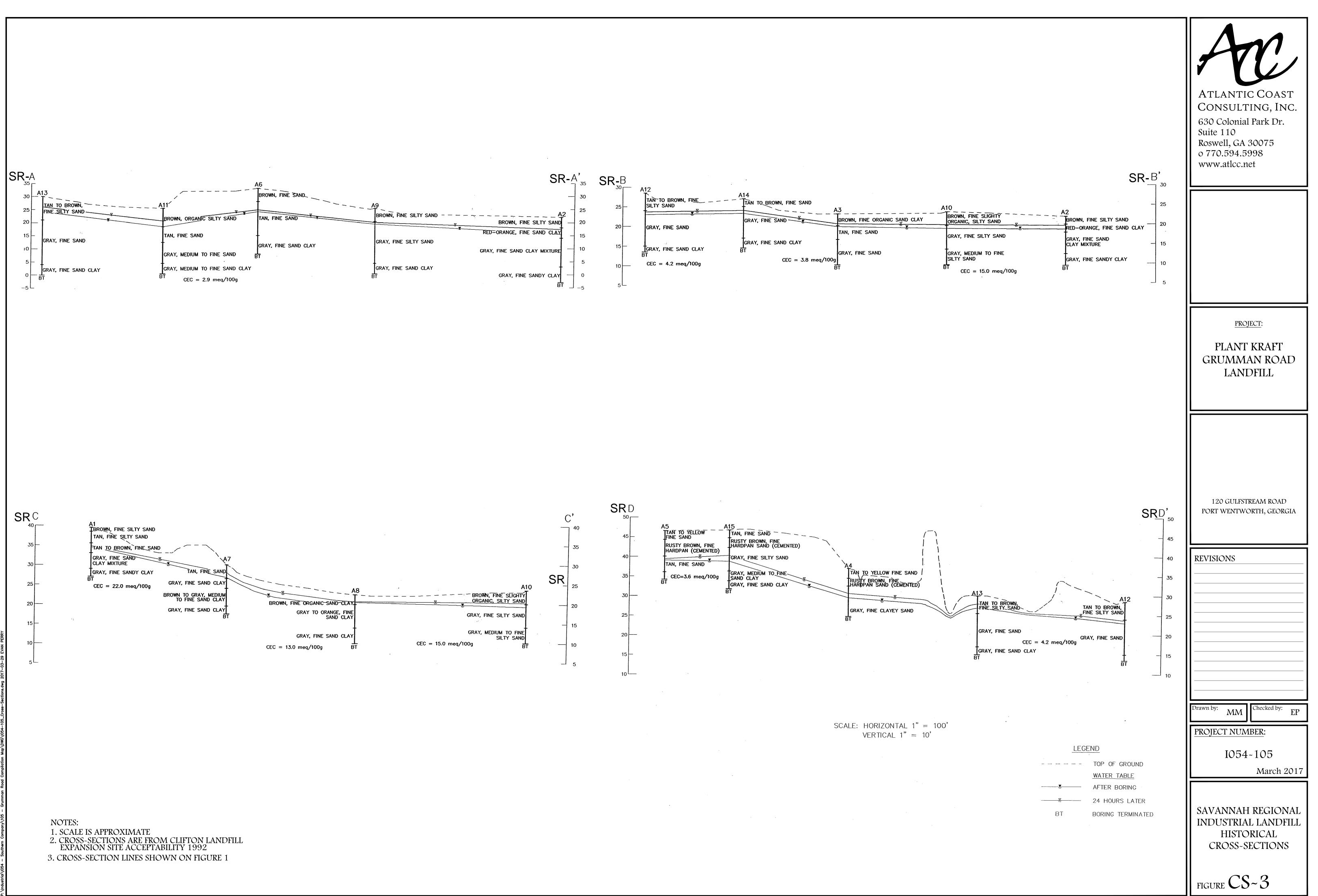


ASTERISK BY WELL NAMES DISTANCE BETWEEN MARKED WELLS NOT TO SCALE



- FAT CLAY, DARK TO OLIVE GREY MEDIUM TO HIGH PLASTICITY (CL-CH)

	ATLANTIC COAST CONSULTING, INC. 630 Colonial Park Dr. Suite 110 Roswell, GA 30075 o 770.594.5998 www.atlcc.net
	PROJECT: PLANT KRAFT GRUMMAN ROAD LANDFILL
	120 GULFSTREAM ROAD PORT WENTWORTH, GEORGIA
FILL	REVISIONS
ND, LIGHT GREY HT BROWN WISH GREY	Drawn by: MM Checked by: EP PROJECT NUMBER: I054~105 March 2017 CLIFTON ROAD
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	HISTORICAL CROSS~SECTIONS FIGURE CS~2b



Appendix B Boring and Well Construction Logs

ONV FT)	NEERING, INC. NICALANDENVIRONMENTAL CONSULTANTS	DRILLER: DRILLING I DEPTH TO S T	A E Drill	a County, Georgia ing, Tommy Burnette <u>CME 750 ATV, Hollow stem</u> NITIAL: <u>□ 1.75</u> AFTER STANDARD PENETRATION RESU BLOWS/FOOT 2 5 10 20 30 40 50 1 1 1 1 1 1 1 1 1 BLOWS/FOOT 2 5 10 20 30 40 50 1 1 1 1 1 1 1 1 1 1 1 BLOWS/FOOT	E L n auger 24 HOURS:	LEVATION: OGGED BY: <u> 3.67</u> MO	: <u>5-28-98</u> END: <u>5-28-</u> <u>34.86</u> <u>MSP</u> CAVING> <u>XXX</u> NITOR WELL INSTALLATION DETAILS
	DESCRIPTION FILL SOIL Firm, tan, wet, silty, fin	DRILLER: DRILLING I DEPTH TO S T	A E Drill METHOD: - WATER> 1	Ing, Tommy Burnette <u>CME 750 ATV, Hollow stem</u> NITIAL: <u>↓</u> <u>1.75</u> AFTER STANDARD PENETRATION RESUL BLOWS/FOOT	LTS	OGGED BY: <u>▼ 3.67</u> M ^O	MSP CAVING> XXX CAVING> XXX CAVING XXXX CAVING XXXXX CAVING XXXXX CAVING XXXXX CAVING XXXXX CAVING XXXXX CAVING XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
	CONSULTANTS DESCRIPTION FILL SOIL TOPSOIL Firm, tan, wet, silty, fin	DRILLING I DEPTH TO S T		CME 750 ATV, Hollow stem NITIAL: 2 1.75 AFTER STANDARD PENETRATION RESU BLOWS/FOOT	24 HOURS:	⊻ <u>3.67</u> MO	CAVING> TO CAVING> CAVING> CAVING> CAVING> CAVING> CAVING> CAVING
FT)	DESCRIPTION FILL SOIL TOPSOIL Firm, tan, wet, silty, fin			NITIAL: 2 AFTER STANDARD PENETRATION RESUL	24 HOURS:	Mo	NITOR WELL INSTALLATION DETAILS
FT)	DESCRIPTION FILL SOIL TOPSOIL Firm, tan, wet, silty, fin	S T		STANDARD PENETRATION RESU BLOWS/FOOT			DETAILS
	TOPSOIL Firm, tan, wet, silty, fin	le		2 5 10 20 30 40 50	70 90	Ben	tonite seal 0 to 2 2 feet
	Firm, tan, wet, silty, fin			+			tornite seal, v to L.L leet
	Firm, tan, wet, silty, fin	le		- + - +			
-5	SAND						
-5				► ` - ` -	;-;-;-;- [];		
-5					1		
			H H	▶ · · · · · · · · · · · · · · · · · · ·	d = b= ∔ d = 		er pack, (20-40 gradation d 2.2 to 15.5 feet
			Å 15			E san	
						目	
	Loose, light gray, wet,					E .010	-inch slotted Schedule well screen (ASTM 48
-10	clayey, silty, fine to						to 14.1 feet
10	meaium SAND		Μ				
			A *		+ ·	目	
				L		目	
	Loose, light gray, wet,	silty,					
-15	Tine to medium SAND					Pipe	е сар
			Π,	+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-			al well depth below top
					· · · · · · · · · · · · · · · · · · ·	SUF	ing = 16.7 feet RFACE COMPLETION
						4" x and	4" steel stand-up cove 6-foot by 6-foot concre
	of fill soil added at bas	se of				pad	
- 20	well after drilling activi	ities.					5-inches
•					J - L A J -		
•							
•					-		
•					4 -		
- 25							
					-ר <u>ד</u> -ר וווו		
•							
- 30							
- 35							
55					· · · ·		
				++++-+-+-+-+-+-+-+-+-+-+-+-+-			
			11	1 1 1 1 1 1 1 1 1 1			
	15	 medium SAND Loose, light gray, wet, fine to medium SAND Boring terminated at 1 feet below grade. 1.2- of fill soil added at bas well after drilling activ 	 medium SAND Loose, light gray, wet, silty, fine to medium SAND Boring terminated at 15.5 feet below grade. 1.2-feet of fill soil added at base of well after drilling activities. 	10 medium SAND 8 Loose, light gray, wet, silty, fine to medium SAND 7 15 Boring terminated at 15.5 feet below grade. 1.2-feet of fill soil added at base of well after drilling activities. 7 20 well after drilling activities. 30	10 medium SÁND 11 Loose, light gray, wet, silty, fine to medium SAND 15 Boring terminated at 15.5 feet below grade. 1.2-feet of fill soil added at base of well after drilling activities. 20 Well after drilling activities. 21 Image: Same state s	10 medium SÁND 15 Loose, light gray, wet, silty, fine to medium SAND 15 Boring terminated at 15.5 feet below grade. 1.2-feet of fill soil added at base of well after drilling activities. 20 well after drilling activities. 30	10 medium SAND 15 Loose, light gray, wet, silty, fine to medium SAND 15 Boring terminated at 15.5 feet below grade. 1.2-feet of fills oil added at base of well after drilling activities. 20 Well after drilling activities. 30

BUNG NUMBER GWC-12

DE DRILLED <u>October 6,1993</u> ELEVATIONS: <u>TOP OF CASING</u> = 45.83

SEOLOGIST A.J. Patrick

CLIENT PROJECT

Clifton Equipment Rental

<u>Clifton Landfill</u> NO. 025–030 D (L)

Water Quality Monitoring Plan

GROUND SURFACE = 43.48 TOP OF WELL APRON= 43.48

STATE PLAIN N. <u>779052.950</u> COORDINATES E. <u>961255.879</u>

FP TH	FEET	SAMPLE INTERVAL	SAMPLE # AND TPYE	BLOWS PEF 6 INCHES	GRAPHIC	90T	DESCRIPTION AND REMARKS	'n	ELL SKETCH
		X	SPT	2-2-2	SP		0'-7' EINE SILTY SAND; Light yellowish brown subangular fine sand nonplastic, trace of black opaque fine sand, damp, littoral, (SP)		Bentonite/ Cement Grout
	•	\times	SPT	1-2-2	ML		7'-12' <u>FINE SAND</u> ; Dark reddish brown, subround and subangular fine sand, non-plastic compacted, moist, (ML)		
		\times	SPT	4-6-6	SP		12'-17' <u>EINE SAND</u> ; Light grey, subround and subangular fine sand, trace of subangular medium sand, trace of black opaque fine sand about nonplastic, moist, (SP)		A Bentonite/ Chips
20		\ge	SPT	2-2-2	d S		17'-22' <u>FINE SAND</u> ; Light olive grey, subround and subangular fine sand, trace of angular medium sand, non-plastic, wet, (SP)		¥ 25- per 5- s
25		\ge	SPT	2-2-4	ອ ເ		22'-27' <u>FINE SAND</u> ; 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)		L L L L L L L L L L L L L L L L L L L
30		\ge	SPT	3-3-6	d'S		27'-32' <u>EINE SAND</u> ; 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)		
35		\ge	SPT	9-15-14	MS .		32'-37' <u>MEDIUM SAND</u> ; Dark brownish grey, subrounded and subangular sand, trace of fine grain black opaque sand, wet, (SW)		Cave Cave
ľ		\ge	SPT	13-13-11	NS .		37'-40' <u>MEDIUM SAND</u> ; Light brownish gray, subrounded and subangular sand with trace of fine grain black sand and trace of fine medium grain sand, (SW)		
									- 0 - -
									-5
MET	HOD	OF DR	ILLING	4 1/4"	Hollo	ow S		LL DIAMETER	2 inch
				Auger			Civil	LL MATERIAL	ASTM 480 Schedule 40 PVC
			-	7 1/4 ir					
		TION D		30.3 fe	et		WA ⁻	TER LEVEL: INI	
1	ITIC P	MEIGH		140 lb.				FIN	IAL 17.8 feet

ING NUMBER GWC-11 BO

ELEVATIONS: TOP OF CASING

DA E DRILLED May 8-10,1994 CLIENT

Clifton Equipment Rental PROJECT

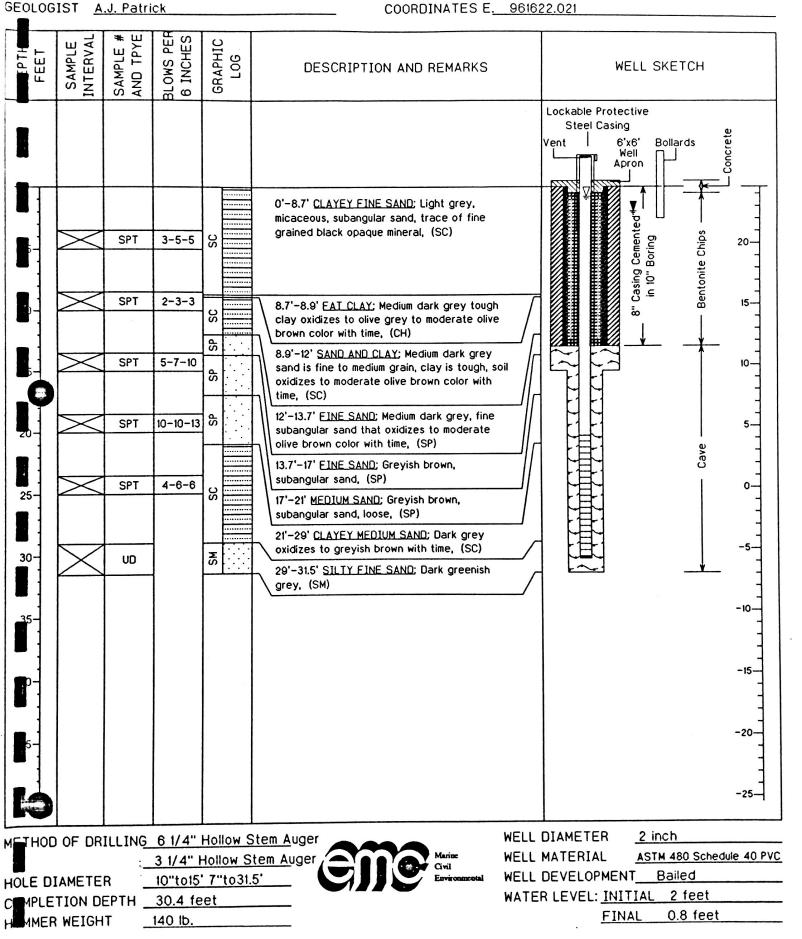
Clifton Landfill NO. 025-030 D (L)

Water Quality Monitoring Plan

GROUND SURFACE = 24.55 TOP OF WELL APRON= 25.15

= 27.17

STATE PLAIN N. 779122.481 COORDINATES E. 961622.021



BURING NUMBER GWC-9

May 7-9,1994 ELEVATIONS: TOP OF CASING = 30.87

GROUND SURFACE = 28.35

TOP OF WELL APRON= 28.84

CLIENT

Clifton Equipment Rental

PROJECT **Clifton Landfill**

NO. 025-030 D (L) Water Quality Monitoring Plan

GEOLOGIST A.J. Patrick

i.

COORDINATES E. 961913.170

DEPTH FEET	SAMPLE INTERVAL	SAMPLE # AND TPYE	BLOWS PER 6 INCHES	GRAPHIC LOG	DESCRIPTION AND REMARKS	WELL SKETCH
						Lockable Protective Steel Casing Vent 6'x6' Bollards
	X	SPT	2-2-2	sc	0'-9' <u>CLAYEY FINE SAND</u> ; Light grey with yellow mottling, micaceous subround sand, trace of black opaque fine grained mineral, first 4' is recent full material, (SC)	8" Casing Ceffented
0-	\ge	SPT	2-3-3	SC CH	9'-12' <u>EAT CLAY;</u> Medium dark tough clay, oxidizes to olive grey to moderate olive brown with time, (CH)	
5-	\ge	SPT	1-1-8	S	12'-14.2' <u>CLAYEY SAMD</u> ; Medium dark grey to black with yellowish brown mottling, tough, subangular sand, decayed wood, (SC)	
20-	\ge	SPT	11-21-23	sc	14.2'-24.8' <u>CLAYEY SAND</u> ; Yellowish grey to greyish brown, fine to medium angular to subangular sand, trace of black opaque fine grain mineral, (SC)	
25-	\ge	SPT	4-4-4	SM	24.8'-28' <u>SILTY FINE SAND</u> ; Dark greenish	
30-				S	grey micaceous subangular sand, color change does not occur over time, (SM)	
35-						-5
						- - - -15
5-						-20-
METHOD	OF DR	ILLING			Stellir Hoger	DIAMETER <u>2 inch</u> MATERIAL <u>ASTM 480 Schedule 40 PVC</u>
		- R		1 7"to28	Civil	DEVELOPMENT Bailed
OMPLE			27.2 fe		WATE	ER LEVEL: INITIAL 4 feet
	R WEIGH		140 lb.			FINAL 4 feet

3 ING NUMBER GWC-7 E DRILLED May 7-9,1994

GROUND SURFACE = 28.45

TOP OF WELL APRON= 29.05

= 31.38

ELEVATIONS: TOP OF CASING

EOLOGIST 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

FEET	SAMPLE INTERVAL	SAMPLE # AND TPYE	BLOWS PER 6 INCHES	GRAPHIC LOG	DESCRIPTION AND REMARKS WELL SKETCH
					Lockable Protective Steel Casing Vent 6'x6' Bollards
	X	SPT	3-4-5	SP SC	0'-2' <u>CLAYEY FINE SAND</u> ; Light grey with yellow mottling, subround, trace of black opaque fine grained mineral, recent fill material, (SC) 2'-7' <u>EINE SAND</u> ; Very dark grey, (SP) 7'-9.5' <u>CLAYEY FINE SAND</u> ; Light grey with with the second
	\times	SPT	3-4-4	CH SC	7'-9.5' <u>CLAYEY FINE SAND</u> : Light grey with yellow mottling, trace of black opaque fine grained mineral, (SC) 9.5'-12' <u>EAT CLAY</u> : Grey tough clay with
	\ge	SPT	3-5-6	S =	yellowish brown mottling, (CH) 12'-16' <u>CLAYEY FINE SAND</u> ; Grey to dark greenish grey with brownish yellow mottling
	\geq	SPT	4-6-12	sc	(SC) 16'-22' CLAYEY FINE SAND: Dark greenish grey, subangular, trace of black opaque fine
25-	\ge	SPT	5-7-7	MS	22'-33.5' <u>SILTY FINE SAND</u> : Dark greenish grey micaceous subangular sand, color change does not occur over time (SM)
30- - 35-	\ge	UD			
- - - -					-10
5-					-15
ło					
	D OF DR	_	3 1/4"		Stem Auger WELL DIAMETER 2 inch Stem Auger Mariae WELL MATERIAL ASTM 480 Schedule 40 PVC 3.5' WELL DEVELOPMENT Bailed
	TION D		28.8 f		WATER LEVEL: INITIAL 3 feet
-	R WEIGH		140 lb.		FINAL 4.3 feet
L Multiple					

			PROJECT:	Savannah Regional Landfill		_ PROJECT NO.: J06-1164-2
R		ELL-LAMMONS	CLIENT:	Republic		START: <u>12-13-06</u> END: <u>12-</u>
	201 202	NEERING, INC.	LOCATION:	Chatham County, Georgia		ELEVATION:22.28
			DRILLER:	BLE, G. Alverson		LOGGED BY: R. Mayer
		CONSULTANTS		ETHOD: Geoprobe 6620DT with 4	-1/4 inch ID holl	ow stem auger
			DEPTH TO -	water> initial: $ arrow 6$	AFTER 24 HOU	RS: 🛂6.98 CAVING> 😿
ELEVA DEPTH			DESCRIPTIO	ON		MONITOR WELL INSTALLATION DETAILS
				n-brown, moist, slightly		Neat cement, 0 to 1.05 feet
		clayey, fine to mediu		Г		
20 -	- 2	6-inches of TOPSOIL		noist, fine to medium		Bentonite seal, 1.05 to 4.75 feet
	Γ.Ι	sandy, silty CLAY				
	4	-				
		Dark brown and ter-	ich brown -	noist fing to approx cond-		Filter pack, sand 4.75 to 16.9 feet
	- 6 -	SILT	isn-prown, n	noist, fine to coarse sandy		-VB
15-						1.16
	- 8	Gray to pale green, w	et, slightly fi	ne to medium sandy,		6.15 ,7
		clayey SILT with thin	interlayered	fine to coarse sand lenses		I ~ LP
	-10					
						2-inch diameter, 0.010-inch slotte Schedule 40 PVC well screen, 6.6
10-	- 12					16.65 feet
	[
	- 14					
			,			
	- 16					Pipe cap
5-	- 18	Boring terminated at	16.9 feet. Gr	oundwater encountered at		•
		6 feet at time of drillin	ng and at 6.9	8 feet after 24 hours.		Total well depth, 16.9 feet
	-20					Borehole diameter, 8.25-inches
						SURFACE COMPLETION
_	- 22					4" X 4" stand-up locking steel protective cover with a 6' x 6'
0						concrete pad at the base with surv
	- 24					pin
						1/4-inch weep and vent holes
	- 26					installed in steel cover and well casing, respectively
F	_					
-5	- 28					Pea gravel installed in protective cover annulus at well head
	-					Ground surface elev. = 22.28 feet
	- 30					Top of PVC casing elev. = 25.00 fee
	-					Survey pin elev. = 22.34 feet
-10-	- 32					Northing = 779,232.98'
-10	-					Easting = 962,876.83'
	- 34					
	-					
	- 36					
-15-	-					
-13	- 38					
	-					
				GRO		

Appendix C Laboratory Analytical Reports



Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

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,

Kein Sherry

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

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

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 #: 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

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

Pace Analytical Services Asheville

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

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 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

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

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

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



92491455024

GWB-6R

Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

SAMPLE SUMMARY

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 10:58 08/19/20 12:45 92491455006 GWC-21 Water 08/18/20 10:58 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 12:45 08/19/20 12:45 92491455010 GWC-2 Water 08/18/20 14:20 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 10:45 08/1	Project: Pace Project No	GRUMMAN ROAD SCAN E b.: 92491455	EVENT 2020		
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 10:58 08/19/20 12:45 92491455009 GWC-14 Water 08/18/20 12:45 08/19/20 12:45 92491455010 GWC-2 Water 08/18/20 14:24 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 10:45 08/19/20 12:45 92491455013 GWC-11 Water 08/18/20 10:45 08/19/20 12:45 92491455015 EB-2-8-18-20 Water 08/18/20 10:30 08/20/20 12:20 92491455016 DUP-2 Water <td< th=""><th>Lab ID</th><th>Sample ID</th><th>Matrix</th><th>Date Collected</th><th>Date Received</th></td<>	Lab ID	Sample ID	Matrix	Date Collected	Date Received
92491455003GWA-8Water08/17/20 14:5908/19/20 12:4592491455004GWC-13Water08/17/20 16:1608/19/20 12:4592491455005GWC-12Water08/17/20 17:2508/19/20 12:4592491455006GWC-16Water08/18/20 09:3208/19/20 12:4592491455007GWC-21Water08/18/20 10:5808/19/20 12:4592491455008GWC-15Water08/18/20 12:5608/19/20 12:4592491455019GWC-14Water08/18/20 14:2408/19/20 12:4592491455010GWC-2Water08/18/20 15:2308/19/20 12:4592491455011GWC-17Water08/18/20 14:5008/19/20 12:4592491455012GWC-20Water08/18/20 16:3608/19/20 12:4592491455013GWC-11Water08/18/20 10:4508/19/20 12:4592491455015EB-28-18-20Water08/18/20 16:5008/19/20 12:4592491455017FB-18-19-20Water08/18/20 16:5008/19/20 12:4592491455018FB-28-19-20Water08/19/20 10:3008/20/20 12:2092491455019GWC-1Water08/19/20 09:0008/20/20 12:2092491455019GWC-1Water08/19/20 09:3508/20/20 12:2092491455019GWC-1Water08/19/20 09:2008/20/20 12:2092491455014GWB-5RWater08/19/20 11:5808/20/20 12:2092491455024GWB-5RWater08/19/20 10:3008/20/20 12:2092491455024GWB-5RWater <td>92491455001</td> <td>DUP-1</td> <td>Water</td> <td>08/17/20 00:00</td> <td>08/19/20 12:45</td>	92491455001	DUP-1	Water	08/17/20 00:00	08/19/20 12:45
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92491455011GWC-17Water08/18/2008/19/2012:4592491455012GWC-20Water08/18/2016:3608/19/2012:4592491455013GWC-11Water08/18/2010:4508/19/2012:4592491455014GWC-22Water08/18/2014:3008/19/2012:4592491455015EB-2-8-18-20Water08/18/2016:5008/19/2012:4592491455016DUP-2Water08/18/2000:0008/19/2012:4592491455017FB-18-19-20Water08/19/2001:3008/20/2012:2092491455018FB-2-8-19-20Water08/19/2009:3508/20/2012:2092491455019GWC-1Water08/19/2009:3508/20/2012:2092491455020GWC-9Water08/19/2009:2008/20/2012:2092491455021GWB-5RWater08/19/2011:5808/20/2012:2092491455022GWA-7Water08/19/2011:5808/20/2012:20	92491455009	GWC-14	Water	08/18/20 14:24	08/19/20 12:45
92491455012GWC-20Water08/18/20 16:3608/19/20 12:4592491455013GWC-11Water08/18/20 10:4508/19/20 12:4592491455014GWC-22Water08/18/20 14:3008/19/20 12:4592491455015EB-2-8-18-20Water08/18/20 16:5008/19/20 12:4592491455016DUP-2Water08/18/20 00:0008/19/20 12:4592491455017FB-1-8-19-20Water08/19/20 10:3008/20/20 12:2092491455018FB-2-8-19-20Water08/19/20 09:0008/20/20 12:2092491455019GWC-1Water08/19/20 09:3508/20/20 12:2092491455020GWC-9Water08/19/20 09:2008/20/20 12:2092491455021GWB-5RWater08/19/20 11:5808/20/20 12:2092491455022GWA-7Water08/19/20 10:3008/20/20 12:20	92491455010	GWC-2	Water	08/18/20 15:23	08/19/20 12:45
92491455013GWC-11Water08/18/20 10:4508/19/20 12:4592491455014GWC-22Water08/18/20 14:3008/19/20 12:4592491455015EB-2-8-18-20Water08/18/20 16:5008/19/20 12:4592491455016DUP-2Water08/18/20 00:0008/19/20 12:4592491455017FB-1-8-19-20Water08/19/20 10:3008/20/20 12:2092491455018FB-2-8-19-20Water08/19/20 09:0008/20/20 12:2092491455019GWC-1Water08/19/20 09:3508/20/20 12:2092491455020GWC-9Water08/19/20 09:3508/20/20 12:2092491455021GWB-5RWater08/19/20 11:5808/20/20 12:2092491455022GWA-7Water08/19/20 10:3008/20/20 12:20	92491455011	GWC-17	Water	08/18/20 14:50	08/19/20 12:45
92491455014GWC-22Water08/18/20 14:3008/19/20 12:4592491455015EB-2-8-18-20Water08/18/20 16:5008/19/20 12:4592491455016DUP-2Water08/18/20 00:0008/19/20 12:4592491455017FB-1-8-19-20Water08/19/20 10:3008/20/20 12:2092491455018FB-2-8-19-20Water08/19/20 09:0008/20/20 12:2092491455019GWC-1Water08/19/20 09:3508/20/20 12:2092491455020GWC-9Water08/19/20 09:2008/20/20 12:2092491455021GWB-5RWater08/19/20 11:5808/20/20 12:2092491455022GWA-7Water08/19/20 10:3008/20/20 12:20	92491455012	GWC-20	Water	08/18/20 16:36	08/19/20 12:45
92491455015EB-2-8-18-20Water08/18/20 16:5008/19/20 12:4592491455016DUP-2Water08/18/20 00:0008/19/20 12:4592491455017FB-1-8-19-20Water08/19/20 10:3008/20/20 12:2092491455018FB-2-8-19-20Water08/19/20 09:0008/20/20 12:2092491455019GWC-1Water08/19/20 09:3508/20/20 12:2092491455020GWC-9Water08/19/20 09:2008/20/20 12:2092491455021GWB-5RWater08/19/20 11:5808/20/20 12:2092491455022GWA-7Water08/19/20 10:3008/20/20 12:20	92491455013	GWC-11	Water	08/18/20 10:45	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 09:35 08/20/20 12:20 92491455021 GWB-5R Water 08/19/20 09:20 08/20/20 12:20 92491455022 GWA-7 Water 08/19/20 10:30 08/20/20 12:20	92491455014	GWC-22	Water	08/18/20 14:30	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 09:35 08/20/20 12:20 92491455021 GWB-5R Water 08/19/20 09:20 08/20/20 12:20 92491455022 GWA-7 Water 08/19/20 11:58 08/20/20 12:20	92491455015	EB-2-8-18-20	Water	08/18/20 16:50	08/19/20 12:45
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 09:20 08/20/20 12:20 92491455022 GWA-7 Water 08/19/20 11:30 08/20/20 12:20	92491455016	DUP-2	Water	08/18/20 00:00	08/19/20 12:45
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	92491455017	FB-1-8-19-20	Water	08/19/20 10:30	08/20/20 12:20
92491455020GWC-9Water08/19/20 09:2008/20/20 12:2092491455021GWB-5RWater08/19/20 11:5808/20/20 12:2092491455022GWA-7Water08/19/20 10:3008/20/20 12:20	92491455018	FB-2-8-19-20	Water	08/19/20 09:00	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	92491455019	GWC-1	Water	08/19/20 09:35	08/20/20 12:20
92491455022 GWA-7 Water 08/19/20 10:30 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
92491455023 GWB-4R Water 08/19/20 11:45 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

Water

08/19/20 14:00

08/20/20 12:20



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



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470A		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
92491455008	GWC-15	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
92491455009	GWC-14	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
2491455010	GWC-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
2491455011	GWC-17	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
2491455012	GWC-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
92491455013	GWC-11	EPA 6020B	CW1	12	PASI-GA
		EPA 7470A	VB	1	PASI-GA



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
	_	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
92491455014	GWC-22	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
2491455016	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
2491455017	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
2491455018	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



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laborator
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2491455020	GWC-9	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
2491455021	GWB-5R	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
491455022	GWA-7	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
491455023	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
491455024	GWB-6R	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

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



Project: **GRUMMAN ROAD SCAN EVENT 2020**

Pace Project No.:

92491455

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92491455001	DUP-1					
EPA 6020B	Barium	0.023	mg/L	0.010	08/21/20 18:57	
EPA 6020B	Lead	0.000073J	mg/L	0.0050		
EPA 9315	Radium-226	0.475 ±	pCi/L		09/02/20 07:43	
		0.356	·			
		(0.629)				
EPA 9320	Radium-228	C:87% T:NA 0.401 ±	pCi/L		09/09/20 13:44	
EFA 9320	Radium-228	0.482	po//L		09/09/20 13.44	
		(1.01)				
		C:62%				
		T:77%	0.1			
Total Radium Calculation	Total Radium	0.876 ± 0.838	pCi/L		09/10/20 13:24	
		(1.64)				
92491455002	EB-1-8-18-20					
EPA 9315	Radium-226	0.181 ±	pCi/L		09/02/20 18:01	
		0.115				
		(0.185) C:869(TNIA				
EPA 9320	Radium-228	C:86% T:NA 0.645 ±	pCi/L		09/09/20 13:10	
ET A 3320		0.510	poi/L		05/05/20 15:10	
		(1.01)				
		C:65%				
Total Radium Calculation	Total Radium	T:81% 0.826 ±	pCi/L		09/10/20 13:24	
Iotal Radium Calculation		0.625	poi/L		09/10/20 13.24	
		(1.20)				
92491455003	GWA-8					
	рН	4.23	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.051	mg/L	0.010		
EPA 6020B	Beryllium	0.00019J	mg/L	0.0030		
EPA 6020B	Chromium	0.00082J	mg/L	0.010		
EPA 6020B	Lithium	0.0010J	mg/L	0.030		
EPA 9315	Radium-226	1.64 ±	pCi/L		09/02/20 18:01	
		0.340 (0.198)				
		C:81% T:NA				
EPA 9320	Radium-228	0.987 ±	pCi/L		09/09/20 12:06	
		0.488				
		(0.830) C:63%				
		T:79%				
Total Radium Calculation	Total Radium	2.63 ±	pCi/L		09/10/20 13:24	
		0.828	·			
EDA 200 0 Day 2 4 4002	Flueride	(1.03)		0.40	00/00/00 00.47	
EPA 300.0 Rev 2.1 1993	Fluoride	0.079J	mg/L	0.10	08/20/20 22:47	
92491455004	GWC-13 рН	4.65	Std. Units		08/20/20 17:18	
EPA 6020B	Barium	0.024	mg/L	0.010	08/20/20 17:18	
EPA 6020B	Chromium	0.024 0.00077J	mg/L	0.010		
EPA 6020B	Lead	0.000076J	mg/L	0.0050		
	Lodu	0.0000700	iiig/∟	0.0000	00/21/20 13.14	

REPORT OF LABORATORY ANALYSIS

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Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92491455004	 GWC-13				·	
EPA 9315	Radium-226	0.429 ± 0.150 (0.162)	pCi/L		09/02/20 18:01	
EPA 9320	Radium-228	C:83% T:NA 0.986 ± 0.510 (0.897) C:68%	pCi/L		09/09/20 15:09	
Total Radium Calculation	Total Radium	T:80% 1.42 ± 0.660 (1.06)	pCi/L		09/10/20 13:24	
92491455005	GWC-12					
EPA 6020B EPA 6020B EPA 6020B EPA 6020B EPA 6020B EPA 6020B EPA 9315	pH Barium Beryllium Chromium Cobalt Lead Lithium Radium-226	$\begin{array}{c} 3.94\\ 0.018\\ 0.00046J\\ 0.0010J\\ 0.00060J\\ 0.000049J\\ 0.00091J\\ 0.630 \pm\\ 0.176\\ (0.152)\\ C:88\%\ T:NA\\ 1.62 \pm\\ 0.620\\ (0.917)\\ C:70\%\end{array}$	Std. Units mg/L mg/L mg/L mg/L mg/L pCi/L	0.010 0.0030 0.010 0.0050 0.0050 0.030	08/21/20 19:20 08/21/20 19:20	
Total Radium Calculation	Total Radium	T:70% 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	
92491455006	GWC-16					
EPA 6020B EPA 6020B EPA 6020B EPA 6020B EPA 6020B EPA 6020B EPA 6020B EPA 9315	pH Arsenic Barium Beryllium Chromium Lead Molybdenum Selenium Radium-226	$\begin{array}{c} 5.52\\ 0.045\\ 0.32\\ 0.000068J\\ 0.0012J\\ 0.0017J\\ 0.15\\ 0.0058J\\ 2.61\pm\\ 0.460\\ (0.136)\\ C:101\%\\ \end{array}$	Std. Units mg/L mg/L mg/L mg/L mg/L mg/L pCi/L	0.0050 0.010 0.0030 0.010 0.0050 0.010 0.010	08/21/20 19:25 08/21/20 19:25 08/21/20 19:25 08/21/20 19:25 08/21/20 19:25	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

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

REPORT OF LABORATORY ANALYSIS

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Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

EPA 9320

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

Radium-228 1.14 ± pCi/L 09/09/20 15:10 0.669 (1.24) C:71% T:60%

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C:93% T:NA



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92491455011	 GWC-17					
Total Radium Calculation	Total Radium	3.11 ± 1.05	pCi/L		09/10/20 13:24	
EPA 300.0 Rev 2.1 1993	Fluoride	(1.41) 0.51	mg/L	0.10	08/21/20 01:02	
92491455012	GWC-20					
	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	0.000	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		
EPA 9315	Radium-226	3.09 ±	pCi/L	0.010	09/02/20 18:01	
	Radium-220	0.537 (0.138) C:97% T:NA	powe		09/02/20 10:01	
EPA 9320	Radium-228	3.77 ± 0.976 (0.980) C:69% T:77%	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	6.86 ± 1.51	pCi/L		09/10/20 13:24	
		(1.12)	1			
92491455013	GWC-11					
	рН	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) C:89% T:NA	pCi/L		09/02/20 17:59	
EPA 9320	Radium-228	3.54 ± 1.00 (1.17) C:58% T:80%	pCi/L		09/09/20 15:10	
Total Radium Calculation	Total Radium	6.76 ± 1.56 (1.35)	pCi/L		09/10/20 13:24	
92491455014	GWC-22					
	рН	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	
		0.000.20	···· 3/ —	0.0000		

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Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92491455014	GWC-22					
EPA 6020B	Thallium	0.00017J	mg/L	0.0010	08/26/20 16:49	
EPA 9315	Radium-226	4.29 ±	pCi/L		09/02/20 17:59	
		0.717				
		(0.153) C:87% T:NA				
EPA 9320	Radium-228	0.87% 1.NA 3.36 ±	pCi/L		09/09/20 15:10	
EI A 3320		0.984	POIL		05/05/20 15:10	
		(1.23)				
		C:68%				
Total Radium Calculation	Total Radium	T:68% 7.65 ± 1.70			09/10/20 13:24	
	Iolai Kauluili	(1.38)	pCi/L		09/10/20 13.24	
92491455015	EB-2-8-18-20					
EPA 6020B	Antimony	0.00059J	mg/L	0.0030	08/25/20 16:48	
EPA 9315	Radium-226	0.0983 ±	pCi/L		09/02/20 17:59	
		0.0893				
		(0.156) C:82% T:NA				
EPA 9320	Radium-228	-0.000828 ±	pCi/L		09/09/20 15:10	
		0.364	P = 0 =			
		(0.850)				
		C:64% T:88%				
Total Radium Calculation	Total Radium	0.0983 ±	pCi/L		09/10/20 13:24	
		0.453	POIL		03/10/20 13:24	
		(1.01)				
92491455016	DUP-2					
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		
EPA 6020B	Lead	0.00066J	mg/L	0.0050	08/26/20 17:00	
EPA 9315	Radium-226	4.34 ±	pCi/L		09/02/20 17:59	
		0.723 (0.166)				
		C:90% T:NA				
EPA 9320	Radium-228	5.03 ± 1.20	pCi/L		09/09/20 15:10	
		(0.992)				
		C:68% T:75%				
Total Radium Calculation	Total Radium	9.37 ± 1.92	pCi/L		09/10/20 13:24	
		(1.16)	poi/L		03/10/20 13:24	
92491455017	FB-1-8-19-20					
EPA 6020B	Antimony	0.0019J	mg/L	0.0030	08/27/20 15:43	
EPA 9315	Radium-226	0.0591 ±	pCi/L		09/03/20 16:47	
		0.0951				
		(0.185)				

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C:94% T:NÁ



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92491455017						
EPA 9320	Radium-228	0.0611 ± 0.357 (0.819) C:66%	pCi/L		09/09/20 12:02	
Total Radium Calculation	Total Radium	T:80% 0.120 ± 0.452 (1.00)	pCi/L		09/10/20 15:11	
92491455018	FB-2-8-19-20					
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	
92491455019	GWC-1					
	рН	5.73	Std. Units		08/20/20 17:18	
EPA 6020B	Antimony	0.00061J	mg/L		08/27/20 15:54	
EPA 6020B	Arsenic	0.0070	mg/L		08/27/20 15:54	
EPA 6020B	Barium	0.057	mg/L		08/27/20 15:54	
EPA 6020B	Chromium	0.0028J	mg/L		08/27/20 15:54	
EPA 6020B	Molybdenum	0.061	mg/L		08/27/20 15:54	
EPA 6020B EPA 9315	Selenium Radium-226	0.0020J 1.08 ± 0.260 (0.235) C:87% T:NA	mg/L pCi/L	0.010	08/27/20 15:54 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	
92491455020	GWC-9					
	рН	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		
EPA 6020B	Lead	0.000096J	mg/L	0.0050		
EPA 6020B	Lithium	0.0019J	mg/L	0.030	08/27/20 16:00	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92491455020	GWC-9			_		
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) C:59% T:83%	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	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	
92491455021	GWB-5R					
	рН	5.14	Std. Units		08/20/20 17:18	
EPA 6020B	Arsenic	0.0019J	mg/L	0.0050		
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		
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) C:65%	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	T:73% 2.49 ± 0.832 (1.09)	pCi/L		09/10/20 15:11	
92491455022	GWA-7					
	рН	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		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) C:90% T:NA	pCi/L		09/10/20 15:09	
EPA 9320	Radium-228	1.23 ± 0.583 (0.978) C:66% T:89%	pCi/L		09/09/20 15:08	
Total Radium Calculation	Total Radium	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	
92491455023	GWB-4R					
	рН	5.70	Std. Units		08/20/20 17:18	

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Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

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



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: DUP-1	Lab ID:	92491455001	Collecte	ed: 08/17/20	00:00	Received: 08/	19/20 12:45 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Prej	paration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, G	A				
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	0.023	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	0.000073J	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	
7470 Mercury	Analytical	Method: EPA 7	470A Prep	paration Met	hod: EF	PA 7470A			
	Pace Ana	lytical Services	- Peachtre	e Corners, G	βA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:08	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0 Rev 2	2.1 1993					
	Pace Ana	lytical Services	- Asheville						
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 21:54	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: EB-1-8-18-20	Lab ID:	92491455002	Collected	d: 08/18/20	00:00	Received: 08/	19/20 12:45 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prep	aration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtree	e Corners, C	SA				
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	
7470 Mercury	Analytical	Method: EPA 7	470A Prep	aration Met	hod: EP	PA 7470A			
	Pace Anal	ytical Services	- Peachtree	e Corners, C	βA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:10	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0 Rev 2.	.1 1993					
-	Pace Anal	ytical Services	- Asheville						
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 22:07	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 924

92491455

Lab ID:	92491455003	Collecte	ed: 08/17/20) 14:59	Received: 08/	19/20 12:45 Ma	atrix: Water	
		Report						
Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Analytical	Method:							
Pace Anal	ytical Services	- Charlotte)					
4.23	Std. Units			1		08/20/20 17:18		
Analytical	Method: EPA 6	020B Prej	paration Met	hod: EF	PA 3005A			
Pace Anal	ytical Services	- Peachtre	e Corners, G	A				
ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:08	7440-36-0	
ND	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:08	7440-38-2	
0.051	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:08	7440-39-3	
0.00019J	mg/L	0.0030	0.000046	1	08/20/20 14:56	08/21/20 19:08	7440-41-7	
ND	mg/L	0.0025	0.00012	1	08/20/20 14:56	08/21/20 19:08	7440-43-9	
0.00082J	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:08	7440-47-3	
ND	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:08	7440-48-4	
ND	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:08	7439-92-1	
0.0010J	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 19:08	7439-93-2	
ND	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:08	7439-98-7	
ND	mg/L	0.010	0.0016	1	08/20/20 14:56	08/21/20 19:08	7782-49-2	
ND	mg/L	0.0010	0.00014	1	08/20/20 14:56	08/21/20 19:08	7440-28-0	
Analytical	Method: EPA 7	470A Prep	paration Met	hod: EF	PA 7470A			
Pace Anal	ytical Services	- Peachtre	e Corners, C	A				
ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:13	7439-97-6	
Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
Pace Anal	ytical Services	- Asheville						
0.079J	mg/L	0.10	0.050	1		08/20/20 22:47	16984-48-8	
	Results Analytical Pace Anal 4.23 Analytical Pace Anal ND 0.0019J ND 0.00082J ND 0.00082J ND 0.00010J ND ND ND ND ND ND ND ND ND ND ND ND ND	ResultsUnitsAnalytical Method: Pace Analytical Services4.23Std. UnitsAnalytical Method: EPA 6 Pace Analytical ServicesNDmg/LNDmg/L0.051mg/L0.00019Jmg/L0.00082Jmg/LNDmg/L0.0010Jmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LNDmg/LAnalytical Method: EPA 7Pace Analytical ServicesNDmg/LAnalytical Method: EPA 3Pace Analytical Services	ResultsUnitsReport LimitAnalytical Method: Pace Analytical Services - Charlotter4.23Std. UnitsAnalytical Method: EPA 6020B Pace Analytical Services - Peachtree Pace Analytical Services - Peachtree NDNDmg/L0.0030 NDmg/L0.0051mg/L0.00019Jmg/L0.00082Jmg/L0.00082Jmg/L0.0010Jmg/L0.0010Jmg/L0.0010Jmg/L0.0010Jmg/L0.0010Jmg/L0.0010Jmg/L0.0010Jmg/L0.0010Jmg/L0.0010NDNDmg/L0.0010NDAnalytical Method: EPA 7470APrepPace Analytical Services - Peachtree NDNDmg/L0.00020Analytical Method: EPA 300.0 Rev 2 Pace Analytical Services - Asheville	ResultsUnitsLimitMDLAnalytical Method: Pace Analytical Services - Charlotte4.23Std. UnitsAnalytical Method: EPA 6020BPreparation Method: Pace Analytical Services - Peachtree Corners, O NDNDmg/L0.00300.00028 0.00078NDmg/L0.00300.00078 0.00019J0.0019Jmg/L0.0100.00071 0.00019J0.00082Jmg/L0.00250.00012 0.00036NDmg/L0.00500.00038 0.00036NDmg/L0.00500.00038 0.00036NDmg/L0.00100.00069 0.00036NDmg/L0.0100.0016 0.0010NDmg/L0.00100.0014Analytical Method: EPA 7470APreparation Method: Preparation Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville	Results Units Limit MDL DF Analytical Method: Pace Analytical Services - Charlotte 1 1 Analytical Method: EPA 6020B Preparation Method: EFF 1 Analytical Method: EPA 6020B Preparation Method: EFF 1 Analytical Method: EPA 6020B Preparation Method: EFF Pace Analytical Services - Peachtree Corners, GA ND mg/L 0.0030 0.00028 1 ND mg/L 0.0050 0.00078 1 0.051 mg/L 0.0030 0.000046 1 ND mg/L 0.0010 0.00071 1 0.00082J mg/L 0.0025 0.00012 1 0.00082J mg/L 0.0050 0.00036 1 ND mg/L 0.0050 0.00036 1 ND mg/L 0.0010 0.0014 1 ND mg/L 0.010 0.00014 1 ND mg/L 0.0010 0.00014 1	Results Units Limit MDL DF Prepared Analytical Method: Pace Analytical Services - Charlotte 1 1 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA ND mg/L 0.0030 0.00028 1 08/20/20 14:56 ND mg/L 0.0050 0.00078 1 08/20/20 14:56 0.051 mg/L 0.010 0.00071 1 08/20/20 14:56 0.00019J mg/L 0.010 0.00071 1 08/20/20 14:56 0.00082J mg/L 0.010 0.00055 1 08/20/20 14:56 0.00082J mg/L 0.010 0.00055 1 08/20/20 14:56 ND mg/L 0.0100 0.00038 1 08/20/20 14:56 ND mg/L 0.0010 0.00038 1 08/20/20 14:56 ND mg/L 0.010 0.00038 1 08/20/20 14:56 ND mg/L 0.0100 0.00016 <td>Results Units Limit MDL DF Prepared Analyzed Analytical Method: Pace Analytical Services - Charlotte 4.23 Std. Units 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA ND mg/L 0.0030 0.00028 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0030 0.00028 1 08/20/20 14:56 08/21/20 19:08 0.051 mg/L 0.0030 0.00078 1 08/20/20 14:56 08/21/20 19:08 0.00019J mg/L 0.0030 0.00071 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0010 0.00055 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0050 0.00038 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0050 0.00038 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.010 0.00069<td>Results Units Imit MDL DF Prepared Analyzed CAS No. Analytical Method: Pace Analytical Services - Charlotte 4.23 Std. Units 1 08/20/20 17:18 Analytical Method: EPace Analytical Services - Charlotte 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA 08/20/20 14:56 08/21/20 19:08 7440-36-0 ND mg/L 0.0050 0.00078 1 08/20/20 14:56 08/21/20 19:08 7440-38-2 0.051 mg/L 0.010 0.00071 1 08/20/20 14:56 08/21/20 19:08 7440-43-3 0.00019J mg/L 0.0025 0.00012 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.00082J mg/L 0.00050 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.0010J mg/L 0.00050 0.00038 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.0010J mg</td></td>	Results Units Limit MDL DF Prepared Analyzed Analytical Method: Pace Analytical Services - Charlotte 4.23 Std. Units 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA ND mg/L 0.0030 0.00028 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0030 0.00028 1 08/20/20 14:56 08/21/20 19:08 0.051 mg/L 0.0030 0.00078 1 08/20/20 14:56 08/21/20 19:08 0.00019J mg/L 0.0030 0.00071 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0010 0.00055 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0050 0.00038 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.0050 0.00038 1 08/20/20 14:56 08/21/20 19:08 ND mg/L 0.010 0.00069 <td>Results Units Imit MDL DF Prepared Analyzed CAS No. Analytical Method: Pace Analytical Services - Charlotte 4.23 Std. Units 1 08/20/20 17:18 Analytical Method: EPace Analytical Services - Charlotte 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA 08/20/20 14:56 08/21/20 19:08 7440-36-0 ND mg/L 0.0050 0.00078 1 08/20/20 14:56 08/21/20 19:08 7440-38-2 0.051 mg/L 0.010 0.00071 1 08/20/20 14:56 08/21/20 19:08 7440-43-3 0.00019J mg/L 0.0025 0.00012 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.00082J mg/L 0.00050 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.0010J mg/L 0.00050 0.00038 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.0010J mg</td>	Results Units Imit MDL DF Prepared Analyzed CAS No. Analytical Method: Pace Analytical Services - Charlotte 4.23 Std. Units 1 08/20/20 17:18 Analytical Method: EPace Analytical Services - Charlotte 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA 08/20/20 14:56 08/21/20 19:08 7440-36-0 ND mg/L 0.0050 0.00078 1 08/20/20 14:56 08/21/20 19:08 7440-38-2 0.051 mg/L 0.010 0.00071 1 08/20/20 14:56 08/21/20 19:08 7440-43-3 0.00019J mg/L 0.0025 0.00012 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.00082J mg/L 0.00050 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.0010J mg/L 0.00050 0.00038 1 08/20/20 14:56 08/21/20 19:08 7440-43-9 0.0010J mg



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

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



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No .:

92491455

Sample: GWC-12	Lab ID:	92491455005	Collecte	ed: 08/17/20) 17:25	Received: 08/	19/20 12:45 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte)					
рН	3.94	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	6A				
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	0.018	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:20	7440-39-3	
Beryllium	0.00046J	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	0.0010J	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 19:20	7440-47-3	
Cobalt	0.00060J	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 19:20	7440-48-4	
Lead	0.000049J	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 19:20	7439-92-1	
Lithium	0.00091J	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	
7470 Mercury	Analytical	Method: EPA 7	470A Prej	paration Met	hod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	6A				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:17	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
	Pace Anal	ytical Services	- Asheville						
Fluoride	0.19	mg/L	0.10	0.050	1		08/20/20 23:14	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92

92491455

Sample: GWC-16	Lab ID:	92491455006	Collecte	ed: 08/18/20	09:32	Received: 08/	19/20 12:45 Ma	atrix: Water	
Demonstere	Daartia	11-20-	Report		55	Durana			Qual
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte)					
рН	5.52	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prej	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	BA				
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:25	7440-36-0	
Arsenic	0.045	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:25	7440-38-2	
Barium	0.32	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 19:25	7440-39-3	
Beryllium	0.000068J	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	0.0012J	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	0.00017J	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	0.15	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:25	7439-98-7	
Selenium	0.0058J	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	
7470 Mercury	Analytical	Method: EPA 7	470A Prep	paration Met	hod: EP	A 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	BA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:25	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	ytical Services	- Asheville						
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 23:28	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92

92491455

Sample: GWC-21	Lab ID:	92491455007	Collecte	ed: 08/18/20	10:58	Received: 08/	19/20 12:45 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte						
рН	5.82	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prep	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	6A				
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:31	7440-36-0	
Arsenic	0.0059	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:31	7440-38-2	
Barium	0.18	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	0.0012J	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	0.00027J	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	0.069	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:31	7439-98-7	
Selenium	0.013	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 7	470A Prep	paration Met	nod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	βA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:27	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	ytical Services	- Asheville						
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 23:41	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No .:

92491455

Sample: GWC-15	Lab ID:	92491455008	Collecte	ed: 08/18/20) 12:56	Received: 08/	19/20 12:45 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte)					
рН	6.39	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	BA				
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	
7470 Mercury	Analytical	Method: EPA 7	470A Prej	paration Met	hod: EP	A 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	6A				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:29	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	ytical Services	- Asheville	1					
Fluoride	ND	mg/L	0.10	0.050	1		08/20/20 23:55	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No .:

92491455

Sample: GWC-14	Lab ID:	92491455009	Collecte	ed: 08/18/20) 14:24	Received: 08/	19/20 12:45 Ma	atrix: Water	
			Report						. .
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte)					
рН	5.56	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	BA				
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 19:54	7440-36-0	
Arsenic	0.0012J	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 19:54	7440-38-2	
Barium	0.028	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	0.00059J	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	0.017	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 19:54	7439-98-7	
Selenium	0.0029J	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	
7470 Mercury	Analytical	Method: EPA 7	470A Prej	paration Met	hod: EP	A 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	6A				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:32	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	ytical Services	- Asheville						
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 00:35	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 924

92491455

Sample: GWC-2	Lab ID:	92491455010	Collecte	ed: 08/18/20	15:23	Received: 08/	19/20 12:45 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte						
рН	4.60	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prep	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	βA				
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	
7470 Mercury	Analytical	Method: EPA 7	470A Prep	paration Met	nod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	βA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:34	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	ytical Services	- Asheville						
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 00:49	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-17	Lab ID:	92491455011	Collecte	ed: 08/18/20	0 14:50	Received: 08/	19/20 12:45 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte)					
рН	4.31	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prej	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, (ЗA				
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	0.074	mg/L	0.010	0.00071	1	08/20/20 14:56	08/21/20 20:05	7440-39-3	
Beryllium	0.0016J	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	0.0011J	mg/L	0.010	0.00055	1	08/20/20 14:56	08/21/20 20:05	7440-47-3	
Cobalt	0.0025J	mg/L	0.0050	0.00038	1	08/20/20 14:56	08/21/20 20:05	7440-48-4	
Lead	0.00014J	mg/L	0.0050	0.000036	1	08/20/20 14:56	08/21/20 20:05	7439-92-1	
Lithium	0.0065J	mg/L	0.030	0.00081	1	08/20/20 14:56	08/21/20 20:05	7439-93-2	
Molybdenum	0.00092J	mg/L	0.010	0.00069	1	08/20/20 14:56	08/21/20 20:05	7439-98-7	
Selenium	0.0020J	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	
7470 Mercury	Analytical	Method: EPA 7	470A Prep	paration Met	hod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	ЭA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:36	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	ytical Services	- Asheville						
Fluoride	0.51	mg/L	0.10	0.050	1		08/21/20 01:02	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 9

92491455

Sample: GWC-20	Lab ID:	92491455012	Collecte	ed: 08/18/20) 16:36	Received: 08/	19/20 12:45 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte	9					
рН	5.89	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	6A				
Antimony	ND	mg/L	0.0030	0.00028	1	08/20/20 14:56	08/21/20 20:11	7440-36-0	
Arsenic	0.30	mg/L	0.0050	0.00078	1	08/20/20 14:56	08/21/20 20:11	7440-38-2	
Barium	0.38	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	0.0011J	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	0.097	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	
7470 Mercury	Analytical	Method: EPA 7	470A Pre	paration Met	hod: EP	A 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	6A				
Mercury	ND	mg/L	0.00020	0.000078	1	08/21/20 08:05	08/21/20 13:39	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	ytical Services	- Asheville	1					
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 01:43	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab ID:	92491455013	Collecte	ed: 08/18/20	0 10:45	Received: 08/	(19/20 12:45 Ma	atrix: Water	
		Report						
Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Analytical	Method:							
Pace Anal	ytical Services	- Charlotte						
4.41	Std. Units			1		08/20/20 17:18		
Analytical	Method: EPA 6	020B Prej	paration Met	hod: EF	PA 3005A			
Pace Anal	ytical Services	- Peachtre	e Corners, C	BA				
0.00064J	mg/L	0.0030	0.00028	1	08/24/20 15:05	08/25/20 16:20	7440-36-0	
ND	mg/L	0.0050	0.00078	1	08/24/20 15:05	08/25/20 16:20	7440-38-2	
0.12	mg/L	0.010	0.00071	1	08/24/20 15:05	08/25/20 16:20	7440-39-3	
ND	mg/L	0.0030	0.000046	1	08/24/20 15:05	08/25/20 16:20	7440-41-7	
0.00058J	mg/L	0.0025	0.00012	1	08/24/20 15:05	08/25/20 16:20	7440-43-9	
0.0015J	mg/L	0.010	0.00055	1	08/24/20 15:05	08/25/20 16:20	7440-47-3	
0.00040J	mg/L	0.0050	0.00038	1	08/24/20 15:05	08/25/20 16:20	7440-48-4	
0.00035J	mg/L	0.0050	0.000036	1	08/24/20 15:05	08/26/20 16:32	7439-92-1	
ND	mg/L	0.030	0.00081	1	08/24/20 15:05	08/25/20 16:20	7439-93-2	
0.00077J	mg/L	0.010	0.00069	1	08/24/20 15:05	08/25/20 16:20	7439-98-7	
0.0028J	mg/L	0.010	0.0016	1	08/24/20 15:05	08/25/20 16:20	7782-49-2	
0.00021J	mg/L	0.0010	0.00014	1	08/24/20 15:05	08/26/20 16:32	7440-28-0	
Analytical	Method: EPA 7	470A Prep	paration Met	hod: EF	PA 7470A			
Pace Anal	ytical Services	- Peachtre	e Corners, C	6A				
ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:38	7439-97-6	
Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
Pace Analytical Services - Asheville								
ND	mg/L	0.10	0.050	1		08/21/20 02:23	16984-48-8	
	Results Analytical Pace Anal 4.41 Analytical Pace Anal 0.00064J ND 0.12 ND 0.00058J 0.00015J 0.00040J 0.00035J ND 0.00021J Analytical Pace Anal ND Analytical Pace Anal	Analytical Method: Pace Analytical Services 4.41 Std. Units Analytical Method: EPA 6 Pace Analytical Services 0.00064J mg/L ND mg/L 0.12 mg/L 0.00058J mg/L 0.00058J mg/L 0.00055J mg/L 0.00035J mg/L 0.00035J mg/L 0.00028J mg/L 0.00028J mg/L 0.00021J mg/L Analytical Method: EPA 7 Pace Analytical Services ND mg/L Analytical Method: EPA 3 Pace Analytical Services	ResultsUnitsEmport LimitAnalytical Method: Pace Analytical Services - Charlotter4.41Std. UnitsAnalytical Method: EPA 6020BPrep Pace Analytical Services - Peachtree0.00064Jmg/L0.0030 NDNDmg/L0.0030 0.00058J0.12mg/L0.010 NDNDmg/L0.0030 0.00250.00058Jmg/L0.0025 0.0015J0.00040Jmg/L0.0050 0.00050NDmg/L0.0050 0.00035JNDmg/L0.00100.00021Jmg/L0.0010Analytical Method: EPA 7470APrep Pace Analytical Services - Peachtree NDmg/LNDmg/L0.00020Analytical Method: EPA 300.0 Rev 2 Pace Analytical Services - Asheville	Results Units Limit MDL Analytical Method: Pace Analytical Services - Charlotte 4.41 Std. Units Analytical Method: EPA 6020B Preparation Method: Pace Analytical Services - Peachtree Corners, Orners,	Results Units Limit MDL DF Analytical Method: Pace Analytical Services - Charlotte 1 1 Analytical Method: EPA 6020B Preparation Method: EFP ace Analytical Services - Peachtree Corners, GA 1 Analytical Method: EPA 6020B Preparation Method: EFP ace Analytical Services - Peachtree Corners, GA 1 0.00064J mg/L 0.0030 0.00028 1 ND mg/L 0.010 0.00071 1 ND mg/L 0.0030 0.00028 1 0.00058J mg/L 0.010 0.00071 1 ND mg/L 0.0025 0.00012 1 0.00058J mg/L 0.0025 0.00012 1 0.00051J mg/L 0.0050 0.00038 1 0.00077J mg/L 0.010 0.00069 1 0.00021J mg/L 0.0010 0.00014 1 Analytical Method: EPA 7470A Preparation Method: EFP ace Analytical Services - Peachtree Corners, GA ND mg/L 0.00020 0.0	Results Units Limit MDL DF Prepared Analytical Method: Pace Analytical Services - Charlotte 1 1 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA 0.00064J mg/L 0.0030 0.00028 1 08/24/20 15:05 ND mg/L 0.0030 0.00078 1 08/24/20 15:05 ND mg/L 0.0030 0.00071 1 08/24/20 15:05 ND mg/L 0.0030 0.00071 1 08/24/20 15:05 0.00058J mg/L 0.0025 0.00012 1 08/24/20 15:05 0.00058J mg/L 0.0025 0.00012 1 08/24/20 15:05 0.00035J mg/L 0.0050 0.00038 1 08/24/20 15:05 0.00035J mg/L 0.010 0.00036 1 08/24/20 15:05 0.00035J mg/L 0.010 0.00036 1 08/24/20 15:05 0.00021J mg/L	Results Units Report Limit MDL DF Prepared Analyzed Analytical Method: Pace Analytical Services - Charlotte 4.41 Std. Units 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA 08/24/20 15:05 08/25/20 16:20 0.00064J mg/L 0.0030 0.00028 1 08/24/20 15:05 08/25/20 16:20 ND mg/L 0.010 0.00071 1 08/24/20 15:05 08/25/20 16:20 0.12 mg/L 0.010 0.00071 1 08/24/20 15:05 08/25/20 16:20 0.12 mg/L 0.010 0.00071 1 08/24/20 15:05 08/25/20 16:20 0.00058J mg/L 0.0025 0.00012 1 08/24/20 15:05 08/25/20 16:20 0.00040J mg/L 0.0050 0.00038 1 08/24/20 15:05 08/25/20 16:20 0.00035J mg/L 0.010 0.00069 1 08/24/20 15:05 08/25/20 16:20 0.00028J <	Results Units Limit MDL DF Prepared Analyzed CAS No. Analytical Method: Pace Analytical Services - Charlotte 4.41 Std. Units 1 08/20/20 17:18 Analytical Method: EPAce Analytical Services - Charlotte 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA 0.00064J mg/L 0.0030 0.00028 1 08/24/20 15:05 08/25/20 16:20 7440-36-0 ND mg/L 0.0050 0.00078 1 08/24/20 15:05 08/25/20 16:20 7440-38-2 0.12 mg/L 0.0010 0.00071 1 08/24/20 15:05 08/25/20 16:20 7440-43-9 0.0015J mg/L 0.00025 0.00012 08/24/20 15:05 08/25/20 16:20 7440-43-9 0.0015J mg/L 0.00050 0.00038 1 08/24/20 15:05 08/25/20 16:20 7440-43-9 0.00040J mg/L 0.0050 0.00038 1 08/24/20 15:05



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92

92491455

Sample: GWC-22	Lab ID:	92491455014	Collecte	ed: 08/18/20) 14:30	Received: 08/	19/20 12:45 Ma	atrix: Water	
_	- .		Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte	•					
рН	4.52	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prej	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	A				
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 7	470A Prep	paration Met	hod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	A				
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:40	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Analytical Services - Asheville								
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 02:37	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: EB-2-8-18-20	Lab ID:	92491455015	Collecte	ed: 08/18/20	0 16:50	Received: 08/	19/20 12:45 Ma	atrix: Water		
Report										
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A				
	Pace Anal	ytical Services	- Peachtre	e Corners, C	S A					
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		
7470 Mercury	Analytical	Method: EPA 7	470A Prej	paration Met	hod: EF	PA 7470A				
	Pace Anal	ytical Services	- Peachtre	e Corners, G	S A					
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:47	7439-97-6		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993						
-	Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 03:17	16984-48-8		



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: DUP-2	Lab ID:	92491455016	Collecte	ed: 08/18/20	00:00	Received: 08/	19/20 12:45 Ma	atrix: Water		
Report										
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prep	paration Met	hod: EF	PA 3005A				
	Pace Ana	lytical Services	- Peachtre	e Corners, G	S A					
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		
7470 Mercury	Analytical	Method: EPA 7	470A Prep	paration Met	hod: EF	PA 7470A				
	Pace Ana	lytical Services	- Peachtre	e Corners, G	βA					
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 08:50	7439-97-6		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993						
	Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 03:31	16984-48-8		



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: FB-1-8-19-20	Lab ID:	92491455017	Collecte	ed: 08/19/20	0 10:30	Received: 08/	20/20 12:20 Ma	atrix: Water		
	Report									
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: EF	PA 3005A				
	Pace Analytical Services - Peachtree Corners, GA									
Antimony	0.0019J	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		
7470 Mercury	Analytical	Method: EPA 7	470A Pre	paration Met	hod: EF	PA 7470A				
	Pace Anal	ytical Services	- Peachtre	e Corners, C	S A					
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:02	7439-97-6		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0 Rev 2	2.1 1993						
-	Pace Analytical Services - Asheville									
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 23:05	16984-48-8		



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: FB-2-8-19-20	Lab ID:	92491455018	Collect	ed: 08/19/20	00:00	Received: 08/	20/20 12:20 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical	Method: EPA 6	6020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	βA				
Antimony	0.00060J	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	
7470 Mercury	Analytical	Method: EPA	7470A Pre	paration Met	hod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	βA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:04	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
	Pace Anal	ytical Services	- Asheville	•					
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 23:18	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-1	Lab ID:	92491455019	Collecte	ed: 08/19/20	09:35	Received: 08/	20/20 12:20 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte)					
рН	5.73	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prej	paration Met	hod: El	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	A				
Antimony	0.00061J	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 15:54	7440-36-0	
Arsenic	0.0070	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 15:54	7440-38-2	
Barium	0.057	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	0.0028J	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	0.061	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 15:54	7439-98-7	
Selenium	0.0020J	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 7	470A Prep	paration Met	hod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, G	βA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:06	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
	Pace Anal	ytical Services	- Asheville						
Fluoride	ND	mg/L	0.10	0.050	1		08/21/20 23:32	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 9249

92491455

Sample: GWC-9	Lab ID:	92491455020	Collecte	ed: 08/19/20	0 09:20	Received: 08/	20/20 12:20 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	ytical Services	- Charlotte						
рН	4.58	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	S A				
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	0.17	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 16:00	7440-39-3	
Beryllium	0.00022J	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	0.0013J	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 16:00	7440-47-3	
Cobalt	0.0011J	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 16:00	7440-48-4	
Lead	0.000096J	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 16:00	7439-92-1	
Lithium	0.0019J	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 7	470A Prep	paration Met	hod: EF	PA 7470A			
	Pace Anal	ytical Services	- Peachtre	e Corners, C	S A				
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:09	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
	Pace Anal	ytical Services	- Asheville						
Fluoride	0.092J	mg/L	0.10	0.050	1		08/21/20 23:45	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:

92491455

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Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWA-7 Collected: 08/19/20 10:30 Received: 08/20/20 12:20 Lab ID: 92491455022 Matrix: Water Report Units MDL DF Parameters Results Limit Prepared CAS No. Analyzed Qual **Field Data** Analytical Method: Pace Analytical Services - Charlotte pН 5.81 Std. Units 08/20/20 17:18 1 Analytical Method: EPA 6020B Preparation Method: EPA 3005A 6020 MET ICPMS 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 0.0060J mg/L 0.025 0.0039 08/24/20 15:10 08/27/20 16:30 7440-38-2 D3 Arsenic 5 0.050 0.0036 Barium 0.10 mg/L 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 08/24/20 15:10 08/27/20 16:30 7440-47-3 Chromium 0.015J mg/L 0.050 0.0028 5 D3 0.0021J 0.025 0.0019 5 08/24/20 15:10 08/27/20 16:30 7440-48-4 D3 Cobalt mg/L 08/24/20 15:10 08/27/20 16:30 7439-92-1 0.0044J 0.025 0.00018 5 D3 Lead mg/L 08/24/20 15:10 08/27/20 16:30 7439-93-2 D3 Lithium ND mg/L 0.15 0.0040 5 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 Analytical Method: EPA 7470A Preparation Method: EPA 7470A 7470 Mercury 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 Analytical Method: EPA 300.0 Rev 2.1 1993 300.0 IC Anions 28 Days Pace Analytical Services - Asheville Fluoride 0.21 mg/L 0.10 0.050 1 08/22/20 23:51 16984-48-8



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:

92491455

Sample: GWB-4R	Lab ID:	92491455023	Collecte	ed: 08/19/20) 11:45	Received: 08/	20/20 12:20 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Anal	vtical Services	- Charlotte						
рН	5.70	Std. Units			1		08/20/20 17:18		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prep	paration Met	hod: EF	PA 3005A			
	Pace Anal	vtical Services	- Peachtre	e Corners, G	6A				
Antimony	ND	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 16:36	7440-36-0	
Arsenic	0.0033J	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 16:36	7440-38-2	
Barium	0.076	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	0.0022J	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 16:36	7440-47-3	
Cobalt	0.00072J	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 16:36	7440-48-4	
Lead	0.00048J	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 16:36	7439-92-1	
Lithium	0.014J	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 16:36	7439-93-2	
Molybdenum	0.16	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	
7470 Mercury	Analytical	Method: EPA 7	470A Prep	paration Met	nod: EF	PA 7470A			
	Pace Anal	vtical Services	- Peachtre	e Corners, G	βA				
Mercury	ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:20	7439-97-6	
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Anal	vtical Services	- Asheville						
Fluoride	0.17	mg/L	0.10	0.050	1		08/23/20 00:06	16984-48-8	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:

92491455

Lab ID:	92491455024	Collecte	ed: 08/19/20	14:00	Received: 08/	20/20 12:20 M	atrix: Water	
		Report						
Results	Units	Limit	MDL .	DF	Prepared	Analyzed	CAS No.	Qual
Analytical	Method:							
Pace Anal	ytical Services	- Charlotte	•					
5.21	Std. Units			1		08/20/20 17:18		
Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	A 3005A			
Pace Anal	ytical Services	- Peachtre	e Corners, G	iΑ				
ND	mg/L	0.0030	0.00028	1	08/24/20 15:10	08/27/20 16:42	7440-36-0	
0.0036J	mg/L	0.0050	0.00078	1	08/24/20 15:10	08/27/20 16:42	7440-38-2	
0.064	mg/L	0.010	0.00071	1	08/24/20 15:10	08/27/20 16:42	7440-39-3	
0.000050J	mg/L	0.0030	0.000046	1	08/24/20 15:10	08/27/20 16:42	7440-41-7	
ND	mg/L	0.0025	0.00012	1	08/24/20 15:10	08/27/20 16:42	7440-43-9	
0.0037J	mg/L	0.010	0.00055	1	08/24/20 15:10	08/27/20 16:42	7440-47-3	
ND	mg/L	0.0050	0.00038	1	08/24/20 15:10	08/27/20 16:42	7440-48-4	
0.00014J	mg/L	0.0050	0.000036	1	08/24/20 15:10	08/27/20 16:42	7439-92-1	
ND	mg/L	0.030	0.00081	1	08/24/20 15:10	08/27/20 16:42	7439-93-2	
0.0010J	mg/L	0.010	0.00069	1	08/24/20 15:10	08/27/20 16:42	7439-98-7	
ND	mg/L	0.010	0.0016	1	08/24/20 15:10	08/27/20 16:42	7782-49-2	
ND	mg/L	0.0010	0.00014	1	08/24/20 15:10	08/27/20 16:42	7440-28-0	
Analytical	Method: EPA 7	470A Prej	paration Met	nod: EP	A 7470A			
Pace Anal	ytical Services	- Peachtre	e Corners, G	βA				
ND	mg/L	0.00020	0.000078	1	08/24/20 11:30	08/25/20 09:23	7439-97-6	
Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
Pace Anal	ytical Services	- Asheville						
ND	mg/L	0.10	0.050	1		08/23/20 00:21	16984-48-8	
	Results Analytical Pace Anal 5.21 Analytical Pace Anal ND 0.0036J 0.064 0.00050J ND 0.00014J ND 0.00014J ND 0.00010J ND Analytical Pace Anal ND	Analytical Method: Pace Analytical Services 5.21 Std. Units Analytical Method: EPA 6 Pace Analytical Services ND mg/L 0.0036J mg/L 0.0036J mg/L 0.00050J mg/L 0.0007J mg/L 0.0037J mg/L ND mg/L 0.00014J mg/L ND mg/L 0.0010J mg/L ND mg/L Analytical Method: EPA 7 Pace Analytical Services ND mg/L Analytical Method: EPA 3 Pace Analytical Services	ResultsUnitsReport LimitAnalytical Method: Pace Analytical Services - Charlotter5.21Std. UnitsAnalytical Method: EPA 6020BPrep Pace Analytical Services - PeachtreeNDmg/L0.00300.0036Jmg/L0.00300.004mg/L0.0030NDmg/L0.00300.0037Jmg/L0.00250.0037Jmg/L0.0010NDmg/L0.00500.0014Jmg/L0.00500.0010Jmg/L0.0010NDmg/L0.0010NDmg/L0.0010NDmg/L0.0010NDmg/L0.0010Analytical Method: EPA 7470APrep Pace Analytical Services - Peachtre NDNDNDmg/L0.00020Analytical Method: EPA 300.0 Rev 2 Pace Analytical Services - Asheville	ResultsUnitsLimitMDLAnalytical Method: Pace Analytical Services - Charlotte5.21Std. UnitsAnalytical Method: EPA 6020BPreparation Meth Pace Analytical Services - Peachtree Corners, GNDmg/L0.00300.000280.0036Jmg/L0.00500.000780.064mg/L0.0100.000710.00050Jmg/L0.00300.00046NDmg/L0.00250.00120.0037Jmg/L0.00500.000380.00014Jmg/L0.00500.00036NDmg/L0.00500.00036NDmg/L0.00100.00069NDmg/L0.0100.00069NDmg/L0.0100.0014Analytical Method: EPA 7470APreparation Meth Pace Analytical Services - Peachtree Corners, GNDmg/L0.000200.00078Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville	Results Units Limit MDL DF Analytical Method: Pace Analytical Services - Charlotte 1 1 Analytical Method: EPA 6020B Preparation Method: EPA 6020B Preparation Method: EPA 6020B 1 Analytical Method: EPA 6020B Preparation Method: EPA 6020B 1 1 Analytical Method: EPA 6020B Preparation Method: EPA 90000 1 1 Analytical Method: EPA 6020B Preparation Method: EPA 90000 1 1 Analytical Method: EPA 6020B Preparation Method: EPA 90000 1 1 MD mg/L 0.0030 0.00028 1 1 0.0036J mg/L 0.0050 0.00071 1 1 0.00050J mg/L 0.0010 0.00012 1 0.0037J mg/L 0.0010 0.00036 1 ND mg/L 0.0050 0.00036 1 ND mg/L 0.0010 0.00069 1 ND mg/L 0.0010	Results Units Limit MDL DF Prepared Analytical Method: Pace Analytical Services - Charlotte 1 1 5.21 Std. Units 1 1 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA ND mg/L 0.0030 0.00028 1 08/24/20 15:10 0.0036J mg/L 0.010 0.00071 1 08/24/20 15:10 0.00050J mg/L 0.010 0.00071 1 08/24/20 15:10 0.00050J mg/L 0.0010 0.00071 1 08/24/20 15:10 0.0037J mg/L 0.0010 0.00055 1 08/24/20 15:10 ND mg/L 0.0010 0.00038 1 08/24/20 15:10 0.00014J mg/L 0.0010 0.00036 1 08/24/20 15:10 ND mg/L 0.010 0.00036 1 08/24/20 15:10 0.0010J mg/L 0.010 0.00016 1 08/24/2	Results Units Limit MDL DF Prepared Analyzed Analytical Method: Pace Analytical Services - Charlotte 5.21 Std. Units 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA ND mg/L 0.0030 0.00028 1 08/24/20 15:10 08/27/20 16:42 0.0036J mg/L 0.0030 0.00078 1 08/24/20 15:10 08/27/20 16:42 0.0044 mg/L 0.0030 0.00071 1 08/24/20 15:10 08/27/20 16:42 0.0044 mg/L 0.0030 0.00046 1 08/24/20 15:10 08/27/20 16:42 0.0037J mg/L 0.0025 0.00012 1 08/24/20 15:10 08/27/20 16:42 ND mg/L 0.00050 0.00038 1 08/24/20 15:10 08/27/20 16:42 ND mg/L 0.0050 0.00038 1 08/24/20 15:10 08/27/20 16:42 ND mg/L 0.010<	Results Units Limit MDL DF Prepared Analyzed CAS No. Analytical Method: Pace Analytical Services - Charlotte 5.21 Std. Units 1 08/20/20 17:18 Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA ND mg/L 0.0030 0.00028 1 08/24/20 15:10 08/27/20 16:42 7440-36-0 0.0036J mg/L 0.0050 0.00078 1 08/24/20 15:10 08/27/20 16:42 7440-38-2 0.0644 mg/L 0.010 0.00071 1 08/24/20 15:10 08/27/20 16:42 7440-43-9 0.00050J mg/L 0.0025 0.00012 1 08/24/20 15:10 08/27/20 16:42 7440-43-9 0.0037J mg/L 0.00050 1 08/24/20 15:10 08/27/20 16:42 7440-43-9 0.0037J mg/L 0.0010 0.00051 0.8/24/20 15:10 08/27/20 16:42 7440-43-9 0.00014J mg/L 0.0050 0.00038 1



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:	92491455
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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 Samp		5002, 92491455003, 92491455004 5009, 92491455010, 92491455011	4, 92491455005, 92491455006, 92491455007, 1, 92491455012

METHOD BLANK: 2977587

Matrix: Water

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

		Blank	Reporting			
Parameter	Units	Result	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

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
ntimony	mg/L	0.1	0.10	103	80-120	
senic	mg/L	0.1	0.094	94	80-120	
ium	mg/L	0.1	0.096	96	80-120	
yllium	mg/L	0.1	0.097	97	80-120	
Imium	mg/L	0.1	0.10	100	80-120	
omium	mg/L	0.1	0.10	100	80-120	
alt	mg/L	0.1	0.099	99	80-120	
	mg/L	0.1	0.097	97	80-120	
ım	mg/L	0.1	0.10	100	80-120	
/bdenum	mg/L	0.1	0.096	96	80-120	
enium	mg/L	0.1	0.095	95	80-120	
allium	mg/L	0.1	0.096	96	80-120	

MATRIX SPIKE & MATRIX SP	PIKE DUPLI	CATE: 2977	589		2977590							
	g	2491389001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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	

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



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 2977	589		2977590							
Parameter	9 Units	2491389001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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.



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:	92491455
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tratch Method: EPA 3005A Analysis Description: 6020 MET Laboratory: Pace Analytical Services - Peachtree Corners, G ciated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016 HOD BLANK: 2980652 Matrix: Water ciated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016 Blank Reporting Parameter Units Mg/L ND ND 0.0030 0.00078 08/25/20 16:08 m mg/L ND 0.0030 0.00071 08/25/20 16:08 mium mg/L ND 0.000046 0.00025 0.00012 08/25/20 16:08							
Laboratory: Pace Analytical Services - Peachtree Corners, Greated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016 HOD BLANK: 2980652 Matrix: Water ciated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016 Blank Reporting Parameter Units MDL Analyzed Qualifie nony mg/L ND 0.0030 0.00078 08/25/20 16:08 m mg/L ND 0.0030 0.00071 08/25/20 16:08 mic mg/L ND 0.0030 0.00071 08/25/20 16:08 mic mg/L ND 0.0010 0.00071 08/25/20 16:08 mic mg/L ND 0.0030 0.000046 08/25/20 16:08 mium mg/L ND ND 0.00025 0.00012 08/25/20 16:08 0.0025	QC Batch: 561963		Analysis Meth	iod: E	EPA 6020B		
ciated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016 HOD BLANK: 2980652 Matrix: Water ciated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016 Blank Reporting Parameter Units Result Limit MDL Analyzed Qualifie nony mg/L ND 0.0030 0.00028 08/25/20 16:08 Qualifie nony mg/L ND 0.010 0.00071 08/25/20 16:08 Qualifie nony mg/L ND 0.0030 0.00071 08/25/20 16:08 Qualifie nony mg/L ND 0.010 0.00071 08/25/20 16:08 Qualifie nony mg/L ND 0.0030 0.000071 08/25/20 16:08 Qualifie nic mg/L ND 0.0030 0.000071 08/25/20 16:08 Qualifie mium mg/L ND 0.0030 0.000046 08/25/20 16:08 Qualifie	QC Batch Method: EPA 3005A		Analysis Desc	cription: 6	6020 MET		
HOD BLANK: 2980652 Matrix: Water ciated Lab Samples: 92491455013, 92491455014, 92491455015, 92491455016 Blank Reporting Parameter Units Result Limit MDL Analyzed Qualifie nony mg/L ND 0.0030 0.00028 08/25/20 16:08 Qualifie nic mg/L ND 0.010 0.00071 08/25/20 16:08 MI m mg/L ND 0.010 0.00071 08/25/20 16:08 MI hium mg/L ND 0.0030 0.000046 08/25/20 16:08 MI nium mg/L ND 0.0030 0.000046 08/25/20 16:08 MI			Laboratory:	F	Pace Analytical Ser	rvices - Peachtree (Corners, GA
Biank Reporting Parameter Units Result Limit MDL Analyzed Qualifie nony mg/L ND 0.0030 0.00028 08/25/20 16:08 nic mg/L ND 0.010 0.00071 08/25/20 16:08 m mg/L ND 0.0030 0.00071 08/25/20 16:08 nium mg/L ND 0.0030 0.000046 08/25/20 16:08	Associated Lab Samples: 9249145501	3, 92491455014	, 92491455015, 92	491455016			
Blank Reporting Parameter Units Result Limit MDL Analyzed Qualifie nony mg/L ND 0.0030 0.00028 08/25/20 16:08 Qualifie nic mg/L ND 0.0050 0.00078 08/25/20 16:08 Qualifie mic mg/L ND 0.010 0.00071 08/25/20 16:08 Qualifie minum mg/L ND 0.010 0.00071 08/25/20 16:08 Qualifie	METHOD BLANK: 2980652		Matrix:	Water			
Parameter Units Result Limit MDL Analyzed Qualifie nony mg/L ND 0.0030 0.00028 08/25/20 16:08 Qualifie nic mg/L ND 0.0050 0.00078 08/25/20 16:08 Qualifie m mg/L ND 0.010 0.00071 08/25/20 16:08 Qualifie lium mg/L ND 0.010 0.000046 08/25/20 16:08 Qualifie nium mg/L ND 0.0030 0.000046 08/25/20 16:08 Qualifie	Associated Lab Samples: 9249145501	3, 92491455014	, 92491455015, 92	2491455016			
mony mg/L ND 0.0030 0.00028 08/25/20 16:08 nic mg/L ND 0.0050 0.00078 08/25/20 16:08 m mg/L ND 0.010 0.00071 08/25/20 16:08 lium mg/L ND 0.010 0.000046 08/25/20 16:08 nium mg/L ND 0.0030 0.000046 08/25/20 16:08			Blank	Reporting			
mg/L ND 0.0050 0.00078 08/25/20 16:08 m mg/L ND 0.010 0.00071 08/25/20 16:08 lium mg/L ND 0.010 0.000046 08/25/20 16:08 nium mg/L ND 0.0030 0.000046 08/25/20 16:08	Parameter	Units	Result	Limit	MDL	Analyzed	Qualifiers
m mg/L ND 0.010 0.00071 08/25/20 16:08 lium mg/L ND 0.0030 0.000046 08/25/20 16:08 nium mg/L ND 0.0025 0.00012 08/25/20 16:08	Antimony	mg/L	ND	0.0030	0.00028	08/25/20 16:08	
lium mg/L ND 0.0030 0.000046 08/25/20 16:08 nium mg/L ND 0.0025 0.00012 08/25/20 16:08	Arsenic	mg/L	ND	0.0050	0.00078	08/25/20 16:08	
nium mg/L ND 0.0025 0.00012 08/25/20 16:08	Barium	mg/L	ND	0.010	0.00071	08/25/20 16:08	
3	Beryllium	mg/L	ND	0.0030	0.000046	08/25/20 16:08	
mium ma/l ND 0.010 0.00055 08/25/20.16:08		ma/l	ND	0.0025	5 0.00012	08/25/20 16:08	
	Cadmium	mg/∟	ND				
It mg/L ND 0.0050 0.00038 08/25/20 16:08	Cadmium Chromium	mg/L	ND	0.010	0.00055	08/25/20 16:08	
mg/L ND 0.0050 0.000036 08/26/20 16:20		mg/L	ND	0.010			

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

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
ntimony	mg/L	0.1	0.10	100	80-120	
senic	mg/L	0.1	0.096	96	80-120	
um	mg/L	0.1	0.097	97	80-120	
yllium	mg/L	0.1	0.098	98	80-120	
mium	mg/L	0.1	0.099	99	80-120	
omium	mg/L	0.1	0.099	99	80-120	
alt	mg/L	0.1	0.098	98	80-120	
	mg/L	0.1	0.10	100	80-120	
um	mg/L	0.1	0.098	98	80-120	
/bdenum	mg/L	0.1	0.097	97	80-120	
enium	mg/L	0.1	0.098	98	80-120	
llium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX		CATE: 2980	654		2980655							
Parameter	9 Units	2491455013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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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REPORT OF LABORATORY ANALYSIS



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 2980	654		2980655							
Parameter	9 Units	2491455013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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	

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.



GRUMMAN ROAD SCAN EVENT 2020

Project:

QUALITY CONTROL DATA

QC Batch: 5619	964		Analysis I	Method:	EPA 6020B						
QC Batch Method: EPA	3005A		Analysis I	Description:	6020 MET						
			Laborator		Pace Analytic	cal Servi	ices - Peach	ntree Corner	rs. GA		
Associated Lab Samples:	924914550 924914550)17, 92491455018)24			•						
METHOD BLANK: 29806	59		Mat	rix: Water							
Associated Lab Samples:	924914550 924914550)17, 92491455018)24		-		1, 92491	1455022, 92	2491455023	8,		
			Blank	Reporting	•						
Parameter		Units	Result	Limit	MDL		Analyzed	l Qu	alifiers	i	
Antimony		mg/L	N	ND 0.00	0.0	0028	08/27/20 15	:08			
Arsenic		mg/L	Ν	ND 0.00	050 0.0	0078	08/27/20 15	:08			
Barium		mg/L	Ν	ND 0.0	0.0	0071	08/27/20 15	:08			
Beryllium		mg/L	Ν	ND 0.00	0.00	0046	08/27/20 15	:08			
Cadmium		mg/L	Ν	ND 0.00)25 0.0	0012	08/27/20 15	:08			
Chromium		mg/L	Ν	ND 0.0	0.0	0055	08/27/20 15	:08			
Cobalt		mg/L	Ν	ND 0.00)50 0.0	0038	08/27/20 15	:08			
Lead		mg/L	Ν	1D 0.00)50 0.00		08/27/20 15				
Lithium		mg/L	Ν	ND 0.0	030 0.0	0081	08/27/20 15	:08			
Molybdenum		mg/L					08/27/20 15				
Selenium		mg/L					08/27/20 15				
Thallium		mg/L	N	1D 0.00	10 0.0	0014 (08/27/20 15	0.08			
LABORATORY CONTROL	SAMPLE:	2980660									
			Spike	LCS	LCS	%	Rec				
Parameter		Units	Conc.	Result	% Rec	Lir	nits	Qualifiers			
Antimony											
		mg/L	0.1	0.10	101		80-120				
•		mg/L mg/L	0.1 0.1	0.10 0.097	101 97		80-120 80-120				
Arsenic		-									
Arsenic Barium		mg/L	0.1	0.097	97		80-120				
Arsenic Barium Beryllium		mg/L mg/L	0.1 0.1	0.097 0.099	97 99		80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium		mg/L mg/L mg/L	0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099	97 99 99		80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt		mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099 0.099	97 99 99 99 99 99 100		80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead		mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099 0.10 0.10	97 99 99 99 99 100 100		80-120 80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium		mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099 0.10 0.10 0.10	97 99 99 99 99 100 100 100		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium Molybdenum		mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099 0.10 0.10 0.10	97 99 99 99 99 100 100 100 101 99		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium Molybdenum Selenium		mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099 0.10 0.10 0.10	97 99 99 99 100 100 101 99 96		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium Molybdenum Selenium		mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099 0.10 0.10 0.10	97 99 99 99 99 100 100 100 101 99		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium Molybdenum Selenium Thallium	SPIKE DUP	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.10 0.10 0.10 0.099 0.096 0.10	97 99 99 99 100 100 101 99 96 101		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium Molybdenum Selenium Thallium	SPIKE DUPI	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.10 0.10 0.10 0.099 0.096 0.10	97 99 99 99 100 100 101 99 96 101		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120				
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium Molybdenum	SPIKE DUPI	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.10 0.10 0.10 0.099 0.096 0.10 298060 SD	97 99 99 99 100 100 101 99 96 101		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	% Rec		Мах	
Arsenic Barium Beryllium Cadmium Chromium Cobalt Lead Lithium Molybdenum Selenium Thallium	SPIKE DUP	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0.097 0.099 0.099 0.099 0.099 0.10 0.10 0.10	97 99 99 99 100 100 101 99 96 101		80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120 80-120	% Rec Limits	RPD	Max RPD	Qual

0.1 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.

0.1

0.10

0.14

0.10

0.14

101

98

100

97

75-125

75-125

REPORT OF LABORATORY ANALYSIS

Arsenic

Barium

mg/L

mg/L

ND

0.047

0.1

0.1

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0 20



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

MATRIX SPIKE & MATRIX	SPIKE DUPLIC	CATE: 2980	661		2980662							
Parameter	9 Units	2491663009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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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Project:	GRUMM	IAN ROAD	SCAN EVENT 20)20									
Pace Project No.:	9249145	5											
QC Batch:	561377	7		Analy	sis Metho	d:	EPA 7470A						
QC Batch Method:	EPA 74	70A		Analy	sis Descri	ption:	7470 Mercui	у					
				Labo	ratory:		Pace Analyti	cal Servi	ces - Peach	tree Corne	rs, GA		
Associated Lab San			01, 92491455002 08, 92491455009						1455006, 92	491455007	7,		
METHOD BLANK:	2977870)			Matrix: W	/ater							
Associated Lab San			01, 92491455002 08, 92491455009	, 9249145	5010, 924	91455011,		,	1455006, 92	491455007	,		
Paran	notor		Units	Blar Resi		Reporting Limit	MDL		Analyzed	0	ualifiers		
									08/21/20 12:		amers		
Mercury			mg/L		ND	0.0002	20 0.00	0078	56/21/2012.	.52			
LABORATORY CON	NTROL S	AMPLE:	2977871										
Paran	neter		Units	Spike Conc.	LC Re:	S Sult	LCS % Rec		Rec nits	Qualifiers			
Mercury			mg/L	0.002		0.0027	108		80-120				
MATRIX SPIKE & M	IATRIX SI	PIKE DUPL	ICATE: 29778			297787	3						
, 	IATRIX SI	PIKE DUPL		MS	MSD		-						
		PIKE DUPL Units	ICATE: 29778 92491389001 Result		MSD Spike Conc.	297787 MS Result	3 MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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.



Project: Pace Project No.:	GRUMMA 92491455	-	SCAN EVENT 2	020									
QC Batch:	561894			Analy	vsis Metho	d.	EPA 7470A						
QC Batch Method:	EPA 747	70 4			vsis Descri		7470 Mercu	m (
QC Batch Methou.	EFA /4/	TUA			·	puon.		,	ana Daash				
		04044550	12 0040445504		ratory:	04 455040	Pace Analy				,		
Associated Lab Sam			13, 9249145501 20, 9249145502	·	,	,		,	1455018, 92	491455018	9,		
METHOD BLANK:	2980088				Matrix: W	/ater							
Associated Lab Sam			13, 9249145501 20, 9249145502	,	,	,		,	1455018, 92	491455019	9,		
				Blar	nk	Reporting							
Param	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Mercury			mg/L		ND	0.0002	20 0.0	00078	08/25/20 08:	:19			
LABORATORY CON	NTROL SA	MPLE: 2	2980089										
				Spike	LC	S	LCS	%	Rec				
Param	neter		Units	Conc.	Res	sult	% Rec	Lir	nits	Qualifiers			
Mercury			mg/L	0.002	25	0.0026	10	5	80-120		_		
MATRIX SPIKE & M	IATRIX SP	IKE DUPL	ICATE: 29800	090		298009	1						
				MS	MSD								
			92491616002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury		mg/L	ND	0.0025	0.0025	0.0023	0.0026	9	0 102	75-125	12	20	

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Project: Pace Project No.:	GRUMN 924914		SCAN EVENT 20	020									
QC Batch:	56123	6		Anal	ysis Metho	d:	EPA 300.0	Rev 2.1 ²	1993				
QC Batch Method:	EPA 3	00.0 Rev 2. ⁻	1 1993	Anal	ysis Descri	ption:	300.0 IC An	nions					
				Labo	oratory:		Pace Analy	tical Serv	vices - Ashevill	е			
Associated Lab Sam			01, 92491455002 08, 92491455009	,	,	,	924914550	05, 9249	91455006, 924	91455007	,		
METHOD BLANK:	297701	0			Matrix: W	/ater							
Associated Lab Sam			01, 92491455002 08, 92491455009	,	55010, 924	,	924914550	05, 9249	91455006, 924	91455007	,		
Param	neter		Units	Res		Limit	MD	L	Analyzed	Qu	alifiers		
Fluoride		· · · ·	mg/L		ND	0.1		0.050	08/20/20 16:2				
			iiig/E			0.1	0	0.000	00/20/20 10.2				
LABORATORY CON	NTROL S	AMPLE:	2977011										
Param	neter		Units	Spike Conc.	LC Res		LCS % Rec		Rec mits C	ualifiers			
Fluoride			mg/L	2	.5	2.4	9	5	90-110		_		
MATRIX SPIKE & M	IATRIX S		ICATE: 29770)12		2977013	3						
				MS	MSD								
Parameter		Units	92490037006 Result	Spike Conc.	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	10		90-110	12	10	R1
MATRIX SPIKE & M	IATRIX S	PIKE DUPL	ICATE: 29770)14 MS	MSD	2977015	5						
_			92491455002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Fluoride		mg/L	ND	2.5	2.5	2.4	2.3	ę	95 92	90-110	4	10	

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REPORT OF LABORATORY ANALYSIS



Project: Pace Project No.:	GRUMMAN ROAI 92491455	D SCAN EVENT 2	2020									
QC Batch:	561238		Analy	sis Method	1:	EPA 300.0	Rev 2.1 19	93				
QC Batch Method:	EPA 300.0 Rev 2	2.1 1993	Analy	ysis Descrip	otion:	300.0 IC An	nions					
			Labo	ratory:		Pace Analy	tical Servio	es - Ashevi	lle			
Associated Lab San	nples: 92491455	012, 9249145501	3, 9249145	5014, 9249	91455015,	924914550	16					
METHOD BLANK:	2977016			Matrix: Wa	ater							
Associated Lab San	nples: 92491455	012, 9249145501	3, 9249145	5014, 9249	91455015.	924914550	16					
			Blar		Reporting							
Paran	neter	Units	Res		Limit	MD	L	Analyzed	Qu	alifiers		
Fluoride		mg/L		ND	0.1	0	0.050 0	8/21/20 01:	16			
LABORATORY CON	NTROL SAMPLE:	2977017			_							
Davas		1.1.5.1.5	Spike	LC	-	LCS	% F					
Paran	heter	Units	Conc.	Res		% Rec	Lim		Qualifiers	_		
Fluoride		mg/L	2.	.5	2.7	10	9	90-110				
MATRIX SPIKE & M	IATRIX SPIKE DUF	PLICATE: 2977			2977019	9						
		00404455040	MS	MSD		MOD		MOD	0/ D		Maria	
Parameter	Units	92491455012 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.5	2.5	98	99	90-110	1	10	
MATRIX SPIKE & M	IATRIX SPIKE DUF	PLICATE: 2977	020		297702	1						
			MS	MSD								
		92490037060	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Davasta	11.20	Deeult	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	70 Kec				Quai

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REPORT OF LABORATORY ANALYSIS



Project: Pace Project No.:	GRUMMAN ROAI 92491455	D SCAN EVENT 2	2020									
QC Batch:	561506		Analy	sis Methor	1:	EPA 300.0	Rev 2.1 19	93				
QC Batch Method:	EPA 300.0 Rev 2	2.1 1993	Analy	/sis Descrip	otion:	300.0 IC An	ions					
			Labo	ratory:		Pace Analy	tical Servio	es - Ashevil	le			
Associated Lab Sam	nples: 92491455	017, 9249145501	8, 9249145	5019, 9249	91455020,	924914550	21					
METHOD BLANK:	2978310			Matrix: Wa	ater							
Associated Lab Sam	nples: 92491455	017, 9249145501	8, 9249145	5019, 9249	91455020,	924914550	21					
			Blar		Reporting							
Param	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qu	alifiers		
Fluoride		mg/L		ND	0.1	0	0.050 0	8/21/20 17:2	28			
LABORATORY CON	NTROL SAMPLE:	2978311			_							
Derer		l la ita	Spike	LC	-	LCS	% F					
Param	leter	Units	Conc.	Res		% Rec	Lim		Qualifiers	_		
Fluoride		mg/L	2.	.5	2.4	9	8	90-110				
MATRIX SPIKE & M	IATRIX SPIKE DUF	PLICATE: 2978	312 MS	MSD	2978313	3						
		92491393004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Fluoride	mg/L	0.17	2.5	2.5	3.0	3.0	112	112	90-110	0	10	M1
MATRIX SPIKE & M	IATRIX SPIKE DUF	PLICATE: 2978	-		2978315	5						
		00404000005	MS	MSD	MO	MCD	MC	MCD			Main	
Parameter	Units	92491663005 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	
Fluoride	mg/L	0.060J	2.5	2.5	2.7	2.7	105	106	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS



Project:		OAD	SCAN EVENT 2	020									
Pace Project No.:	92491455												
QC Batch:	561764				ysis Methoo		EPA 300.0 I		993				
QC Batch Method:	EPA 300.0 R	ev 2.1	1993		ysis Descrip		300.0 IC An						
				Labo	ratory:	I	Pace Analy	tical Servi	ces - Ashevil	le			
Associated Lab San	nples: 92491	45502	22, 9249145502	3, 9249145	5024								
METHOD BLANK:	2979652				Matrix: Wa	ater							
Associated Lab San	nples: 92491	45502	22, 9249145502	3, 9249145	5024								
				Blar	nk F	Reporting							
Paran	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Fluoride			mg/L		ND	0.1	0	0.050	08/22/20 16:5	53			
LABORATORY COM	NTROL SAMPL	E: 2	2979653										
				Spike	LC	S	LCS	% F	Rec				
Paran	neter		Units	Conc.	Res	ult	% Rec	Lin	nits C	Qualifiers			
Fluoride			mg/L	2	.5	2.7	10	8	90-110				
MATRIX SPIKE & M	IATRIX SPIKE I	DUPL	ICATE: 29796	654		2979655	;						
				MS	MSD								
			92491912001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r L	Inits	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Fluoride	n	ng/L		2.5	2.5	2.7	2.7	106	5 108	90-110	2	10	
MATRIX SPIKE & M	IATRIX SPIKE I	DUPL	ICATE: 29796	656 MS	MSD	2979657	,						
				1/1.5	UCIVI								
			02401602004	-	-	MS	MSD	MC	MGD	% Poc		Max	
Parameter	r L	Inits	92491692001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:	92491455
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Sample: DUP-1 PWS:	Lab ID: 9249		Received:	08/19/20 12:45	Matrix: Water	
PW5.	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.475 ± 0.356 (0.629) C:87% T:NA	pCi/L	09/02/20 07:43	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.401 ± 0.482 (1.01) C:62% T:77%	pCi/L	09/09/20 13:44	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.876 ± 0.838 (1.64)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: EB-1-8-18-20 PWS:	Lab ID: 9249 Site ID:	1455002 Collected: 08/18/20 00:00 Sample Type:	Received:	08/19/20 12:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.181 ± 0.115 (0.185) C:86% T:NA	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.645 ± 0.510 (1.01) C:65% T:81%	pCi/L	09/09/20 13:10	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.826 ± 0.625 (1.20)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:	92491455
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Sample: GWA-8	Lab ID: 924914	55003 Collected: 08/17/20 14:59	Received:	08/19/20 12:45 I	Matrix: Water	
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	ervices - Greensburg			_	
Radium-226	EPA 9315	1.64 ± 0.340 (0.198) C:81% T:NA	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical Se	rvices - Greensburg				
Radium-228	EPA 9320	0.987 ± 0.488 (0.830) C:63% T:79%	pCi/L	09/09/20 12:06	5 15262-20-1	
	Pace Analytical Se	rvices - Greensburg				
Total Radium	Total Radium Calculation	2.63 ± 0.828 (1.03)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Face Floject No 9249145	5					
Sample: GWC-13 PWS:	Lab ID: 9249 Site ID:	1455004 Collected: 08/17/20 16:16 Sample Type:	Received:	08/19/20 12:45 N	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.429 ± 0.150 (0.162) C:83% T:NA	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.986 ± 0.510 (0.897) C:68% T:80%	pCi/L	09/09/20 15:09	15262-20-1	
	Pace Analytica	Services - Greensburg				
Total Radium	Total Radium Calculation	1.42 ± 0.660 (1.06)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

1 acc 1 loject 10 5245145	5					
Sample: GWC-12 PWS:	Lab ID: 9249 Site ID:	4455005 Collected: 08/17/20 17:25 Sample Type:	Received:	08/19/20 12:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.630 ± 0.176 (0.152) C:88% T:NA	pCi/L	09/02/20 18:00	0 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	1.62 ± 0.620 (0.917) C:70% T:70%	pCi/L	09/09/20 15:09	9 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	2.25 ± 0.796 (1.07)	pCi/L	09/10/20 13:24	4 7440-14-4	



Qual

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Pace Project No.: 9249145	5					
Sample: GWC-16 PWS:	Lab ID: 9249 Site ID:	1455006 Collected: 08/18/20 09:32 Sample Type:	Received:	08/19/20 12:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	2.61 ± 0.460 (0.136) C:101% T:NA	pCi/L	09/02/20 18:00	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	1.63 ± 0.625 (0.970) C:69% T:82%	pCi/L	09/09/20 15:09	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	4.24 ± 1.09 (1.11)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-21	Lab ID: 924914	55007 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 Se	ervices - Greensburg				
Radium-226	EPA 9315	1.89 ± 0.372 (0.243) C:96% T:NA	pCi/L	09/02/20 18:00	13982-63-3	
	Pace Analytical Se	ervices - Greensburg				
Radium-228	EPA 9320	1.38 ± 0.583 (0.956) C:69% T:81%	pCi/L	09/09/20 15:09	9 15262-20-1	
	Pace Analytical Se	ervices - Greensburg				
Total Radium	Total Radium Calculation	3.27 ± 0.955 (1.20)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

	.					
Sample: GWC-15 PWS:	Lab ID: 92491 Site ID:	455008 Collected: 08/18/20 12:56 Sample Type:	Received:	08/19/20 12:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.285 ± 0.129 (0.182) C:94% T:NA	pCi/L	09/02/20 18:00	0 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	1.55 ± 0.588 (0.892) C:66% T:87%	pCi/L	09/09/20 15:10	0 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.84 ± 0.717 (1.07)	pCi/L	09/10/20 13:24	4 7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-14 PWS:	Lab ID: 9249 Site ID:	1455009 Collected: 08/18/20 14:24 Sample Type:	Received:	08/19/20 12:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.388 ± 0.152 (0.201) C:84% T:NA	pCi/L	09/02/20 18:01	1 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.343 ± 0.564 (1.23) C:69% T:66%	pCi/L	09/09/20 15:10	0 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.731 ± 0.716 (1.43)	pCi/L	09/10/20 13:24	4 7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:	92491455
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Sample: GWC-2	Lab ID: 92491	455010 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 S	Services - Greensburg				
Radium-226	EPA 9315	0.377 ± 0.150 (0.200) C:86% T:NA	pCi/L	09/02/20 18:01	1 13982-63-3	
	Pace Analytical S	Services - Greensburg				
Radium-228	EPA 9320	0.709 ± 0.486 (0.941) C:71% T:79%	pCi/L	09/09/20 15:10) 15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	1.09 ± 0.636 (1.14)	pCi/L	09/10/20 13:24	4 7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-17	Lab ID: 92491	455011 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 S	ervices - Greensburg			_	
Radium-226	EPA 9315	1.97 ± 0.377 (0.171) C:93% T:NA	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 9320	1.14 ± 0.669 (1.24) C:71% T:60%	pCi/L	09/09/20 15:10) 15262-20-1	
	Pace Analytical S	ervices - Greensburg				
Total Radium	Total Radium Calculation	3.11 ± 1.05 (1.41)	pCi/L	09/10/20 13:24	4 7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-20	Lab ID: 9249	01455012 Collected: 08/18/20 16:36	Received:	08/19/20 12:45 M	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	3.09 ± 0.537 (0.138) C:97% T:NA	pCi/L	09/02/20 18:01	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	3.77 ± 0.976 (0.980) C:69% T:77%	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	6.86 ± 1.51 (1.12)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-11	Lab ID: 9249	1455013 Collected: 08/18/20 10:45	Received:	08/19/20 12:45 N	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	3.22 ± 0.562 (0.179) C:89% T:NA	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	3.54 ± 1.00 (1.17) C:58% T:80%	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	6.76 ± 1.56 (1.35)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWC-22	Lab ID: 9249	1455014 Collected: 08/18/20 14:30	Received:	08/19/20 12:45 M	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	4.29 ± 0.717 (0.153) C:87% T:NA	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	3.36 ± 0.984 (1.23) C:68% T:68%	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	7.65 ± 1.70 (1.38)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: EB-2-8-18-20 PWS:	Lab ID: 9249 Site ID:	01455015 Collected: 08/18/20 16:50 Sample Type:	Received:	08/19/20 12:45 I	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.0983 ± 0.0893 (0.156) C:82% T:NA	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	-0.000828 ± 0.364 (0.850) C:64% T:88%	pCi/L	09/09/20 15:10	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.0983 ± 0.453 (1.01)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:	92491455
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Sample: DUP-2 PWS:	Lab ID: 9249 Site ID:	01455016 Collected: 08/18/20 00:00 Sample Type:	Received:	08/19/20 12:45	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	4.34 ± 0.723 (0.166) C:90% T:NA	pCi/L	09/02/20 17:59	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	5.03 ± 1.20 (0.992) C:68% T:75%	pCi/L	09/09/20 15:10) 15262-20-1	
	Pace Analytica	Services - Greensburg				
Total Radium	Total Radium Calculation	9.37 ± 1.92 (1.16)	pCi/L	09/10/20 13:24	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: FB-1-8-19-20	Lab ID: 9249		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	0.0591 ± 0.0951 (0.185) C:94% T:NA	pCi/L	09/03/20 16:47	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.0611 ± 0.357 (0.819) C:66% T:80%	pCi/L	09/09/20 12:02	2 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.120 ± 0.452 (1.00)	pCi/L	09/10/20 15:11	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: FB-2-8-19-20 PWS:	Lab ID: 9249 Site ID:	1455018 Collected: 08/19/20 09:00 Sample Type:	Received:	08/20/20 12:20	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	-0.0223 ± 0.145 (0.305) C:87% T:NA	pCi/L	09/03/20 16:47	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.820 ± 0.441 (0.761) C:62% T:78%	pCi/L	09/09/20 12:02	2 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.820 ± 0.586 (1.07)	pCi/L	09/10/20 15:11	7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.:	92491455
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	GRUININAN ROAD SCAN EVENT 2020
ct No.:	92491455

Sample: GWC-1 PWS:	Lab ID: 9249 Site ID:	1455019 Collected: 08/19/20 09:35 Sample Type:	Received:	08/20/20 12:20	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	1.08 ± 0.260 (0.235) C:87% T:NA	pCi/L	09/03/20 16:47	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.830 ± 0.488 (0.892) C:63% T:77%	pCi/L	09/09/20 12:02	2 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.91 ± 0.748 (1.13)	pCi/L	09/10/20 15:11	1 7440-14-4	



Project: **GRUMMAN ROAD SCAN EVENT 2020**

Pace Project No.:	92491455
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Sample: GWC-9 PWS:	Lab ID: 9249 Site ID:	1455020 Collected: 08/19/20 09:20 Sample Type:	Received:	08/20/20 12:20	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	1.20 ± 0.267 (0.192) C:90% T:NA	pCi/L	09/03/20 16:47	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	1.14 ± 0.521 (0.849) C:59% T:83%	pCi/L	09/09/20 15:08	8 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	2.34 ± 0.788 (1.04)	pCi/L	09/10/20 15:11	1 7440-14-4	



Qual

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Pace Project No.: 92491455						
Sample: GWB-5R PWS:	Lab ID: 92491 Site ID:	455021 Collected: 08/19/20 11:58 Sample Type:	Received:	08/20/20 12:20 I	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	(
	Pace Analytical S	ervices - Greensburg				
Radium-226	EPA 9315	1.97 ± 0.388 (0.210) C:82% T:NA	pCi/L	09/03/20 16:47	13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 9320	0.521 ± 0.444 (0.882) C:65% T:73%	pCi/L	09/09/20 15:08	3 15262-20-1	
	Pace Analytical S	ervices - Greensburg				
Total Radium	Total Radium Calculation	2.49 ± 0.832 (1.09)	pCi/L	09/10/20 15:11	7440-14-4	



GRUMMAN ROAD SCAN EVENT 2020 Project:

Pace Project No.:	92491455
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GRUIVIIVIAN	RUAD	SCAN	2020

Sample: GWA-7 PWS:	Lab ID: 9249 Site ID:	1455022 Collected: 08/19/20 10:30 Sample Type:	Received:	08/20/20 12:20	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	4.22 ± 1.13 (0.672) C:90% T:NA	pCi/L	09/10/20 15:09	9 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	1.23 ± 0.583 (0.978) C:66% T:89%	pCi/L	09/09/20 15:08	8 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	5.45 ± 1.71 (1.65)	pCi/L	09/11/20 13:22	2 7440-14-4	



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Sample: GWB-4R	Lab ID: 924914	455023 Collected: 08/19/20 11:45	Received:	08/20/20 12:20 I	Matrix: Water	
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	ervices - Greensburg				
Radium-226	EPA 9315	1.89 ± 0.368 (0.222) C:94% T:NA	pCi/L	09/03/20 18:44	13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 9320	1.21 ± 0.552 (0.915) C:67% T:77%	pCi/L	09/09/20 15:08	15262-20-1	
	Pace Analytical S	ervices - Greensburg				
Total Radium	Total Radium Calculation	3.10 ± 0.920 (1.14)	pCi/L	09/10/20 15:11	7440-14-4	



Qual

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: **GRUMMAN ROAD SCAN EVENT 2020**

Pace Project No.: 92491455

Pace Project No.: 92491455					
Sample: GWB-6R PWS:	Lab ID: 924914550 Site ID:	24 Collected: 08/19/20 14:00 Sample Type:	Received:	08/20/20 12:20 N	fatrix: Water
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
	Pace Analytical Servic	es - Greensburg			
Radium-226		.78 ± 0.640 (0.184) ∷88% T:NA	pCi/L	09/03/20 18:45	13982-63-3
	Pace Analytical Servic	es - Greensburg			

Radium-228	EPA 9320	0.754 ± 0.462 (0.836) C:61% T:79%	pCi/L	09/09/20 15:08 15262-20-1
	Pace Analytical	Services - Greensburg		
Total Radium	Total Radium Calculation	4.53 ± 1.10 (1.02)	pCi/L	09/10/20 15:11 7440-14-4



Project: Pace Project No.:	GRUMMAN ROAD SCAN E 92491455	EVENT 2020					
QC Batch:	411435	Analysis Method:	EPA 9320				
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 2	28			
		Laboratory:	Pace Analytical	Services - Greensbu	rg		
Associated Lab Sa	mples: 92491455001, 9249	91455002, 92491455003					
METHOD BLANK:	1990342	Matrix: Water					
Associated Lab Sa	Associated Lab Samples: 92491455001, 92491455002, 92491455003						
Para	meter	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			

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.



Project:	GRUMM	AN ROAD SCAN EVEN	Г 2020			
Pace Project No .:	9249145	5				
QC Batch:	411439		Analysis Method:	EPA 9320		
QC Batch Method:	EPA 932	20	Analysis Description:	9320 Radium 22	28	
			Laboratory:	Pace Analytical	Services - Greensbu	rg
Associated Lab Sa		2491455017, 92491455 2491455024	018, 92491455019, 924914550	20, 92491455021, 9	92491455022, 92491	455023,
METHOD BLANK:	1990347		Matrix: Water			
Associated Lab Sat	•	2491455017, 92491455 2491455024	018, 92491455019, 924914550	20, 92491455021, §	92491455022, 92491	455023,
Para	meter	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	

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.



Project:	GRUMMAN ROA	D SCAN EVENT 2020						
Pace Project No.:	92491455							
QC Batch:	411373		Analysis Method:	EPA 9315				
QC Batch Method:	EPA 9315		Analysis Description:	9315 Total Radi	um			
			Laboratory:	Pace Analytical	Pace Analytical Services - Greensburg			
Associated Lab Sa	mples: 9249145	5001						
METHOD BLANK:	1989993		Matrix: Water					
Associated Lab Sa	mples: 9249145	5001						
Para	meter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers		
Radium-226		0.0671 ± 0.195 (0.4)	31) C:88% T:NA	pCi/L	09/02/20 07:31			

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.



Project:	GRUM	MAN ROAD SCAN	EVENT 2020				
Pace Project No.:	924914	155					
QC Batch:	41143	36	Analys	is Method:	EPA 9320		
QC Batch Method:	EPA 9	9320	Analys	is Description:	9320 Radium 2	228	
			Labora	atory:	Pace Analytica	I Services - Greensbu	rg
Associated Lab Sar	nples:	,	191455005, 92491455 191455012, 92491455	,	, ,	92491455009, 92491 92491455016	455010,
METHOD BLANK:	199034	13	Ν	Aatrix: Water			
Associated Lab Samples: 92491455004, 92491455005, 92491455006, 92491455007, 92491455008, 92491455009, 92491455010, 92491455011, 92491455012, 92491455013, 92491455014, 92491455015, 92491455016						455010,	
Paran	neter		Act ± Unc (MDC) C	arr Trac	Units	Analyzed	Qualifiers
Radium-228		0.245 ±	0.335 (0.716) C:719	6 T:90%	pCi/L	09/09/20 15:09	

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.



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 Radi	um	
			Laboratory:	Pace Analytical	Services - Greensbu	ırg
Associated Lab Sar	mples: 924	91455017, 924914550	18, 92491455019, 924914550	20, 92491455021, 9	92491455022, 92491	1455023,
	. 924	91455024				
METHOD BLANK:	924 1989998	91455024	Matrix: Water			
METHOD BLANK: Associated Lab Sar	1989998 19les: 924		Matrix: Water 18, 92491455019, 924914550	20, 92491455021, 9	92491455022, 92491	1455023,
Associated Lab Sar	1989998 19les: 924	91455017, 924914550 91455024		20, 92491455021, s Units	92491455022, 92491 Analyzed	1455023, Qualifiers

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.



Project:	GRUM	IMAN ROAD SCAN EVE	NT 2020			
Pace Project No.:	924914	455				
QC Batch:	4113	74	Analysis Method:	EPA 9315		
QC Batch Method:	EPA	9315	Analysis Description:	9315 Total Radiu	um	
Associated Lab Sar	nples:	,	Laboratory: 55003, 92491455004, 92491455 55010, 92491455011, 92491455	5005, 92491455006, 9	,	1455008,
METHOD BLANK:	198999	96	Matrix: Water			
Associated Lab Sar	nples:	,	55003, 92491455004, 92491455 55010, 92491455011, 92491455	, ,	,	,
Parameter Act ±		ct ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers	
Radium-226		0.241 ± 0.16	65 (0.285) C:87% T:NA	pCi/L	09/02/20 18:01	

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.



QUALIFIERS

Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

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.



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

_ab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytic: Batch
2491455003	GWA-8				
2491455004	GWC-13				
2491455005	GWC-12				
2491455006	GWC-16				
2491455007	GWC-21				
2491455008	GWC-15				
2491455009	GWC-14				
2491455010	GWC-2				
2491455011	GWC-17				
2491455012	GWC-20				
2491455013	GWC-11				
2491455014	GWC-22				
2491455019	GWC-1				
2491455020	GWC-9				
2491455020	GWB-5R				
2491455022	GWA-7				
2491455023	GWB-4R				
2491455025	GWB-4R GWB-6R				
2491455001	DUP-1	EPA 3005A	561324	EPA 6020B	561396
2491455002	EB-1-8-18-20	EPA 3005A	561324	EPA 6020B	561396
2491455003	GWA-8	EPA 3005A	561324	EPA 6020B	561396
2491455004	GWC-13	EPA 3005A	561324	EPA 6020B	561396
2491455005	GWC-12	EPA 3005A	561324	EPA 6020B	561396
2491455006	GWC-16	EPA 3005A	561324	EPA 6020B	561396
2491455007	GWC-21	EPA 3005A	561324	EPA 6020B	561396
2491455008	GWC-15	EPA 3005A	561324	EPA 6020B	561396
2491455009	GWC-14	EPA 3005A	561324	EPA 6020B	561396
2491455010	GWC-2	EPA 3005A	561324	EPA 6020B	561396
2491455011	GWC-17	EPA 3005A	561324	EPA 6020B	561396
2491455012	GWC-20	EPA 3005A	561324	EPA 6020B	561396
2491455013	GWC-11	EPA 3005A	561963	EPA 6020B	562039
2491455014	GWC-22	EPA 3005A	561963	EPA 6020B	562039
2491455015	EB-2-8-18-20	EPA 3005A	561963	EPA 6020B	562039
2491455015	DUP-2	EPA 3005A EPA 3005A	561963	EPA 6020B	562039
2491455017	FB-1-8-19-20	EPA 3005A	561964	EPA 6020B	562041
2491455018	FB-2-8-19-20	EPA 3005A	561964	EPA 6020B	562041
2491455019	GWC-1	EPA 3005A	561964	EPA 6020B	562041
2491455020	GWC-9	EPA 3005A	561964	EPA 6020B	562041
2491455021	GWB-5R	EPA 3005A	561964	EPA 6020B	562041
2491455022	GWA-7	EPA 3005A	561964	EPA 6020B	562041
2491455023	GWB-4R	EPA 3005A	561964	EPA 6020B	562041
2491455024	GWB-6R	EPA 3005A	561964	EPA 6020B	562041
2491455001	DUP-1	EPA 7470A	561377	EPA 7470A	561555
2491455001	EB-1-8-18-20	EPA 7470A EPA 7470A	561377	EPA 7470A EPA 7470A	561555
2491455002					
2491455003 2491455004	GWA-8 GWC-13	EPA 7470A EPA 7470A	561377 561377	EPA 7470A EPA 7470A	561555 561555
	(=VVL.=1.5	EPA (4/UA	5013//	FPA (4/UA	561555



Project: GRUMMAN ROAD SCAN EVENT 2020

Pace Project No.: 92491455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica 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
2491455011	GWC-17	EPA 7470A	561377	EPA 7470A	561555
2491455012	GWC-20	EPA 7470A	561377	EPA 7470A	561555
2491455013	GWC-11	EPA 7470A	561894	EPA 7470A	562048
2491455014	GWC-22	EPA 7470A	561894	EPA 7470A	562048
2491455015	EB-2-8-18-20	EPA 7470A	561894	EPA 7470A	562048
2491455016	DUP-2	EPA 7470A	561894	EPA 7470A	562048
2491455017	FB-1-8-19-20	EPA 7470A	561894	EPA 7470A	562048
2491455018	FB-2-8-19-20	EPA 7470A	561894	EPA 7470A	562048
2491455019	GWC-1	EPA 7470A	561894	EPA 7470A	562048
2491455020	GWC-9	EPA 7470A	561894	EPA 7470A	562048
2491455021	GWB-5R	EPA 7470A	561894	EPA 7470A	562048
2491455022	GWA-7	EPA 7470A	561894	EPA 7470A	562048
2491455023	GWB-4R	EPA 7470A	561894	EPA 7470A	562048
2491455024	GWB-6R	EPA 7470A	561894	EPA 7470A	562048
2491455001	DUP-1	EPA 9315	411373		
2491455002	EB-1-8-18-20	EPA 9315	411374		
2491455003	GWA-8	EPA 9315	411374		
2491455004	GWC-13	EPA 9315	411374		
2491455005	GWC-12	EPA 9315	411374		
2491455006	GWC-16	EPA 9315	411374		
2491455007	GWC-21	EPA 9315	411374		
2491455008	GWC-15	EPA 9315	411374		
2491455009	GWC-14	EPA 9315	411374		
2491455010	GWC-2	EPA 9315	411374		
2491455011	GWC-17	EPA 9315	411374		
2491455012	GWC-20	EPA 9315	411374		
2491455013	GWC-11	EPA 9315	411374		
2491455014	GWC-22	EPA 9315	411374		
2491455015	EB-2-8-18-20	EPA 9315	411374		
2491455016	DUP-2	EPA 9315	411374		
2491455017	FB-1-8-19-20	EPA 9315	411375		
2491455018	FB-2-8-19-20	EPA 9315	411375		
2491455019	GWC-1	EPA 9315	411375		
2491455020	GWC-9	EPA 9315	411375		
2491455021	GWB-5R	EPA 9315	411375		
2491455022	GWA-7	EPA 9315	411375		
2491455023	GWB-4R	EPA 9315	411375		
2491455024	GWB-6R	EPA 9315	411375		
2491455001	DUP-1	EPA 9320	411435		
2491455002	EB-1-8-18-20	EPA 9320	411435		
2491455003	GWA-8	EPA 9320	411435		



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		



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		

			•		1
Same Sa	imple Conditio	n Upon Recei	MO	#:924	91455
Face Analytical Client Name	· CATO	wer			
р *	- Caller AC				
	ent Commercial	Pace Other	92491 T		819 TO T THE MANNESS IN THE TO T THE T
Tracking #:		· · ·		Proj. Due C Proj. Name	
Custody Seal on Cooler/Box Present:	no Sea	Is intact: dres	00		
Packing Material: Bubble Wrap Bubble	e Bags 📋 None	FOther ZIP	100		
Thermometer Used	Type of Ice: 🐠	Blue None	Sar	ples on ice, cooling	
Cooler Temperature <u>2013.711.3</u> Temp should be above freezing to 640	Biological Tissu	e is Frozen: Yes No Comments:		Date and Initials of contents:	person examining
Chain of Custody Present:	ETTES DNO DN/	A 1.			
Chain of Custody Filled Out:		A 2.			
Chain of Custody Relinquished:		A 3.			
Sampler Name & Signature on COC:	Thes Ino In/	A 4.			
Samples Arrived within Hold Time:		4 5.			
Short Hold Time Analysis (<72hr):	TYes DING DN/				
Rush Turn Around Time Requested:		· · · · · · · · · · · · · · · · · · ·			
Sufficient Volume:	ETTes DNO DN/A		ļ		
Correct Containers Used:		1			
-Pace Containers Used:			<u> </u>	······	· · · · ·
Containers Intact:			<u> </u>		
Filtered volume received for Dissolved tests	Yes No CHI			M . 1	
Sample Labels match COC:		12 DUPI, EB-1 Container also wi	w/o	laber.D	PHONDRES.
-Includes date/time/ID/Analysis Matrix: All containers needing preservation have been checked.			<u>1'a</u>	wel.	• •
		11 11			
All containers needing preservation are found to be in compliance with EPA recommendation.	ATes ONO ON/A			n Antonio a compositore da	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	□Yes □No	initial when completed	Lot	f of added ervalive	
Samples checked for dechlorination:	UYes ONO GHA		Thies		· · · · · · · · · · · · · · · · · · ·
Headspace in VOA Vials (>6mm):					
Trip Blank Present:					
Trip Blank Custody Seals Present				:	
Pace Trip Blank Lot # (if purchased):	_				
Client Notification/ Resolution:					
Person Contacted:	Date/	Tíme:	Field	Data Required?	Y / N
Comments/ Resolution:	Dato				
	ALCOLUMN FOR STATES OF BROAD STATES AND			······	
				:	
Project Manager Review:	na an a	· · · · · · · · · · · · · · · · · · ·	<u> </u>	Date:	Stational Contraction of the Station
Note: Whenever there is a discrepancy affecting North C	arolina compliance sar	nples, a copy of this form	will be a	ent to the North Car	ina DEHNR

Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Section A Required Client Information:	Section B Required Project Information:		Section C Invoice information:		Page	9
Company: GA Power	Report To: SCS Contacts		Attention: Southern Co.			-
Address: Atlanta, GA	Copy To: ACC Contacts		Company Name:	REGULATORY AGENCY	AGENCY	
			Address	F NPDES F	D WATER ^{[~~}	DRINKING WATER
e SCS Contacts	Ĩż		Perce Oucle Rolenance:	L N2L L	RCRA R	OTHER COM
	Project Name: Grumman Road -	d - Scan Event 2020	Pace Project Kevin Herring Manager	Site Location		
Requested Due DateTFAT; 19 Day	Project Number:		Pace Profile #: 2926-1	STATE	AN	
				Requested Analysis Filtered	od (Y/N) (IIII) be	
Section D Valid Matr Required Cient Information MATROX	s to Jeff)	COLLECTED	Preservatives ≥			
WATER WATER	id code	COMPOSITE			ı)	
(AZ, 0.91,-) OTHER	요 옷 옷 위 위 가 DE (see vali		INERS		Corine (Y/N	
	a MATRIX CO SAMPLE TYP	SAMPLE TEM	# OF CONTA Unpreserve H ₂ SO ₄ HNO ₃ HCI NaOH Na ₂ S ₂ O ₃ Methanol Other Analysis	luoride 300.0 pp. IV Metals 6 AD 226/228	Residual Ch	Schuhz
070-1	\$	8/17/20	4 7 7	Ż	1	
0F 18-70	EB-1-8-18-20 W 6+		4 V V			pH= NA
GWA-5	1	<u>- ginthe 1454</u>	4///			C2 ، ۴ =Hq
						<u>م</u> ا
	_					5.5.5 He
Gwc 2	W C	3/10/10 10.54				h
<u>, </u>						pH= 6,39
11 - Jru[]		- <u>3/14/37/1474</u>				Į5j
	W G					0-6- PH=
- 10 Chil- 70		OGhl Clark				
	RECINQUISHED BY	AFFLIATION DATE		Y AFFILIATION DATE	SAMPLE	E CONDITIONS
Please noie when the last sample for the event has been taken	aken Yijin	8-18-20	1 OSIT She OK	elles 8-AD	0315	
	21			Tal Pale 8/19/24	1215 2.0 4	X K
			1.1			
		SAMPLER NAME AND SIGNATURE			on	N)
		PRINT Name of SAMPLER:	C. FUDIER, Z. DAVIS,	J. BEAZSEARD	np in * eived e (Y/N	dy Se ler (Y) bles in (Y/N)
		SIGNATURE of SAMPLER:		DATE Signed	Rec	200

			 			olease ne		12	11	10	8	8	┡	6	ţh	4	a	N	4	ITEM #					2hone -		Address:	Company:	Section A Required C	1
						sasa note when the last sample for the event has been taken.	ADDITIONAL COMMENTS									Dro-2	EB-2-2-18-20	6wc-22	GWC-1	Nique	Required Client Information M		reducing the point of the red				Atlanta, GA	GA Power	i i	Pace Analytical
		-				been taken.														WATER WATER WW PRODUCT P SPULSCUD SL OK WRPE AR OTHER OT TISSUE TS	NIRIX CODE	lid Matrix Codes	Jeanum moland				Copy To:	Report To: SCS Contacts	Section B Required Project Information:	
				ſ	\mathbb{N}	12	A	5				1								MATRIX CODE (see valid code SAMPLE TYPE (G=GRAB C=C		-		1			ACC Contacts	SCS C	noject inf	
		2				n	usly of	-				 									*			unraan			ontacts	ontacts	ormation	
		SAN				W	REWNOUSHED BY I AFFILIATION							¥			~			2 A	12			Gruinnian Road - Scan Event 2020						
90	PRIN	IPLER N			and the second se	Ω	JATION	\square						•			8	51	1.1		COLLECTED			Scan r						į
	FRINT Name of SAMPLER	SAMPLER NAME AND SIGNATURE														1		moment		DATE COMPOSE	E			vent 202						0
OI SAMPLE	SAMPL) SIGNA				2-14-20	DATE			: 	1					1	1650	1930	549					6						nin onentronyosady is a technik providincia († vil jelekali
C		TURE															\mathbf{N}		V	SAMPLE TEMP AT COLLECTION	1		_	33	2.2	×	-0	->	35 UN	0 9 5
Y	N)	X.				5,80	TIME		maain		: : :	 		: 	<u></u>	म र	Ľ	r C	£ ح	# OF CONTAINERS	T:	_	ce Prof	Manager:	Pace Quote Reference:	Address;	Company Name:	Attention: Sou	Section C	Ģ
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(MIM/DEVYY):	DATE Signed			~	9	2	Ϊ.		_		2					2	\leq	\leq		luoride 300.0		Requested Analysis Filtered (Y/N)								
NY.					N	[1]	NOI						Ц	_		5	Ņ	Ż	-innal-	App: IV Metels 6020/7470 AD 226/228										- -
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1/82					S.	0																alya		Site Location	ç.	z	EGU			
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11	femp i	n*C		Ŕ	\mathbf{v}	. 8 .											T			Residual Chlorine (Y/N)	112	<u>Ult</u>				GROUND WATER				
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	ice (Y	/N)			4		SAM							: 1	5.					Pace		UW	(III)	III.		· 3				
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	stody : looler (Sealed (Y/N)			4		SAMPLE CONDITIONS		-	đ			Ļ			,	- I.	. 	. 1	A ZURAIUSS		lli lli	<u>()</u>	<u>III</u>	OTHER	DRINKING WATER				
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101

Sar	nple Condition	Upon Recei	WO#:92491455
Face Analytical Client Name	GAB	wer	PM: KLH1 Due Date: 09/02/20 CLIENT: GA-GA Power
Courier: Fed Ex UPS USPS Clier Tracking #: Custody Seal on Cooler/Box Present: yes	nt Commercial	Pace Other	Proj Due Date: Proj Name:
•	Bags None [
Packing Material: Bubble Wrap Bubble Thermometer Used	Type of Ice: Wet		Samples on ice, cooling process has begun
Cooler Temperature	Biological Tissue I		Data and Isitials of dors on examining
Chain of Custody Present:	ETTES DNO DNA	1.	
Chain of Custody Filled Out:	BYES DNO DN/A	2.	
Chain of Custody Relinquished:		3.	
Sampler Name & Signature on COC:		4.	
Samples Arrived within Hold Time:		5.	
Short Hold Time Analysis (<72hr):	□Yes ISM6 □N/A	6.	
Rush Turn Around Time Requested:		7.	
Sufficient Volume:	ETYes ONO ON/A	8.	
Correct Containers Used:		9.	
-Pace Containers Used:			
Containers Intact:		10.	
Filtered volume received for Dissolved tests		11.	
Sample Labels match COC:	Elyes DUNO DINA	12.0h/ 4 CB	Mainars for GWB-GR Areson
-Includes date/time/ID/Analysis Matrix:	\sim	atte av 10	ted on CDC.
All containers needing preservation have been checked.	BYES DNO DNIA		
All containers needing preservation are found to be in compliance with EPA recommendation.			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	maria maria	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:		14.	· · · · · · · · · · · · · · · · · · ·
Headspace in VOA Vials (>6mm):		15.	
Trip Blank Present:	□Yes □No □NIA	16.	
Trip Blank Custody Seals Present			a de la companya de l
Pace Trip Blank Lot # (if purchased):	_		
Client Notification/ Resolution:	Date/I	Fime:	Field Data Required? Y / N
Person Contacted:			
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)

	Sam		Te		08/19/20		DATE Signed			Ň		A	PLER:	SIGNATURE of SAMPLER:	SIGNATU									
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		Residual Chlorine (Y/N)				AD 226/228	luoride 300,0 pp. IV Metets 6020/7470	Analysis Test	Na ₂ S ₂ O ₃ Methanol Dther	HCI NaOH Na S O	H2SO4 HNO3	# OF CONTAINERS	SAMPLE TEMP AT COLLECTIO		DATE COMPOSITE	DATE		MATRIX CODE (see valid coo SAMPLE TYPE (G=GRAB C=	A 4 2 9 L 5 2	ANALLEY WATER WATER WATER WATER WATER WATER AND SOLLOUD SL COLLOUD SL COLLOUD SL COLLOUD SL COLLOUT AND		SAMPLE ID (A-Z, 0-9 /) Sample IDs MUST BE UNIQUE	Sample ID	ITEM #
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Quality Control Sample Performance Assessment

MS/MSD 2

Yellow.	MS/MSD 1			
<u>Analyst Must Manually Enter All Fields Highlighted in Yellow.</u>	Sample Matrix Spike Control Assessment Sample Collection Date: Sample I.D. Sample I.D.	Sample MSD I.D. Spike Concentration (pCi/mL): Spike Volume Used in MSC (mL): Spike Volume Used in MSC (mL): MS Target Conc.(pCi/L, g, F): MSD Aliquot (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 Counting Uncertainty (pCiU, g, F): Sample Matrix Spike Result Matrix Spike Duplicate Result Counting Uncertainty (pCiU, g, F): MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Status vs Numerical Indicator: MSD Status vs Rumerical Indicator: MSD Status vs Recovery: MSD Upper %, Recovery Imits: MS/MSD Upper %, Recovery Limits:	Matrix Spike/Matrix Spike Duplicate Sample Assessment Sample ID Sample Matrix Spike Result Matrix Spike Result Counting Uncertainty (pc/ir, g, F) Sample Matrix Spike Duplicate Result Matrix Spike Duplicate Result Counting Uncertainty (pc/ir, g, F) Duplicate Result Counting Uncertainty (pc/ir, g, F) Matrix Spike Duplicate Result Status vs NMSD Duplicate RPD: MS/ MSD Duplicate Status vs RPD: MS/ MSD Duplicate Status vs RPD: % RPD Limit
		F	LCSD55839	Enter Duplicate sample IDs if other than LCS/LCSD in LCS/LCSD in the space below. <u>92491393012</u> DUP <u>92491393012DUP</u>
Ra-226	LAL 9/3/2020 55839 DW	1989998 0.135 0.113 0.203 2.34 N/A Pass	LCSD (Y or N)? LCS56839 94/2020 19.033 19.033 24.045 0.10 0.10 0.502 4.785 0.502 4.785 0.782 1.72 86.64% NA Pass 125% 75%	92491393012 924913930120UP 0.684 0.377 0.377 0.377 0.377 0.377 0.377 0.377 57.84% N/A Fall***
	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Concentration: MB Counting Uncertainty: MB Counting Uncertainty: MB MDC: MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs MDC:	Laboratory Control Sample Assessment Count Date: Spike I.D.: Decay Corrected Spike Concentration (p.C/mL): Volume Used (mL): Aliquot Volume (L, g, F): Uncertainty (p.C/L, g, F): LCS/LCSD Counting Uncertainty (p.C/L, g, F): Numerical Performance Indicator: Status vs Recovery: Clapter % Recovery: Clapter % Recovery: Upper % Recovery: Lower % Recovery Limits:	Duplicate Sample Assessment Sample ID. Sample ID. Sample ID. Sample Result Counting Uncertainty (DCM, g, F) Sample Result (DCM, g, F) Sample Duplicate Result Counting Uncertainty (DCM, g, F) Sample Duplicate Result (DCM, g, F) Are sample and/or duplicate Result (DCM, g, F) Duplicate Result counting Uncertainty (DCM, g, F) Are sample and/or duplicate Results below RL? Duplicate RPD: Duplicate Numerical Performance Indicator Duplicate RPD: Puplicate Status vs Numerical Indicator Duplicator Buplicate Status vs Numerical Indicator Duplicator Duplicate Status vs Numerical Indicator Duplicator

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

Comments:

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Quality Control Sample Performance Assessment

<u>Analyst Must Manually Enter All Fields Highlighted in V</u>	Sample Matrix Spike Control Assessment Sample Collection Date: Sample I.D. Sample MS I.D.	Sample MSD I.D. Spike I.D.: Spike Concentration (pCl/mL): Spike Volume Used in MS (mL): Spike Volume Used in MS (mL): MS Aliquot (L, g. F): MS Target Conc. (pCl/L, g. F): MSD Tarreet Conc. (pCl/L, g. F):	MS Spike Uncertainty (calculated)	mod opike origenaring (calculated); Sample Result	Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result. Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Percent Recovery: MSD Percent Recovery: MSD Percent Recovery: MSD Upper % Recovery: MSSMSD Upper % Recovery: MSSMSD Upper % Recovery:	Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D. Sample MSD I.D. Sample MSD I.D. Sample MSD I.D. Sample MSD I.D. Sample MSD I.D. Sample Matrix Spike Dupitate Result Matrix Spike Duplicate Result Counting Uncertainty (pcl/t., g. F): Duplicate Result Counting Uncertainty (pcl/t., g. F): Duplicate Result Counting Uncertainty (pcl/t., g. F): Duplicate Networkers) MSI MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numentcal Indicator: MS/ MSD Duplicate Status vs Numentcal Indicator:
			2	LCSD55839			Enter Duplicate sample IDs if other than LCS/LCSD in the space below. 92491663008 92491663008
Ra-226	LAL 9/3/2020 55839 DW	1989998 0.135 0.113 0.113 2.34 N/A Pass	LCSD (Y or N)?	LCS55839	9/4/220 19-033 24.045 24.045 0.104 0.502 0.557 4.098 0.057 0.058 0.058 0.057 1.72 85.64% B5.64% B5.64% 1.72 1.25% 75%		924916530080 924916530080UP 0.467 0.143 0.143 0.359 0.359 0.359 0.256 See Below ## 26.34% Fall**
Pace Analytical T	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Sample ID MB concentration: M/B Counting Uncertainy: MB Nurmerical Performance Indicator: MB Status vs Nurmerical Indicator: MB Status vs MDC: MB Status vs MDC:	Laboratory Control Sample Assessment		Court Date: Spike I.D.: Decay Corrected Spike Concentration (pcl/mL): Aliquot Volume Used (mL): Aliquot Volume (L, g, F): Uncertainty (Calculated): Result (pcl/L, g, F): LCS/LCSD Counting Uncertainty (col/L, g, F): Numerical Performance Indicator Status vs Numerical Indicator Status vs Recovery. Upper % Recovery Umits: Lower % Recovery Limits:	Duplicate Sample Assessment	Sample I.D. Duplicate Sample I.D. Sample Result Counting Uncertainty (pCi/L, g, F) Sample Duplicate Result (pCi/L, g, F) Sample Duplicate Result Counting Uncertainty (pCi/L, g, F) Are sample and/or duplicate results below RL? Duplicate Nurmerical Performance Indicator Duplicate Status vs Nurmerical Indicator Duplicate Status vs RPDL

I in Yellow.

MS/MSD 2

MS/MSD 1

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

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Quality Control Sample Performance Assessment

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Yellow.	MS/MSD 1								
<u>Analyst Must Manually Enter All Fields Highlighted in Yellow.</u>	Sample Matrix Spike Control Assessment Sample Collection Date: Sample MS LD. Sample MS LD.	Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCli/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MSD Aliquot (L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCl/L, g, F):	MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Samua Decenter	Sample Result Counting Uncertainty (pCII, 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: MSMSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:	Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D. Sample MS I.D. Sample MS I.D. Sample MS I.D. Sample Matrix Spike Result Matrix Spike Duplicate Result Matrix Spike Duplicate Result Duplicate Result Counting Uncertainty (pCM, g, F): Duplicate Result Counting Uncertainty (pCM, g, F): Duplicate Result Counting Uncertainty (pCM, g, F): Duplicate Result Counting Uncertainty (pCM, g, F): (Based on the Percent Recoveries) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD: MS/ MSD Duplicate Status vs RPD: MS/ MSD Duplicate Status vs RPD:
			N I CSD55837	FCSD39931					Enter Duplicate sample IDs if other than LCS/LCSD in the space below. 924909630044 92490963004DUP
Ra-226	LAL 9/1/2020 55837 DW	1989993 0.067 0.195 0.481 0.481 N/A Pass	LCSD (Y or N)?	9/2/2020 19-033	24.045 0.10 0.508 4.738	0.057 5.286 0.868 1.24	111.58% N/A Pass 125% 75%		92490963004 92490963004DUP 0.116 0.301 0.301 0.277 See Below ## 1.591 117.70% NMA Fail** 25%
Face Analytical Test:	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Sample ID M/B Counting Uncertainty: MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs MDC:	Laboratory Control Sample Assessment	Count Date:	Decay Corrected Spike Concentration (pCt/mL): Volume Used (mL): Aliquot Volume (t, g, F): Taroet Conc. (pC/M, g, F):	Uncertainty (Calculated): Result (pCM, g, F): LCSALCSD Counting Uncertainty (pCI/t, g, F): Numerical Performance Indicator:	Percent Recovery: Status vs Numerical indicator Status vs Recovery: Upper & Recovery Limits: Lower & Recovery Limits:	Duplicate Sample Assessment	Sample I.D.: 92490963004 Duplicate Sample I.D.: 92490963004DIP Sample Result Counting Uncertainty (pCI/L, g, F): 0.116 Sample Duplicate Result (pCI/L, g, F): 0.301 Sample Duplicate Result (pCI/L, g, F): 0.307 Are sample and/or duplicate Result (pCI/L, g, F): 0.277 Are sample and/or duplicate results below RL? See Below ## Duplicate Numerical Performance Indicator: -1.591 Duplicate Numerical Performance Indicator: -1.591 Duplicate Status vs Numerical Indicator: NIX Duplicate Status vs RPD: Fail** 25%

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

Comments:

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Quality Control Sample Performance Assessment

MS/MSD 2

<u>Analyst Must Manually Enter All Fields Highlighted in Yellow.</u>	I Assessment MS/MSD 1 Sample Collection Date: Sample LD. Sample MS LD. Sample MS LD.	MS/MSD Decay Corrected Spike Concentration (pCl/mL): Spike Volume Used in MS (mL): Spike Volume Used in MS (mL): MS Aliquot (L, g, F): MS Target Conc. (pCl/L, g, F): MSD Tancet Conc. (pCl/L, g, F):	MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result Sample Mathx Spike Result;	Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result Sample Uncertainty (pCi/L, g, F): MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD MAD Upper" & Recovery: MSD MAD Lower % Recovery: MS/MSD Lower % Recovery Limits:	Matrix Spike/Matrix Spike Duplicate Sample Assessment Sample I.D. Sample MS I.D. Sample MS I.D. Sample MS I.D. Sample MS I.D. Sample MS I.D. Sample Matrix Spike Duplicate Result Matrix Spike Duplicate Result Counting Uncertainty (pCM, g. F): Duplicate Result Counting Uncertainty (pCM, g. F): Duplicate Result Counting Uncertainty (pCM, g. F): Duplicate Result Counting Uncertainty (pCM, g. F): Matrix Spike Duplicate Result Matrix Spike Duplicate Status vs RPD: MS/ MSD Duplicate Status vs RPD: MS/ MSD Duplicate Status vs RPD:	0
<u>Analyst Must Manually.</u>	Sample Matrix Spike Control Assessment S	MS/MSD Decay Cor		24.045 Matrix Spike Res 0.10 S 0.10 Matrix Spike Duplicate Res 4.797 0.058 0.058 4.329 0.058 0.005 0.058 0.056 0.001/cate Res 4.329 0.058 0.05 0.056 1.13 0.058 1.13 90.26% 75% 75%	Matrix Spike Incate Matrix Spike D in Delow. Matrix Spi	esults are below the MDC.
900 D	LAL LAL 9/1/2020 55837 DW	1989993 0.067 0.195 0.481 0.481 0.481 0.481 N/A	LCSD (Y or N)? LCS55837 9/2/2020 19-033	24.045 0.10 0.508 4.738 0.057 0.057 0.057 0.057 1.28% 111.58% N/A Pass 125% 75%	837	ample or duplicate <i>r</i> e
Face Analytical measurement con	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Sample ID MB concentration: M/B counting Uncertainty: MB Counting Uncertainty: MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs Numerical Indicator: MB Status vs Numerical Indicator:		Decay Corrected Spike Concentration (pCi/mL): Volume Used (mL): Aliquot Volume (L, g, F): Target Conc. (pCi/l, g, F): Uncertainty (Caloulated): Result (pCi/l, g, F): LCS/LCSD Counting Uncertainty (pCi/l, g, F): Numerical Performance Indicator: Percent Recovery: Status vs Numerical Indicator: Upper % Recovery: Upper % Recovery: Lower % Recovery: Lower % Recovery:	Duplicate Sample Assessment Sample I.D.: Sample I.D.: Duplicate Sample I.D.: Sample Execut Counting Uncertainty (pCi/L, g, F): Sample Execut (pCi/L, g, F): Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): Sample Duplicate Result (pCi/L, g, F): Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): Are sample and/or duplicate Results below RL? Result Counting Uncertainty (pCi/L, g, F): Are sample and/or duplicate Results below RL? Resed on the LCS/LCSD Percent Recoveries) Duplicate RPD: Duplicate Status vs RPD: Duplicate Status vs RPD: Sk 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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Quality Control Sample Performance Assessment

MS/MSD 2

Analyst Must Manually Enter All Fields Highlighted in Yellow.		Sample Matrix Spike Control Assessment MS/MSD 1	Sample Collection Date:	Sample I.D.	Sample MSD I.D.	Spike I.D.:	MS/MSD Decay Corrected Spike Concentration (pCl/mL):	Spike Volume Used in MSD (mL): Snike Volume Used in MSD (mL):	MS Aliquot (L, g, F):	MS Target Conc. (pCi/l., g, F):	MSD Aliquot (L, g, F):	MOUT Larget Cone. (PORE, 9, r.). MS Solike Lincertainty (calculated):	MSD Spike Uncertainty (calculated):	Sample Result:	Sample Result Counting Uncertainty (pC/IL, g, F):	Matrix Shika Decuit Counting Incortainty (AC) o EV	Sample Matrix Solide Dublicate Result.	Matrix Snike Dunlicate Result Countion Uncertainty (nCid) o EV	Mauk Spike Duplicate result Counting Original (POWC, 9, 1). 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-	MONOU LANCE A LACOAL FILMO	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 (pCt/L, g, F):	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		(Based on t	MS/ MSD Duplicate Status vs Numerical Indicator:	MS/ MSD Duplicate Status vs RPD: % RPD Limit:
													N	LCSD55838																u u	<i>(</i>)	other than	LCS/LCSD in	the space below.		92491663005	92491663005DUP		
	Ra-226	LAL	9/2/2020	55838 Divi	2		1989996	0.241 0.161	0.285	2.94	N/A	660 L	LCSD (Y or N)?	LCS55838	9/2/2020	24 045	010	0.501	4.798	0.058	4.336	0.343	-2.60	90.37%	N/A	Pass	125% 75%	22		92491663005	92491663005DUP	0.117	0.110	0.098	See Below #	0.253	16.83%	A/N	Pass 25%
Pace Analytical	Test	Analyst	Date:	Worklist		Method Blank Assessment	MB Sample ID	MB Concentration: M/B Counting Lincertainty	MB MDC:	MB Numerical Performance Indicator;	MB Status vs Numerical indicator:		Laboratory Control Sample Assessment	-	Count Date:	Decev Corrected Snike Concentration (nCitrel):	Volume [[sed (m]).	Alimet Volume // A EV	Target Conc. (pCVL, g, F):	Uncertainty (Calculated):	Result (pCi/L, g, F);	LCS/LCSD Counting Uncertainty (pCi/L, g, F);	Numerical Performance Indicator.	Percent Recovery:	Status vs Numerical Indicator:	Status vs Recovery:	Upper % Recovery Limits:	LUWER / DISCOVERY LINAS	Duplicate Sample Assessment			Sample Result (pCi/L, g, F):	Sample Result Counting Uncertainty (pCl/L, g, F):	Sample Duplicate Result (pC/R, g, F): Semulo Dunitario Bazutt Counting Handraich, (nC/R - B):	Sample puppedences result output oncertainty (portuger) Are sample and/or duplicate results below RL?	Duplicate Numerical Performance Indicator.	Duplicate RPD:	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:

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Face Analytical

Quality Control Sample Performance Assessment

MS/MSD 2

Yellow.	MS/MSD 1																																			
Analyst Must Manually Enter All Fields Highlighted in Yellow.	Sample Matrix Spike Control Assessment	Sample Collection Date:	Sample I.D.	Sample MS 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 Terret Conc. (E. g. F): MS Terret Conc. (DCill R. E):	Mis target conc. pour c, F. F. MSD Aliquot (L, o, F):	MSD Target Conc. (pCi/L, g, F): MS Carlos Handsight (order lots 2):	MSD Spike Uncertainty (valculated).	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:	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Minnedical Performance Indicator	MCD Nimerical 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 Mou LU. Sample Matrix Snike Result	Matrix Soike Result Counting Uncertainty (pC)(L. a. F):	Sample Matrix Spike Duplicate Result:	Matrix Spike Duplicate Result Counting Uncertainty (pCIA, 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:
													1 CSD55838	9/2/2020	19-033	24.045	0.10	0.509	0.057	4.783	0.364	0.34	101.35%	N/A	Pass	125% 75%		Enter Duplicate	sample lus n	I CS/I CS/I in	the space below.			92491663005 92491663005DUP		
Ra-226	LAL	9/2/2020	55838	20		1989996	0.241	0.161	C87'0	42'7 N/N	Pass	I CED (V or NI2	LCS55838	9/2/2020	19-033	24.045	0.10	0.501	0.058	4.336	0,343	-2.60	90.37%	N/A	Pass	125% 75%		LCS55838	1,200	4.330 0.343	4.783	0.364	Q.	-1.753 11.46%	NIA	Pass 25%
Pace Analytical www.pseconcom	Analyst:	Date:	Worklist	MGUIX	Method Blank Assessment	MB Sample ID	MB concentration:	M/B Counting Uncertainty:	NUD MUD Barformsona Instrumenta MUD MUD MUD IN MUD	MB Status vs Numerical Indicator:	MB Status vs. MDC:	1 aboratany Control Samala Accaesmant		Count Date:	Spike I.D.:	Decay Corrected Spike Concentration (pCi/mL):	Volume Used (mL):	Aliquot Volume (L, g, F): Terret Conc. (nCit. o. E):	Incertainty (Calculated)	Circertainty (Cardiates). Result (pCi/l, a, F):	LCS/LCSD Counting Uncertainty (pC//L, q, F):	Numerical Performance Indicator:	Percent Recovery:	Status vs Numerical Indicator:	Status vs Recovery:	Upper % Recovery Limits: Lower % Recovery Limits:	Duplicate Sample Assessment	Sample I.D.:		Sample Result Counting Lincedainty (nCill o E)	oampre Neaur Countring Oncertainty (PORE, 9, 7). Sample Dublicate Result (DCVL, 0, F):	Sample Duplicate Result Counting Uncertainty (pCVL, g, F):	Are sample and/or duplicate results below RL?	Duplicate Numerical Performance Indicator: (Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	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:

TAR DW QC Printed: 9/3/2020 7:05 AM

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TAR_5538_W.xls Total Alpha Radium (R104-3 11Feb2019).xls

20202 (3) 2020

1 of 1

Face Analytical

Quality Control Sample Performance Assessment

	ASMSD 2																			
Yellow.	MS/MSD 1																			
<u>Analyst Must Manually Enter All Fields Highlighted in Yellow.</u>	Sample Matrix Spike Control Assessment Sample Collection Date: Sample ID. Sample MS I.D. Sample MS I.D.	Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCI/mL): Spike Volume Used in MSD (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MSD Target Conc. (pCI/L, g, F): MSD Target Conc. (pCI/L, g, F):	MS Spike Uncertainty (calculated):	wou opine drive drive drive drive sample Result.	Sample Result 2 Sigma CSU (pCl/l., g, F): Sample Matrix Spike Result	Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Samula Matrix Spike Duminate Descrite	A Matrix Spike Duplicate Result 2 Sigma CSU (FCM, g, F): Matrix Spike Duplicate Result 2 Sigma CSU (FCM, g, F): MS Numerical Performance Indicator:	MSD Numerical Performance Indicator:	MS Stells is the Nirmedian 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. Samile MS I D	Sample MSD LD.	Sample Matrix Spike Result 2 Sigma CSU (pCi/l, g, F):	Sample Matrix Spike Duplicate Result 2 Sigma CSU (pCi/l, g, F):	Duplicate Numerical Performance Indicator. /Based on the Percent Recoveries, MS/ MSD Dunicate RPD:	MS/ MSD Duplicate Status vs Numerical Indicator.	MS/ MSD Duplicate Status vs RPD: % RPD Limit:
				LCSD55851	9/9/2020 20030	38.472	0.803	0.235	1.030	90.24%	N/A Pass	135% 60%		Enter Duplicate samnle IDs if	other than	the space below.				
Ra-228	VAL 9/2/2020 55851 WT	1990342 0.664 0.374 0.374 0.672 3.48 Fail* Pasi	000	LCS55851	9/9/2020 20-030	38.472	0.812 0.812 4.737	0.232	1.288	118.17%	N/A Pass	135% 60%		LCS55851 I CSD55851	5.598	1.288	0:01 0	1.516 26 80%	Pass	Pass 36%
Face Analytical measure con	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Sample ID MB concentration: MB concentration: MB MDC: MB Numerical Performance indicator: MB Status vs Numerical Indicator: MB Status vs Numerical Indicator: MB Status vs Numerical Networks.			Count Date: Spike I.D.:	Decay Corrected Spike Concentration (pCl/mL):	Aliquot Volume Used (m.L.) Aliquot Volume (L. g. F): Target Conc. (pc)(L. g. F):	Uncertainty (Calculated):	LCS/LCSD 2 Sigma CSU (pCi/L, g, F): Minimoted Professional (principate		Status vs Numerical Indicator: Status vs Recovery:	Upper % Recovery Limits: Lower % Recovery Limits:	Duplicate Sample Assessment	Sample I.D.: Dunimate Sample I.D.:	Sample Result (pCi/l, g, F):	Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Duplicate Result (pCi/L, g, F):	Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F.): Are sample and/or duplicate results below RL?	Duplicate Numerical Performance Indicator: /Reced on the LCS/LCSD Percent Percentation Dunitate RPD.	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 biank value, the blank is acceptable; otherwise this batch must be re-prepped.

Ra-228 NELAC DW2 Printed: 9/10/2020 8:20 AM

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Ra-228 55851_W xis Ra-228 (R086-8 04592019) xis OVOVOV

Quality Control Sample Performance Assessment

	MS/MSD 2								
Yellow	1 DSWSM								
Analyst Must Manually Enter All Fields Highlighted in Yellow	Sample Matrix Spike Control Assessment Sample Collection Date: Sample NS I.D. Sample MS I.D. Sample MS I.D.	Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MSD (mL): Spike Volume Used in MSD (mL): MS Target Conc.(pCi/t, g, F): MSD Target Conc. (pCi/t, g, F): MSD Target Conc. (pCi/t, g, F):	MS Spike Uncertainty (calculated); MSD Spike Uncertainty (calculated);	Sample Result 2 Sigma Csumple Result. 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: MS/MSD Upper % Recovery Limits: MS/MSD Lower % Recovery Limits:	Matrix Spike/Matrix Spike Duplicate Sample Assessment	Sample I.D Sample NS I.D Sample MS I.D Sample MS I.D Sample Matrix Spike Result Matrix Spike Result 2 Signa CSU (pcdir, g, F) Sample Matrix Spike Duplicate Result Matrix Spike Duplicate Result 2 Signa CSU (pcdir, 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 Limit: % RPD Limit:
			Υ	LCSU35852 9/9/2020 20-030	38.470 0.10 0.802 4.799	0.235 5.838 1.360 1.47	121.64% N/A Pass 135% 60%		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Ra-228	VAL 9/2/2020 55852 WT	1990343 0.245 0.335 0.716 1.43 Pass	LCSD (Y or N)?	LCS55852 9/9/2020 20-030	38.470 0.10 0.801 4.804	0.235 4.151 1.079 -1.16	86.42% N/A Pass 135% 60%		LCS55852 LCSD55852 4.151 1.079 5.338 5.338 1.360 NO -1.903 33.85% Pass Pass Pass
Face Analytical" Test	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Sample ID MB concentration: MB concentration: MB 2500 MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC:	Laboratory Control Sample Assessment	Count Date: Spike I.D.:	Decay Corrected Spike Concentration (pCi/mL): Volume Used (mL): Aliquot Volume (L, g, F): Taroet Conc. (oCyl., g, F):	Uncertainty (Calculated): Result (pC/H, g. F): LCS/LCSD 2 Sigma CSU (pC/H, g. F): Nurnerical Performance Indicator:	Percent Recovery: Status vs Numerical Indicator: Status vs Recovery: Upper % Recovery Limits: Lower % Recovery Limits:	Duplicate Sample Assessment	Sample I.D.: Duplicate Sample I.D. Sample Result (pCi/I, g, F): Sample Result 2 Sigma CSU (pCi/I, g, F): Sample Duplicate Result (pCi/I, g, F): Sample Duplicate Result 2 Sigma CSU (pCi/I, g, F): Are sample and/or duplicate results below RL2 Duplicate Recoveries) Duplicate RPD: Duplicate Status vs Numerical Indicator 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:

Ra-228 NELAC DW2 Printed: 9/10/2020 8:17 AM

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Ra-228_55852_W.xls +228 (R086-8 04Sep2019).xls

Quality Control Sample Performance Assessment

	MS/MSD 2		
<u>Yellow.</u>	MS/MSD 1		
Analyst Must Manually Enter All Fields Highlighted in Yellow.	Sample Matrix Spike Control Assessment Sample Collection Date: Sample I.D. Sample M.S.I.D.	Spike I.D.: Spike Volume Used in MSD (mL): Spike Volume Used in MSD (mL): Spike Volume Used in MSD (mL): MS Aliquot (I, g, F) MS Target Conc.(pCi/I, g, F) MSD Target Conc.(pCi/I, g, F) MSD Target Conc.(pCi/I, g, F) MSD Target Conc.(pCi/I, g, F) MSD Target Conc.(pCi/I, g, F) Sample Result MSD Spike Uncertainty (calculated): Sample Result 2 Sigma CSU (pCi/I, g, F) Sample Matrix Spike Puplicate Result Matrix Spike Duplicate Result MSD Numerical Performance Indicator: MSD Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MSD Status vs Recovery MSD Upper % Recovery Limits: MSMSD Lower % Recovery Limits: Matrix Spike Duplicate Sample Assessment	Sample I.D. Sample MSD I.D. Sample MSD I.D. Sample MSD I.D. Sample Matrix Spike Result Matrix Spike Result 2 Sigma CSU (pCi/I., g. F): Sample Matrix Spike Duplicate Result Matrix Spike Duplicate Result 2 Sigma CSU (pCi/I., g. F): Duplicate Namerical Parformance Indicator: (Based on the Percent Recovertes) MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD.
		Y LCSD58533 9/9/2020 20-030 38.472 0.10 0.10 0.812 4.736 0.812 4.736 0.232 5.603 1.1205 1.205 1.205 1.205 1.205 1.35% R18.30% N/A Pass 135% 60%	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Ra-228	VAL 9/2/2020 55853 WT	1990347 0.226 0.226 0.585 1.65 Pass Pass Pass 9/9/2020 38.472 0.10 0.10 0.10 0.10 0.10 0.233 4.963 1.118 0.233 4.963 1.118 0.233 4.963 1.118 0.233 4.963 1.118 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.233 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 8.472 0.235 0.235 0.235 0.235 0.235 0.235 0.235 0.235 0.235 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.255 0.2550 0.2550 0.2550 0.2550000000000	LCS55853 LCS55853 4.963 1.118 5.603 1.205 NO 0.762 12.35% Pass Pass 26%
Pace Analytical measurements com	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Sample ID MB Concentration: MB Concentration: MB Concentration: MB Status vs Numerical Indicator MB Numerical Performance Indicator MB Numerical Performance Indicator MB Status vs Munecical Indicator Spike ID: Decay Corrected Spike Concentration (pcl/n, g, F): Uncertainty (Calculated): Target Conc. (pcl/l, g, F): Uncertainty (Calculated): Result (pcl/l, g, F): Uncertainty (Calculated): Status vs Recovery: Upper % Recovery Limits: Lower % Recovery Limits:	Sample I.D.: Duplicate Sample I.D.: Duplicate Sample I.D. Sample Result (pCM, g, F): Sample Result 2 Sigma CSU (pCM, g, F): Sample Duplicate Result 2 Sigma CSU (pCM, g, F): Are sample and/or duplicate results below RL? Duplicate Result 2 Sigma CSU (pCM, g, F): Are sample and/or duplicate results below RL? Duplicate RPD: Duplicate Status vs Numerical Indicator: Duplicate Status vs 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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Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

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,

Kein Slury

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





CERTIFICATIONS

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

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

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

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



SAMPLE SUMMARY

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

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



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



Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92491818001	GWA-7					
	рН	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	
92491818002	GWB-5R					
	рН	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	



Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 924918

92491818

Sample: GWA-7	Lab ID:	92491818001	Collecte	ed: 08/19/20	0 10:30	Received: 08/	20/20 12:20 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte)					
рН	5.81	Std. Units			1		08/20/20 16:59		
6020 MET ICPMS, Dissolved	Analytical	Method: EPA 6	020B Pre	paration Met	thod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, 0	GΑ				
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	
7470 Mercury, Dissolved	Analytical	Method: EPA 7	470A Prej	paration Met	hod: EF	PA 7470A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	GA				
Mercury, Dissolved	ND	mg/L	0.00020	0.000078	1	08/26/20 12:00	08/27/20 09:53	7439-97-6	



Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 924

92491818

Sample: GWB-5R	Lab ID:	92491818002	Collecte	ed: 08/19/20) 11:58	Received: 08/	20/20 12:20 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte)					
рН	5.14	Std. Units			1		08/20/20 17:00		
6020 MET ICPMS, Dissolved	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, 0	βA				
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	0.0019J	mg/L	0.0050	0.00078	1	08/24/20 12:49	08/24/20 18:10	7440-38-2	
Barium, Dissolved	0.098	mg/L	0.010	0.00071	1	08/24/20 12:49	08/24/20 18:10	7440-39-3	
Beryllium, Dissolved	0.000058J	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	0.0029J	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	0.00089J	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	
7470 Mercury, Dissolved	Analytical	Method: EPA 7	470A Prej	paration Met	hod: EF	PA 7470A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA				
Mercury, Dissolved	0.00011J	mg/L	0.00020	0.000078	1	08/26/20 12:00	08/27/20 10:03	7439-97-6	



QUALITY CONTROL DATA

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.:	92491818
-------------------	----------

QC Batch:	561952	Analysis Metho	od: EP	EPA 6020B			
QC Batch Method:	EPA 3005A	Analysis Descri	iption: 602	6020 MET Dissolved			
		Laboratory:	Pa	ace Analytical Services - Peachtree Corners, GA			
Associated Lab Sam	nples: 92491818001, 92491818002						
METHOD BLANK:	2980579	Matrix: W	Vater				
METHOD BLANK: Associated Lab Sam		Matrix: W	Vater				
			Vater Reporting				
	aples: 92491818001, 92491818002			MDL	Analyzed	Qualifiers	

mg/L	ND	0.0030	0.00028	08/24/20 17:24
mg/L	ND	0.0050	0.00078	08/24/20 17:24
mg/L	ND	0.010	0.00071	08/24/20 17:24
mg/L	ND	0.0030	0.000046	08/24/20 17:24
mg/L	ND	0.0025	0.00012	08/24/20 17:24
mg/L	ND	0.010	0.00055	08/24/20 17:24
mg/L	ND	0.0050	0.00038	08/24/20 17:24
mg/L	ND	0.0050	0.000036	08/24/20 17:24
mg/L	ND	0.030	0.00081	08/24/20 17:24
mg/L	ND	0.010	0.00069	08/24/20 17:24
mg/L	ND	0.010	0.0016	08/24/20 17:24
mg/L	ND	0.0010	0.00014	08/24/20 17:24
	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	mg/L ND mg/L ND mg/L ND mg/L ND mg/L ND mg/L ND mg/L ND mg/L ND mg/L ND	mg/L ND 0.0050 mg/L ND 0.010 mg/L ND 0.0030 mg/L ND 0.0025 mg/L ND 0.010 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.0050 mg/L ND 0.030 mg/L ND 0.010 mg/L ND 0.010 <td>mg/L ND 0.0050 0.00078 mg/L ND 0.010 0.00071 mg/L ND 0.0030 0.000046 mg/L ND 0.0025 0.00012 mg/L ND 0.010 0.00055 mg/L ND 0.0050 0.00038 mg/L ND 0.0050 0.00036 mg/L ND 0.030 0.00081 mg/L ND 0.010 0.00069 mg/L ND 0.010 0.0016</td>	mg/L ND 0.0050 0.00078 mg/L ND 0.010 0.00071 mg/L ND 0.0030 0.000046 mg/L ND 0.0025 0.00012 mg/L ND 0.010 0.00055 mg/L ND 0.0050 0.00038 mg/L ND 0.0050 0.00036 mg/L ND 0.030 0.00081 mg/L ND 0.010 0.00069 mg/L ND 0.010 0.0016

METHOD BLANK: 2980581

Matrix: Water

Associated Lab Samples	÷ 92491818001, 92491818002	
		Blank

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	

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 - 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
Parameter	Units		Result	% Rec	Limits	Quaimers
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 S	PIKE DUPL	LICATE: 2980	616 MS	MSD	2980617							
_		92491818002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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	

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: Pace Project No.:	GRUMMAN ROA 92491818	D - SCAN EVENT	2020									
QC Batch:	562439		Analy	ysis Metho	od:	EPA 7470A						
QC Batch Method:	EPA 7470A		Analy	, ysis Descr	iption:	7470 Mercu	Iry Dissolv	ved				
			Labo	oratory:		Pace Analy	ical Servi	ces - Peach	tree Corne	rs, GA		
Associated Lab Sar	nples: 92491818	3001, 9249181800	2									
METHOD BLANK:	2982838			Matrix: V	Vater							
Associated Lab Sar	nples: 92491818	3001, 9249181800	2									
			Blai	nk	Reporting							
Parar	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Mercury, Dissolved		mg/L		ND	0.0002	0.0	00078 (08/27/20 09	:48			
LABORATORY CO	NTROL SAMPLE:	2982839										
			Spike	L	CS	LCS	% I	Rec				
Parar	neter	Units	Conc.	Re	sult	% Rec	Lin	nits	Qualifiers			
Mercury, Dissolved		mg/L	0.002	25	0.0025	9	8	80-120		_		
MATRIX SPIKE & N		PLICATE: 2982	840		2982841	1						
			MS	MSD	2002041							
		92491818001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r Units	s Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual

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.



QUALIFIERS

Project: GRUMMAN ROAD - SCAN EVENT 2020

Pace Project No.: 92491818

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



QUALITY CONTROL DATA CROSS REFERENCE TABLE

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

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92491818001 92491818002	GWA-7 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

Sar	nple Conditio	on Upon Receipt	
Pace Analytical Client Name	:A	Power W	0#:92491818
Courier: C Fed Ex UPS USPS Clier	nt Commercia	al 🗆 Pace Othe	491818
Custody Seal on Cooler/Box Present: Use	t no Se	als intact: 🗌 yes 🛛	
Packing Material: Bubble Wrap Bubble	Bags None	Other	
Thermometer Used 233	Type of Ice: M	et Blue None [Samples on ice, cooling process has begun
Cooler Temperature 2/1/2	Biological Tiss	ue is Frozen: Yes No Comments:	Date and initials of person examining contents:
Chain of Custody Present:	TYes DNO DI	I/A 1.	
Chain of Custody Filled Out:		VA 2.	
Chain of Custody Relinquished:		I/A 3.	
Sampler Name & Signature on COC:		NA 4.	
Samples Arrived within Hold Time:	CIYes ONO ON	NA 5.	
Short Hold Time Analysis (<72hr):	DYes DNo DI	NA 6.	
Rush Turn Around Time Requested:	OYes DNo DI	NA 7.	
Sufficient Volume:	ENGS DNO DI	NA 8.	
Correct Containers Used:	LATES DNO DI	NA 9.	
-Pace Containers Used:		I/A	
Containers Intact:	Gres DNO DI	1/A 1D.	
Filtered volume received for Dissolved tests	DYes DNO	N/A 11.	
Sample Labels match COC:	TYes DNO DI	VA 12.	
-Includes date/time/ID/Analysis Matrix:	\mathcal{N}		
All containers needing preservation have been checked.	TYes DNO DI	VA 13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	Pres INO II	and the second se	-
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	Yes Ho	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	TYes No	WA 14.	Contraction of the Contraction o
Headspace in VOA Vials (>6mm):		VA 15.	
Trip Blank Present:	/	16.	
Trip Blank Custody Seals Present	□Yes □No □		
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution:	anona eva takiningi ve transf		Field Data Required? Y / N
Person Contacted:	Da	te/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)

F-ALLC003rev 3, 11September2006

Document issued: March 14, 2019 Document Name. Page 1 of 1 Bottle Identification Form (BIF) Issuing Authority Pace Analytical . Document No : Pace Carolinas Quality Office F-CAR-CS-043-Rev.00 WO#:9249181 8 Project # Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation Due Date: 09/03/20 PM: KLH1 somples. CLIENT: GA-GA Power Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg -*Bottom half of box is to list number of bottle AGOU-100 mL Amber Unpreserved vials (N/A) AG3A[DG3A]-250 mL Amber NH4Cl (N/A)(Cl-) AG3U-250 mL Amber Unpreserved (N/A) (Ci-) BP4Z-125 mL Plastic ZN Acetate & NaOH (>9) WGFU-Wide-mouthed Glass Jar Unpreserved BP3A-250 mL Plastic (NH2)2504 (9.3-9.7) AG1U-1 liter Amber Unpreserved (N/A) (Cl-) -Bp4U-125 mL Plastic Unpreserved (N/A) (G-) V/GK (3 vials per kit)-VPH/Gas kit (N/A) SP2T-250 mL Sterile Plastic (N/A - lab) SP5T-125 mL Sterile Plastic (N/A - lab) Bp4C-125 mL Plastic NaOH (pH > 12) (Cl-) vsgu-zo mt scinttitation vlats [N/A] BP4S-125 mL Plastic H2SO4 (pH < 2) (Ci-) BP3U-250 mL Plastic Unpreserved (N/A) BP2U-500 mL Plastic Unpreserved (M/A) VOAK (6 vials per kit)-soas kit (N/A) AG35-250 mL Amber H2504 (pH < 2) BP1U-1 liter Plastic Unpreserved (N/A) **AG1S-1** liter Amber H2504 (pH < 2) BP3N-250 mL plastic HNO3 (pH < 2) VG9T-40 mL VOA Na25203 (N/A) 0G9P-40 mL VOA H3PO4 (N/A) AG1H-1 liter Amber HCI (pH < 2) VG9U-40 mL VOA Unp (N/A) DG9H-40 mt VOA HCI (N/A) Matrix tremt 1 2 3 4 4 5 6 4 7 8 9 10 11 12 pH Adjustment Log for Preserved Samples 10 Amount of Preservative Time preservation Date preservation adjusted pH upon receipt added Type of Preservative adjusted Sample ID 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. and the second
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"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 involces not paid within 30 days.

			Please note		12	=	10	9	8	7	•	5	-	2	-	• •	ITEM #			vedocate		zmail To:		Address	Company	Required C
			e when the last sample for	ADDITIONAL COMMENTS										-0149	F-4/mc)	Inch -	SAMPLE ID (A-2, 0-9 / -) Sample IDS MUST BE UN QUE	Required Client Information		vednested one bate (MT)		SCS Contacts		Atlanta, GA		Clien
			when the last sample for the event has been taken.	MMENTS										719	S		WATER WATER PRODUCT OSL OSL OSL OSL OSL OSL OSL OTHER TISSUE			in ney		5				
			1			_											3 9 8 8 0 2 ⁹ 8 4 9			Project Number	Project Name:	Purchase Order No		Copy To:		Section B Required Project Information.
			2	RELINQU		_	_	+	+	+	+	+	+	K G	0	`	ATRIX CODE (see valid code		+	ber	1	der No		ACC C	SCS C	roject Info
			2	JISHED B	*****			*****						1	K	DATE	T.		1		Grumman Road			ACC Contacts	ontacts	ormation;
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PRINT Name of SAMPLER: SIGNATURE of SAMPLER:	SAMPLER NAME AND SIGNATURE		02/02/20	DATE										8511 02-4-2	1030	TIME					020					
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Temp in •	·c		2	ł	+	-	+	+	+	+	+-	-	-		_	Re	esidual Chlorine (Y/N)			ļ			GROUND WATER			ġ.
Received Ice (Y/N			<	SA		T	T	T	T	T	T	Γ		Fill Filmed	Kell F	Pa	2					ব	ER		ŕ	
ustody Se			5	APLE CO											Filmed	e Proje	, Che					OTHER	DRIN			đ
emples In (Y/N)			×	SAMPLE CONDITIONS					pn=		PH	pH≞	pH=	pH= 5.14	18,5 =Hd	Pace Project No./ Lab I.D.	1814					ER CCR	DRINKING WATER			-

Page 15 of 15

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

Face Analytical



Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

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,

type Japan

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





Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

CERTIFICATIONS

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

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

Pace Analytical Services Asheville

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

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

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

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



Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

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



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	КН	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	



SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084015 GWC-20 EPA 6010D DRB 1 EPA 6020B CW1 15 15 SM 2450C-2011 AW1 1 1 92498084016 GWB-4R EPA 6010D DRB 1 EPA 6010D DRB 1 1 SM 2450C-2011 AW1 1 1 92498084016 GWB-4R EPA 6010D DRB 1 EPA 6020B CW1 15 15 15 SM 2450C-2011 AW1 1 1 EPA 300.0 Rev 2.1 1993 CDC 3 15 SM 2450C-2011 AW1 1 1 EPA 300.0 Rev 2.1 1993 CDC 3 15	Lab ID	Sample ID	Method	Analysts	Analytes Reported	
22498084011DUP-1EPA 300.0 Rev 2.1 1993CDC392498084011DUP-1EPA 6010DDRB1EPA 6020BCW11392498084012GWC-21GWC-21GWC-2192498084012GWC-21EPA 6010DDRB192498084013GWC-15EPA 6010DDRB192498084014GWC-15EPA 6010DCPR192498084015GWC-15EPA 6010DCPR192498084014GWC-16EPA 6010DCPR192498084015GWC-16EPA 6010DCPR192498084016GWC-16EPA 6010DCPR192498084017GWC-201AW11192498084018GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR15192498084019GWC-201CPR1192498084019GWC-201CPR1192498084019GWC-201CPR1192498084019GWC-201CPR1192498084019GWC-201CPR1 <td></td> <td></td> <td>EPA 6020B</td> <td> CW1</td> <td>15</td> <td></td>			EPA 6020B	 CW1	15	
92498084011 92498084011 92498084012 92498084012 92498084012 92498084012 92498084013 			SM 2450C-2011	AW1	1	
P2498084012 92498084012GWC-21IEPA 300.0 Rev 2.1 1993CDC392498084012 92498084013GWC-21EPA 60100DR8192498084013 92498084013GWC-21ISA1192498084014 92498084014GWC-15EPA 300.0 Rev 2.1 1993CDC392498084015 92498084014GWC-15EPA 60100DR8192498084014 92498084014GWC-15EPA 300.0 Rev 2.1 1993CDC392498084015 92498084015GWC-16EPA 60100DR8192498084016 92498084015GWC-16EPA 60100DR8192498084016 92498084015GWC-20EPA 60100OR8192498084015 92498084015GWC-20EPA 60100OR8192498084016 92498084016GWC-20EPA 60100OR8192498084017 92498084017GWC-20EPA 60100OR8192498084017 92498084017EPA-30.0 Rev 2.1 1993CDC392498084017 92498084017EPA-30.0 Rev 2.1 1993CDC392498084017 92498084017EPA-30.0 Rev 2.1 1993CDC392498084017 92498084018GWB-4REPA 60000DR8192498084017 92498084018EPA-30.00 Rev 2.1 1993CDC392498084019 92498084018GWB-4REPA 60000RB192498084019 92498084018GWB-4REPA 60000RB192498084019 92498084018EPA-30.00 Rev 2.1 1993CDC392498084019 <b< td=""><td></td><td></td><td>EPA 300.0 Rev 2.1 1993</td><td>CDC</td><td>3</td><td></td></b<>			EPA 300.0 Rev 2.1 1993	CDC	3	
SM 2450C-2011AW1192498084012GWC-21GWC-21FPA 60100DR8192498084012GWC-21FPA 60100DR8192498084013GWC-15FPA 60100DR8192498084014GWC-15FPA 60100DR8192498084015GWC-15FPA 60100DR8192498084014GWC-16FPA 60100DR8192498084014GWC-16FPA 60100DR8192498084015GWC-2011AW11192498084016GWC-16FPA 60100DR8192498084017GWC-201GWC3192498084018GWC-201GWC3192498084019GWC-20FPA 60100DR8192498084016FPA 60100DR81192498084017FPA 60100DR81192498084016GWG-41FPA 60100DR8192498084017FPA 60100DR81192498084016FPA 60100DR81192498084017FPA 60100DR81192498084017FPA 60100DR81192498084017FPA 60100DR81192498084017FPA 60100DR81192498084018GWG-41FPA 60100DR8192498084016FPA 60100DR81192498084017FPA 60100DR81192498084018	92498084011	DUP-1	EPA 6010D	DRB	1	
P2498084012 92498084012GWC-21GPC392498084013 92498084013GWC-21GWC-21GWC-21GWC-2192498084013 92498084014GWC-15EPA 6000 EPA 60100DRB192498084014 92498084014GWC-15EPA 6000DRB192498084015 92498084014GWC-16EPA 6000DRB192498084015 92498084015GWC-16EPA 6000DRB192498084016 92498084015GWC-20EPA 6000DRB192498084016 92498084015GWC-20EPA 6000DRB192498084016 92498084015GWC-20EPA 6000DRB192498084017 92498084017GWC-20EPA 6000DRB192498084017 92498084017GWC-20EPA 6000RB192498084017 92498084017GWC-20EPA 6000RB192498084017 92498084017GWC-20EPA 6000RB192498084017 92498084017GWC-20EPA 6000RB192498084018 92498084017GWC-20EPA 6000RB192498084018 92498084018GWC-20EPA 6000RB192498084019 92498084018GWC-17EPA 6000RB192498084019 92498084018GWC-17EPA 6000RB192498084019 92498084018GWC-17EPA 6000RB192498084019 92498084018GWC-17EPA 6000RB192498084019 92498084018GWC-17EPA 60			EPA 6020B	CW1	15	
92498084012 GWC-21 DRB 1 EPA 6010D DRB CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084013 GWC-15 EPA 6010D DRB 1 EPA 60100 DRB CW1 15 SM 2450C-2011 AW1 1 EPA 6010D DRB 1 SM 2450C-2011 AW1 1 SM 2450C-2011 AW1 1 EPA 6010D DRB 1 EPA 6000 Rev 2.1 1993 CDC 3 92498084014 GWC-16 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 1 1 P2498084015 GWC-20 EPA 6010D DRB 1 P2498084015 GWC-20 EPA 6010D DRB 1 P2498084015 GWB-4R EPA 6010D DRB 1 P2498084016 GWB-4R EPA 6010D DRB 1 P24			SM 2450C-2011	AW1	1	
EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084013 GWC-15 EPA 6010D DRB 1 EPA 6020B CW1 15 5 5 5 5 92498084014 GWC-15 EPA 6020B CW1 15 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			EPA 300.0 Rev 2.1 1993	CDC	3	
SM 2450C-2011AW1192498084013GWC-15EPA 300.0 Rev 2.1 1993CDC392498084014GWC-15EPA 6020BCW11592498084014GWC-16EPA 6010DDRB192498084015GWC-20EPA 6010DDRB192498084016GWC-20EPA 6010DDRB192498084017GWC-20EPA 6010DDRB192498084018GWC-20EPA 6010DDRB192498084016GWC-20EPA 6010DDRB192498084017GWC-20EPA 6010DDRB192498084016GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084017GWB-4REPA 6010DDRB192498084018JUP-2EPA 6010DDRB192498084018JUP-2EPA 6010DDRB192498084018GWC-17EPA 6010DDRB192498084018GWC-2011AW11192498084018GWC-2011AW11192498084018GWC-2011SW<	92498084012	GWC-21	EPA 6010D	DRB	1	
P2498084013GWC-15EPA 300.0 Rev 2.1 1993CDC392498084014GWC-15EPA 6010DDRB192498084014GWC-16EPA 6020BCW1192498084014GWC-16EPA 6010DDRB192498084015GWC-20EPA 6010DDRB192498084016GWC-20EPA 6010DDRB192498084017GWC-20EPA 6010DDRB192498084018GWC-20EPA 6010DDRB192498084016GWC-20EPA 6010DDRB192498084017GWC-20EPA 6010DDRB192498084018GWB-4REPA 300.0 Rev 2.1 1993CDC392498084017GWB-4REPA 6010DDRB192498084017EB-2-9-30-20EPA 6010DDRB192498084018JUP-2EPA 6010DDRB1<			EPA 6020B	CW1	15	
92498084013GWC-15EPA 6010DDR81EPA 6020BCW115SM 2450C-2011AW11EPA 300.0 Rev 2.1 1993CDC392498084014GWC-16EPA 6010DDR81EPA 6020BCW115SM 2450C-2011AW11SM 2450C-2011AW1192498084015GWC-20EPA 6010DDR8192498084015GWC-20EPA 6010DDR8192498084016GWB-4REPA 300.0 Rev 2.1 1993CDC392498084016GWB-4REPA 6020BCW11592498084017EB-2-9-30-20EPA 6010DDR81EPA 300.0 Rev 2.1 1993CDC3192498084017EB-2-9-30-20EPA 6010DDR81SM 2450C-2011AW1111EPA 6020BCW11515SM 2450C-2011AW111P2498084017EB-2-9-30-20EPA 6010DDR81SM 2450C-2011AW1111EPA 6020BCW1151514SM 2450C-2011AW1111EPA 6020BCW1151514SM 2450C-2011AW1111EPA 6020BCW1151514EPA 6020BCW1151514EPA 6020BCW1151514EPA 6020BCW1151514E			SM 2450C-2011	AW1	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 SM 2450C-2011 AW1 15 15 SM 2450C-2011 AW1 15 15 SM 2450C-2011 AW1 1 1 92498084015 GWC-20 EPA 6010D DRB 1 92498084015 GWC-20 EPA 6010D DRB 1 92498084015 GWC-20 EPA 6010D DRB 1 92498084016 GWB-4R EPA 6010D DRB 1 92498084017 GWB-4R EPA 6010D DRB 1 92498084017 GWB-4R EPA 6010D DRB 1 92498084017 EPA-30-20 EPA 6010D DRB 1 92498084017 EPA-30-20 EPA 6010D DRB 1 92498084017 EPA-30-20 EPA 6010D DRB 1 92498084017			EPA 300.0 Rev 2.1 1993	CDC	3	
SM 2450C-2011AW1192498084014GWC-16EPA 300.0 Rev 2.1 1993CDC392498084014GWC-16EPA 6010DDRB192498084015GWC-20EPA 6020BCW11592498084015GWC-20EPA 6010DDRB192498084016GWC-20EPA 6010DDRB192498084016GWC-20EPA 6020BCW11592498084016GWB-4REPA 6010DDRB192498084017GWC-47EPA 6010DDRB192498084018GWB-4REPA 6010DDRB192498084017EB-29-30-20EPA 6010DDRB192498084017EB-29-30-20EPA 6010DDRB192498084017EB-29-30-20EPA 6010DDRB192498084018DUP-2EPA 60000 Rev 2.1 1993CDC392498084017EB-29-30-20EPA 6010DDRB192498084018DUP-2EPA 60000 Rev 2.1 1993CDC392498084019DUP-2EPA 60000 Rev 2.1 1993CDC392498084018DUP-2EPA 60010DDRB1EPA 60000 Rev 2.1 1993CDC3392498084019GWC-17EPA 60000CW115EPA 60000 Rev 2.1 1993CDC3392498084018DUP-2EPA 60010DDRB1EPA 60000 Rev 2.1 1993CDC3392498084019GWC-17EPA 6000DDRB1	92498084013	GWC-15	EPA 6010D	DRB	1	
92498084014 GWC-16 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 92498084015 GWC-20 EPA 300.0 Rev 2.1 1993 CDC 3 92498084015 GWC-20 EPA 6010D DRB 1 EPA 300.0 Rev 2.1 1993 CDC 3 3 92498084016 GWB-4R EPA 6010D DRB 1 EPA 300.0 Rev 2.1 1993 CDC 3 3 92498084016 GWB-4R EPA 6010D DRB 1 EPA 300.0 Rev 2.1 1993 CDC 3 3 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 EPA 6020B CW1 15 5 5 3 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 EPA 6020B CW1 15 5 5 5 5 5 5 5 3			EPA 6020B	CW1	15	
92498084014 GWC-16 EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 92498084015 GWC-20 EPA 300.0 Rev 2.1 1993 CDC 3 92498084015 GWC-20 EPA 6010D DRB 1 92498084015 GWC-20 EPA 6010D DRB 1 92498084016 GWB-4R EPA 300.0 Rev 2.1 1993 CDC 3 92498084016 GWB-4R EPA 6010D DRB 1 92498084017 GWB-4R EPA 6010D DRB 1 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 92498084018 DUP-2 EPA 6010D DRB 1 <			SM 2450C-2011	AW1	1	
EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084015 GWC-20 EPA 6010D DR8 1 EPA 6020B CW1 15 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			EPA 300.0 Rev 2.1 1993	CDC	3	
SM 2450-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084015 GWC-20 EPA 6010D DR8 1 EPA 6020B CW1 15 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	92498084014	GWC-16	EPA 6010D	DRB	1	
P2498084015GWC-20EPA 300.0 Rev 2.1 1993CDC392498084015GWC-20EPA 6010DDRB1FPA 6020BGW11592498084016GWB-4REPA 300.0 Rev 2.1 1993CDC392498084017GWB-4REPA 6010DDRB1FPA 300.0 Rev 2.1 1993CDC3192498084017EB-2-9-30-20EPA 6010DDRB192498084017EB-2-9-30-20EPA 6010DDRB192498084017EB-2-9-30-20EPA 6010DDRB192498084017EB-2-9-30-20EPA 6010DDRB192498084017EB-2-9-30-20EPA 6010DDRB192498084018DUP-2EPA 6010DDRB192498084018DUP-2EPA 6010DDRB192498084018GWC-17EPA 6010DDRB192498084019GWC-17EPA 6010DDRB192498084019GWC-17EPA 6010DDRB1			EPA 6020B	CW1	15	
92498084015GWC-20EPA 6010DDRB1EPA 6020BCW115SM 2450C-2011AW11EPA 300.0 Rev 2.1 1993CDC392498084016GWB-4REPA 6010DDRB1EPA 300.0 Rev 2.1 1993CDC31SM 2450C-2011AW111EPA 300.0 Rev 2.1 1993CDC392498084017EB-2-9-30-20EPA 6010DDRB1SM 2450C-2011AW111EPA 300.0 Rev 2.1 1993CDC3192498084017EB-2-9-30-20EPA 6010DDRB1SM 2450C-2011AW1111EPA 300.0 Rev 2.1 1993CDC311SM 2450C-2011AW1111EPA 6020BCW1151515SM 2450C-2011AW1111EPA 300.0 Rev 2.1 1993CDC315SM 2450C-2011AW1111EPA 300.0 Rev 2.1 1993CDC315SM 2450C-2011AW1111EPA 300.0 Rev 2.1 1993CDC315SM 2450C-2011AW1111EPA 300.0 Rev 2.1 1993CDC33SM 2450C-2011AW1111EPA 300.0 Rev 2.1 1993CDC33SM 2450C-2011AW1111EPA 300.0 Rev 2.1 1993CDC33SM 2450C-201			SM 2450C-2011	AW1	1	
EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084016 GWB-4R EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 EPA 6020B CW1 15 15 SM 2450C-2011 AW1 1 1 EPA 6020B CW1 15 15 SM 2450C-2011 AW1 1 1 EPA 300.0 Rev 2.1 1993 CDC 3 1 92498084018 DUP-2 EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1			EPA 300.0 Rev 2.1 1993	CDC	3	
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92498084016 GWB-4R EPA 300.0 Rev 2.1 1993 CDC 3 92498084016 GWB-4R EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 EPA 6020B CW1 15 15 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 92498084018 DUP-2 EPA 6010D DRB 1 92498084018 DUP-2 EPA 6010D DRB 1 EPA 300.0 Rev 2.1 1993 CDC 3 3 92498084019 GWC-17 EPA 6010D DRB 1			EPA 6020B	CW1	15	
92498084016 GWB-4R EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 P2498084017 EB-2-9-30-20 EPA 6010D DRB 1 P2498084018 DUP-2 EPA 6020B CW1 15 P2498084018 DUP-2 EPA 6010D DRB 1 EPA 6020B CW1 15 15 SM 2450C-2011 AW1 1 1 EPA 6020B CW1 15 15 SM 2450C-2011 DRB 1 1 EPA 6020B CW1 15 15 SM 2450C-2011 AW1 1 1 EPA 300.0 Rev 2.1 1993 CDC 3 3 P2498084019 GWC-17 EPA 6010D DRB 1			SM 2450C-2011	AW1	1	
EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 92498084018 DUP-2 EPA 6010D DRB 1 92498084018 DUP-2 EPA 6010D DRB 1 EPA 6020B CW1 15 15 SM 2450C-2011 AW1 1 1 EPA 6020B CW1 15 15 SM 2450C-2011 DRB 1 15 SM 2450C-2011 AW1 1 15 EPA 300.0 Rev 2.1 1993 CDC 3 3 92498084019 GWC-17 EPA 6010D DRB 1			EPA 300.0 Rev 2.1 1993	CDC	3	
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92498084017 EB-2-9-30-20 EPA 300.0 Rev 2.1 1993 CDC 3 92498084017 EB-2-9-30-20 EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 P2498084018 DUP-2 EPA 6010D DRB 1 P2498084018 DUP-2 EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 P2498084019 GWC-17 EPA 6010D DRB 1			EPA 6020B	CW1	15	
92498084017 EB-2-9-30-20 EPA 6010D DRB 1 EPA 6020B CW1 15 SM 2450C-2011 AW1 1 P2498084018 DUP-2 EPA 6010D DRB 1 EPA 6020B CW1 DB 1 EPA 6010D DRB 1 1 EPA 6020B CW1 DB 1 EPA 6020B CW1 15 15 SM 2450C-2011 AW1 1 1 EPA 300.0 Rev 2.1 1993 CDC 3 3 P2498084019 GWC-17 EPA 6010D DRB 1			SM 2450C-2011	AW1	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 15 EPA 6020B CW1 10 15 EPA 6020B CW1 15 15 EPA 6020B CW1 15 15 EPA 300.0 Rev 2.1 1993 CDC 3 15 EPA 6010D DRB 1 15 15 EPA 6010D DRB 1 15 15 15 EPA 6010D DRB 1 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 <td></td> <td></td> <td>EPA 300.0 Rev 2.1 1993</td> <td>CDC</td> <td>3</td> <td></td>			EPA 300.0 Rev 2.1 1993	CDC	3	
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B2498084018 DUP-2 EPA 300.0 Rev 2.1 1993 CDC 3 6 EPA 6010D DRB 1 1 1 6 EPA 6020B CW1 15 1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084019 GWC-17 EPA 6010D DRB 1			EPA 6020B	CW1	15	
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 92498084019 GWC-17 EPA 6010D DRB 1			SM 2450C-2011	AW1	1	
EPA 6020B CW1 15 SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084019 GWC-17 EPA 6010D DRB 1			EPA 300.0 Rev 2.1 1993	CDC	3	
SM 2450C-2011 AW1 1 EPA 300.0 Rev 2.1 1993 CDC 3 92498084019 GWC-17 EPA 6010D DRB 1	92498084018	DUP-2	EPA 6010D	DRB	1	
EPA 300.0 Rev 2.1 1993 CDC 3 92498084019 GWC-17 EPA 6010D DRB 1			EPA 6020B	CW1	15	
92498084019 GWC-17 EPA 6010D DRB 1			SM 2450C-2011	AW1	1	
			EPA 300.0 Rev 2.1 1993	CDC	3	
EPA 6020B CW1 15	92498084019	GWC-17	EPA 6010D	DRB	1	
			EPA 6020B	CW1	15	



SAMPLE ANALYTE COUNT

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



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Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498084001	GWA-7					
	Performed by	CUSTOME R			10/12/20 16:37	
	рН	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	
92498084002	GWC-13					
	Performed by	CUSTOME R			10/12/20 16:37	
	рН	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	
92498084003	GWA-8					
	Performed by	CUSTOME R			10/12/20 16:37	
	рН	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	
92498084004	GWC-1					
	Performed by	CUSTOME R			10/12/20 16:37	
	ا ا م	5.79	Std. Units		10/12/20 16:37	
	рН	5.15	olu. Offilia		10/12/20 10.01	



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Lab Sample ID Client Sample ID Qualifiers Method Parameters Result Units Report Limit Analyzed 92498084004 GWC-1 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 0.010 10/06/20 19:45 mg/L 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 0.000043J 10/06/20 19:45 EPA 6020B I ead mg/L 0.0050 10/06/20 19:45 EPA 6020B Molybdenum 0.059 0.010 mg/L EPA 6020B 10/06/20 19:45 Vanadium 0.0042J mg/L 0.010 Zinc 0.0092J 0.010 10/06/20 19:45 EPA 6020B mg/L 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 92498084006 **GWC-12** CUSTOME Performed by 10/12/20 16:37 R 3.95 Std. Units pН 10/12/20 16:37 EPA 6010D Calcium 42.0 mg/L 1.0 10/05/20 22:33 EPA 6020B Barium 0.018 0.010 10/06/20 19:56 mg/L EPA 6020B 0.00043J 10/06/20 19:56 Beryllium mg/L 0.0030 EPA 6020B Boron 4.7 0.040 10/06/20 19:56 mg/L EPA 6020B Chromium 0.00085J 0.010 10/06/20 19:56 mg/L EPA 6020B Cobalt 0.00057J mg/L 0.0050 10/06/20 19:56 0.0050 EPA 6020B Lead 0.000037J mg/L 10/06/20 19:56 EPA 6020B 0.00086J 0.030 10/06/20 19:56 Lithium mg/L EPA 6020B 0.0046J 0.010 10/06/20 19:56 Vanadium mg/L 0.0074J 0.010 10/06/20 19:56 EPA 6020B Zinc mg/L **Total Dissolved Solids** SM 2450C-2011 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 Fluoride EPA 300.0 Rev 2.1 1993 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 92498084007 **GWC-11** CUSTOME Performed by 10/12/20 16:37 R pН 4.77 Std. Units 10/12/20 16:37 EPA 6010D 123 mg/L 1.0 10/05/20 22:37 Calcium EPA 6020B 0.00051J 0.0030 10/06/20 20:02 Antimony mg/L EPA 6020B Barium 0.14 0.010 10/06/20 20:02 mg/L EPA 6020B 1.2 0.040 10/06/20 20:02 Boron mg/L 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 0.00055J 0.0050 EPA 6020B Cobalt mg/L 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 0.010 10/06/20 20:02 mg/L EPA 6020B Zinc 0.0031J 10/06/20 20:02 mg/L 0.010 SM 2450C-2011 **Total Dissolved Solids** 1100 mg/L 50.0 10/02/20 17:28



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Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498084007	 GWC-11				· ,	
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	
92498084008	GWC-14					
	Performed by	CUSTOME R			10/12/20 16:37	
	рН	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		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
92498084009	GWC-2					
	Performed by	CUSTOME R			10/12/20 16:37	
	рH	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	
92498084010	EB-1-9-29-20		5	-		
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	
92498084011	DUP-1					
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		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		10/05/20 19:14	
SM 2450C-2011	Total Dissolved Solids	434	mg/L		10/02/20 17:28	
EPA 300.0 Rev 2.1 1993	Chloride	24.4	mg/L		10/02/20 01:06	
EPA 300.0 Rev 2.1 1993	Fluoride	0.16	mg/L		10/02/20 01:06	



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Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
			UTIIIS		Analyzeu	Qualifiers
92498084012	GWC-21					
	Performed by	CUSTOME R			10/12/20 16:37	
	рН	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	В
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	
92498084013	GWC-15	000	iiig/ E	1.0	10/01/20 00:10	
52-5000-010		CUSTOME			40/40/00 40:07	
	Performed by	R			10/12/20 16:37	
	рН	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	0.040	10/07/20 17:17	
EPA 6020B	Lead	0.000047J	mg/L	0.0050	10/07/20 17:17	
EPA 6020B	Molybdenum	0.0000473	mg/L	0.0030	10/07/20 17:17	
EPA 6020B	Vanadium	0.0028J	-	0.010	10/07/20 17:17	
			mg/L			
EPA 6020B	Zinc Tatal Disease and Calida	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	
92498084014	GWC-16	CUSTOME			40/40/00 40 07	
	Performed by	R			10/12/20 16:37	
	рН	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	



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

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



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lab Sample ID Client Sample ID Method Qualifiers Parameters Result Units Report Limit Analyzed 92498084018 DUP-2 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 0.010 10/07/20 17:45 mg/L 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 **Total Dissolved Solids** SM 2450C-2011 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 Sulfate 969 10/07/20 10:15 EPA 300.0 Rev 2.1 1993 mg/L 20.0 92498084019 GWC-17 Performed by CUSTOME 10/12/20 16:37 R pН 4.08 Std. Units 10/12/20 16:37 EPA 6010D 53.5 1.0 10/08/20 01:53 Calcium mg/L 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 0.040 10/07/20 17:51 mg/L 0.00096J EPA 6020B Chromium mg/L 0.010 10/07/20 17:51 EPA 6020B Cobalt 0.0018J 0.0050 10/07/20 17:51 mg/L EPA 6020B Lead 0.000060J 0.0050 10/07/20 17:51 mg/L EPA 6020B Lithium 0.0041J mg/L 0.030 10/07/20 17:51 0.0041J EPA 6020B Molybdenum mg/L 0.010 10/07/20 17:51 0.010 EPA 6020B 0.0043J 10/07/20 17:51 Zinc mg/L **Total Dissolved Solids** 20.0 10/03/20 16:27 SM 2450C-2011 752 mg/L Chloride 257 10/07/20 10:29 EPA 300.0 Rev 2.1 1993 mg/L 6.0 0.15 EPA 300.0 Rev 2.1 1993 Fluoride 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 **GWC-22** 92498084020 CUSTOME Performed by 10/12/20 16:37 R pН 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 В EPA 6020B Barium 0.045 0.010 10/07/20 18:14 mg/L 0.25 0.040 10/07/20 18:14 EPA 6020B Boron mg/L EPA 6020B Cadmium 0.00024J 0.0025 10/07/20 18:14 mg/L EPA 6020B Chromium 0.00064J 0.010 10/07/20 18:14 mg/L EPA 6020B I ead 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 65.5 EPA 300.0 Rev 2.1 1993 Sulfate mg/L 1.0 10/07/20 01:51 92498084021 GWB-6R CUSTOME Performed by 10/12/20 16:37 R pН 5.39 Std. Units 10/12/20 16:37



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Lah Comple ID	Client Comple ID						
Lab Sample ID	Client Sample ID	Deput	Linita	Depart Limit	Analyzad	~	Juclifiere
Method	Parameters	Result	Units	Report Limit	Analyzed	·	Qualifiers
92498084021	GWB-6R						
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	В	
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		
92498084022	GWB-5R						
	Performed by	CUSTOME			10/12/20 16:37		
		R					
	рН	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	В	
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		
92498084023	FB-2-9-30-20						
EPA 6020B	Boron	0.030J	mg/L	0.040	10/07/20 18:31		
92498084024	GWC-9						
	Performed by	CUSTOME R			10/12/20 16:37		
	рН	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		
		0.020		0.010			

REPORT OF LABORATORY ANALYSIS

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Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

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



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: GWA-7	Lab ID:	92498084001	Collecte	d: 09/28/2	0 15:20	Received: 09/	30/20 11:47 Ma	atrix: Water		
			Report							
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
Field Data	Analytical	Method:								
	Pace Ana	lytical Services	- Charlotte							
Performed by	CUSTOME R				1		10/12/20 16:37			
рН	5.86	Std. Units			1		10/12/20 16:37			
6010D ATL ICP		Method: EPA 6	•			PA 3010A				
	Pace Ana	lytical Services	- Peachtree	e Corners, (βA					
Calcium	3.3	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:02	7440-70-2		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Prep	paration Met	hod: EF	PA 3005A				
	Pace Ana	lytical Services	- Peachtree	e Corners, (ΒA					
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	0.095	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	4.6	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	0.014J	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	0.0043J	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	0.010J	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	0.10	mg/L	0.050	0.011	5	10/02/20 15:00	10/06/20 19:16	7440-62-2		
Zinc	0.16	mg/L	0.050	0.011	5	10/02/20 15:00	10/06/20 19:16	7440-66-6		
2540C Total Dissolved Solids	Analytical	Method: SM 24	450C-2011							
	Pace Ana	lytical Services	- Peachtree	e Corners, (ΒA					
Total Dissolved Solids	1450	mg/L	50.0	50.0	1		10/02/20 17:27			
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993									
	Pace Ana	lytical Services	- Asheville							
Chloride	113	mg/L	2.0	1.2	2		10/02/20 06:40	16887-00-6		
Fluoride	0.069J	mg/L	0.10	0.050	1		10/01/20 21:43	16984-48-8		
Sulfate	20.0	mg/L	1.0	0.50	1		10/01/20 21:43	14808-79-8		



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 9249

92498084

Sample: GWC-13	Lab ID:	92498084002	Collect	ed: 09/28/20) 16:40	Received: 09/	/30/20 11:47 Ma	atrix: Water				
			Report									
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual			
Field Data	Analytica	I Method:										
	Pace Ana	alytical Services	- Charlotte	9								
Performed by	CUSTOME R				1		10/12/20 16:37					
рН	4.76	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	2.9	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:07	7440-70-2				
6020 MET ICPMS	Analytica	I Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A						
	Pace Ana	alytical Services	- Peachtre	e Corners, C	βA							
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						
Barium	0.029	mg/L	0.010	0.00071	1	10/02/20 15:00						
Beryllium	ND	mg/L	0.0030	0.000046	1		10/06/20 19:22					
Boron	0.24	mg/L	0.040	0.0052	1	10/02/20 15:00						
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 19:22	7440-43-9				
Chromium	0.00062J	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	0.000064J	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	0.016	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:22	7440-66-6				
2540C Total Dissolved Solids	Analytica	I Method: SM 24	450C-2011									
	Pace Ana	alytical Services	- Peachtre	e Corners, C	βA							
Total Dissolved Solids	60.0	mg/L	10.0	10.0	1		10/02/20 17:27					
300.0 IC Anions 28 Days	Analytica	I Method: EPA 3	300.0 Rev 2	2.1 1993								
· · · · · · · · · · · · · · · · · · ·	•	alytical Services										
Chloride	4.3	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	25.6	mg/L	1.0	0.50	1		10/01/20 21:58	14808-79-8				



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 9249

92498084

Sample: GWA-8	Lab ID:	92498084003	Collecte	ed: 09/28/20	0 16:04	Received: 09/	/30/20 11:47 Ma	atrix: Water				
			Report									
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual			
Field Data	Analytical	Method:										
	Pace Ana	lytical Services	- Charlotte	9								
Performed by	CUSTOME R				1		10/12/20 16:37					
рН	4.41	Std. Units			1		10/12/20 16:37					
6010D ATL ICP	Analytical	Analytical Method: EPA 6010D Preparation Method: EPA 3010A										
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA							
Calcium	25.6	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:11	7440-70-2				
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A						
	Pace Ana	lytical Services	- Peachtre	e Corners, C	B A							
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	0.050	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:39	7440-39-3				
Beryllium	0.00021J	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:39	7440-41-7				
Boron	0.15	mg/L	0.040	0.0052	1	10/02/20 15:00						
Cadmium	ND	mg/L	0.0025	0.00012	1							
Chromium	0.00071J	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	0.0010J	mg/L	0.030	0.00081	1		10/06/20 19:39					
Molybdenum	ND	mg/L	0.010	0.00069	1		10/06/20 19:39					
Selenium	ND	mg/L	0.010	0.0016	1		10/06/20 19:39					
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	0.0092J	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:39	7440-66-6				
2540C Total Dissolved Solids	Analytical	Method: SM 24	450C-2011									
	Pace Ana	lytical Services	- Peachtre	e Corners, C	S A							
Total Dissolved Solids	175	mg/L	10.0	10.0	1		10/02/20 17:27					
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993								
-		lytical Services										
Chloride	13.7	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					
Sulfate	93.6	mg/L	2.0	1.0	2		10/02/20 06:55					



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Face Floject No 92490004										
Sample: GWC-1	Lab ID:	Lab ID: 92498084004 Collected: 09/28/20 17:08 Received: 09/30/20 11:47 Matrix: Water								
			Report							
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
Field Data	Analytical	Method:								
	Pace Ana	lytical Services	- Charlotte	e						
Performed by	CUSTOME R				1		10/12/20 16:37			
рН	5.79	Std. Units			1		10/12/20 16:37			
6010D ATL ICP	Analytical	I Method: EPA 6	010D Pre	paration Me	thod: EF	PA 3010A				
	Pace Ana	lytical Services	- Peachtre	ee Corners, (GA					
Calcium	70.7	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:24	7440-70-2		
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Me	thod: EF	PA 3005A				
	Pace Ana	lytical Services	- Peachtre	ee Corners, (ЗA					
Antimony	0.00035J	mg/L	0.0030	0.00028	1	10/02/20 15:00	10/06/20 19:45	7440-36-0		
Arsenic	0.0058	mg/L	0.0050	0.00078	1	10/02/20 15:00	10/06/20 19:45	7440-38-2		
Barium	0.051	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	0.69	mg/L	0.040	0.0052	1	10/02/20 15:00		7440-42-8		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00				
Chromium	0.0024J	mg/L	0.010	0.00055	1	10/02/20 15:00				
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:45			
Lead	0.000043J	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:45			
Lithium	ND	mg/L	0.030	0.00081	1	10/02/20 15:00	10/06/20 19:45			
Molybdenum	0.059	mg/L	0.010	0.00069	1	10/02/20 15:00				
Selenium	ND	mg/L	0.010	0.0016	1	10/02/20 15:00				
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/20 15:00				
Vanadium	0.0042J	mg/L	0.010	0.0022	1	10/02/20 15:00				
Zinc	0.0092J	mg/L	0.010	0.0022	1	10/02/20 15:00				
2540C Total Dissolved Solids	Analytical	Method: SM 24	150C-2011							
	Pace Ana	lytical Services	- Peachtre	ee Corners, (GΑ					
Total Dissolved Solids	373	mg/L	10.0	10.0	1		10/02/20 17:27			
300.0 IC Anions 28 Days	Analytical	I Method: EPA 3	00.0 Rev 2	2.1 1993						
	Pace Ana	lytical Services	- Asheville	9						
Chloride	13.8	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			
Sulfate	71.6	mg/L	1.0	0.50	1		10/01/20 22:27			
	7 1.0		1.0	0.00						



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: FB-1-9-28-20	Lab ID:	92498084005	Collecte	ed: 09/28/2	0 16:55	Received: 09/	30/20 11:47 Ma	atrix: Water					
			Report										
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual				
6010D ATL ICP	Analytical	Method: EPA 6	010D Pre	paration Me	thod: El	PA 3010A							
	Pace Ana	lytical Services	- Peachtre	e Corners, (GΑ								
Calcium	ND	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:28	7440-70-2					
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	thod: Ef	PA 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					
2540C Total Dissolved Solids	Analytical	Method: SM 24	150C-2011										
	Pace Ana	lytical Services	- Peachtre	e Corners, (GΑ								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/02/20 17:27						
300.0 IC Anions 28 Days	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					



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 9249

92498084

Sample: GWC-12	Lab ID:	9249808400	6 Collect	ed: 09/29/20	0 09:35	Received: 09/	'30/20 11:47 Ma	atrix: Water				
			Report									
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual			
Field Data	Analytica	I Method:										
	Pace Ana	alytical Service	s - Charlotte	e								
Performed by	CUSTOME R				1		10/12/20 16:37					
рН	3.95	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	42.0	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:33	7440-70-2				
6020 MET ICPMS	Analytica	I Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A						
	Pace Ana	alytical Service	s - Peachtre	ee Corners, C	βA							
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					
Barium	0.018	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 19:56	7440-39-3				
Beryllium	0.00043J	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 19:56	7440-41-7				
Boron	4.7	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	0.00085J	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 19:56	7440-47-3				
Cobalt	0.00057J	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 19:56	7440-48-4				
Lead	0.000037J	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/06/20 19:56	7439-92-1				
Lithium	0.00086J	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	0.0046J	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:56	7440-62-2				
Zinc	0.0074J	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 19:56	7440-66-6				
2540C Total Dissolved Solids	Analytica	I Method: SM 2	2450C-2011									
	Pace Ana	alytical Service	s - Peachtre	ee Corners, C	βA							
Total Dissolved Solids	440	mg/L	10.0	10.0	1		10/02/20 17:28					
300.0 IC Anions 28 Days	Analytica	I Method: EPA	300.0 Rev 2	2.1 1993								
	Pace Analytical Services - Asheville											
Chloride	24.3	mg/L	1.0	0.60	1		10/01/20 22:56	16887-00-6				
Fluoride	0.16	mg/L	0.10	0.050	1		10/01/20 22:56					
Sulfate	237	mg/L	5.0	2.5	5		10/02/20 07:09	14808-79-8				



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Pace Project No.: 92498084													
Sample: GWC-11	Lab ID:	92498084007	Collecte	ed: 09/29/20) 12:20	Received: 09/	30/20 11:47 Ma	atrix: Water					
			Report										
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual				
Field Data	Analytical	Method:											
	Pace Ana	lytical Services	- Charlotte	;									
Performed by	CUSTOME				1		10/12/20 16:37						
рН	R 4.77	Std. Units			1		10/12/20 16:37						
6010D ATL ICP	Analytical	Method: EPA	6010D Pre	paration Met	hod: Ef	PA 3010A							
		Pace Analytical Services - Peachtree Corners, GA											
Calcium	123	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:37	7440-70-2					
6020 MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A							
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA								
Antimony	0.00051J	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						
Barium	0.14	mg/L	0.010	0.00071	1	10/02/20 15:00	10/06/20 20:02						
Beryllium	ND	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/06/20 20:02	7440-41-7					
Boron	1.2	mg/L	0.040	0.0052	1	10/02/20 15:00	10/06/20 20:02	7440-42-8					
Cadmium	0.00077J	mg/L	0.0025	0.00012	1	10/02/20 15:00	10/06/20 20:02	7440-43-9					
Chromium	0.0011J	mg/L	0.010	0.00055	1	10/02/20 15:00	10/06/20 20:02	7440-47-3					
Cobalt	0.00055J	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/06/20 20:02	7440-48-4					
Lead	0.00032J	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		10/06/20 20:02						
Selenium	0.0024J	mg/L	0.010	0.0016	1	10/02/20 15:00	10/06/20 20:02	7782-49-2					
Thallium	0.00017J	mg/L	0.0010	0.00014	1	10/02/20 15:00	10/06/20 20:02	7440-28-0					
Vanadium	0.0023J	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 20:02	7440-62-2					
Zinc	0.0031J	mg/L	0.010	0.0022	1	10/02/20 15:00	10/06/20 20:02	7440-66-6					
2540C Total Dissolved Solids	Analytical	Method: SM 2	450C-2011										
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA								
Total Dissolved Solids	1100	mg/L	50.0	50.0	1		10/02/20 17:28						
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993									
	Pace Ana	lytical Services	s - Asheville										
Chloride	143	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	516	mg/L	11.0	5.5	11		10/02/20 07:23						
		-											



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

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



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498

92498084

Sample: GWC-2	Lab ID:	92498084009	Collecte	ed: 09/29/20) 15:05	Received: 09/	30/20 11:47 Ma	atrix: Water			
			Report								
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual		
Field Data	Analytical	Method:									
	Pace Ana	lytical Services	- Charlotte)							
Performed by	CUSTOME R				1		10/12/20 16:37				
рН	4.60	Std. Units			1		10/12/20 16:37				
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A										
	Pace Ana	lytical Services	- Peachtre	e Corners, C	B A						
Calcium	0.18J	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:46	7440-70-2			
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A					
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA						
Antimony	0.0016J	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	0.049	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 19:03	7440-39-3			
Beryllium	0.000075J	mg/L	0.0030	0.000046	1		10/05/20 19:03				
Boron	0.024J	mg/L	0.040	0.0052	1	10/02/20 15:00					
Cadmium	ND	mg/L	0.0025	0.00012	1	10/02/20 15:00					
Chromium	ND	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 19:03				
Cobalt	ND	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 19:03				
Lead	ND	mg/L	0.0050	0.000036	1	10/02/20 15:00					
Lithium	ND	mg/L	0.030	0.00081	1		10/05/20 19:03				
Molybdenum	ND	mg/L	0.010	0.00069	1		10/05/20 19:03				
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	0.056	mg/L	0.010	0.0022	1	10/02/20 15:00	10/05/20 19:03	7440-66-6			
2540C Total Dissolved Solids	Analytical	Method: SM 24	450C-2011								
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA						
Total Dissolved Solids	33.0	mg/L	10.0	10.0	1		10/02/20 17:28				
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993							
	Pace Ana	lytical Services	- Asheville								
Chloride	5.4	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				
Sulfate	8.6	mg/L	1.0	0.50	1		10/02/20 00:37				



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: EB-1-9-29-20	Lab ID:	92498084010	Collecte	ed: 09/29/2	0 16:20	Received: 09/	30/20 11:47 Ma	atrix: Water					
			Report										
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual				
6010D ATL ICP	Analytical	Method: EPA 6	010D Pre	paration Me	thod: El	PA 3010A							
	Pace Ana	lytical Services	- Peachtre	e Corners, (GΑ								
Calcium	ND	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:50	7440-70-2					
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	thod: Ef	PA 3005A							
	Pace Analytical Services - Peachtree Corners, GA												
Antimony	0.00049J	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					
2540C Total Dissolved Solids	Analytical	Method: SM 24	150C-2011										
	Pace Ana	lytical Services	- Peachtre	e Corners, (GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/02/20 17:28						
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993												
	Pace Ana	lytical Services	- Asheville	ł									
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	1.6	mg/L	1.0	0.50	1		10/02/20 00:51	14808-79-8					



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: DUP-1	Lab ID:	92498084011	Collecte	ed: 09/29/20	00:00	Received: 09/	30/20 11:47 Ma	atrix: Water					
			Report										
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual				
6010D ATL ICP		Method: EPA 6 lytical Services		•		PA 3010A							
Calcium	43.1	mg/L	1.0	0.070	1	10/01/20 18:53	10/05/20 22:55	7440-70-2					
6020 MET ICPMS	Apolytical	Ū	020B Bro	norotion Mot	had. El	20.05							
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	10/02/20 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	0.017	mg/L	0.010	0.00071	1	10/02/20 15:00	10/05/20 19:14	7440-39-3					
Beryllium	0.00040J	mg/L	0.0030	0.000046	1	10/02/20 15:00	10/05/20 19:14	7440-41-7					
Boron	4.6	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	0.00090J	mg/L	0.010	0.00055	1	10/02/20 15:00	10/05/20 19:14	7440-47-3					
Cobalt	0.00056J	mg/L	0.0050	0.00038	1	10/02/20 15:00	10/05/20 19:14	7440-48-4					
Lead	0.000040J	mg/L	0.0050	0.000036	1	10/02/20 15:00	10/05/20 19:14	7439-92-1					
Lithium	0.00088J	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	0.0049J	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					
2540C Total Dissolved Solids	Analytical	Method: SM 24	150C-2011										
	Pace Ana	lytical Services	- Peachtre	e Corners, C	ЗA								
Total Dissolved Solids	434	mg/L	10.0	10.0	1		10/02/20 17:28						
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993												
	Pace Ana	lytical Services	- Asheville	!									
Chloride	24.4	mg/L	1.0	0.60	1		10/02/20 01:06	16887-00-6					
Fluoride	0.16	mg/L	0.10	0.050	1		10/02/20 01:06	16984-48-8					
Sulfate	241	mg/L	5.0	2.5	5		10/02/20 08:06	14808-79-8					



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498

92498084

Sample: GWC-21	Lab ID:	92498084012	Collecte	ed: 09/30/20	0 10:49	Received: 10/	/02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte	9					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	5.82	Std. Units			1		10/12/20 16:37		
6010D ATL ICP	-	Method: EPA 6				PA 3010A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA				
Calcium	98.4	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:13	7440-70-2	
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	A				
Antimony	0.00033J	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:11	7440-36-0	В
Arsenic	0.0029J	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:11		
Barium	0.19	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:11		
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:11		
Boron	2.3	mg/L	0.040	0.0052	1	10/05/20 17:15	10/07/20 17:11		
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:11	7440-43-9	
Chromium	0.00067J	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	0.000054J	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:11		
Lithium	ND	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:11	7439-93-2	
Molybdenum	0.028	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 17:11	7439-98-7	
Selenium	0.0061J	mg/L	0.010	0.0016	1		10/07/20 17:11		
Thallium	ND	mg/L	0.0010	0.00014	1	10/05/20 17:15	10/07/20 17:11	7440-28-0	
Vanadium	0.0029J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:11	7440-62-2	
Zinc	0.0096J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:11	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 24	450C-2011						
	Pace Ana	lytical Services	- Peachtre	e Corners, C	A				
Total Dissolved Solids	634	mg/L	20.0	20.0	1		10/03/20 16:26		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Ana	lytical Services	- Asheville	•					
Chloride	23.7	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		
Sulfate	306	mg/L	7.0	3.5	7		10/07/20 09:18		



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: GWC-15	Lab ID:	92498084013	Collecte	ed: 09/30/20) 12:30	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qua
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte	;					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	6.71	Std. Units			1		10/12/20 16:37		
6010D ATL ICP		Method: EPA		•		PA 3010A			
Calcium	109	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:17	7440-70-2	
6020 MET ICPMS	Analytical	Method: EPA	6020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, G	βA				
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:17	7440-36-0	
Arsenic	0.24	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:17		
Barium	0.034	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 17:17		
Beryllium	ND	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 17:17	7440-41-7	
Boron	0.86	mg/L	0.040	0.0052	1	10/05/20 17:15			
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15	10/07/20 17:17	7440-43-9	
Chromium	0.0016J	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		10/07/20 17:17		
Lead	0.000047J	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	0.11	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	0.0028J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:17	7440-62-2	
Zinc	0.032	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:17	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 2	450C-2011						
	Pace Ana	lytical Services	- Peachtre	e Corners, C	A				
Total Dissolved Solids	434	mg/L	10.0	10.0	1		10/03/20 16:26		
300.0 IC Anions 28 Days	Analytical	Method: EPA	300.0 Rev 2	2.1 1993					
-	Pace Ana	lytical Services	s - Asheville						
Chloride	1.7	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		
Sulfate	18.5	mg/L	1.0	0.50	1		10/06/20 23:41		



Project: **GRUMMAN ROAD SEMI ANNUAL**

Pace Project No.: 92498084 Sample: GWC-16 Lab ID: 92498084014 Collected: 09/30/20 14:00 Received: 10/02/20 12:22 Matrix: Water Report Units MDL DF Parameters Results Limit Prepared CAS No. Analyzed Qual Analytical Method: Field Data Pace Analytical Services - Charlotte CUSTOME Performed by 10/12/20 16:37 1 R 5.47 Std. Units 1 10/12/20 16:37 pН 6010D ATL ICP Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA Calcium 177 mg/L 1.0 0.070 1 10/05/20 17:12 10/08/20 01:31 7440-70-2 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 17:22 7440-36-0 Arsenic 0.044 mg/L 0.0050 0.00078 10/05/20 17:15 10/07/20 17:22 7440-38-2 1 0.010 0.00071 10/05/20 17:15 10/07/20 17:22 7440-39-3 Barium 0.14 mg/L 1 Beryllium 0.000089J mg/L 0.0030 0.000046 1 10/05/20 17:15 10/07/20 17:22 7440-41-7 Boron 8.1 mg/L 0.040 0.0052 1 10/05/20 17:15 10/07/20 17:22 7440-42-8 Cadmium ND 0.0025 0.00012 10/05/20 17:15 10/07/20 17:22 7440-43-9 mg/L 1 0.00098J 0.010 0.00055 10/05/20 17:15 10/07/20 17:22 7440-47-3 Chromium mg/L 1 0.0050 0.00038 10/05/20 17:15 10/07/20 17:22 7440-48-4 Cobalt ND mg/L 1 0.000091J 10/05/20 17:15 10/07/20 17:22 7439-92-1 0.0050 0.000036 Lead mg/L 1 10/05/20 17:15 10/07/20 17:22 7439-93-2 Lithium ND mg/L 0.030 0.00081 1 10/05/20 17:15 10/07/20 17:22 7439-98-7 Molybdenum 0.15 mg/L 0.010 0.00069 1 Selenium 0.0037J 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 0.0028J 0.010 0.0022 10/05/20 17:15 10/07/20 17:22 7440-62-2 mg/L 1 0.0051J Zinc mg/L 0.010 0.0022 1 10/05/20 17:15 10/07/20 17:22 7440-66-6 Analytical Method: SM 2450C-2011 2540C Total Dissolved Solids Pace Analytical Services - Peachtree Corners, GA **Total Dissolved Solids** 1140 50.0 50.0 10/03/20 16:26 mg/L 1 Analytical Method: EPA 300.0 Rev 2.1 1993 300.0 IC Anions 28 Days Pace Analytical Services - Asheville Chloride 39.6 mg/L 1.0 0.60 10/07/20 00:24 16887-00-6 1 Fluoride ND 0.10 0.050 10/07/20 00:24 16984-48-8 mg/L 1 Sulfate 736 mg/L 16.0 8.0 16 10/07/20 09:32 14808-79-8



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: GWC-20 Lab ID: 92498084015 Collected: 09/30/20 16:31 Received: 10/02/20 12:22 Matrix: Water Report Units MDL DF Results Limit Prepared CAS No. Parameters Analyzed Qual Analytical Method: **Field Data** Pace Analytical Services - Charlotte CUSTOME Performed by 10/12/20 16:37 1 R 6.04 Std. Units 1 10/12/20 16:37 pН 6010D ATL ICP Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA Calcium 292 mg/L 1.0 0.070 1 10/05/20 17:12 10/08/20 01:35 7440-70-2 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 17:28 7440-36-0 Arsenic 0.31 mg/L 0.0050 0.00078 10/05/20 17:15 10/07/20 17:28 7440-38-2 1 0.35 0.010 0.00071 10/05/20 17:15 10/07/20 17:28 7440-39-3 Barium mg/L 1 Beryllium ND mg/L 0.0030 0.000046 1 10/05/20 17:15 10/07/20 17:28 7440-41-7 Boron 9.9 mg/L 0.040 0.0052 1 10/05/20 17:15 10/07/20 17:28 7440-42-8 Cadmium ND 0.0025 0.00012 10/05/20 17:15 10/07/20 17:28 7440-43-9 mg/L 1 0.0013J 0.010 0.00055 10/05/20 17:15 10/07/20 17:28 7440-47-3 Chromium 1 mg/L 0.0050 0.00038 10/05/20 17:15 10/07/20 17:28 7440-48-4 Cobalt ND mg/L 1 ND 0.0050 0.000036 10/05/20 17:15 10/07/20 17:28 7439-92-1 Lead mg/L 1 10/05/20 17:15 10/07/20 17:28 7439-93-2 Lithium ND mg/L 0.030 0.00081 1 10/05/20 17:15 10/07/20 17:28 7439-98-7 Molybdenum 0.33 mg/L 0.010 0.00069 1 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 0.0029J 0.010 0.0022 10/05/20 17:15 10/07/20 17:28 7440-62-2 mg/L 1 Zinc 0.031 mg/L 0.010 0.0022 1 10/05/20 17:15 10/07/20 17:28 7440-66-6 Analytical Method: SM 2450C-2011 2540C Total Dissolved Solids Pace Analytical Services - Peachtree Corners, GA **Total Dissolved Solids** 1860 50.0 50.0 10/03/20 16:26 mg/L 1 300.0 IC Anions 28 Days Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville

	r acc / mary					
Chloride	34.9	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	956	mg/L	20.0	10.0	20	10/07/20 09:47 14808-79-8



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.:

92498084

Sample: GWB-4R	Lab ID:	92498084016	Collecte	ed: 10/01/20	0 08:50	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytica	I Method:							
	Pace Ana	alytical Services	- Charlotte	;					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	5.75	Std. Units			1		10/12/20 16:37		
6010D ATL ICP		l Method: EPA 6 alytical Services				PA 3010A			
Calcium	48.4	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:40	7440-70-2	
6020 MET ICPMS	Analytica	I Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Ana	alytical Services	- Peachtre	e Corners, C	A				
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:34	7440-36-0	
Arsenic	0.0027J	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:34	7440-38-2	
Barium	0.077	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	5.2	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	0.0020J	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:34	7440-47-3	
Cobalt	0.00050J	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:34	7440-48-4	
Lead	0.00026J	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:34	7439-92-1	
Lithium	0.013J	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:34	7439-93-2	
Molybdenum	0.15	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	0.0047J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:34	7440-62-2	
Zinc	0.0064J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:34	7440-66-6	
2540C Total Dissolved Solids	Analytica	I Method: SM 24	450C-2011						
	Pace Ana	alytical Services	- Peachtre	e Corners, C	βA				
Total Dissolved Solids	424	mg/L	10.0	10.0	1		10/03/20 16:28		
300.0 IC Anions 28 Days	Analytica	I Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Ana	alytical Services	- Asheville	•					
Chloride	15.7	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	178	mg/L	4.0	2.0	4		10/07/20 10:01	14808-79-8	



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: EB-2-9-30-20	Lab ID:	92498084017	Collecte	ed: 09/30/2	0 14:30	Received: 10/	02/20 12:22 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Method: EPA 6 lytical Services		•		PA 3010A			
Calcium	0.30J	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:44	7440-70-2	
6020 MET ICPMS		Method: EPA 6 lytical Services		•		PA 3005A			
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	0.061	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	0.0027J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:39	7440-66-6	
2540C Total Dissolved Solids		Method: SM 24		o Cornore (24				
		,		,					
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/03/20 16:26		
300.0 IC Anions 28 Days	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		
Sulfate	ND	mg/L	1.0	0.50	1		10/07/20 01:08		
		0	-					-	



CAS No.

Qual

Received: 10/02/20 12:22 Matrix: Water

10/05/20 17:12 10/08/20 01:49 7440-70-2

Analyzed

10/07/20 10:15 14808-79-8

Prepared

ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: DUP-2	Lab ID:	92498084018	Collecte	d: 09/30/2	0 00:00	Receive
			Report			
Parameters	Results	Units	Limit	MDL	DF	Prepa
6010D ATL ICP	Analytica	Method: EPA 6	6010D Prep	aration Me	thod: EF	PA 3010A
	Pace Ana	lytical Services	- Peachtree	e Corners, (GA	
Calcium	294	mg/L	1.0	0.070	1	10/05/20

969

mg/L

Galoidin	204	iiig/L	1.0	0.070		10/00/20 11.12	10/00/20 01.40	1440102
6020 MET ICPMS			PA 6020B Prep			PA 3005A		
	Pace Analy	tical Servi	ces - Peachtre	e Corners, C	έA			
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:45	7440-36-0
Arsenic	0.29	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:45	7440-38-2
Barium	0.33	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	9.8	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	0.0013J	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	0.31	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	0.0030J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:45	7440-62-2
Zinc	0.0062J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 17:45	7440-66-6
2540C Total Dissolved Solids	Analytical	Method: SN	N 2450C-2011					
	Pace Anal	tical Servi	ces - Peachtre	e Corners, C	ΒA			
Total Dissolved Solids	1720	mg/L	50.0	50.0	1		10/03/20 16:27	
300.0 IC Anions 28 Days	Analytical	Method: EF	PA 300.0 Rev 2	2.1 1993				
	Pace Anal	tical Servi						
Chloride	35.4	mg/L	1.0	0.60	1		10/07/20 01:22	16887-00-6
Fluoride	0.32	mg/L	0.10	0.050	1		10/07/20 01:22	

20.0

10.0

20

REPORT OF LABORATORY ANALYSIS

Sulfate



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498

92498084

Sample: GWC-17	Lab ID:	92498084019	Collect	ed: 09/30/20) 12:00	Received: 10/	/02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte	9					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	4.08	Std. Units			1		10/12/20 16:37		
6010D ATL ICP	Analytical	Method: EPA 6	010D Pre	paration Met	hod: Ef	PA 3010A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	θA				
Calcium	53.5	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:53	7440-70-2	
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA				
Antimony	ND	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 17:51	7440-36-0	
Arsenic	0.0012J	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 17:51		
Barium	0.035	mg/L	0.010	0.00071	1	10/05/20 17:15			
Beryllium	0.0013J	mg/L	0.0030	0.000046	1		10/07/20 17:51		
Boron	0.86	mg/L	0.040	0.0052	1	10/05/20 17:15			
Cadmium	ND	mg/L	0.0025	0.00012	1	10/05/20 17:15			
Chromium	0.00096J	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 17:51		
Cobalt	0.0018J	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 17:51		
Lead	0.000060J	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 17:51	7439-92-1	
Lithium	0.0041J	mg/L	0.030	0.00081	1	10/05/20 17:15	10/07/20 17:51	7439-93-2	
Molybdenum	0.0041J	mg/L	0.010	0.00069	1		10/07/20 17:51		
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	0.0043J	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 24	450C-2011						
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA				
Total Dissolved Solids	752	mg/L	20.0	20.0	1		10/03/20 16:27		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-	Pace Ana	lytical Services	- Asheville)					
Chloride	257	mg/L	6.0	3.6	6		10/07/20 10:29	16887-00-6	
Fluoride	0.15	mg/L	0.10	0.050	1		10/07/20 01:37	16984-48-8	
Sulfate	193	mg/L	6.0	3.0	6		10/07/20 10:29	14808-79-8	



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 9249

92498084

Sample: GWC-22	Lab ID:	92498084020	Collecte	ed: 09/30/20	0 14:05	Received: 10/	/02/20 12:22 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte	9					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	4.63	Std. Units			1		10/12/20 16:37		
6010D ATL ICP	Analytical	Method: EPA 6	010D Pre	paration Met	hod: EF	PA 3010A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	SA				
Calcium	20.9	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 01:58	7440-70-2	
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA				
Antimony	0.0016J	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:14	7440-36-0	В
Arsenic	ND	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:14		
Barium	0.045	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	0.25	mg/L	0.040	0.0052	1	10/05/20 17:15			
Cadmium	0.00024J	mg/L	0.0025	0.00012	1		10/07/20 18:14		
Chromium	0.00064J	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		
Lead	0.00023J	mg/L	0.0050	0.000036	1	10/05/20 17:15			
Lithium	ND	mg/L	0.030	0.00081	1		10/07/20 18:14		
Molybdenum	ND	mg/L	0.010	0.00069	1		10/07/20 18:14		
Selenium	ND	mg/L	0.010	0.0016	1		10/07/20 18:14		
Thallium	ND	mg/L	0.0010	0.00014	1		10/07/20 18:14		
Vanadium	ND	mg/L	0.010	0.0022	1	10/05/20 17:15			
Zinc	ND	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:14	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 24	450C-2011						
	Pace Ana	lytical Services	- Peachtre	e Corners, C	βA				
Total Dissolved Solids	113	mg/L	10.0	10.0	1		10/03/20 16:27		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
-		lytical Services							
Chloride	8.5	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		
Sulfate	65.5	mg/L	1.0	0.50	1		10/07/20 01:51		



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.:

92498084

Sample: GWB-6R	Lab ID:	92498084021	Collecte	ed: 09/30/20) 15:35	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte	9					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	5.39	Std. Units			1		10/12/20 16:37		
6010D ATL ICP	-	Method: EPA 6				PA 3010A			
Calcium	27.5	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:02	7440-70-2	
6020 MET ICPMS		Method: EPA 6		•		PA 3005A			
Antimony	0.00059J	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:20	7440-36-0	В
Arsenic	0.0040J	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:20		
Barium	0.092	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 18:20	7440-39-3	
Beryllium	0.000046J	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 18:20	7440-41-7	
Boron	4.2	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	0.0045J	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	0.000080J	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	0.00097J	mg/L	0.010	0.00069	1	10/05/20 17:15	10/07/20 18:20	7439-98-7	
Selenium	0.0023J	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	0.018	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	
2540C Total Dissolved Solids		Method: SM 24		o Cornoro (` ^				
Total Dissolved Solids	816	mg/L	20.0	20.0	1		10/03/20 16:27		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
	Pace Ana	lytical Services	- Asheville	•					
Chloride	53.9	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	339	mg/L	7.0	3.5	7		10/07/20 10:43	14808-79-8	



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 9

92498084

Sample: GWB-5R	Lab ID:	92498084022	Collecte	ed: 09/30/20) 17:30	Received: 10/	/02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte	;					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	4.99	Std. Units			1		10/12/20 16:37		
6010D ATL ICP	Analytical	Method: EPA 6	010D Pre	paration Met	hod: EF	PA 3010A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	BA				
Calcium	70.4	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:07	7440-70-2	
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e Corners, C	S A				
Antimony	0.00030J	mg/L	0.0030	0.00028	1	10/05/20 17:15	10/07/20 18:25	7440-36-0	В
Arsenic	0.0017J	mg/L	0.0050	0.00078	1	10/05/20 17:15	10/07/20 18:25		
Barium	0.16	mg/L	0.010	0.00071	1		10/07/20 18:25		
Beryllium	0.000065J	mg/L	0.0030	0.000046	1		10/07/20 18:25		
Boron	4.0	mg/L	0.040	0.0052	1		10/07/20 18:25		
Cadmium	ND	mg/L	0.0025	0.00012	1		10/07/20 18:25		
Chromium	0.0018J	mg/L	0.010	0.00055	1		10/07/20 18:25		
Cobalt	0.00056J	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 18:25		
Lead	0.0012J	mg/L	0.0050	0.000036	1		10/07/20 18:25		
Lithium	ND	mg/L	0.030	0.00081	1		10/07/20 18:25		
Molybdenum	ND	mg/L	0.010	0.00069	1		10/07/20 18:25		
Selenium	ND	mg/L	0.010	0.0016	1		10/07/20 18:25		
Thallium	ND	mg/L	0.0010	0.00014	1		10/07/20 18:25		
Vanadium	0.0037J	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:25		
Zinc	ND	mg/L	0.010	0.0022	1		10/07/20 18:25		
2540C Total Dissolved Solids	Analytical	Method: SM 24	450C-2011						
	Pace Ana	lytical Services	- Peachtre	e Corners, C	A				
Total Dissolved Solids	652	mg/L	20.0	20.0	1		10/03/20 16:27		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	00.0 Rev 2	2.1 1993					
	-	lytical Services							
Chloride	24.1	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	339	mg/L	7.0	3.5	7		10/07/20 11:26		



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: FB-2-9-30-20	Lab ID:	92498084023	Collecte	ed: 09/30/2	0 15:25	Received: 10/	02/20 12:22 M	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Method: EPA 6 lytical Services		•		PA 3010A			
Calcium	ND	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:11	7440-70-2	
6020 MET ICPMS		Method: EPA 6 lytical Services		•		PA 3005A			
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	0.030J	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	
2540C Total Dissolved Solids		Method: SM 24							
	Pace Ana	lytical Services	- Peachtre	e Corners, (ΕA				
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/03/20 16:27		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
	Face Ana	iyucal Services	- ASHEVIIIE						
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	



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

Sample: GWC-9	Lab ID:	92498084024	Collecte	ed: 10/01/2	0 08:21	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte	9					
Performed by	CUSTOME R				1		10/12/20 16:37		
рН	4.42	Std. Units			1		10/12/20 16:37		
6010D ATL ICP	Analytical	Method: EPA 6	6010D Pre	paration Me	thod: EF	PA 3010A			
	Pace Ana	lytical Services	- Peachtre	e Corners,	GA				
Calcium	5.5	mg/L	1.0	0.070	1	10/05/20 17:12	10/08/20 02:29	7440-70-2	
6020 MET ICPMS	Analytical	Method: EPA 6	020B Pre	paration Me	thod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtre	e 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	0.15	mg/L	0.010	0.00071	1	10/05/20 17:15	10/07/20 18:37	7440-39-3	
Beryllium	0.00020J	mg/L	0.0030	0.000046	1	10/05/20 17:15	10/07/20 18:37	7440-41-7	
Boron	0.028J	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	0.0012J	mg/L	0.010	0.00055	1	10/05/20 17:15	10/07/20 18:37	7440-47-3	
Cobalt	0.00099J	mg/L	0.0050	0.00038	1	10/05/20 17:15	10/07/20 18:37	7440-48-4	
Lead	0.000038J	mg/L	0.0050	0.000036	1	10/05/20 17:15	10/07/20 18:37	7439-92-1	
Lithium	0.0019J	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	0.025	mg/L	0.010	0.0022	1	10/05/20 17:15	10/07/20 18:37	7440-66-6	
2540C Total Dissolved Solids	Analytical	Method: SM 24	450C-2011						
	Pace Ana	lytical Services	- Peachtre	e Corners,	GA				
Total Dissolved Solids	111	mg/L	10.0	10.0	1		10/03/20 16:28		
300.0 IC Anions 28 Days	Analytical	Method: EPA 3	300.0 Rev 2	2.1 1993					
-	Pace Ana	lytical Services	- Asheville	•					
Chloride	16.8	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	35.0	mg/L	1.0	0.50	1		10/07/20 04:16	14808-79-8	
		-							



Project: Pace Project No.:	GRUMMAN ROAI 92498084	D SEMI ANNUAL										
			A									
QC Batch:	570380			ysis Metho		EPA 6010D						
QC Batch Method:	EPA 3010A			ysis Descr	iption:	6010D ATL						
				oratory:		Pace Analy						
Associated Lab Sam		001, 92498084002 008, 92498084009				924980840	05, 924980	084006, 924	498084007	7,		
METHOD BLANK:	3021700			Matrix: V	Vater							
Associated Lab Sam		001, 92498084002 008, 92498084009				924980840	05, 924980	084006, 924	498084007	7,		
			Blai	nk	Reporting							
Param	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Calcium		mg/L		ND	1	.0	0.070 10	0/05/20 20:	52			
LABORATORY CON	NTROL SAMPLE:	3021701										
			Spike	L	CS	LCS	% R	ec				
Param	neter	Units	Conc.	Re	sult	% Rec	Limi	its (Qualifiers			
Calcium		mg/L		1	1.0	10	3 8	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUF	PLICATE: 30217	-		302176	5						
			MS	MSD								
Parameter	. Units	92497532027 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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.



Project:	GRUMMAN ROAL	O SEMI ANNUAL										
Pace Project No.:	92498084											
QC Batch:	571010			ysis Metho		EPA 6010D						
QC Batch Method:	EPA 3010A		Anal	ysis Descr	iption:	6010D ATL						
				oratory:		Pace Analy				,		
Associated Lab San		012, 9249808401 019, 9249808402	,	,	,		,	,	498084018	3,		
METHOD BLANK:	3024605			Matrix: V	Vater							
Associated Lab San	•	.012, 9249808401 .019, 9249808402	,	,	,		,	,	498084018	3,		
			Bla	nk	Reporting							
Paran	neter	Units	Res	sult	Limit	MD	L	Analyzed	Qı	ualifiers		
Calcium		mg/L		ND	1	.0	0.070 10	0/08/20 00:	10			
LABORATORY CON	NTROL SAMPLE:	3024606										
			Spike	L	CS	LCS	% R	ec				
Paran	neter	Units	Conc.	Re	sult	% Rec	Limi	its (Qualifiers			
Calcium		mg/L		1	1.0	10	1 8	80-120				
MATRIX SPIKE & M	IATRIX SPIKE DUF	PLICATE: 3024	607		302460	8						
			MS	MSD								
Parameter	· Units	92498544001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual

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.



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.:	92498084
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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 Sam	ples: 92498084001, 92498084002, 9	2498084003, 92498084004	4, 92498084005, 92498084006, 92498084007

METHOD BLANK: 3022872 Matrix: Water Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005, 92498084006, 92498084007

		Blank	Reporting			
Parameter	Units	Result	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

_		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% 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	

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



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

MATRIX SPIKE & MATRIX	SPIKE DUPL	_ICATE: 3022	874		3022875							
			MS	MSD								
		92496914020	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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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REPORT OF LABORATORY ANALYSIS



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.:	92498084
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QC Batch:	570627		Analysis Meth	iod: E	PA 6020B		
QC Batch Method:	EPA 300)5A	Analysis Desc	cription: 6	020 MET		
			Laboratory:	F	ace Analytical Sei	vices - Peachtree	Corners, GA
Associated Lab Sam	ples: 92	2498084008, 9249808400	9, 92498084010, 92	2498084011			
METHOD BLANK:	3022878		Matrix:	Water			
Associated Lab Sam	ples: 92	2498084008, 9249808400	9, 92498084010, 92	498084011			
			Blank	Reporting			
Param	eter	Units	Result	Limit	MDL	Analyzed	Qualifiers
Antimony		mg/L		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

	3022073	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% 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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REPORT OF LABORATORY ANALYSIS



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

MATRIX SPIKE & MATRIX S	PIKE DUP	LICATE: 3022	880		3022881							
			MS	MSD								
		92498084008	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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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REPORT OF LABORATORY ANALYSIS



Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.:	92498084
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QC Batch:	57101	1	Analysis Method:	EPA 6020B	
QC Batch Method:	EPA 3	005A	Analysis Description:	6020 MET	
			Laboratory:	Pace Analytical Services - Peachtree Corners, GA	
Associated Lab Samp	oles:	92498084012, 92498084013,	, 92498084014, 92498084015	, 92498084016, 92498084017, 92498084018,	
		92498084019, 92498084020,	, 92498084021, 92498084022	, 92498084023, 92498084024	
METHOD BLANK: 3	302461	0	Matrix: Water		

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

		Blank	Reporting			
Parameter	Units	Result	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		0.12		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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Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

MATRIX SPIKE & MATRIX	SPIKE DUP	LICATE: 3024	612		3024613							
			MS	MSD								
		92498544002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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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REPORT OF LABORATORY ANALYSIS



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 Corr	ners, GA
Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005	
METHOD BLANK: 3022933 Matrix: Water	
Associated Lab Samples: 92498084001, 92498084002, 92498084003, 92498084004, 92498084005	
Blank Reporting	
Parameter Units Result Limit MDL Analyzed	Qualifiers
Total Dissolved Solids mg/L ND 10.0 10/02/20 17:24	
LABORATORY CONTROL SAMPLE: 3022934	
Spike LCS LCS % Rec	
Parameter Units Conc. Result % Rec Limits Qualifiers	S
Total Dissolved Solids mg/L 400 419 105 84-108	
SAMPLE DUPLICATE: 3022936	
92497532034 Dup Max	
	alifiers
Parameter Units Result Result RPD RPD Qua	
ParameterUnitsResultResultRPDQuaTotal Dissolved Solidsmg/LNDND10	
Total Dissolved Solids mg/L ND ND 10 SAMPLE DUPLICATE: 3023295 92497532027 Dup Max	
Total Dissolved Solids mg/L ND ND 10 SAMPLE DUPLICATE: 3023295 92497532027 Dup Max	alifiers

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.



Project:	GRUM	IMAN ROA	D SEMI ANNUAL								
Pace Project No.:	92498	084									
QC Batch:	5706	40		Analysis M	lethod:	S	M 2450C-20)11			
QC Batch Method:	SM 2	2450C-2011		Analysis D	escription:	2	540C Total E	Dissol	ved Solids		
				Laboratory	/:	Ρ	ace Analytic	al Sei	vices - Pea	achtree	e Corners, GA
Associated Lab Sar	nples:	92498084	006, 92498084007,	92498084008	, 924980840	09, 9	2498084010), 924	98084011		
METHOD BLANK:	30229	41		Matri	x: Water						
Associated Lab Sar	nples:	92498084	006, 92498084007,	92498084008	, 924980840	09, 9	2498084010), 924	98084011		
				Blank	Reporti	•					
Parar	neter		Units	Result	Limit		MDL		Analyz	zed	Qualifiers
Total Dissolved Soli	ds		mg/L	N	C	10.0		10.0	10/02/20	17:27	
LABORATORY CO	NTROL	SAMPLE:	3022942								
				Spike	LCS		LCS	%	6 Rec		
Paran	neter		Units	Conc.	Result		% Rec	L	imits	Qua	alifiers
Total Dissolved Soli	ds		mg/L	400	430		108		84-108		
SAMPLE DUPLICA		022943									
				92498367001	Dup				Max		
Paran	neter		Units	Result	Resu	t	RPD		RPD		Qualifiers
Total Dissolved Soli	ds		mg/L	65.	0	71.0		9		10	
SAMPLE DUPLICA		022944									
				92497532037	' Dup				Max		
Parar	neter		Units	Result	Resu	t	RPD		RPD		Qualifiers
Total Dissolved Soli	ds		mg/L	908	8	862		5		10	

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.



Project: Pace Project No.:	GRUMMAN R 92498084	OAD SEMI ANNUAL						
QC Batch:	570756		Analysis M	ethod:	SM 2450C-201	11		
QC Batch Method:	SM 2450C-2	2011	Analysis De	escription:	2540C Total Di	issolved Solids		
			Laboratory	:	Pace Analytica	I Services - Pea	achtree	Corners, GA
Associated Lab Sam		3084012, 92498084013 3084019, 92498084020	, ,		, ,	· · · ·	92498	084018,
METHOD BLANK:	3023513		Matrix	k: Water				
Associated Lab Sam		8084012, 92498084013 8084019, 92498084020					92498	084018,
			Blank	Reporting				
Param	neter	Units	Result	Limit	MDL	Analyz	ed	Qualifiers
Total Dissolved Solid	ds	mg/L	NE) 10	0.0 1	0.0 10/03/20	16:26	
LABORATORY CON	ITROL SAMPL	E: 3023514						
Param	neter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qua	lifiers
Total Dissolved Solid	ls	mg/L	400	430	108	84-108		
SAMPLE DUPLICAT	E: 3023515							
			92498084012	- 1		Max		
Param	neter	Units	Result	Result	RPD	RPD		Qualifiers
Total Dissolved Solid	ds	mg/L	634	4 6	36	0	10	
SAMPLE DUPLICAT	E: 3023516							
		•••	92498084023	Dup		Max		0 11
-		Lipito		Result	RPD	RPD		Qualifiers
Param	neter	Units	Result					

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.



Project: Pace Project No.:	GRUMMAN RO/ 92498084	AD SEMI ANNUAL										
QC Batch:	570217		Anal	ysis Metho	d: E	EPA 300.0 I	Rev 2.1 19	993				
QC Batch Method:	EPA 300.0 Rev	2.1 1993		, vsis Descri		300.0 IC An	ions					
				pratory:				ces - Ashevi	lle			
Associated Lab Sar		34001, 9249808400 34008, 9249808400	02, 9249808	84003, 924	98084004, 9	,				,		
METHOD BLANK:	3020447			Matrix: W	ater							
Associated Lab Sar		34001, 9249808400 34008, 9249808400		84010, 924		924980840	05, 92498	084006, 924	498084007	,		
Parar	neter	Units	Res		Limit	MD	L	Analyzed	Qu	alifiers	;	
Chloride		mg/L		ND	1.(D	0.60 1	0/01/20 19:	33			
Fluoride		mg/L		ND	0.10	D	0.050 1	0/01/20 19:	33			
Sulfate		mg/L		ND	1.0)	0.50 1	0/01/20 19:	33			
LABORATORY COI	NTROL SAMPLE:	3020448										
Paran	notor	Units	Spike Conc.			LCS % Rec	% F Lim		Qualifiers			
	lietei		·					·	Quaimers	_		
Chloride Fluoride		mg/L mg/L		50 2.5	51.6 2.7	10 11		90-110 90-110				
Sulfate		mg/L		50	50.5	10		90-110				
MATRIX SPIKE & M		JPLICATE: 3020)449		3020450							
			MS	MSD	0020100							
Parameter	r Un	92497532033 its Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
Chloride	mg	/L 8.1	50	50	62.3	61.6	108	3 107	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 & M	IATRIX SPIKE DU	JPLICATE: 3020)451		3020452							
			MS	MSD					_			
Parameter	r Un	92498084008 its Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
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		90-110	3		
		/L 93.5	50	50	134	134	82	2 81	90-110	0	10	M1

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REPORT OF LABORATORY ANALYSIS



Project:		-	SEMI ANNUAL										
Pace Project No.:	92498084	•											
QC Batch:	571106			•	ysis Methoo		PA 300.0 R		93				
QC Batch Method:	EPA 300).0 Rev 2.7	1 1993	Analy	ysis Descrij	otion: 3	00.0 IC Ani	ons					
					oratory:		,		es - Ashevi				
Associated Lab Sa			12, 9249808401 19, 9249808402				249808401	6, 924980	084017, 924	498084018	,		
METHOD BLANK:	3024838				Matrix: W	ater							
Associated Lab Sa			12, 9249808401 19, 9249808402	0, 9249808	34021, 9249	98084022	249808401	6, 924980	084017, 92 [,]	498084018	i,		
_				Blai		Reporting				-			
Para	meter		Units	Res	ult	Limit	MDL		Analyzed	Qu	alifiers	i	
Chloride			mg/L		ND	1.0			0/06/20 19:				
Fluoride			mg/L		ND	0.10			0/06/20 19:				
Sulfate			mg/L		ND	1.0)	0.50 1	0/06/20 19:	21			
LABORATORY CC	ONTROL SA	MPLE: ;	3024839										
Para	imeter		Units	Spike Conc.	LC Res		LCS % Rec	% R Lim		Qualifiers			
Chloride			mg/L	5	 50	49.5	99)	90-110		_		
Fluoride			mg/L	2	~	2.3	04		~~ ~ ~ ~				
			nig/L	2	.5	2.3	91		90-110				
Sulfate			mg/L		.5 50	49.4	99		90-110 90-110				
Sulfate MATRIX SPIKE & I	MATRIX SP	IKE DUPL	mg/L	840	50								
	MATRIX SP	IKE DUPL	mg/L ICATE: 3024	5 840 MS	MSD	49.4 3024841	99)	90-110	% Rec		Max	
	-	IKE DUPL Units	mg/L	840	50	49.4				% Rec Limits	RPD	Max RPD	Qua
MATRIX SPIKE &	-	Units	mg/L ICATE: 3024 92498545001 Result	840 MS Spike Conc.	50 MSD Spike Conc.	49.4 3024841 MS Result	MSD Result	MS % Rec	90-110 MSD % Rec	Limits		RPD	
MATRIX SPIKE & I Paramete Chloride	-	Units mg/L	mg/L ICATE: 3024 92498545001 Result 265	840 MS Spike Conc. 50	MSD Spike Conc. 50	49.4 3024841 MS Result 309	MSD Result 313	MS % Rec 87	90-110 MSD <u>% Rec</u> 96	Limits 90-110	1	RPD 10	M6
MATRIX SPIKE & I	-	Units	mg/L ICATE: 3024 92498545001 Result	840 MS Spike Conc.	50 MSD Spike Conc.	49.4 3024841 MS Result	MSD Result	MS % Rec	90-110 MSD <u>% Rec</u> 96 185	Limits		RPD 10 10	Qua M6 M6
MATRIX SPIKE & I Paramete Chloride Fluoride Sulfate	er	Units mg/L mg/L mg/L	mg/L ICATE: 3024 92498545001 Result 265 8.8 28.4	840 MS Spike Conc. 50 2.5 50	MSD Spike Conc. 50 2.5	49.4 3024841 MS Result 309 13.4 78.6	MSD Result 313 13.5	MS % Rec 87 182	90-110 MSD <u>% Rec</u> 96 185	Limits 90-110 90-110	1 1	RPD 10 10	M6
MATRIX SPIKE & I Paramete Chloride Fluoride	er	Units mg/L mg/L mg/L	mg/L ICATE: 3024 92498545001 Result 265 8.8 28.4	840 MS Spike Conc. 50 2.5 50	MSD Spike Conc. 50 2.5	49.4 3024841 MS Result 309 13.4	MSD Result 313 13.5	MS % Rec 87 182	90-110 MSD <u>% Rec</u> 96 185	Limits 90-110 90-110	1 1	RPD 10 10	M6
MATRIX SPIKE & I Paramete Chloride Fluoride Sulfate	er	Units mg/L mg/L mg/L	mg/L ICATE: 3024 92498545001 Result 265 8.8 28.4	840 MS Spike Conc. 50 2.5 50 842	50 MSD Spike Conc. 50 2.5 50	49.4 3024841 MS Result 309 13.4 78.6	MSD Result 313 13.5	MS % Rec 87 182	90-110 MSD <u>% Rec</u> 96 185	Limits 90-110 90-110	1 1	RPD 10 10	M6
MATRIX SPIKE & I Paramete Chloride Fluoride Sulfate	er MATRIX SP	Units mg/L mg/L mg/L	mg/L ICATE: 3024 92498545001 Result 265 8.8 28.4 ICATE: 3024	840 MS Spike Conc. 50 2.5 50 842 MS	MSD Spike Conc. 50 2.5 50 MSD	49.4 3024841 MS Result 309 13.4 78.6 3024843	99 MSD Result 313 13.5 79.5	MS % Rec 87 182 100	90-110 MSD % Rec 96 185 102	Limits 90-110 90-110 90-110	1 1 1	RPD 10 10 10	M6
MATRIX SPIKE & Paramete Chloride Fluoride Sulfate MATRIX SPIKE & Paramete	er MATRIX SP	Units mg/L mg/L mg/L IKE DUPL Units	mg/L ICATE: 3024 92498545001 Result 265 8.8 28.4 ICATE: 3024 92498084013	840 MS Spike Conc. 50 2.5 50 842 MS Spike	MSD Spike Conc. 50 2.5 50 MSD Spike	49.4 3024841 MS Result 309 13.4 78.6 3024843 MS Result	99 MSD Result 313 13.5 79.5 MSD	MS % Rec 87 182 100 MS	90-110 MSD % Rec 96 185 102 MSD % Rec	Limits 90-110 90-110 90-110 90-110 % Rec Limits	1 1 1	RPD 10 10 10 10 Max RPD	M6 M6
MATRIX SPIKE & Paramete Chloride Fluoride Sulfate MATRIX SPIKE & I	er MATRIX SP	Units mg/L mg/L mg/L	mg/L ICATE: 3024 92498545001 Result 265 8.8 28.4 ICATE: 3024 92498084013 Result	840 MS Spike Conc. 50 2.5 50 842 MS Spike Conc.	MSD Spike Conc. 50 2.5 50 MSD Spike Conc.	49.4 3024841 MS Result 309 13.4 78.6 3024843 MS	MSD Result 313 13.5 79.5 MSD Result	MS % Rec 87 182 100 MS % Rec	90-110 MSD % Rec 96 185 102 MSD % Rec 105	Limits 90-110 90-110 90-110 % Rec	1 1 1 RPD	RPD 10 10 10 10 10 Max RPD 10	M6 M6

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REPORT OF LABORATORY ANALYSIS



Project: Pace Project No.:	GRUMMAN ROAE 92498084) SEMI ANNUAL										
QC Batch:	571109		Analy	sis Metho	d:	EPA 300.0 F	Rev 2.1 1	1993				
QC Batch Method:	EPA 300.0 Rev 2	.1 1993	Analy	sis Descri	iption:	300.0 IC An	ions					
			Labo	ratory:		Pace Analyt	tical Serv	vices - Ashevi	ille			
Associated Lab San	nples: 92498084	023, 92498084024	4	-		-						
METHOD BLANK:	3024847			Matrix: W	/ater							
Associated Lab San	nples: 92498084	023, 92498084024	4									
			Blan	ık	Reporting							
Paran	neter	Units	Resu	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Chloride		mg/L		ND	1.	0	0.60	10/07/20 03:	:04			
Fluoride		mg/L		ND	0.1	0	0.050	10/07/20 03:	:04			
0 17 1		mg/L		ND	1.	0	0.50	10/07/20 03:	:04			
Sulfate		iiig/ E										
LABORATORY CON	NTROL SAMPLE:	3024848										
	NTROL SAMPLE:	_	Spike	LC	cs	LCS	%	Rec				
		_	Spike Conc.	LC	CS sult	LCS % Rec			Qualifiers			
LABORATORY COM		3024848	•	LC Re:			Li		Qualifiers			
LABORATORY CON		3024848 Units	Conc.	LC 	sult	% Rec	Li	mits	Qualifiers			
LABORATORY CON Paran Chloride		3024848 Units mg/L	Conc.	LC Re: 0 5	sult 49.1	% Rec 9	Li 8 0	mits 90-110	Qualifiers	_		
LABORATORY COM Paran Chloride Fluoride	neter	3024848 Units mg/L mg/L mg/L	Conc. 5 2. 5 349	LC Re: 0 5 0	sult 49.1 2.5	% Rec 9 10 9	Li 8 0	90-110 90-110	Qualifiers			
LABORATORY COM Paran Chloride Fluoride Sulfate	neter	3024848 Units mg/L mg/L mg/L LICATE: 30248	Conc. 5 2. 5 349 MS	LC Re: 0 5 0 MSD	sult 49.1 2.5 48.5 3024850	% Rec 94 100 9	Li 8 0 7	mits 90-110 90-110 90-110		_	Max	
LABORATORY COM Paran Chloride Fluoride Sulfate	neter IATRIX SPIKE DUP	3024848 Units mg/L mg/L mg/L LICATE: 30248 92498084023	Conc. 5 2. 5 349	LC Re: 0 5 0	49.1 2.5 48.5	% Rec 9 10 9	Li 8 0	mits 90-110 90-110 90-110 MSD	Qualifiers % Rec Limits	RPD	Max RPD	Qual
LABORATORY COM Paran Chloride Fluoride Sulfate MATRIX SPIKE & M	neter IATRIX SPIKE DUP	3024848 Units mg/L mg/L mg/L LICATE: 30248 92498084023 Result	Conc. 5 2. 5 349 MS Spike	LC Re: 0 5 0 MSD Spike	sult 49.1 2.5 48.5 3024850 MS	% Rec 94 100 97	Li 8 0 7 MS	Mits 90-110 90-110 90-110 90-110 MSD % Rec	% Rec Limits		RPD	Qual
LABORATORY COM Paran Chloride Fluoride Sulfate MATRIX SPIKE & M Parameter	neter IATRIX SPIKE DUP	3024848 Units mg/L mg/L mg/L LICATE: 30248 92498084023 Result	Conc. 5 2. 5 349 MS Spike Conc.	LC Re: 0 5 0 MSD Spike Conc.	49.1 2.5 48.5 3024850 MS Result	% Rec 94 104 97 97 97 97 97 97 97 97 97 97 97 97 97	Li 8 0 7 MS % Rec	mits 90-110 90-110 90-110 90-110 MSD <u>% Rec</u> 05 105	% Rec Limits 90-110		RPD 10	Qual

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.



QUALIFIERS

Project: GRUMMAN ROAD SEMI ANNUAL

Pace Project No.: 92498084

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.



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	Analytica Batch
92498084001	GWA-7				
92498084002	GWC-13				
2498084003	GWA-8				
2498084004	GWC-1				
2498084006	GWC-12				
2498084007	GWC-11				
2498084008	GWC-14				
2498084009	GWC-2				
2498084012	GWC-21				
2498084013	GWC-15				
2498084014	GWC-16				
2498084015	GWC-20				
2498084016	GWB-4R				
2498084019	GWC-17				
2498084020	GWC-22				
2498084021	GWB-6R				
2498084022	GWB-5R				
2498084024	GWC-9				
2498084001	GWA-7	EPA 3010A	570380	EPA 6010D	570413
2498084002	GWC-13	EPA 3010A	570380	EPA 6010D	570413
2498084003	GWA-8	EPA 3010A	570380	EPA 6010D	570413
2498084004	GWC-1	EPA 3010A	570380	EPA 6010D	570413
2498084005	FB-1-9-28-20	EPA 3010A	570380	EPA 6010D	570413
2498084006	GWC-12	EPA 3010A	570380	EPA 6010D	570413
2498084007	GWC-11	EPA 3010A	570380	EPA 6010D	570413
2498084008	GWC-14	EPA 3010A	570380	EPA 6010D	570413
2498084009	GWC-2	EPA 3010A	570380	EPA 6010D	570413
2498084010	EB-1-9-29-20	EPA 3010A	570380	EPA 6010D	570413
2498084011	DUP-1	EPA 3010A	570380	EPA 6010D	570413
2498084012	GWC-21	EPA 3010A	571010	EPA 6010D	571031
2498084013	GWC-15	EPA 3010A	571010	EPA 6010D	571031
2498084014	GWC-16	EPA 3010A	571010	EPA 6010D	571031
2498084015	GWC-20	EPA 3010A	571010	EPA 6010D	571031
2498084016	GWB-4R	EPA 3010A	571010	EPA 6010D	571031
2498084017	EB-2-9-30-20	EPA 3010A	571010	EPA 6010D	571031
2498084018	DUP-2	EPA 3010A	571010	EPA 6010D	571031
2498084019	GWC-17	EPA 3010A	571010	EPA 6010D	571031
2498084020	GWC-22	EPA 3010A	571010	EPA 6010D	571031
2498084021	GWB-6R	EPA 3010A	571010	EPA 6010D	571031
2498084022	GWB-5R	EPA 3010A	571010	EPA 6010D	571031
2498084023	FB-2-9-30-20	EPA 3010A	571010	EPA 6010D	571031
2498084024	GWC-9	EPA 3010A	571010	EPA 6010D	571031
2498084001	GWA-7	EPA 3005A	570626	EPA 6020B	570683
2498084002	GWC-13	EPA 3005A	570626	EPA 6020B	570683
2498084003	GWA-8	EPA 3005A	570626	EPA 6020B	570683
2498084004	GWC-1	EPA 3005A	570626	EPA 6020B	570683
2498084005	FB-1-9-28-20	EPA 3005A	570626	EPA 6020B	570683



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	Analytica Batch
92498084006		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
2498084012	GWC-21	EPA 3005A	571011	EPA 6020B	571032
2498084013	GWC-15	EPA 3005A	571011	EPA 6020B	571032
2498084014	GWC-16	EPA 3005A	571011	EPA 6020B	571032
2498084015	GWC-20	EPA 3005A	571011	EPA 6020B	571032
2498084016	GWB-4R	EPA 3005A	571011	EPA 6020B	571032
2498084017	EB-2-9-30-20	EPA 3005A	571011	EPA 6020B	571032
2498084018	DUP-2	EPA 3005A	571011	EPA 6020B	571032
2498084019	GWC-17	EPA 3005A	571011	EPA 6020B	571032
2498084020	GWC-22	EPA 3005A	571011	EPA 6020B	571032
2498084020	GWB-6R	EPA 3005A	571011	EPA 6020B	571032
2498084022	GWB-5R	EPA 3005A	571011	EPA 6020B	571032
2498084022	FB-2-9-30-20	EPA 3005A	571011	EPA 6020B	571032
2498084023	GWC-9	EPA 3005A	571011	EPA 6020B	571032
2498084001	GWA-7	SM 2450C-2011	570638		
2498084002	GWC-13	SM 2450C-2011	570638		
2498084003	GWA-8	SM 2450C-2011	570638		
2498084004	GWC-1	SM 2450C-2011	570638		
2498084005	FB-1-9-28-20	SM 2450C-2011	570638		
2498084006	GWC-12	SM 2450C-2011	570640		
2498084007	GWC-11	SM 2450C-2011	570640		
2498084008	GWC-14	SM 2450C-2011	570640		
2498084009	GWC-2	SM 2450C-2011	570640		
2498084010	EB-1-9-29-20	SM 2450C-2011	570640		
2498084011	DUP-1	SM 2450C-2011	570640		
2498084012	GWC-21	SM 2450C-2011	570756		
2498084013	GWC-15	SM 2450C-2011	570756		
2498084014	GWC-16	SM 2450C-2011	570756		
2498084015	GWC-20	SM 2450C-2011	570756		
2498084016	GWB-4R	SM 2450C-2011	570756		
2498084017	EB-2-9-30-20	SM 2450C-2011	570756		
2498084018	DUP-2	SM 2450C-2011	570756		
2498084019	GWC-17	SM 2450C-2011	570756		
2498084019	GWC-17 GWC-22	SM 2450C-2011	570756		
2498084020	GWB-6R	SM 2450C-2011	570756		
2498084022	GWB-5R	SM 2450C-2011	570756		
2498084022	FB-2-9-30-20	SM 2450C-2011	570756		
2498084023	GWC-9	SM 2450C-2011	570756		
	GWA-7	EPA 300.0 Rev 2.1 1993	570217		
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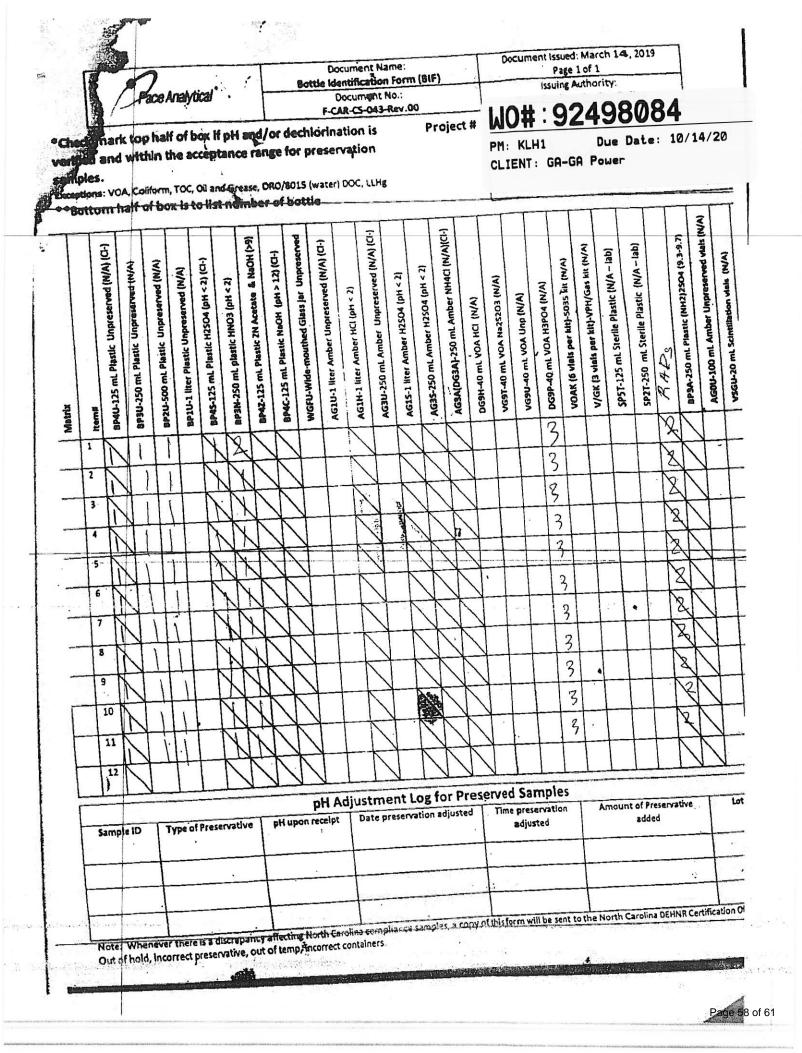
QUALITY CONTROL DATA CROSS REFERENCE TABLE

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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hain of Custody Filled Out:	DYes DNO DN/A	2		
hain of Custody Relinquished:	ØYes □NO □N/A	3.		
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amples Arrived within Hold Time:	ØYes □NO □N/A	5.	and the second	
hort Hold Time Analysis (<72hr):	DYes DNO DNIA	6.		
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Project Manager Review:				
Note: Whenever there is a discrepancy affecting North	Carolina compliance sam	ples, a copy of this form	vill be sent to the North Carolin	a DEHNR
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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,

Kein Sherry

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





Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

CERTIFICATIONS

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Pace Analytical Services Asheville

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

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

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



Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

SAMPLE SUMMARY

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

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 16:40 09/30/20 11:47 92498088004 GWC-1 Water 09/28/20 16:04 09/30/20 11:47 92498088005 GWC-1 Water 09/28/20 09:35 09/30/20 11:47 92498088006 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 92498088006 GWC-14 Water 09/29/20 12:20 09/30/20 11:47 92498088007 GWC-14 Water 09/29/20 15:55 09/30/20 11:47 92498088008 GWC-2 Water 09/30/20 10:49 10/02/20 12:22 92498088009 GWC-21 Water 09/30/20 10:49 10/02/20 12:22 92498088010 GWC-15 Water 09/30/20 14:00 10/02/20 12:22 92498088012 GWC-20 Water 09/30/20 14:00 10/02/20 12:	Lab ID	Sample ID	Matrix	Date Collected	Date Received
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	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
9249000010 GWC-9 Water 10/01/20 08:21 10/02/20 12:22	92498088018	GWC-9	Water	10/01/20 08:21	10/02/20 12:22



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	



SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Analytes Method Lab ID Sample ID Analysts Reported EPA 350.1 Rev 2.0 1993 KDF1 1 EPA 351.2 Rev 2.0 1993 MFO 1 SM 5310B-2011 ECH 1 92498088009 GWC-21 EPA 6010D DRB 5 SM 2320B-2011 ECH 3 EPA 350.1 Rev 2.0 1993 KDF1 1 MFO EPA 351.2 Rev 2.0 1993 1 SM 5310B-2011 ECH 1 92498088010 **GWC-15** 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 92498088011 GWC-16 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 MFO EPA 351.2 Rev 2.0 1993 1 SM 5310B-2011 ECH 1 92498088013 GWB-4R DRB EPA 6010D 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 92498088014 EPA 6010D DRB 5 **GWC-17** 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 92498088015 GWC-22 EPA 6010D DRB 5 SM 2320B-2011 ECH 3 EPA 350.1 Rev 2.0 1993 KDF1 1 MFO EPA 351.2 Rev 2.0 1993 1



SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 5310B-2011	ECH	1
92498088016	GWB-6R	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
92498088017	GWB-5R	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
92498088018	GWC-9	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



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Client Sample ID Method Parameters Qualifiers Result Units Report Limit Analyzed 92498088001 GWA-7 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 0.040 10/05/20 22:02 mg/L 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 10/08/20 20:44 SM 2320B-2011 Alkalinity, Bicarbonate (CaCO3) 775 mg/L 5.0 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 Nitrogen, Kjeldahl, Total 4.2 0.50 10/14/20 00:09 EPA 351.2 Rev 2.0 1993 mg/L SM 5310B-2011 **Total Organic Carbon** 236 mg/L 50.0 10/08/20 03:06 92498088002 **GWC-13** EPA 6010D 0.30 0.040 10/05/20 22:07 Iron mg/L EPA 6010D Magnesium 6.3 mg/L 0.050 10/05/20 22:07 0.0043J 10/05/20 22:07 EPA 6010D Manganese mg/L 0.040 EPA 6010D Potassium 1.7 mg/L 0.20 10/05/20 22:07 EPA 6010D Sodium 3.5 10/05/20 22:07 mg/L 1.0 EPA 351.2 Rev 2.0 1993 Nitrogen, Kjeldahl, Total 0.28J mg/L 0.50 10/14/20 00:13 M1 **Total Organic Carbon** 10/08/20 03:59 SM 5310B-2011 1.4 mg/L 1.0 92498088003 GWA-8 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 0.040 10/05/20 22:11 mg/L EPA 6010D 0.20 10/05/20 22:11 Potassium 3.2 mg/L EPA 6010D Sodium 14 8 1.0 10/05/20 22:11 mg/L 10/07/20 12:34 EPA 350.1 Rev 2.0 1993 Nitrogen, Ammonia 0.93 mg/L 0.10 EPA 351.2 Rev 2.0 1993 Nitrogen, Kjeldahl, Total 10/14/20 00:16 1.2 mg/L 0.50 Total Organic Carbon SM 5310B-2011 5.3 mg/L 1.0 10/08/20 04:14 92498088004 GWC-1 EPA 6010D Iron 0.16 mg/L 0.040 10/05/20 22:24 14.8 0.050 10/05/20 22:24 EPA 6010D Magnesium mg/L 0.051 EPA 6010D Manganese mg/L 0.040 10/05/20 22:24 EPA 6010D Potassium 9.0 0.20 10/05/20 22:24 mg/L EPA 6010D Sodium 11.8 10/05/20 22:24 mg/L 1.0 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 Total Organic Carbon SM 5310B-2011 47.6 mg/L 1.0 10/08/20 04:32 GWC-12 92498088005 EPA 6010D 2.2 0.040 10/05/20 22:33 Iron mg/L EPA 6010D Magnesium 13.4 0.050 10/05/20 22:33 mg/L 0.071 EPA 6010D Manganese mg/L 0.040 10/05/20 22:33 EPA 6010D Potassium 6.5 0.20 10/05/20 22:33 mg/L FPA 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



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Client Sample ID Parameters Qualifiers Method Result Units Report Limit Analyzed 92498088005 GWC-12 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 1.0 10/08/20 04:53 mg/L 92498088006 GWC-11 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 0.037J 10/05/20 22:37 EPA 6010D Manganese mg/L 0.040 EPA 6010D Potassium 25.7 0.20 10/05/20 22:37 mg/L EPA 6010D Sodium 184 mg/L 1.0 10/05/20 22:37 EPA 350.1 Rev 2.0 1993 Nitrogen, Ammonia 0.73 0.10 10/15/20 10:36 mg/L EPA 351.2 Rev 2.0 1993 Nitrogen, Kjeldahl, Total 0.90 0.50 10/14/20 00:22 mg/L Total Organic Carbon 10/14/20 19:52 SM 5310B-2011 5.0 mg/L 1.0 92498088007 GWC-14 EPA 6010D Iron 0.39 mg/L 0.040 10/05/20 22:41 EPA 6010D 7.4 0.050 10/05/20 22:41 Magnesium mg/L 0.16 0.040 10/05/20 22:41 EPA 6010D Manganese mg/L 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 (CaCO3) 31.0 5.0 10/08/20 21:34 mg/L SM 2320B-2011 Alkalinity, Total as CaCO3 31.0 5.0 10/08/20 21:34 mg/L 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 1.0 10/08/20 05:13 mg/L 92498088008 GWC-2 EPA 6010D Iron 1.0 0.040 10/05/20 22:46 mg/L EPA 6010D Magnesium 0.77 0.050 10/05/20 22:46 mg/L EPA 6010D Manganese 0.0052J 0.040 10/05/20 22:46 mg/L EPA 6010D Potassium 0.58 0.20 10/05/20 22:46 mg/L EPA 6010D Sodium 6.5 1.0 10/05/20 22:46 mg/L EPA 350.1 Rev 2.0 1993 Nitrogen, Ammonia 0.13 mg/L 0.10 10/07/20 12:40 0.29J EPA 351.2 Rev 2.0 1993 Nitrogen, Kjeldahl, Total 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 GWC-21 92498088009 EPA 6010D 0.050 0.040 10/08/20 01:13 Iron mg/L EPA 6010D Magnesium 19.6 mg/L 0.050 10/08/20 01:13 EPA 6010D Manganese 0.061 0.040 10/08/20 01:13 mg/L EPA 6010D Potassium 10.2 mg/L 0.20 10/08/20 01:13 38.0 10/08/20 01:13 EPA 6010D Sodium mg/L 1.0 SM 2320B-2011 Alkalinity, Bicarbonate (CaCO3) 54.9 mg/L 5.0 10/09/20 16:15 Alkalinity, Total as CaCO3 54.9 5.0 10/09/20 16:15 SM 2320B-2011 mg/L EPA 350.1 Rev 2.0 1993 Nitrogen, Ammonia 0.17 0.10 10/09/20 09:38 mg/L EPA 351.2 Rev 2.0 1993 Nitrogen, Kjeldahl, Total 0.53 0.50 10/16/20 01:32 mg/L SM 5310B-2011 **Total Organic Carbon** 7.7 mg/L 1.0 10/14/20 23:33 92498088010 **GWC-15** EPA 6010D 0.040 10/08/20 01:17 Iron 0.14 mg/L



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498088010	GWC-15					
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
92498088011	GWC-16					
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	
92498088012	GWC-20					
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	
92498088013	GWB-4R					
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		10/08/20 01:40	
EPA 6010D	Potassium Sodium	18.4	mg/L		10/08/20 01:40	
EPA 6010D		47.8	mg/L		10/08/20 01:40	
SM 2320B-2011 SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3) Alkalinity, Total as CaCO3	84.0 84.0	mg/L		10/09/20 18:48 10/09/20 18:48	
EPA 350.1 Rev 2.0 1993	Nitrogen, Ammonia	2.3	mg/L mg/L		10/09/20 18:48	
EPA 351.2 Rev 2.0 1993	Nitrogen, Kjeldahl, Total	2.3	mg/L		10/16/20 01:38	
SM 5310B-2011	Total Organic Carbon	23.4	mg/L		10/15/20 02:02	
92498088014	GWC-17		<u> </u>			
EPA 6010D		14.1	mc/l	0.040	10/08/20 01:53	
EPA 6010D EPA 6010D	Iron Magnesium	31.4	mg/L mg/L	0.040	10/08/20 01:53	
	พลงแลงแลง	31.4	nig/L	0.050	10/00/20 01.33	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Client Sample ID Method Parameters Qualifiers Result Units Report Limit Analyzed 92498088014 GWC-17 EPA 6010D Manganese 0.12 mg/L 0.040 10/08/20 01:53 EPA 6010D Potassium 4.8 0.20 10/08/20 01:53 mg/L EPA 6010D 141 10/08/20 01:53 Sodium mg/L 1.0 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 10/09/20 09:45 EPA 350.1 Rev 2.0 1993 Nitrogen, Ammonia 1.8 mg/L 0.10 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 92498088015 **GWC-22** EPA 6010D 10/08/20 01:58 0.18 0.040 Iron mg/L EPA 6010D 0.050 10/08/20 01:58 Magnesium 3.0 mg/L EPA 6010D 0.0097J 0.040 10/08/20 01:58 Manganese mg/L 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 10/15/20 02:39 2.1 mg/L 1.0 GWB-6R 92498088016 EPA 6010D 2.9 0.040 10/08/20 02:02 Iron mg/L EPA 6010D Magnesium 5.8 0.050 10/08/20 02:02 mg/L 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 1.0 10/08/20 02:02 mg/L 95.2 5.0 SM 2320B-2011 Alkalinity, Bicarbonate (CaCO3) 10/09/20 17.14 mg/L SM 2320B-2011 Alkalinity, Total as CaCO3 95.2 5.0 10/09/20 17:14 mg/L 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 10/16/20 01:44 mg/L 0.50 10/15/20 02:55 SM 5310B-2011 **Total Organic Carbon** 49.3 mg/L 1.0 92498088017 GWB-5R 7.2 EPA 6010D Iron mg/L 0.040 10/08/20 02:07 30.7 0.050 10/08/20 02:07 EPA 6010D Magnesium mg/L EPA 6010D Manganese 0.24 mg/L 0.040 10/08/20 02:07 EPA 6010D Potassium 14.5 0.20 10/08/20 02:07 mg/L EPA 6010D Sodium 47.3 10/08/20 02:07 mg/L 1.0 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 17 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 GWC-9 92498088018 EPA 6010D 6.4 0.040 10/08/20 02:29 Iron mg/L 10/08/20 02:29 EPA 6010D Magnesium 2.6 0.050 mg/L 0.035J EPA 6010D Manganese mg/L 0.040 10/08/20 02:29 EPA 6010D Potassium 0.20 10/08/20 02:29 1.4 mg/L FPA 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



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498088018 EPA 351.2 Rev 2.0 1993	GWC-9 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	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWA-7	Lab ID:	92498088001	Collected	: 09/28/20	0 15:20	Received: 09/	30/20 11:47 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prepa	aration Me	thod: EF	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	Corners, C	ЗA				
Iron	2.3	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:02	7439-89-6	
Magnesium	0.73	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:02	7439-95-4	
Manganese	0.014J	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:02	7439-96-5	
Potassium	8.3	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:02	7440-09-7	
Sodium	415	mg/L	10.0	2.6	10	10/01/20 18:53	10/06/20 16:10	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Anal	ytical Services	- Asheville						
Alkalinity,Bicarbonate (CaCO3)	775	mg/L	5.0	5.0	1		10/08/20 20:44		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 20:44		
Alkalinity, Total as CaCO3	775	mg/L	5.0	5.0	1		10/08/20 20:44		
350.1 Ammonia	Analytical	Method: EPA 3	350.1 Rev 2.0) 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	1.0	mg/L	0.10	0.070	1		10/07/20 12:28	7664-41-7	
351.2 Total Kjeldahl Nitrogen		Method: EPA 3 ytical Services) 1993 Pro	eparatio	on Method: EPA 3	51.2 Rev 2.0 199	3	
Nitrogen, Kjeldahl, Total	4.2	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:09	7727-37-9	
5310B TOC		Method: SM 53 ytical Services							
Total Organic Carbon	236	mg/L	50.0	25.0	50		10/08/20 03:06	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-13	Lab ID:	92498088002	Collected	09/28/20	0 16:40	Received: 09/	30/20 11:47 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prepa	ration Met	hod: EF	PA 3010A			
	Pace Ana	lytical Services	- Peachtree	Corners, C	SA				
Iron	0.30	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:07	7439-89-6	
Magnesium	6.3	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:07	7439-95-4	
Manganese	0.0043J	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:07	7439-96-5	
Potassium	1.7	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:07	7440-09-7	
Sodium	3.5	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:07	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Ana	lytical 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		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.0	1993					
	Pace Ana	lytical Services	- Asheville						
Nitrogen, Ammonia	ND	mg/L	0.10	0.070	1		10/07/20 12:32	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	51.2 Rev 2.0	1993 Pre	eparatio	n Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Ana	lytical Services	- Asheville						
Nitrogen, Kjeldahl, Total	0.28J	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:13	7727-37-9	M1
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Ana	lytical Services	- Asheville						
Total Organic Carbon	1.4	mg/L	1.0	0.50	1		10/08/20 03:59	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWA-8	Lab ID:	92498088003	Collected	: 09/28/20	0 16:04	Received: 09/	30/20 11:47 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prepa	aration Me	thod: EF	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	Corners, C	ЭA				
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	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Anal	ytical 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		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.0	0 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	0.93	mg/L	0.10	0.070	1		10/07/20 12:34	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	51.2 Rev 2.0) 1993 Pre	eparatio	n Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Anal	ytical 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	
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Anal	ytical Services	- Asheville						
Total Organic Carbon	5.3	mg/L	1.0	0.50	1		10/08/20 04:14	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-1	Lab ID:	92498088004	Collected	: 09/28/2	0 17:08	Received: 09/	30/20 11:47 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prepa	aration Me	thod: EF	PA 3010A			
	Pace Ana	lytical 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	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Ana	lytical 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		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.0) 1993					
	Pace Ana	lytical Services	- Asheville						
Nitrogen, Ammonia	0.51	mg/L	0.10	0.070	1		10/07/20 12:35	7664-41-7	
351.2 Total Kjeldahl Nitrogen		Method: EPA 3 lytical Services) 1993 Pr	eparatio	n Method: EPA 3	51.2 Rev 2.0 199	3	
		,							
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	
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Ana	lytical Services	- Asheville						
Total Organic Carbon	47.6	mg/L	1.0	0.50	1		10/08/20 04:32	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-12	Lab ID:	92498088005	Collected	d: 09/29/20	0 09:35	Received: 09/	30/20 11:47 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prep	aration Met	thod: E	PA 3010A			
	Pace Ana	ytical Services	- Peachtree	e Corners, C	ΒA				
Iron	2.2	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:33	7439-89-6	
Magnesium	13.4	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:33	7439-95-4	
Manganese	0.071	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:33	7439-96-5	
Potassium	6.5	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:33	7440-09-7	
Sodium	43.0	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:33	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Ana	ytical 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		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.	.0 1993					
	Pace Ana	ytical Services	- Asheville						
Nitrogen, Ammonia	1.3	mg/L	0.10	0.070	1		10/07/20 12:37	7664-41-7	
351.2 Total Kjeldahl Nitrogen		Method: EPA 3 ytical Services		.0 1993 Pre	eparatio	on Method: EPA 3	51.2 Rev 2.0 199	3	
Nitrogen, Kjeldahl, Total	1.4	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:20	7727-37-9	
5310B TOC		Method: SM 53 ytical Services							
Total Organic Carbon	5.8	mg/L	1.0	0.50	1		10/08/20 04:53	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-11	Lab ID:	92498088006	Collected	d: 09/29/20	0 12:20	Received: 09/	30/20 11:47 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	thod: Ef	PA 3010A			
	Pace Ana	lytical Services	- Peachtree	Corners, C	GΑ				
Iron	0.64	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:37	7439-89-6	
Magnesium	50.8	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:37	7439-95-4	
Manganese	0.037J	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:37	7439-96-5	
Potassium	25.7	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:37	7440-09-7	
Sodium	184	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:37	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Ana	lytical Services	- Asheville						
Alkalinity, Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:23		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/08/20 21:23		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		10/08/20 21:23		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.	0 1993					
	Pace Ana	lytical Services	- Asheville						
Nitrogen, Ammonia	0.73	mg/L	0.10	0.070	1		10/15/20 10:36	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	51.2 Rev 2.	0 1993 Pre	eparatio	n Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Ana	lytical Services	- Asheville						
Nitrogen, Kjeldahl, Total	0.90	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:22	7727-37-9	
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Ana	lytical Services	- Asheville						
Total Organic Carbon	5.0	mg/L	1.0	0.50	1		10/14/20 19:52	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Pace Project No.: 92498088									
Sample: GWC-14	Lab ID:	92498088007	Collected	d: 09/29/20) 14:42	Received: 09/	30/20 11:47 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: EF	PA 3010A			
	Pace Analy	vtical Services	- Peachtree	Corners, C	6A				
Iron	0.39	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:41	7439-89-6	
Magnesium	7.4	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:41	7439-95-4	
Manganese	0.16	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:41	7439-96-5	
Potassium	2.7	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:41	7440-09-7	
Sodium	13.3	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:41	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Analy	vtical Services	- Asheville						
Alkalinity,Bicarbonate (CaCO3)	31.0	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	31.0	mg/L	5.0	5.0	1		10/08/20 21:34		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.	0 1993					
	Pace Analy	vtical Services	- Asheville						
Nitrogen, Ammonia	0.24	mg/L	0.10	0.070	1		10/07/20 12:38	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	51.2 Rev 2.	0 1993 Pre	paratio	on Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Analy	vtical Services	- Asheville						
Nitrogen, Kjeldahl, Total	0.38J	mg/L	0.50	0.25	1	10/13/20 06:13	10/14/20 00:23	7727-37-9	
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Analy	ytical Services	- Asheville						
Total Organic Carbon	3.9	mg/L	1.0	0.50	1		10/08/20 05:13	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-2	Lab ID:	92498088008	Collected	d: 09/29/20) 15:55	6 Received: 09/	30/20 11:47 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA	6010D Prep	aration Met	hod: E	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	Corners, C	ΒA				
Iron	1.0	mg/L	0.040	0.016	1	10/01/20 18:53	10/05/20 22:46	7439-89-6	
Magnesium	0.77	mg/L	0.050	0.0076	1	10/01/20 18:53	10/05/20 22:46	7439-95-4	
Manganese	0.0052J	mg/L	0.040	0.0017	1	10/01/20 18:53	10/05/20 22:46	7439-96-5	
Potassium	0.58	mg/L	0.20	0.056	1	10/01/20 18:53	10/05/20 22:46	7440-09-7	
Sodium	6.5	mg/L	1.0	0.26	1	10/01/20 18:53	10/05/20 22:46	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 2	320B-2011						
-	Pace Anal	ytical 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		
350.1 Ammonia	Analytical	Method: EPA	350.1 Rev 2.	0 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	0.13	mg/L	0.10	0.070	1		10/07/20 12:40	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA	351.2 Rev 2.	0 1993 Pre	eparatio	on Method: EPA 3	51.2 Rev 2.0 199	93	
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Kjeldahl, Total	0.29J	mg/L	0.50	0.25	1	10/13/20 12:41	10/14/20 01:04	7727-37-9	
5310B TOC	Analytical	Method: SM 5	310B-2011						
	Pace Anal	ytical Services	- Asheville						
Total Organic Carbon	0.88J	mg/L	1.0	0.50	1		10/08/20 06:06	7440-44-0	
-		-							



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 9249

: 92498088

Sample: GWC-21	Lab ID:	92498088009	Collected	: 09/30/20	0 10:49	Received: 10/	02/20 12:22 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prepa	aration Met	hod: EF	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	Corners, C	βA				
Iron	0.050	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:13	7439-89-6	
Magnesium	19.6	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:13	7439-95-4	
Manganese	0.061	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:13	7439-96-5	
Potassium	10.2	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:13	7440-09-7	
Sodium	38.0	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:13	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Anal	ytical Services	- Asheville						
Alkalinity,Bicarbonate (CaCO3)	54.9	mg/L	5.0	5.0	1		10/09/20 16:15		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 16:15		
Alkalinity, Total as CaCO3	54.9	mg/L	5.0	5.0	1		10/09/20 16:15		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.0	0 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	0.17	mg/L	0.10	0.070	1		10/09/20 09:38	7664-41-7	
351.2 Total Kjeldahl Nitrogen		Method: EPA 3 ytical Services		0 1993 Pre	eparatio	n Method: EPA 3	51.2 Rev 2.0 199	3	
Nitrogen, Kjeldahl, Total	0.53	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:32	7727-37-9	
5310B TOC		Method: SM 53 ytical Services							
Total Organic Carbon	7.7	mg/L	1.0	0.50	1		10/14/20 23:33	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-15	Lab ID:	92498088010	Collecte	d: 09/30/20) 12:30	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: E	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	e Corners, C	βA				
Iron	0.14	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:17	7439-89-6	
Magnesium	16.2	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:17	7439-95-4	
Manganese	0.26	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:17	7439-96-5	
Potassium	11.6	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:17	7440-09-7	
Sodium	6.1	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:17	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Anal	ytical Services	- Asheville						
Alkalinity,Bicarbonate (CaCO3)	349	mg/L	5.0	5.0	1		10/12/20 17:07		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/12/20 17:07		
Alkalinity, Total as CaCO3	349	mg/L	5.0	5.0	1		10/12/20 17:07		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2	.0 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	0.27	mg/L	0.10	0.070	1		10/09/20 09:40	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	51.2 Rev 2.	.0 1993 Pre	paratio	on Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Kjeldahl, Total	0.98	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:33	7727-37-9	
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Anal	ytical Services	- Asheville						
Total Organic Carbon	33.8	mg/L	1.0	0.50	1		10/14/20 23:51	7440-44-0	M1



Qual

ANALYTICAL RESULTS

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-16 Lab ID: 92498088011 Collected: 09/30/20 14:00 Received: 10/02/20 12:22 Matrix: Water Report Units MDL DF Parameters Results Limit Prepared CAS No. Analyzed Analytical Method: EPA 6010D Preparation Method: EPA 3010A 6010D ATL ICP Pace Analytical Services - Peachtree Corners, GA Iron 0.48 mg/L 0.040 0.016 1 10/05/20 17:12 10/08/20 01:31 7439-89-6 0.050 0.0076 10/08/20 01:31 7439-95-4 Magnesium 53.5 mg/L 1 10/05/20 17:12 Manganese 0.11 mg/L 0.040 0.0017 1 10/05/20 17:12 10/08/20 01:31 7439-96-5 Potassium 19.1 mg/L 0.20 0.056 1 10/05/20 17:12 10/08/20 01:31 7440-09-7 Sodium 91.8 mg/L 1.0 0.26 1 10/05/20 17:12 10/08/20 01:31 7440-23-5 2320B Alkalinity Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville Alkalinity, Bicarbonate (CaCO3) 45.5 mg/L 5.0 5.0 1 10/09/20 16:39 Alkalinity, Carbonate (CaCO3) ND mg/L 5.0 5.0 1 10/09/20 16:39 Alkalinity, Total as CaCO3 45.5 5.0 5.0 10/09/20 16:39 mg/L 1 350.1 Ammonia Analytical Method: EPA 350.1 Rev 2.0 1993 Pace Analytical Services - Asheville 0.070 Nitrogen, Ammonia 0.57 mg/L 0.10 10/09/20 09:41 7664-41-7 1

 351.2 Total Kjeldahl Nitrogen
 Analytical Method: EPA 351.2 Rev 2.0 1993
 Preparation Method: EPA 351.2 Rev 2.0 1993

 Nitrogen, Kjeldahl, Total
 1.1 mg/L
 0.50
 0.25
 1
 10/15/20 06:01
 10/16/20 01:34
 7727-37-9

 5310B TOC
 Analytical Method: SM 5310B-2011 Pace Analytical Services - Asheville

1.0

0.50

1

10/15/20 00:47 7440-44-0

19.5

mg/L

REPORT OF LABORATORY ANALYSIS

Total Organic Carbon



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-20	Lab ID:	92498088012	Collected	d: 09/30/20) 16:31	Received: 10/	02/20 12:22 Ma	atrix: Water	
_			Report						- ·
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical I	Method: EPA 6	010D Prep	aration Met	hod: El	PA 3010A			
	Pace Analy	tical Services	- Peachtree	Corners, C	B A				
Iron	0.38	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:35	7439-89-6	
Magnesium	88.5	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:35	7439-95-4	
Manganese	0.074	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:35	7439-96-5	
Potassium	22.9	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:35	7440-09-7	
Sodium	98.5	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:35	7440-23-5	
2320B Alkalinity	Analytical I	Method: SM 23	20B-2011						
	Pace Analy	tical Services	- Asheville						
Alkalinity,Bicarbonate (CaCO3)	229	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	229	mg/L	5.0	5.0	1		10/09/20 16:48		
350.1 Ammonia	Analytical I	Method: EPA 3	50.1 Rev 2.	0 1993					
	Pace Analy	tical Services	- Asheville						
Nitrogen, Ammonia	1.1	mg/L	0.10	0.070	1		10/09/20 09:43	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical I	Method: EPA 3	51.2 Rev 2.	0 1993 Pre	eparatio	on Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Analy	tical Services	- Asheville						
Nitrogen, Kjeldahl, Total	1.6	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:35	7727-37-9	
5310B TOC	Analytical I	Method: SM 53	10B-2011						
	Pace Analy	tical Services	- Asheville						



Project: GRUMMAN ROAD INDICATORS

Pace Project No .:

92498088

Sample: GWB-4R	Lab ID:	92498088013	Collected	d: 10/01/20	0 08:50	Received: 10/	02/20 12:22 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP		Method: EPA 6	•			PA 3010A			
	Pace Anal	ytical Services	- Peachtree	e Corners, C	SA				
Iron	4.6	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:40	7439-89-6	
Magnesium	10.8	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:40	7439-95-4	
Manganese	0.15	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:40	7439-96-5	
Potassium	18.4	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:40	7440-09-7	
Sodium	47.8	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:40	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
-	Pace Anal	ytical Services	- Asheville						
Alkalinity,Bicarbonate (CaCO3)	84.0	mg/L	5.0	5.0	1		10/09/20 18:48		
Alkalinity, Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 18:48		
Alkalinity, Total as CaCO3	84.0	mg/L	5.0	5.0	1		10/09/20 18:48		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.	0 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	2.3	mg/L	0.10	0.070	1		10/09/20 09:44	7664-41-7	
351.2 Total Kjeldahl Nitrogen		Method: EPA 3 ytical Services		.0 1993 Pro	eparatio	n Method: EPA 3	51.2 Rev 2.0 199	3	
Nitrogen, Kjeldahl, Total	2.8	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:38	7727-37-9	
5310B TOC	•	Method: SM 53 ytical Services							
Total Organic Carbon	23.4	mg/L	1.0	0.50	1		10/15/20 02:02	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-17	Lab ID:	92498088014	Collected	d: 09/30/20	0 12:00	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prep	aration Met	thod: E	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	e Corners, C	ΞA				
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	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Anal	ytical Services	- Asheville						
Alkalinity,Bicarbonate (CaCO3)	15.2	mg/L	5.0	5.0	1		10/09/20 17:04		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 17:04		
Alkalinity, Total as CaCO3	15.2	mg/L	5.0	5.0	1		10/09/20 17:04		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.	0 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	1.8	mg/L	0.10	0.070	1		10/09/20 09:45	7664-41-7	
351.2 Total Kjeldahl Nitrogen		Method: EPA 3 ytical Services		0 1993 Pre	eparati	on Method: EPA 3	51.2 Rev 2.0 199	3	
		•							
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	
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Anal	ytical Services	- Asheville						
Total Organic Carbon	7.4	mg/L	1.0	0.50	1		10/15/20 02:21	7440-44-0	



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-22	Lab ID:	92498088015	Collected	d: 09/30/20) 14:05	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prep	aration Met	hod: E	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	e Corners, C	B A				
Iron	0.18	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 01:58	7439-89-6	
Magnesium	3.0	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 01:58	7439-95-4	
Manganese	0.0097J	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 01:58	7439-96-5	
Potassium	4.3	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 01:58	7440-09-7	
Sodium	4.5	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 01:58	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	20B-2011						
-	Pace Anal	ytical 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		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.	0 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	ND	mg/L	0.10	0.070	1		10/09/20 09:47	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	51.2 Rev 2.	0 1993 Pre	eparatio	on Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Kjeldahl, Total	0.36J	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:41	7727-37-9	
5310B TOC	Analytical	Method: SM 53	10B-2011						
	Doog Angl	vtical Services	Achovillo						
	Face Anal	ylical Services	- Asheville						



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 9

o.: 92498088

Parameters Results Units Report Limit 6010D ATL ICP Analytical Method: EPA 6010D Press	e Corners, (Prepared PA 3010A	Analyzed	CAS No.	Qual
	e Corners, (PA 3010A			
	,	20				
Pace Analytical Services - Peachtre						
Iron 2.9 mg/L 0.040	0.016	1	10/05/20 17:12	10/08/20 02:02	7439-89-6	
Magnesium 5.8 mg/L 0.050	0.0076	1	10/05/20 17:12	10/08/20 02:02	7439-95-4	
Manganese 0.069 mg/L 0.040	0.0017	1	10/05/20 17:12	10/08/20 02:02	7439-96-5	
Potassium 25.6 mg/L 0.20	0.056	1	10/05/20 17:12	10/08/20 02:02	7440-09-7	
Sodium 189 mg/L 1.0	0.26	1	10/05/20 17:12	10/08/20 02:02	7440-23-5	
2320B Alkalinity Analytical Method: SM 2320B-2011						
Pace Analytical Services - Asheville)					
Alkalinity,Bicarbonate (CaCO3) 95.2 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 95.2 mg/L 5.0	5.0	1		10/09/20 17:14		
350.1 Ammonia Analytical Method: EPA 350.1 Rev 2	2.0 1993					
Pace Analytical Services - Asheville)					
Nitrogen, Ammonia 1.2 mg/L 0.10	0.070	1		10/09/20 09:51	7664-41-7	
351.2 Total Kjeldahl Nitrogen Analytical Method: EPA 351.2 Rev 2		eparatio	on Method: EPA 3	51.2 Rev 2.0 199	3	
Pace Analytical Services - Asheville)					
Nitrogen, Kjeldahl, Total 2.2 mg/L 0.50	0.25	1	10/15/20 06:01	10/16/20 01:44	7727-37-9	
5310B TOC Analytical Method: SM 5310B-2011						
Pace Analytical Services - Asheville)					
Total Organic Carbon49.3mg/L1.0	0.50	1		10/15/20 02:55	7440-44-0	



Matrix: Water

CAS No.

Qual

Received: 10/02/20 12:22

Analyzed

Prepared

ANALYTICAL RESULTS

DF

Project: **GRUMMAN ROAD INDICATORS**

Pace Project No.:

92498088 Sample: GWB-5R Lab ID: 92498088017 Collected: 09/30/20 17:30 Report Parameters Results Units Limit MDL

6010D ATL ICP	Analytical	Method: EPA	6010D Prepa	aration Meth	nod: E	PA 3010A		
	-		s - Peachtree					
Iron	7.2	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 02:07	7439-89-6
Magnesium	30.7	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 02:07	7439-95-4
Manganese	0.24	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 02:07	7439-96-5
Potassium	14.5	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 02:07	7440-09-7
Sodium	47.3	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 02:07	7440-23-5
2320B Alkalinity	Analytical	Method: SM 2	2320B-2011					
	Pace Anal	ytical Service	s - Asheville					
Alkalinity,Bicarbonate (CaCO3)	26.2	mg/L	5.0	5.0	1		10/09/20 17:21	
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		10/09/20 17:21	
Alkalinity, Total as CaCO3	26.2	mg/L	5.0	5.0	1		10/09/20 17:21	
350.1 Ammonia	Analytical	Method: EPA	350.1 Rev 2.	0 1993				
	Pace Anal	ytical Service	s - Asheville					
Nitrogen, Ammonia	1.3	mg/L	0.10	0.070	1		10/09/20 09:53	7664-41-7
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA	351.2 Rev 2.	0 1993 Pre	parati	on Method: EPA 3	51.2 Rev 2.0 199	3
	Pace Anal	ytical Service	s - Asheville					
Nitrogen, Kjeldahl, Total	1.7	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:45	7727-37-9
5310B TOC	Analytical	Method: SM s	5310B-2011					
	Pace Anal	ytical Service	s - Asheville					
Total Organic Carbon	10.6	mg/L	1.0	0.50	1		10/15/20 03:14	7440 44 0



Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

Sample: GWC-9	Lab ID:	92498088018	Collected	: 10/01/20	0 08:21	Received: 10/	02/20 12:22 Ma	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical	Method: EPA 6	010D Prepa	aration Me	thod: El	PA 3010A			
	Pace Anal	ytical Services	- Peachtree	Corners, C	ΒA				
Iron	6.4	mg/L	0.040	0.016	1	10/05/20 17:12	10/08/20 02:29	7439-89-6	
Magnesium	2.6	mg/L	0.050	0.0076	1	10/05/20 17:12	10/08/20 02:29	7439-95-4	
Manganese	0.035J	mg/L	0.040	0.0017	1	10/05/20 17:12	10/08/20 02:29	7439-96-5	
Potassium	1.4	mg/L	0.20	0.056	1	10/05/20 17:12	10/08/20 02:29	7440-09-7	
Sodium	12.7	mg/L	1.0	0.26	1	10/05/20 17:12	10/08/20 02:29	7440-23-5	
2320B Alkalinity	Analytical	Method: SM 23	320B-2011						
	Pace Anal	ytical 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		
350.1 Ammonia	Analytical	Method: EPA 3	50.1 Rev 2.0) 1993					
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Ammonia	0.43	mg/L	0.10	0.070	1		10/09/20 09:54	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical	Method: EPA 3	51.2 Rev 2.0) 1993 Pre	eparatio	on Method: EPA 3	51.2 Rev 2.0 199	3	
	Pace Anal	ytical Services	- Asheville						
Nitrogen, Kjeldahl, Total	0.77	mg/L	0.50	0.25	1	10/15/20 06:01	10/16/20 01:46	7727-37-9	
5310B TOC	Analytical	Method: SM 53	310B-2011						
	Pace Anal	ytical Services	- Asheville						
Total Organic Carbon	4.7	mg/L	1.0	0.50	1		10/15/20 03:35	7440-44-0	



QC Batch:	570380			Ana	lysis Met	hod:	EPA 6	010D						
QC Batch Method:	EPA 30	10A		Ana	lysis Des	cription:	6010E) ATL						
				Lab	oratory:		Pace	Analyti	cal Servi	ices - Peach	tree Corne	rs, GA		
Associated Lab Sar		924980880 924980880	01, 9249808800 08			249808800								
METHOD BLANK:	3021700				Matrix:	Water								
Associated Lab Sar)24980880)24980880	01, 9249808800 08	2, 924980	88003, 9	249808800	4, 92498	308800	5, 92498	3088006, 92	498088007	7,		
				Bla	ank	Reporting	9							
Parar	neter		Units	Re	sult	Limit		MDL		Analyzed	Qı	ualifiers	;	
Iron			mg/L		ND	0.	040	(0.016	10/05/20 20	:52			
Magnesium			mg/L		ND		050			10/05/20 20				
Manganese			mg/L		ND		040			10/05/20 20				
Potassium			mg/L		ND	(0.20	(10/05/20 20				
Sodium			mg/L		0.31J		1.0		0.26	10/05/20 20	:52			
LABORATORY CO	NTROL SA	MPLE: 3	3021701											
				Spike	•	LCS	LC	S	%	Rec				
Parar	neter		Units	Conc	. F	Result	% R	ec	Lir	nits	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 & N	IATRIX SF	PIKE DUPL	ICATE: 3021	764		30217	65							
				MS	MSD									
			92497532027	Spike	Spike	MS	MS	D	MS	MSD	% Rec		Max	
Paramete	r	Units	Result	Conc.	Conc.	Result	Res	sult	% Rec	% Rec	Limits	RPD	RPD	Qua
ron		mg/L	ND	1		1 1	0	0.99	99	9 97	75-125	2		
Vagnesium		mg/L	18.7	1		1 20		19.6	12			2		
Vanganese		mg/L	ND	1		1 1		0.97	99					
Potassium		mg/L	3.0	1		1 4		4.1	118			4		
Sodium		mg/L	2.7	1		1 3	1	3.6	98	8 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.

REPORT OF LABORATORY ANALYSIS



Project: Pace Project No.:	924980)88											
QC Batch:	57101	10		Analy	/sis Met	hod:	EPA 6010D)					
QC Batch Method:	FPA 3	3010A				scription:	6010D ATL						
				-	ratory:				ces - Peacht	tree Cornei	rs GA		
Associated Lab Sar	mples:		09, 9249808801 16, 9249808801	0, 9249808	88011, 9	2498088012,							
METHOD BLANK:	302460)5			Matrix:	Water							
Associated Lab Sar	mples:		09, 9249808801 16, 9249808801			2498088012,	924980880	13, 92498	088014, 924	498088015	,		
				Blar	۱k	Reporting							
Parar	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qu	alifiers		
Iron			mg/L		ND	0.04	40	0.016 1	0/08/20 00:	10			
Magnesium			mg/L		ND	0.0	50	0.0076 1	0/08/20 00:	10			
Manganese			mg/L		ND	0.04	40	0.0017 1	0/08/20 00:	10			
Potassium			mg/L		0.068J	0.2	20	0.056 1	0/08/20 00:	10			
Sodium			mg/L		ND	1	.0	0.26 1	0/08/20 00:	10			
			3024606										
LABORATORY COI Parar		SAMPLE:	3024606 Units	Spike Conc.	F	LCS Result	LCS % Rec	% F 	nits C	Qualifiers			
Parar		SAMPLE:	Units mg/L	•	F 	Result 1.0	% Rec 10	Lim 14	nits 0 80-120	Qualifiers	_		
Parar Iron Magnesium		SAMPLE:	Units mg/L mg/L	•	F 1 1	Result 1.0 1.1	% Rec 10 10	Lim 14 15	nits (80-120 80-120	Qualifiers	_		
Parar Iron Magnesium Manganese		SAMPLE:	Units mg/L mg/L mg/L	•	F 1 1 1	Result 1.0 1.1 1.0	% Rec 10 10 10	Lin 14 15 12	nits 0 80-120 80-120 80-120	Qualifiers			
Parar Iron Magnesium Manganese Potassium		SAMPLE:	Units mg/L mg/L	•	F 1 1	Result 1.0 1.1	% Rec 10 10	Lim 14 15 12 18	nits (80-120 80-120	Qualifiers			
Parar Iron Magnesium Manganese Potassium Sodium	meter		Units mg/L mg/L mg/L mg/L mg/L	Conc.	F 1 1 1 1	Result 1.0 1.1 1.0 1.1	% Rec 10 10 10 10 10	Lim 14 15 12 18	nits 0 80-120 80-120 80-120 80-120	Qualifiers	_		
Parar Iron Magnesium Manganese Potassium Sodium	meter		Units mg/L mg/L mg/L mg/L mg/L	Conc.	F 1 1 1 1 1	Result 1.0 1.1 1.0 1.1 1.1 302460	% Rec 10 10 10 10 10	Lim 14 15 12 18	nits 0 80-120 80-120 80-120 80-120	Qualifiers	_	Max	
Parar Iron Magnesium Manganese Potassium Sodium	neter MATRIX S		Units mg/L mg/L mg/L mg/L mg/L	607 MS	F 1 1 1 1 1 1 1 MSD	Result 1.0 1.1 1.0 1.1 1.1 302460 MS	% Rec 10 10 10 10 10 8	Lim 4 15 12 18 17	nits (80-120 80-120 80-120 80-120 80-120		RPD	Max RPD	Qua
Parar Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & M Paramete	neter MATRIX S	SPIKE DUPL	Units mg/L mg/L mg/L mg/L mg/L LICATE: 3024	Conc. 607 MS Spike	F 1 1 1 1 1 1 1 5 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0	Result 1.0 1.1 1.0 1.1 1.1 302460 MS	% Rec 10 10 10 10 10 8 8 8 8 8 8 8 8 8 8 8 8	Lim 4 15 12 18 17 MS	MSD % Rec	% Rec	 RPD0	RPD	Qu
Parar Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & M Paramete ron	neter MATRIX S	SPIKE DUPL	Units mg/L mg/L mg/L mg/L mg/L LICATE: 3024 92498544001 Result	607 MS Spike Conc.	F 1 1 1 1 1 1 1 5 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0	Result 1.0 1.1 1.0 1.1 1.1 302460 MS Result	% Rec 10 10 10 10 10 8 8 8 8 8 8 8 8 8 8 1.1	Lim 4 5 2 8 7 7 MS % Rec	MSD % Rec % Rec % Rec	% Rec Limits		RPD	
Parar Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & M	neter MATRIX S	SPIKE DUPL	Units mg/L mg/L mg/L mg/L mg/L LICATE: 3024 92498544001 Result 0.11	607 MS Spike Conc. 1	F 1 1 1 1 1 1 1 5 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0	Result 1.0 1.1 1.0 1.1 1.1 302460 MS Result 1 1.1	% Rec 10 10 10 10 10 10 8 MSD Result 1.1 44.9	Lim 14 15 12 18 17 MS % Rec 103	MSD % Rec % Rec 103 % Rec	% Rec Limits 75-125	0	RPD 20 20 20	
Parar Iron Magnesium Manganese Potassium Sodium MATRIX SPIKE & M Parameter Iron Magnesium	neter MATRIX S	SPIKE DUPL Units mg/L mg/L	Units mg/L mg/L mg/L mg/L mg/L LICATE: 3024 92498544001 Result 0.11 43.8	607 MS Spike Conc. 1 1	F 1 1 1 1 1 1 1 5 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0	Result 1.0 1.1 1.0 1.1 1.1 302460 MS Result 1 1.1 1 45.4	% Rec 10 10 10 10 10 10 8 8 MSD Result 1.1 44.9 1.3	Lim 14 15 12 18 17 MS % Rec 103 156	MSD % Rec % Rec 3 103 % 80-120 % 80-120 % 80-120	% Rec Limits 75-125 75-125 75-125 75-125 75-125	0	RPD 20 20 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



Project: Pace Project No.:	GRUMI 924980	-	NDICATORS										
QC Batch:	57165	5		Analy	sis Metho	d:	SM 2320B-2	2011					
QC Batch Method:	SM 23	320B-2011		Analy	sis Descri	otion:	2320B Alkal	inity					
				Labo	atory:		Pace Analyt	ical Servio	ces - Ashevi	lle			
Associated Lab Sar	nples:	9249808800 9249808800)1, 9249808800)8	2, 9249808	8003, 9249	98088004,	924980880	05, 92498	088006, 924	198088007	,		
METHOD BLANK:	302787	7			Matrix: W	ater							
Associated Lab Sar	nples:	9249808800 9249808800)1, 9249808800)8	2, 9249808	8003, 9249	98088004,	924980880	05, 92498	088006, 924	198088007	,		
				Blan	k l	Reporting							
Paran	neter		Units	Resu	ult	Limit	MDI		Analyzed	Qualifie			
Alkalinity, Total as C	aCO3		mg/L		ND	5.	0	5.0 1	0/08/20 18:	28			
Alkalinity, Bicarbona	•	,	mg/L		ND	5.	-		0/08/20 18:				
Alkalinity,Carbonate	(CaCO	3)	mg/L	ND		5.	0	5.0 1	0/08/20 18:	28			
LABORATORY CO		SAMPLE: 3	027878										
_				Spike	LC		LCS	% F					
Parar	neter		Units	Conc.	Res	ult	% Rec	Lim	nits (Qualifiers	_		
Alkalinity, Total as C	aCO3		mg/L	5	0	50.0	100)	80-120				
MATRIX SPIKE & M	IATRIX S	PIKE DUPLI	ICATE: 3027	879		3027880)						
MATRIX SPIKE & M	IATRIX S	SPIKE DUPLI	CATE: 3027	879 MS	MSD	3027880)						
MATRIX SPIKE & N			92497913003		MSD Spike	3027880 MS	MSD	MS	MSD	% Rec		Max	
MATRIX SPIKE & M Parameter				MS	-			MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			92497913003	MS Spike	Spike	MS	MSD	-	% Rec		RPD 1	RPD	Qual
Parameter	aCO3	Units mg/L	92497913003 Result 57.8	MS Spike Conc. 50	Spike Conc.	MS Result	MSD Result 109	% Rec	% Rec	Limits		RPD	Qual
Parameter Alkalinity, Total as C	aCO3	Units mg/L	92497913003 Result 57.8	MS Spike Conc. 50	Spike Conc.	MS Result 108	MSD Result 109	% Rec	% Rec	Limits		RPD	Qual
Parameter Alkalinity, Total as C	aCO3	Units mg/L SPIKE DUPLI	92497913003 Result 57.8 ICATE: 3029 92495904018	MS Spike Conc. 50 635	Spike Conc. 50	MS Result 108	MSD Result 109	% Rec 100 MS	% Rec 0 103 MSD	Limits 80-120 % Rec	1	RPD 25 Max	
Parameter Alkalinity, Total as C	aCO3	Units mg/L SPIKE DUPLI	92497913003 Result 57.8 ICATE: 3029	MS Spike Conc. 50	Spike Conc. 50 MSD	MS Result 108 3029636	MSD Result 109	% Rec 100	% Rec 0 103	Limits 80-120		RPD 25	Qual

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



Project: Pace Project No.:	GRUMI 924980	-	INDICATORS										
QC Batch:	57212	21		Analy	sis Metho	d:	SM 2320B-2	2011					
QC Batch Method:	SM 23	320B-2011		Analy	sis Descri	ption:	2320B Alkal	linity					
				Labo	ratory:		Pace Analyt	ical Servi	ces - Ashevi	lle			
Associated Lab Sam	nples:		09, 9249808801 17, 9249808801		8011, 9249	98088012,	924980880	14, 92498	8088015, 924	198088016	ò,		
METHOD BLANK:	303012	20			Matrix: W	ater							
Associated Lab Sam	nples:		09, 9249808801 17, 9249808801		8011, 9249	98088012,	924980880	14, 92498	8088015, 924	198088016	ö,		
				Blar	nk	Reporting							
Param	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qu	Qualifiers		
Alkalinity, Total as C	aCO3		mg/L		ND	5.	0	5.0	10/09/20 13:	19			
Alkalinity, Bicarbonat	e (CaCC	D3)	mg/L		ND	5.	0	5.0 ⁻	10/09/20 13:	19			
Alkalinity,Carbonate	(CaCO3	3)	mg/L		ND	5.	0	5.0 ⁻	10/09/20 13:	19			
LABORATORY CON	NTROL S	SAMPLE:	3030121	Calles	LC		LCS		Rec				
Param	neter		Units	Spike Conc.	Res		% Rec			Qualifiers			
Alkalinity, Total as C			mg/L		0	51.9	104		80-120				
MATRIX SPIKE & M	IATRIX S	SPIKE DUPL	ICATE: 3030			3030123	3						
			92498103001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Мах	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Alkalinity, Total as Ca	aCO3	mg/L	437	50	50	481	482	88	3 92	80-120	0	25	
MATRIX SPIKE & M	IATRIX S	SPIKE DUPL	ICATE: 3030	124		303012	5						
				MS	MSD								
Parameter		Units	92498364006 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as Ca	2003	mg/L	76.2	50	50	129	129	106	5 106	80-120	0	25	

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



- ,	GRUMMAN F 92498088	ROAD II	NDICATORS										
QC Batch:	572122			Anal	sis Methor	d: 5	SM 2320B-2	2011					
QC Batch Method:	SM 2320B-2	2011		Analy	/sis Descrij	otion: 2	2320B Alkal	inity					
				Labo	ratory:	F	Pace Analyt	ical Serv	ices - Ashevil	le			
Associated Lab Sam	oles: 9249	308801	3										
METHOD BLANK:	3030131				Matrix: W	ater							
Associated Lab Sam	oles: 9249	308801	3										
				Blai	nk l	Reporting							
Parame	eter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	Qualifiers		
Alkalinity, Total as Ca	CO3		mg/L		ND	5.0	0	5.0	10/09/20 17:2	29			
Alkalinity,Bicarbonate	. ,		mg/L		ND	5.0			10/09/20 17:2	-			
Alkalinity,Carbonate (CaCO3)		mg/L		ND	5.0)	5.0	10/09/20 17:2	29			
LABORATORY CON	TROL SAMPI	.E: 3	030132										
Param	-to -		Units	Spike Conc.	LC Res	-	LCS % Rec		Rec mits 0	Qualifiers			
										Juaimers	_		
Alkalinity, Total as Ca	CO3		mg/L	5	50	51.7	103	3	80-120				
MATRIX SPIKE & MA	ATRIX SPIKE	DUPLI	CATE: 3030	133		3030134							
				MS	MSD								
			92499296001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Alkalinity, Total as Ca	CO3	mg/L	90.0	50	50	139	143	9	9 107	80-120	3	25	
MATRIX SPIKE & MA	ATRIX SPIKE	DUPLI	CATE: 3030	135		3030136							
				MS	MSD								
		ç	92499192001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual

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.



Project: Pace Project No.:	GRUMMA 92498088	-	NDICATORS											
QC Batch:	571180			Ana	alysis Met	hod:		EPA 350.1 I	Rev 2.0 1	993				
QC Batch Method:	EPA 350	0.1 Rev 2.0	1993	Ana	alysis Des	scription:	;	350.1 Amm	onia					
				Lab	oratory:		I	Pace Analy	tical Serv	ices - Ashev	ille			
Associated Lab Sam	ples: 92	249808800	1, 9249808800	2, 924980	088003, 9	24980880	004,	924980880	05, 9249	8088007, 92	498088008	3		
METHOD BLANK:	3025287				Matrix:	Water								
Associated Lab Sam	ples: 9	249808800	1, 9249808800	2, 924980	088003, 9	24980880	004,	924980880	05, 9249	8088007, 92	498088008	3		
				BI	ank	Report	ing							
Param	neter		Units	Re	sult	Limi	t	MD	L	Analyzed	Q	ualifiers	;	
Nitrogen, Ammonia			mg/L		ND		0.1	0	0.070	10/07/20 12	:18			
LABORATORY CON		MPLE: 30	025288	Spike		LCS		LCS		Rec				
Param	leter		Units	_ Cond	C. ł	Result		% Rec	Lir	nits	Qualifiers	_		
Nitrogen, Ammonia			mg/L		5	5.0	D	9	9	90-110				
MATRIX SPIKE & M	ATRIX SP		CATE: 3025	289 MS	MSD	302	5290)						
		ç	2498086001	Spike	Spike	MS	5	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Resu	ult	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Ammonia		mg/L	28.1	5		5 3	32.5	33.0	8	8 98	90-110	1	10	M1
MATRIX SPIKE & M	ATRIX SP		CATE: 3025	291		302	5292	2						
				MS	MSD									
_			2498088001	Spike	Spike	MS		MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Resu	ult	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Ammonia		mg/L	1.0	5	i	5	5.6	5.6	9	1 91	90-110	0	10	

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.



Project: Pace Project No.:	GRUMN 924980	-	INDICATORS										
QC Batch:	57173			Ana	lysis Metho	d:	EPA 350.1	Rev 2.0 19	93				
QC Batch Method:	EPA 3	50.1 Rev 2.	0 1993		lysis Descr		350.1 Amm						
					oratory:	•	Pace Analy	tical Servio	es - Ashevi	le			
Associated Lab Sam			09, 9249808801 16, 9249808801			98088012,	924980880	13, 92498	088014, 924	98088015	,		
METHOD BLANK:	302818	0			Matrix: W	/ater							
Associated Lab Sam			09, 9249808801 16, 9249808801			98088012,	924980880	13, 92498	088014, 924	98088015	i,		
Dorom	otor		Linita			Reporting Limit			Analyzad	0	olifiara		
Param	leter		Units	Ke	sult	-	MD		Analyzed		ualifiers		
Nitrogen, Ammonia			mg/L		ND	0.1	0	0.070 1	0/09/20 09::	23			
LABORATORY CON	ITROL S	AMPLE:	3028181										
Parameter			Units	Spike Conc		CS sult	LCS % Rec	% F Lim		Qualifiers			
Nitrogen, Ammonia			mg/L		5	5.0	9	9	90-110		_		
MATRIX SPIKE & M	ATRIX S		_ICATE: 3028	182		3028183	3						
				MS	MSD								
Parameter		Units	92498461002 Result	Spike Conc.	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 & M	ATRIX S	PIKE DUPL	LICATE: 3028	184 MS	MSD	302818	5						
Parameter		Units	92498581001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia		mg/L		5	5	4.6	4.6	91	92	90-110	0	10	

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.



Project: Pace Project No.:	GRUMMAN ROAD 92498088	INDICATORS										
QC Batch:	573187		Anal	ysis Metho	d:	EPA 350.1 I	Rev 2.0 19	93				
QC Batch Method:	EPA 350.1 Rev 2	.0 1993	Anal	ysis Descri	ption:	350.1 Amm	onia					
			Labo	oratory:		Pace Analy	tical Servic	es - Ashevil	le			
Associated Lab Sam	nples: 924980880	006										
METHOD BLANK:	3035056			Matrix: W	/ater							
Associated Lab Sam	nples: 924980880	006										
			Bla	nk	Reporting							
Param	neter	Units	Res		Limit	MD	L	Analyzed	Qu	alifiers		
Nitrogen, Ammonia		mg/L		ND	0.1	0	0.070 1	0/15/20 10:3	34			
LABORATORY CON	ITROL SAMPLE:	3035057	0			1.00	04 D					
Param	neter	Units	Spike Conc.	LC Res	-	LCS % Rec	% R Lim		Qualifiers			
Nitrogen, Ammonia		mg/L		5	5.0	10	0	90-110		_		
MATRIX SPIKE & M	ATRIX SPIKE DUP	LICATE: 3035			3035059)						
		92499540001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	5.0	5.0	98	99	90-110	0	10	
MATRIX SPIKE & M	ATRIX SPIKE DUP	LICATE: 3035	060		3035061							
			MS	MSD								
		92499540002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Ammonia	mg/L	ND	5	5	4.9	4.9	98	98	90-110	0	10	

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.



Project: Pace Project No.:	GRUMMAN 92498088	ROAD	INDICATORS										
QC Batch:	572501			Analy	ysis Method	1:	EPA 351.2 I	Rev 2.0 19	993				
QC Batch Method:	EPA 351.2	Rev 2.	0 1993	Anal	ysis Descrip	otion:	351.2 TKN						
				Labo	ratory:		Pace Analy	tical Servi	ces - Ashevi	ille			
Associated Lab Sam	nples: 9249	80880	01, 9249808800	2, 9249808	88003, 9249	98088004,	924980880	05, 92498	088006, 92	498088007	7		
METHOD BLANK:	3031974				Matrix: Wa	ater							
Associated Lab Sam	nples: 9249	80880	01, 9249808800	2, 9249808	8003, 9249	98088004,	924980880	05, 92498	088006, 92	498088007	,		
				Blai	nk I	Reporting							
Param	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qu	ualifiers	;	
Nitrogen, Kjeldahl, T	otal		mg/L		ND	0.5	50	0.25	0/14/20 00:	:07			
LABORATORY CON	ITROL SAMP	LE:	3031975										
_				Spike	LC	-	LCS	% F		o ""			
Param	neter		Units	Conc.	Res	ult	% Rec	Lin	nits	Qualifiers	_		
Nitrogen, Kjeldahl, T	otal		mg/L	1	0	9.5	9	5	90-110				
MATRIX SPIKE & M	ATRIX SPIKE	DUPL	LICATE: 30319	976 MS	MSD	303197	7						
			92498088001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Kjeldahl, T	otal	mg/L	4.2	10	10	13.9	13.8	96	96	90-110	1	10	
MATRIX SPIKE & M	ATRIX SPIKE	DUPL	_ICATE: 30319	978		3031979	9						
				MS	MSD								
			92498088002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Kjeldahl, T	otal	mg/L	0.28J	10	10	9.1	9.1	88	88 88	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.



Project: Pace Project No.:	GRUMMAN ROAI 92498088	D INDICATORS										
QC Batch:	572713		Analy	sis Method	d:	EPA 351.2 I	Rev 2.0 19	93				
QC Batch Method:	EPA 351.2 Rev 2	2.0 1993	Anal	ysis Descrij	ption:	351.2 TKN						
			Labo	ratory:	I	Pace Analy	tical Servic	es - Ashevil	le			
Associated Lab Sam	ples: 92498088	800										
METHOD BLANK:	3033044			Matrix: W	ater							
Associated Lab Sam	ples: 92498088	800										
			Blai	nk l	Reporting							
Param	neter	Units	Res	ult	Limit	MD	L	Analyzed	Qu	alifiers		
Nitrogen, Kjeldahl, T	otal	mg/L		ND	0.5	0	0.25 1	0/14/20 01:0	02			
		0000045										
LABORATORY CON	TROL SAMPLE:	3033045	Spike	LC	· C	LCS	% R					
Param	neter	Units	Conc.	Res		% Rec	Lim		Qualifiers			
Nitrogen, Kjeldahl, T	otal	mg/L	1	0	9.6	9	6	90-110		_		
MATRIX SPIKE & M	ATRIX SPIKE DUF	PLICATE: 3033			3033047							
		0040000000	MS	MSD	MO	MOD	MO	MOD	0/ Dee		Mari	
Parameter	Units	92498088008 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, T	otal mg/L	0.29J	10	10	9.6	9.3	93	90	90-110	3	10	
MATRIX SPIKE & M		PLICATE: 3033	048		3033049							
		2.0, (12. 0000	MS	MSD	0000040							
		92498865004	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Kjeldahl, To	otal mg/L	. ND	10	10	9.2	10.2	88	98	90-110	10	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.



Project: Pace Project No.:	GRUM 924980	-	INDICATORS										
QC Batch:	57304			Analy	/sis Metho	d:	EPA 351.2 I	Rev 2.0 19	993				
QC Batch Method:	EPA 3	351.2 Rev 2.	0 1993	Analy	/sis Descri	ption:	351.2 TKN						
				Labo	ratory:		Pace Analy	tical Servi	ces - Ashevi	lle			
Associated Lab San	nples:		09, 9249808801 16, 9249808801			98088012,	924980880	13, 92498	088014, 924	498088015	,		
METHOD BLANK:	303435	56			Matrix: W	ater							
Associated Lab San	nples:		09, 9249808801 16, 9249808801			98088012,	924980880	13, 92498	088014, 924	498088015	i,		
_				Blar		Reporting				-			
Paran	neter		Units	Res	ult	Limit	MD	L	Analyzed	Q	ualifiers		
Nitrogen, Kjeldahl, T	Fotal		mg/L		ND	0.5	0	0.25 ´	10/16/20 01:	17			
LABORATORY COM	NTROL	SAMPLE:	3034357										
Paran	neter		Units	Spike Conc.	LC Res	-	LCS % Rec		Rec nits (Qualifiers			
Nitrogen, Kjeldahl, T	Total		mg/L	1	0	10.2	10	2	90-110				
MATRIX SPIKE & N	IATRIX	SPIKE DUPI	_ICATE: 3034	358		3034359)						
				MS	MSD								
Parameter	r	Units	92498418001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, T	otal	mg/L	3.3	10	10	14.1	13.8	108	3 105	90-110	2	10	
MATRIX SPIKE & M	IATRIX S	SPIKE DUPI	LICATE: 3034	360 MS	MSD	3034361							
			92498088012	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Nitrogen, Kjeldahl, T	otal	mg/L	1.6	10	10	12.3	12.1	107	7 105	90-110	1	10	

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.



Project: Pace Project No.:	GRUMMAN F 92498088	ROAD	INDICATORS										
QC Batch:	571179			Analy	ysis Method	d:	SM 5310B-	2011					
QC Batch Method:	SM 5310B-2	2011		Anal	sis Descri	otion:	5310B TOC	;					
					ratory:		Pace Analy	tical Servic	es - Ashevi	ille			
Associated Lab San	nples: 9249	80880	01, 9249808800		•						3		
METHOD BLANK:	3025279				Matrix: W	ater							
Associated Lab San	nples: 9249	80880	01, 9249808800	2, 9249808	38003, 9249	98088004,	924980880	05, 924980	088007, 92	498088008	3		
				Blai	nk l	Reporting							
Param	neter		Units	Res	ult	Limit	MD	L	Analyzed	Qı	ualifiers		
Total Organic Carbo	n		mg/L		ND	1	.0	0.50 10	0/08/20 00:	44			
LABORATORY COM	NTROL SAMP	LE:	3025280	Spike	LC	s	LCS	% R	ec				
Paran	neter		Units	Conc.	Res	ult	% Rec	Limi	its	Qualifiers			
Total Organic Carbo	n		mg/L	2	25	26.7	10	7	90-110		_		
MATRIX SPIKE & M	IATRIX SPIKE	DUPL	LICATE: 30252	281 MS	MSD	302528	2						
			92498025001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Total Organic Carbo	n	mg/L	1.6	25	25	27.1	27.5	102	104	90-110	1	10	
MATRIX SPIKE & M	IATRIX SPIKE	DUPL	-ICATE: 30252	283		302528	4						
				MS	MSD								
			92498088007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Total Organic Carbo	n	mg/L	3.9	25	25	30.0	30.2	104	105	90-110	1	10	

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.



Project: Pace Project No.:	GRUM 924980	-	INDICATORS										
QC Batch:	5731	06		Anal	ysis Metho	d:	SM 5310B-2	2011					
QC Batch Method:	SM 5	310B-2011		Anal	ysis Descri	ption:	5310B TOC						
				Labo	oratory:		Pace Analy	ical Servi	ces - Ashevi	lle			
Associated Lab San	nples:		06, 9249808800 15, 9249808801	,	,			12, 92498	088013, 924	498088014	ŀ,		
METHOD BLANK:	303453	30			Matrix: W	ater							
Associated Lab San	nples:		06, 9249808800 15, 9249808801	6, 9249808	38017, 924	98088018		12, 92498	088013, 924	498088014	l,		
Paran	neter		Units	Bla Res		Reporting Limit	MD	L	Analyzed	Qu	Jalifiers		
Total Organic Carbo	n		mg/L		ND	1	.0	0.50 1	0/14/20 19:				
Total Organio Calbe	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		iiig/ L		ND		.0	0.00	0/14/20 10.	.,			
LABORATORY COM	NTROL	SAMPLE:	3034531										
Paran	neter		Units	Spike Conc.	LC Res		LCS % Rec	% F Lin		Qualifiers			
Total Organic Carbo	on		mg/L	2	25	26.4	10	6	90-110				
MATRIX SPIKE & M	IATRIX	SPIKE DUPI	_ICATE: 3034			303453	3						
			/	MS	MSD								
Parameter	r	Units	92498088006 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbo	n	mg/L	5.0	25	25	30.3	30.8	101	103	90-110	2	10	
MATRIX SPIKE & M	IATRIX	SPIKE DUPI	LICATE: 3034			303453	5						
			0040000040	MS	MSD	MO	MCD	MO	MOD	0/ D = -		Mass	
Parameter	r	Units	92498088010 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbo	n	mg/L	33.8	25	25	56.2	56.6	89	91	90-110	1	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.



QUALIFIERS

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

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.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GRUMMAN ROAD INDICATORS

Pace Project No.: 92498088

9249608001 GWA-7 EFA 3010A 570380 EFA 6010D 570413 9249080002 GWC-13 EPA 3010A 570380 EPA 6010D 570413 9249080004 GWC-1 EPA 3010A 570380 EPA 6010D 570413 92490808005 GWC-1 EPA 3010A 570380 EPA 6010D 570413 92490808006 GWC-12 EPA 3010A 570380 EPA 6010D 570413 92490808006 GWC-14 EPA 3010A 570380 EPA 6010D 570413 92490808007 GWC-21 EPA 3010A 570380 EPA 6010D 570413 92490808009 GWC-21 EPA 3010A 571010 EPA 6010D 571031 9249080801 GWC-15 EPA 3010A 571010 EPA 6010D 571031 9249080801 GWC-17 EPA 3010A 571010 EPA 6010D 571031 9249080801 GWC-17 EPA 3010A 571010 EPA 6010D 571031 9249080801 GWC-17 EPA 3010A 571010 EPA 6010D	Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
22490808001GWA-8EPA 2010A570380EPA 6010D57041322490808005GWC-12EPA 3010A570380EPA 6010D57041322490808006GWC-11EPA 3010A570380EPA 6010D57041322490808006GWC-24EPA 3010A570380EPA 6010D57041322490808007GWC-21EPA 3010A570380EPA 6010D57103122490808011GWC-21EPA 3010A571010EPA 6010D5710312249080801GWC-21EPA 3010A571010EPA 6010D5710312249080801GWC-20EPA 3010A571010EPA 6010D57103122490808015GWC-20EPA 3010A571010EPA 6010D57103122490808015GWC-22EPA 3010A571010EPA 6010D57103122490808015GWC-22EPA 3010A571010EPA 6010D57103122490808016GWK-5REPA 3010A571010EPA 6010D57103122490808015GWC-17EPA 3010A571010EPA 6010D57103122490808016GWC-18SM 23208-201157165557103122490808016GWC-13SM 23208-201157165557103122490808016GWC-14SM 23208-201157165557103122490808006GWC-11SM 23208-201157165557103122490808006GWC-13SM 23208-2011571215712122490808016GWC-24SM 23208-20115721215712122490808016GWC-21 <td>92498088001</td> <td>GWA-7</td> <td>EPA 3010A</td> <td>570380</td> <td>EPA 6010D</td> <td>570413</td>	92498088001	GWA-7	EPA 3010A	570380	EPA 6010D	570413
22490080004GWC-1EPA 3010A570380EPA 6010D5704132249008005GWC-12EPA 3010A570380EPA 6010D5704132249008006GWC-14EPA 3010A570380EPA 6010D5704132249008006GWC-2EPA 3010A570380EPA 6010D5704132249008006GWC-2EPA 3010A571010EPA 6010D5710312249008001GWC-16EPA 3010A571010EPA 6010D5710312249008001GWC-16EPA 3010A571010EPA 6010D5710312249008012GWC-20EPA 3010A571010EPA 6010D5710312249008013GWC-2EPA 3010A571010EPA 6010D57103122490808014GWC-17EPA 3010A571010EPA 6010D57103122490808015GWC-22EPA 3010A571010EPA 6010D57103122490808016GWC-17EPA 3010A571010EPA 6010D57103122490808016GWC-17SM 220B-201157165557103122490808016GWC-13SM 220B-20115716555710312249080801GWC-14SM 220B-20115716555710312249080800GWC-14SM 220B-2011571655571212249080800GWC-20SM 230B-201157121571212249080800GWC-17SM 230B-201157121571212249080800GWC-17SM 230B-201157121571212249080800GWC-14SM 230B-201157121	92498088002	GWC-13	EPA 3010A	570380	EPA 6010D	570413
2449080005GWC-12EPA 3010A570380EPA 6010D570413248008006GWC-11EPA 3010A570380EPA 6010D570413248008007GWC-24EPA 3010A570380EPA 6010D570413248008007GWC-21EPA 3010A571010EPA 6010D571031248008007GWC-15EPA 3010A571010EPA 6010D571031248008011GWC-16EPA 3010A571010EPA 6010D571031248008013GWC-17EPA 3010A571010EPA 6010D571031248008016GWC-22EPA 3010A571010EPA 6010D571031248008016GWC-22EPA 3010A571010EPA 6010D571031248008016GWC-22EPA 3010A571010EPA 6010D571031248008016GWC-22EPA 3010A571010EPA 6010D571031248008016GWC-34M 23208-2011571655571031248008017GWC-94EPA 3010A571010EPA 6010D571031248008003GWC-13SM 23208-2011571655571031248008005GWC-14SM 23208-201157165557121248008006GWC-11SM 23208-20115712157121248008007GWC-14SM 23208-201157212157121248008006GWC-13SM 23208-201157212157121248008007GWC-14SM 23208-201157212157121248008007GWC-14SM 23208-201157212157121 </td <td>2498088003</td> <td>GWA-8</td> <td>EPA 3010A</td> <td>570380</td> <td>EPA 6010D</td> <td>570413</td>	2498088003	GWA-8	EPA 3010A	570380	EPA 6010D	570413
2498088006GWC-11EPA 3010A570380EPA 6010D5704132498088007GWC-2EPA 3010A570380EPA 6010D5704132498088009GWC-21EPA 3010A571010EPA 6010D5710312498088010GWC-15EPA 3010A571010EPA 6010D571031249808801GWC-16EPA 3010A571010EPA 6010D5710312498088012GWC-16EPA 3010A571010EPA 6010D5710312498088013GWC-17EPA 3010A571010EPA 6010D5710312498088016GWC-17EPA 3010A571010EPA 6010D5710312498088016GWC-17EPA 3010A571010EPA 6010D5710312498088016GWC-17SM 2302B-20115716515710312498088016GWC-9EPA 3010A571010EPA 6010D5710312498088016GWC-13SM 2302B-20115716555710312498088003GWC-13SM 2302B-20115716555716552498088004GWC-14SM 2302B-2011571655571212498088005GWC-14SM 2302B-201157121571212498088006GWC-17SM 2302B-2011572121571212498088007GWC-16SM 2302B-2011572121571212498088016GWC-17SM 2302B-2011572121571212498088016GWC-16SM 2302B-2011572121571812498088017GWB-4RSM 2302B-2011572121571812	2498088004	GWC-1	EPA 3010A	570380	EPA 6010D	570413
2490808007GWC-14EPA 3010A570800EPA 6010D5704132490808008GWC-21EPA 3010A570101EPA 6010D571031249080801GWC-15EPA 3010A571010EPA 6010D571031249008001GWC-16EPA 3010A571010EPA 6010D57103124900801GWC-20EPA 3010A571010EPA 6010D571031249008013GWC-20EPA 3010A571010EPA 6010D571031249008014GWC-77EPA 3010A571010EPA 6010D571031249008015GWC-22EPA 3010A571010EPA 6010D571031249008016GWE-8REPA 3010A571010EPA 6010D571031249008016GWC-9EPA 3010A571010EPA 6010D571031249008016GWC-9EPA 3010A571010EPA 6010D571031249008001GWC-13SM 2320B-2011571655571655249008003GWC-14SM 2320B-2011571655571655249008004GWC-11SM 2320B-2011571655571655249008007GWC-14SM 2320B-20115712157121249008007GWC-15SM 2320B-20115712157121249008007GWC-16SM 2320B-20115712157121249008006GWC-17SM 2320B-20115712157121249008007GWC-13SM 2320B-20115712157121249008007GWC-14SM 2320B-20115712157121249008007	2498088005	GWC-12	EPA 3010A	570380	EPA 6010D	570413
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2498088009 GWC-21 EPA 3010A 571010 EPA 6010D 571031 2498088010 GWC-15 EPA 3010A 571010 EPA 6010D 571031 2498088011 GWC-16 EPA 3010A 571010 EPA 6010D 571031 2498088012 GWC-20 EPA 3010A 571010 EPA 6010D 571031 2498088014 GWC-17 EPA 3010A 571010 EPA 6010D 571031 2498088015 GWC-22 EPA 3010A 571010 EPA 6010D 571031 2498088016 GWB-6R EPA 3010A 571010 EPA 6010D 571031 2498088016 GWB-7 SM 2300B-2011 57165 571031 2498088016 GWC-7 SM 2320B-2011 571655 571031 2498088002 GWC-13 SM 2320B-2011 571655 571031 2498088005 GWC-14 SM 2320B-2011 571655 571031 2498088005 GWC-12 SM 2320B-2011 571655 571031 2498088006 GWC-12 SM 2320B-2011	2498088007	GWC-14	EPA 3010A	570380	EPA 6010D	570413
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2498088011GWC-16EPA 3010A571010EPA 6010D5710312498088012GWC-20EPA 3010A571010EPA 6010D5710312498088014GWC-47EPA 3010A571010EPA 6010D5710312498088015GWC-22EPA 3010A571010EPA 6010D5710312498088016GWB-6REPA 3010A571010EPA 6010D5710312498088016GWC-22EPA 3010A571010EPA 6010D5710312498088016GWC-9EPA 3010A571010EPA 6010D5710312498088016GWC-9EPA 3010A571010EPA 6010D571031249808802GWC-1SM 2320B-2011571655571031249808803GWC-13SM 2320B-2011571655571031249808803GWC-14SM 2320B-2011571655571031249808803GWC-14SM 2320B-2011571655571031249808803GWC-14SM 2320B-2011571655571031249808804GWC-14SM 2320B-20115712157121249808805GWC-14SM 2320B-2011572121572121249808801GWC-17SM 2320B-2011572121572121249808801GWC-17SM 2320B-20115721215721212498088015GWC-17SM 2320B-20115721215721212498088016GWC-17SM 2320B-20115721215721212498088015GWC-13EPA 350.1 Rev 2.0 19935711802498088016GWC-14EPA	2498088009	GWC-21	EPA 3010A	571010	EPA 6010D	571031
2498088012GWC-20EPA 3010A571010EPA 6010D5710312498088013GWB-4REPA 3010A571010EPA 6010D5710312498088014GWC-17EPA 3010A571010EPA 6010D5710312498088015GWC-22EPA 3010A571010EPA 6010D5710312498088016GWB-6REPA 3010A571010EPA 6010D5710312498088017GWB-5REPA 3010A571010EPA 6010D5710312498088016GWC-9EPA 3010A571010EPA 6010D5710312498088016GWC-9EPA 3010A571010EPA 6010D5710312498088001GWC-9EPA 3010A571010EPA 6010D5710312498088005GWC-13SM 23208-20115716555710312498088006GWC-14SM 23208-2011571655571212498088006GWC-21SM 23208-2011571655571212498088010GWC-16SM 23208-201157121571212498088010GWC-17SM 23208-2011572121571212498088010GWC-17SM 23208-2011572121571212498088016GWC-17SM 23208-2011572121571212498088016GWC-17SM 23208-2011572121571212498088016GWC-18SM 23208-2011572121571212498088016GWC-17SM 23208-201157121571852498088016GWC-18SM 23208-2011572121571812498088016	2498088010	GWC-15	EPA 3010A	571010	EPA 6010D	571031
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2498088014GWC-17EPA 3010A571010EPA 6010D5710312498088015GWC-22EPA 3010A571010EPA 6010D5710312498088016GWB-5REPA 3010A571010EPA 6010D5710312498088016GWC-9EPA 3010A571010EPA 6010D5710312498088016GWC-9EPA 3010A571010EPA 6010D5710312498088003GWC-13SM 2320B-20115716555710312498088004GWC-13SM 2320B-20115716555716552498088005GWC-12SM 2320B-20115716555716552498088006GWC-11SM 2320B-2011571655571212498088007GWC-2SM 2320B-2011571655571212498088008GWC-2SM 2320B-201157121571212498088009GWC-2SM 2320B-2011572121571212498088010GWC-16SM 2320B-20115721215721212498088011GWC-17SM 2320B-20115721215721212498088014GWC-17SM 2320B-20115721215721212498088015GWC-17SM 2320B-20115721215721212498088016GWB-5RSM 2320B-20115721215721212498088016GWB-6RSM 2320B-20115721215721212498088016GWB-6RSM 2320B-20115721215721212498088016GWB-6RSM 2320B-20115721215721212498088016GWB-6RSM 2320B-2011572121 <td< td=""><td>2498088012</td><td>GWC-20</td><td>EPA 3010A</td><td>571010</td><td>EPA 6010D</td><td>571031</td></td<>	2498088012	GWC-20	EPA 3010A	571010	EPA 6010D	571031
2498088015GWC-22EPA 3010A571010EPA 6010D5710312498088016GWB-6REPA 3010A571010EPA 6010D5710312498088018GWC-9EPA 3010A571010EPA 6010D571031249808801GWA-7SM 2320B-20115716555710315710312498088002GWC-13SM 2320B-20115716555710315716552498088003GWA-8SM 2320B-20115716555710315716552498088004GWC-11SM 2320B-20115716555710315716552498088006GWC-12SM 2320B-2011571655571215716552498088006GWC-14SM 2320B-201157165557121571212498088006GWC-22SM 2320B-201157212157121571212498088006GWC-16SM 2320B-20115721215712157121249808801GWC-16SM 2320B-20115721215712157121249808801GWC-16SM 2320B-20115721215712157121249808801GWC-20SM 2320B-20115721215712157121249808801GWC-20SM 2320B-20115721215712157121249808801GWC-20SM 2320B-20115721215712157121249808801GWC-20SM 2320B-20115721215712157121249808801GWC-20SM 2320B-20115721215712157121249808801GWC-17SM 2320B-2011572121571215	2498088013	GWB-4R	EPA 3010A	571010	EPA 6010D	571031
2498088015GWC-22EPA 3010A571010EPA 6010D5710312498088016GWB-6REPA 3010A571010EPA 6010D5710312498088017GWC-9EPA 3010A571010EPA 6010D5710312498088018GWC-9EPA 3010A571010EPA 6010D571031249808802GWC-13SM 2320B-2011571655571051249808803GWA-7SM 2320B-2011571655571231249808804GWC-11SM 2320B-2011571655571231249808805GWC-12SM 2320B-2011571655571231249808806GWC-14SM 2320B-2011571655571231249808806GWC-14SM 2320B-2011571655571231249808807GWC-14SM 2320B-201157121257121249808801GWC-22SM 2320B-201157212157121249808801GWC-16SM 2320B-201157212157121249808801GWC-16SM 2320B-201157212157121249808801GWC-20SM 2320B-2011572121572121249808801GWC-20SM 2320B-2011572121572121249808801GWC-20SM 2320B-2011572121572121249808801GWC-20SM 2320B-2011572121572121249808801GWC-20SM 2320B-2011572121572121249808801GWC-20SM 2320B-2011572121572121249808801GWC-20SM 2320B-2011572121572121249	2498088014	GWC-17	EPA 3010A	571010	EPA 6010D	571031
2498088016 2498088017 2498088018GWB-6R GWC-9EPA 3010A 						
2498088017 2498088018GWB-5R GWC-9EPA 3010A EPA 3010A571010 						
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)2498088006	GWC-11	EPA 350.1 Rev 2.0 1993	573187		
2498088008 GWC-2 EPA 350.1 Rev 2.0 1993 571180	2498088007	GWC-14	EPA 350.1 Rev 2.0 1993	571180		
	2498088008	GWC-2	EPA 350.1 Rev 2.0 1993	571180		



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	Analytica Batch
92498088009	GWC-21	EPA 350.1 Rev 2.0 1993	571731		
92498088010	GWC-15	EPA 350.1 Rev 2.0 1993	571731		
2498088011	GWC-16	EPA 350.1 Rev 2.0 1993	571731		
2498088012	GWC-20	EPA 350.1 Rev 2.0 1993	571731		
2498088013	GWB-4R	EPA 350.1 Rev 2.0 1993	571731		
2498088014	GWC-17	EPA 350.1 Rev 2.0 1993	571731		
2498088015	GWC-22	EPA 350.1 Rev 2.0 1993	571731		
2498088016	GWB-6R	EPA 350.1 Rev 2.0 1993	571731		
2498088017	GWB-5R	EPA 350.1 Rev 2.0 1993	571731		
2498088018	GWC-9	EPA 350.1 Rev 2.0 1993	571731		
2498088001	GWA-7	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
2498088002	GWC-13	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
2498088003	GWA-8	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
2498088004	GWC-1	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
2498088005	GWC-12	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
2498088006	GWC-11	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
2498088007	GWC-14	EPA 351.2 Rev 2.0 1993	572501	EPA 351.2 Rev 2.0 1993	572939
2498088008	GWC-2	EPA 351.2 Rev 2.0 1993	572713	EPA 351.2 Rev 2.0 1993	572980
2498088009	GWC-21	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088010	GWC-15	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088011	GWC-16	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088012	GWC-20	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088013	GWB-4R	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088014	GWC-17	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088015	GWC-22	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088016	GWB-6R	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088017	GWB-5R	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088018	GWC-9	EPA 351.2 Rev 2.0 1993	573043	EPA 351.2 Rev 2.0 1993	573659
2498088001	GWA-7	SM 5310B-2011	571179		
2498088002	GWC-13	SM 5310B-2011	571179		
2498088003	GWA-8	SM 5310B-2011	571179		
2498088004	GWC-1	SM 5310B-2011	571179		
2498088005	GWC-12	SM 5310B-2011	571179		
2498088006	GWC-11	SM 5310B-2011	573106		
2498088007	GWC-14	SM 5310B-2011	571179		
2498088008	GWC-2	SM 5310B-2011	571179		
2498088009	GWC-21	SM 5310B-2011	573106		
2498088010	GWC-15	SM 5310B-2011	573106		
2498088011	GWC-16	SM 5310B-2011	573106		
2498088012	GWC-20	SM 5310B-2011	573106		
2498088013	GWB-4R	SM 5310B-2011	573106		
2498088014	GWC-17	SM 5310B-2011	573106		
2498088015	GWC-22	SM 5310B-2011	573106		
2498088016	GWB-6R	SM 5310B-2011	573106		
2498088017	GWB-5R	SM 5310B-2011	573106		



GRUMMAN ROAD INDICATORS

Project:

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Pace Project No.:	92498088				
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92498088018	GWC-9	SM 5310B-2011	573106		

- and	San	nple Condition	Upon Receipt		
Face	Analytical Client Name	DH D.	ar la	0#:92498088	
	Client Name	OIL TOW			
Courier:	Fed Ex 🗌 UPS 🗌 USPS 🛄 Clier		Pace Other		
Tracking #:	/		92	498088	
Custody Sea	on Cooler/Box Present: Yyes	no Seals	intact: 🛛 yes	no	
Packing Mate	rial: 🗍 Bubble Wrap 🔤 Bubble	Bags [] None	Other	2. RZiplock	
Thermomete	Used 230	Type of Ice: Wei) Blue None	Samples on ice, cooling process has begun	
Cooler Temp	erature 3,7	Biological Tissue	is Frozen: Yes No	Date and initials of person examining contents:	
Temp should be	above freezing to 6°C		Comments:		
Chain of Cust	dy Present:	AYes No N/A	1.		
Chain of Cust	dy Filled Out:		2		-
Chain of Cust	dy Relinquished:	AYes DNO DN/A	3.		
Sampler Nam	e & Signature on COC:	ØYes DNO DN/A	4.		
Samples Arriv	ed within Hold Time:	ØYes □NO □N/A	5.		
Short Hold T	me Analysis (<72hr):	DYes DNO DNA	6.		
Rush Turn A	ound Time Requested:	DYes DNO DNA	7.		
Sufficient Volu	me:	ØYes □No □N/A	8.		
Correct Conta	ners Used:	DYes DNO DN/A	9.		
-Pace Con	ainers Used:	∯Yes □No □N/A			
Containers Int	act:	Yes DNO DNA	10.		
Filtered volum	e received for Dissolved tests	□Yes □No C/N/A	11.		
Sample Label		Pres DNO DN/A	12.		
	late/time/ID/Analysis Matrix:	WT			
	eding preservation have been checked.	Øyes DNO DN/A	13.		
All containers d	eeding preservation are found to be in	r			
	EPA recommendation.	©Yes □No □N/A			
excentions: VOA	coliform, TOC, O&G, WI-DRO (water)	ÚYes □No	Initial when CD	Lot # of added preservative	
	ked for dechlorination:				1
	VOA Vials (>6mm):				
Trip Blank Pre				na - Aran a La Calina - La	1
	stody Seals Present				
		L 4			
	nk Lot # (if purchased):]
	ation/ Resolution:			Field Data Required? Y / N	
	Contacted:	ana ila anti di sua	Time:		
Comments	Resolution:				• ²
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No. 140	er there is a discrepancy affecting North (Carolina compliance en	moles a conv of this form	will be sent to the North Carolina DEHND	
Certification O	er there is a discrepancy affecting North C fice (i.e. out of hold, incorrect preservativ	e, out of temp, incorrec	containers)		an da si ka Parad
				F-ALLC003rev.3, 11September2006	
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	Items (N/A) (C-)	-	8P3U-250 mL Plastic Unpressived (1974)	ap2U-500 mL Plastic Unpreserved (N/A)		- -	ſ	1	T	-1	Pe	T	-1	16	AG1M-1 liter Amber HCI (pm 5 2)	CI-) Seo mi Amber Unpreserved (N/A) (CI-)	VG30-2-0634	AG1S-1 liter Amber H2SO4 (pri 5 4)	Acae.250 mL Amber H2504 (pH < 2)	And Ander NH4CI (N/A)(CI-)	AG3A(DG3A)-250 mm	DG9H-40 mL YOA HCI (N/A)	(A/N) E025203 (N/A)		VG9U-40 mt von out von	1		VUAN (V TIME) - LINLAPH/Gas kit (N/A)	V/GK (3 viais per any	SP5T-125 mL Sterlie Plastic (N/A - 1997	Contractile Plastic (N/A - lab)	1	X X463	1	Amber Unpreserved vials (N/A)	Auto and Scintiliation viels (N/A)
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np Pace's NET 30 day payment forms and agreeing to late charges of 1.5% per month for any #volces not peld within 30 days	SIGNATURE of SAMPLER:	PRINT Name of SAMPLER:	SAMPLER NAME AND SIGNATURE			Julger 14C 9.30-20	RELINQUISHED BT (APPILLATION	5	1 02 91 22 42 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1-29-20	1 24h1 a:b2.6	, wit 6	w1 6 1.29-20 0935 1	wt 6 q 2831 055 /		NT 6 9-28201604	WT 6 4.28-101640	wt 6 9.2820 1520 /	정의 옷 옷 위 MATRIX CODE (600 SAMPLE TYPE (G=GF DATE TIME		ACOLLECTED		Project Number,	Project Name: Grumman Road -Semi-Annual Jadice to 5	Purchase Order No.:		Copy To: ACC Contacts	Report Te: SCS Contacts	Section B Required Project Information:	CHAIN-OF-CI The Chain-of-Custody is	
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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,

typer Pager

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





CERTIFICATIONS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

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

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

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



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



SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

Sample ID	Method	Analysts	Analytes Reported
GWA-7 FILTERED	EPA 6010D	DRB	1
	EPA 6020B	CW1	15
GWB-5R FILTERED	EPA 6010D	DRB	1
	EPA 6020B	CW1	15
	GWA-7 FILTERED	GWA-7 FILTERED EPA 6010D EPA 6020B EPA 6010D GWB-5R FILTERED EPA 6010D	GWA-7 FILTERED EPA 6010D DRB EPA 6020B CW1 GWB-5R FILTERED EPA 6010D DRB

PASI-C = Pace Analytical Services - Charlotte

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



SUMMARY OF DETECTION

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498079001	GWA-7 FILTERED					
	Performed by	CUSTOME R			09/30/20 15:08	
	рН	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	
92498079002	GWB-5R FILTERED					
	Performed by	CUSTOME R			10/02/20 15:06	
	рН	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	



ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

Sample: GWA-7 FILTERED	Lab ID:	92498079001	Collecte	d: 09/28/20	15:20	Received: 09/	30/20 11:47 M	atrix: Water	
			Report						
Parameters	Results	Units	Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte						
Performed by	CUSTOME				1		09/30/20 15:08		
рН	R 5.86	Std. Units			1		09/30/20 15:08		
pri	5.00	Stu. Units					09/30/20 13:00		
6010 MET ICP, Dissolved	Analytical	Method: EPA 6	010D Prep	paration Me	hod: EF	PA 3010A			
	Pace Ana	lytical Services	- Peachtree	e Corners, C	SA				
Calcium, Dissolved	3.0	mg/L	1.0	0.070	1	10/05/20 15:44	10/06/20 18:57	7440-70-2	
6020 MET ICPMS, Dissolved	Analytical	Method: EPA 6	020B Prep	aration Met	hod: EF	PA 3005A			
	Pace Ana	lytical Services	- Peachtree	e Corners, 0	S A				
Antimony, Dissolved	0.0020J	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	0.079	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	4.6	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	0.010J	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	0.00019J	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	0.014J	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	0.10	mg/L	0.050	0.011	5	10/01/20 14:57	10/02/20 16:41	7440-62-2	
Zinc, Dissolved	0.084	mg/L	0.050	0.011	5	10/01/20 14:57	10/02/20 16:41	7440-66-6	



ANALYTICAL RESULTS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 924

92498079

Sample: GWB-5R FILTERED	Lab ID:	92498079002	Collecte	ed: 09/30/20	17:30	Received: 10/	02/20 12:22 Ma	atrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical	Method:							
	Pace Ana	lytical Services	- Charlotte)					
Performed by	CUSTOME R				1		10/02/20 15:06		
рН	4.99	Std. Units			1		10/02/20 15:06		
6010 MET ICP, Dissolved		Method: EPA 6 lytical Services		•		PA 3010A			
Calcium, Dissolved	66.3	mg/L	1.0	0.070	1	10/05/20 15:44	10/06/20 19:16	7440-70-2	
6020 MET ICPMS, Dissolved	-	Method: EPA 6 lytical Services				PA 3005A			
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	0.0014J	mg/L	0.0050	0.00078	1	10/07/20 15:26	10/07/20 20:12	7440-38-2	
Barium, Dissolved	0.15	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	3.9	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		
Chromium, Dissolved	0.00085J	mg/L	0.010	0.00055	1	10/07/20 15:26	10/07/20 20:12		
Cobalt, Dissolved	0.00047J	mg/L	0.0050	0.00038	1	10/07/20 15:26	10/07/20 20:12		
Lead, Dissolved	ND	mg/L	0.0050	0.000036	1	10/07/20 15:26	10/07/20 20:12		
Lithium, Dissolved	ND	mg/L	0.030	0.00081	1	10/07/20 15:26	10/07/20 20:12		
Molybdenum, Dissolved	ND	mg/L	0.010	0.00069	1	10/07/20 15:26	10/07/20 20:12		
Selenium, Dissolved	ND	mg/L	0.010	0.0016	1	10/07/20 15:26	10/07/20 20:12		
Thallium, Dissolved	ND	mg/L	0.0010	0.00014	1	10/07/20 15:26	10/07/20 20:12		
Vanadium, Dissolved	0.0025J	mg/L	0.010	0.0022	1	10/07/20 15:26	10/07/20 20:12		
Zinc, Dissolved	ND	mg/L	0.010	0.0022	1	10/07/20 15:26	10/07/20 20:12	7440-66-6	



QC Batch: QC Batch Method:	570950															
QC Batch Method:			Ana	lysis Meth	nod:	EPA 6	010D									
	EPA 3010A		Ana	Analysis Description:			6010 MET Filtered Diss.									
			Lab	oratory:		Pace A	Analyti	cal Servi	ces - Peach	tree Corne	rs, GA					
Associated Lab Samp	ples: 92498079	001, 9249807900	2													
METHOD BLANK:	3024402			Matrix:	Water											
Associated Lab Samp	ples: 92498079	001, 9249807900	2													
			Bla	ank	Reporting	g										
Parame	eter	Units	Res	sult	Limit		MDL		Analyzed	Qı	ualifiers					
Calcium, Dissolved		mg/L		ND		1.0		0.070	10/06/20 18	48						
LABORATORY CON	TROL SAMPLE:	3024403														
			Spike	e L	LCS	LCS	S	%	Rec							
Parame	eter	Units	Conc	. R	esult	% Re	эс	Lir	nits	Qualifiers						
Calcium, Dissolved		mg/L		1	0.96J		96		80-120							
MATRIX SPIKE & MA		LICATE: 3024	150		30244	F7										
WATRIA SPIRE & WA	AIRIA SPIKE DUP	LICATE: 30244	400 MS	MSD	30244	07										
		92498079002	Spike	Spike	MS	MS	D	MS	MSD	% Rec		Max				
Parameter	Units	Result	Conc.	Conc.	Result	Res	ult	% Rec	% Rec	Limits	RPD	RPD	Qual			
Calcium, Dissolved	mg/L	66.3	1		1 67.	.3	67.3	9	7 102	75-125	0	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.



Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No .:	92498079
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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 Sar	nples: 92498079001		
METHOD BLANK:	3021080	Matrix: Water	
Associated Lab Sar	nples: 92498079001		
		Plank Popartir	29

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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Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

MATRIX SPIKE & MATRIX S	PIKE DUPLI	CATE: 3021	082		3021083							
			MS	MSD								
		92497893001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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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GRUMMAN ROAD SEMI ANNUAL FILT. Project:

Pace Project	No.:	9249807
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Pace Project No.: 92498079	
QC Batch: 571522 Analysis Method:	EPA 6020B
QC Batch Method: EPA 3005A Analysis Description	on: 6020 MET Dissolved
Laboratory:	Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92498079002	
METHOD BLANK: 3026976 Matrix: Wate	r
Associated Lab Samples: 92498079002	
Blank Re	porting
Parameter Units Result I	imit 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

Selenium, Dissolved

Thallium, Dissolved

Zinc, Dissolved

Vanadium, Dissolved

Associated Lab Samples: 92498079002 Matrix: Water

ND

ND

ND

ND

ND

mg/L

mg/L

mg/L

mg/L

mg/L

0.010

0.010

0.0010

0.010

0.010

0.00069 10/07/20 17:53

0.0016 10/07/20 17:53

0.00014 10/07/20 17:53

0.0022 10/07/20 17:53

0.0022 10/07/20 17:53

		Blank	Reporting			
Parameter	Units	Result	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	

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REPORT OF LABORATORY ANALYSIS

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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			0.11	109	80-120	
-	mg/L	-				
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	
ead, Dissolved	mg/L	0.1	0.098	98	80-120	
ithium, Dissolved	mg/L	0.1	0.099	99	80-120	
lolybdenum, 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 S	PIKE DUPL	ICATE: 3026	978		3026979							
			MS	MSD								
		92498079002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
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	

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REPORT OF LABORATORY ANALYSIS

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Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

MATRIX SPIKE & MATRIX S	PIKE DUPLIC	CATE: 3026	978		3026979							
Parameter	9 Units	2498079002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
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 Result	Dup Result	RPD	Max RPD	Qualifiers
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	

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

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, LLC.



QUALIFIERS

Project: GRUMMAN ROAD SEMI ANNUAL FILT.

Pace Project No.: 92498079

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.



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 92498079002	GWA-7 FILTERED GWB-5R FILTERED				
92498079001 92498079002	GWA-7 FILTERED GWB-5R FILTERED	EPA 3010A EPA 3010A	570950 570950	EPA 6010D EPA 6010D	570976 570976
92498079001	GWA-7 FILTERED	EPA 3005A	570318	EPA 6020B	570369
92498079002	GWB-5R FILTERED	EPA 3005A	571522	EPA 6020B	571615

Face	Analytical Client Name	: BABwer	WO#:9249	1001 y	
it. Ite					
Courier: 🛄 Tracking #:		ent 2 Commercial Dec	92498079		
Custody Sea	i on Cooler/Box Present: 🛛 yes	no Seals intact:	🛛 yes 🔲 no		
Packing Mat	erial: 🚺 Bubble Wrap 🔤 Bubbl	e Bags 📋 None 🙆 Oth	er <u>RRZ:plock</u>		
Thermomete	rUsed 230	100			
Cooler Temp	erature	Biological Tissue is Froze	an: Yes No Contents:	of person examining	
	e above freezing to 6*C	Comm	ents:		
Chain of Cus	lody Present:	<u> </u> ZYes □No □N/A 1.	D	La contra con	
	ady Filled Out:		nan daga kana kana kana kana kana kana kana k		
	tody Relinquished:	MYes ⊡No ⊡N/A 3.			
	& Signature on COC:	ØYes ⊡No ⊡N/A 4.			
No. 10	vad within Hold Time:	[] Yes □No □N/A 5.	Announ makenithan an a	an a	
	ime Analysis (<72hr):	□Yes ØNo □N/A 6,			
an a	ound Time Requested:		New York Concerning of the State of the Stat		
Sufficient Vol		Qiyes ⊡No ⊡N/A 8.	Market & Market Andrews and Antonio and		
Correct Contr		VIYes DNO DN/A 9,	5	· · · · · · · · · · · · · · · · · · ·	
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	ls match COC:	Øfyes ⊡Nø ©N/A 12. WT			
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	eeding preservation are found to be in EPA recommendation.	Élyes Elno En/A			
n han an Barana an Arrian		WYes DNo complete			
	coliform, TOC, O&G, WI-DRO (water)	[]Yes □No []N/A 14.		······································	
	VOA Vials (>6mm):	□yes □No □/N/A 15.	<u></u>		
Trip Blank Pr		□Yes DNo □N/A 16.			
	stody Seals Present				
•	nk Lot # (if purchased):				
	cation/ Resolution:	Date/Time:	Field Data Required?	Ύ/Ν	
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Note: Whene	ver there is a discrepancy affecting North	Carolina compliance samples, a c	opy of this form will be sent to the North (Carolina DEHNR	
Certification O	fice (i.e. out of hold, incorrect preserval	ive, out of temp, incorrect contained	ars) · · · · · · · · · · · · · · · · · · ·		Service Sta

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Page	16	of 1	8

Copy To: ACC Contracts Project Nume: Grumman Road - Semi-Annual Project Number: Project Number: RELINGUISHED BY / AFFILIATION Sample TEMP AT COLLECTION Project Number: Sample TEMP AT COLLECTION Project Reliable Sample TEMP AT COLLECTION

F-ALL-Q-020rev.07, 15-Feb-2007

Important Note: By signing this form you are accepting Pace's NET 30 day payment larms and agreeing to late changes of 1.5% per month for any invokes not paid within 30 days.

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	2 	Manado=B, Ca, Sb, As, Ba, Ba, Cd, Cr, Co, Pb, LJ, Mo, Sa, Ti, V, Zn		last semple	la, when the last sample	ADDITIONAL												Gert	Section D Required Clear Internation SAMPLE ID (A-Z, 0-9 1,-2) Sample (Ds MUST BE UNIQUE		Requested Due Date/TAT:		SCS Contacts		Atlanta, GA	Company: GA Power	lient Information:	
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Page 18 of 18

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



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,

Kein Hung

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





Pace Analytical Services, LLC 110 Technology Parkway Peachtree Corners, GA 30092 (770)734-4200

CERTIFICATIONS

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

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



SAMPLE SUMMARY

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 924

	110710	02.000	
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
2498068012	GWC-21	Water	09/30/20 10:49	10/02/20 12:22
2498068013	GWC-15	Water	09/30/20 12:30	10/02/20 12:22
2498068014	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
2498068024	GWC-9	Water	10/01/20 08:21	10/02/20 12:22



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 G\	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



SAMPLE ANALYTE COUNT

Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068014	GWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068015	GWC-20	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068016	GWB-4R	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068017	EB-2-9-30-20	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2498068018	DUP-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068019	GWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068020	GWC-22	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068021	GWB-6R	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068022	GWB-5R	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068023	FB-2-9-30-20	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
92498068024	GWC-9	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498068001	GWA-7					
EPA 9315	Radium-226	22.2 ± 4.27 (0.964) C:93% T:NA	pCi/L		10/15/20 06:56	
EPA 9320	Radium-228	0.156 ± 0.471 (1.06) C:71% T:81%	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	22.4 ± 4.74 (2.02)	pCi/L		10/21/20 12:22	
92498068002	GWC-13					
EPA 9315	Radium-226	0.676 ± 0.337 (0.373) C:85% T:NA	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	0.606 ± 0.395 (0.737) C:71% T:79%	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	1.28 ± 0.732 (1.11)	pCi/L		10/21/20 12:22	
92498068003	GWA-8					
EPA 9315	Radium-226	0.929 ± 0.400 (0.425) C:85% T:NA	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	1.15 ± 0.522 (0.868) C:70% T:78%	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	2.08 ± 0.922 (1.29)	pCi/L		10/21/20 12:22	
92498068004	GWC-1					
EPA 9315	Radium-226	0.727 ± 0.357 (0.460) C:89% T:NA	pCi/L		10/15/20 06:57	
EPA 9320	Radium-228	0.564 ± 0.409 (0.795) C:75% T:78%	pCi/L		10/16/20 14:43	
Total Radium Calculation	Total Radium	1.29 ± 0.766 (1.26)	pCi/L		10/21/20 12:22	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498068005	FB-1-9-28-20					
EPA 9315	Radium-226	-0.0334 ± 0.133 (0.422)	pCi/L		10/15/20 06:55	
EPA 9320	Radium-228	C:90% T:NA 0.886 ± 0.502 (0.919) C:68%	pCi/L		10/21/20 11:33	
Total Radium Calculation	Total Radium	T:78% 0.886 ± 0.635 (1.34)	pCi/L		10/22/20 10:20	
92498068006	GWC-12					
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	
92498068007	GWC-11					
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	
92498068008	GWC-14					
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	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498068009	GWC-2					
EPA 9315	Radium-226	0.553 ± 0.323	pCi/L		10/15/20 07:57	
		(0.494) C:88% T:NA				
EPA 9320	Radium-228	0.450 ± 0.417 (0.853) C:73%	pCi/L		10/21/20 11:44	
Total Radium Calculation	Total Radium	T:84% 1.00 ±	pCi/L		10/22/20 10:20	
		0.740 (1.35)	poi/L		10/22/20 10.20	
92498068010	EB-1-9-29-20					
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%	pCi/L		10/21/20 11:34	
Total Radium Calculation	Total Radium	T:83% 0.155 ± 0.532 (1.27)	pCi/L		10/22/20 10:20	
92498068011	DUP-1					
EPA 9315	Radium-226	0.259 ± 0.219 (0.372)	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	C:92% T:NA 1.42 ± 0.529 (0.789) C:69%	pCi/L		10/21/20 11:34	
Total Radium Calculation	Total Radium	T:84% 1.68 ± 0.748 (1.16)	pCi/L		10/22/20 10:20	
92498068012	GWC-21					
EPA 9315	Radium-226	2.88 ± 0.770 (0.501)	pCi/L		10/15/20 07:57	
EPA 9320	Radium-228	C:76% T:NA 0.945 ± 0.535 (0.993) C:69%	pCi/L		10/21/20 11:35	
Total Radium Calculation	Total Radium	T:79% 3.83 ± 1.31 (1.49)	pCi/L		10/22/20 10:20	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498068013	GWC-15					
EPA 9315	Radium-226	0.709 ± 0.358	pCi/L		10/15/20 07:57	
		(0.518) C:97% T:NA				
EPA 9320	Radium-228	0.547 (0.848) C:71%	pCi/L		10/21/20 11:45	
	T . 1 D . 4	T:86%	0.1			
Total Radium Calculation	Total Radium	2.14 ± 0.905 (1.37)	pCi/L		10/22/20 10:20	
92498068014	GWC-16					
EPA 9315	Radium-226	1.69 ± 0.552 (0.449)	pCi/L		10/16/20 06:44	
		C:86% T:NA				
EPA 9320	Radium-228	0.781 ± 0.435 (0.789) C:74%	pCi/L		10/21/20 11:45	
		T:82%				
Total Radium Calculation	Total Radium	2.47 ± 0.987 (1.24)	pCi/L		10/22/20 10:20	
92498068015	GWC-20					
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) C:66%	pCi/L		10/21/20 11:35	
Total Radium Calculation	Total Radium	T:93% 5.62 ± 1.48 (1.21)	pCi/L		10/22/20 10:20	
92498068016	GWB-4R					
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) C:68%	pCi/L		10/21/20 11:30	
Total Radium Calculation	Total Radium	T:81% 2.60 ± 0.981 (1.14)	pCi/L		10/22/20 10:20	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498068017	EB-2-9-30-20					
EPA 9315	Radium-226	0.132 ± 0.292 (0.685)	pCi/L		10/16/20 06:44	
EPA 9320	Radium-228	C:88% T:NA 0.612 ± 0.386 (0.710) C:71%	pCi/L		10/21/20 11:30	
Total Radium Calculation	Total Radium	T:75% 0.744 ± 0.678 (1.40)	pCi/L		10/22/20 10:20	
92498068018	DUP-2					
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	
92498068019	GWC-17					
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	
92498068020	GWC-22					
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	0.78% 1.NA 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	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92498068021	GWB-6R					
EPA 9315	Radium-226	3.02 ± 0.796 (0.521)	pCi/L		10/16/20 07:29	
EPA 9320	Radium-228	C:90% T:NA 3.37 ± 0.979 (1.28) C:73%	pCi/L		10/21/20 11:36	
Total Radium Calculation	Total Radium	T:70% 6.39 ± 1.78 (1.80)	pCi/L		10/22/20 10:20	
92498068022	GWB-5R					
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	
92498068023	FB-2-9-30-20					
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	
92498068024	GWC-9					
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	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.:	92498068
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Sample: GWA-7	Lab ID: 92498	3068001 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	22.2 ± 4.27 (0.964) C:93% T:NA	pCi/L	10/15/20 06:56	6 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.156 ± 0.471 (1.06) C:71% T:81%	pCi/L	10/16/20 14:43	3 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	22.4 ± 4.74 (2.02)	pCi/L	10/21/20 12:22	2 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Face FI0ject No 9249000	0					
Sample: GWC-13 PWS:	Lab ID: 9249 Site ID:	Collected: 09/28/20 16:40 Sample Type:	Received:	09/30/20 11:47 N	Aatrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg			_	
Radium-226	EPA 9315	0.676 ± 0.337 (0.373) C:85% T:NA	pCi/L	10/15/20 06:57	13982-63-3	
	Pace Analytica	Services - Greensburg				
Radium-228	EPA 9320	0.606 ± 0.395 (0.737) C:71% T:79%	pCi/L	10/16/20 14:43	15262-20-1	
	Pace Analytica	Services - Greensburg				
Total Radium	Total Radium Calculation	1.28 ± 0.732 (1.11)	pCi/L	10/21/20 12:22	7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

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Sample: GWA-8 PWS:	Lab ID: 9249 Site ID:	8068003 Collected: 09/28/20 16:04 Sample Type:	Received:	09/30/20 11:47	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.929 ± 0.400 (0.425) C:85% T:NA	pCi/L	10/15/20 06:57	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	1.15 ± 0.522 (0.868) C:70% T:78%	pCi/L	10/16/20 14:43	3 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	2.08 ± 0.922 (1.29)	pCi/L	10/21/20 12:22	2 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS Pace Project No.: 92498068

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Sample: GWC-1 PWS:	Lab ID: 9249 Site ID:	8068004 Collected: 09/28/20 17:08 Sample Type:	Received:	09/30/20 11:47	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.727 ± 0.357 (0.460) C:89% T:NA	pCi/L	10/15/20 06:57	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.564 ± 0.409 (0.795) C:75% T:78%	pCi/L	10/16/20 14:43	3 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.29 ± 0.766 (1.26)	pCi/L	10/21/20 12:22	2 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: FB-1-9-28-20	Lab ID: 9249	8068005 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	-0.0334 ± 0.133 (0.422) C:90% T:NA	pCi/L	10/15/20 06:55	5 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.886 ± 0.502 (0.919) C:68% T:78%	pCi/L	10/21/20 11:33	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.886 ± 0.635 (1.34)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

1 ace 1 10ject No 9249000	0					
Sample: GWC-12 PWS:	Lab ID: 9249 Site ID:	08068006 Collected: 09/29/20 09:35 Sample Type:	Received:	09/30/20 11:47 N	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytica	Services - Greensburg			_	
Radium-226	EPA 9315	0.494 ± 0.318 (0.495) C:84% T:NA	pCi/L	10/15/20 06:58	13982-63-3	
	Pace Analytica	Services - Greensburg				
Radium-228	EPA 9320	0.351 ± 0.443 (0.942) C:73% T:78%	pCi/L	10/21/20 11:33	15262-20-1	
	Pace Analytica	Services - Greensburg				
Total Radium	Total Radium Calculation	0.845 ± 0.761 (1.44)	pCi/L	10/22/20 10:20	7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: GWC-11	Lab ID: 92498	068007 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 S	Services - Greensburg				
Radium-226	EPA 9315	3.84 ± 0.898 (0.428) C:88% T:NA	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 9320	4.46 ± 1.05 (0.851) C:68% T:81%	pCi/L	10/21/20 11:33	15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	8.30 ± 1.95 (1.28)	pCi/L	10/22/20 10:20	7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

GROWWAN ROAD SEWI ANNOAL RADS

Sample: GWC-14 PWS:	Lab ID: 924980 Site ID:	68008 Collected: 09/29/20 14:42 Sample Type:	Received:	09/30/20 11:47 I	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	ervices - Greensburg				
Radium-226	EPA 9315	0.331 ± 0.258 (0.431) C:83% T:NA	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical Se	rvices - Greensburg				
Radium-228	EPA 9320	-0.233 ± 0.396 (0.960) C:69% T:80%	pCi/L	10/21/20 11:33	15262-20-1	
	Pace Analytical Se	rvices - Greensburg				
Total Radium	Total Radium Calculation	0.331 ± 0.654 (1.39)	pCi/L	10/22/20 10:20	7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.:	92498068	

Sample: GWC-2 PWS:	Lab ID: 9249 Site ID:	8068009 Collected: 09/29/20 15:05 Sample Type:	Received:	09/30/20 11:47	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.553 ± 0.323 (0.494) C:88% T:NA	pCi/L	10/15/20 07:57	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.450 ± 0.417 (0.853) C:73% T:84%	pCi/L	10/21/20 11:44	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	1.00 ± 0.740 (1.35)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: EB-1-9-29-20 PWS:	Lab ID: 9249 Site ID:	8068010 Collected: 09/29/20 16:20 Sample Type:	Received:	09/30/20 11:47	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.00561 ± 0.156 (0.435) C:92% T:NA	pCi/L	10/15/20 07:57	13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.149 ± 0.376 (0.838) C:73% T:83%	pCi/L	10/21/20 11:34	15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.155 ± 0.532 (1.27)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.:	92498068
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Sample: DUP-1	Lab ID: 92498		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 S	Services - Greensburg				
Radium-226	EPA 9315	0.259 ± 0.219 (0.372) C:92% T:NA	pCi/L	10/15/20 07:57	7 13982-63-3	
	Pace Analytical S	Services - Greensburg				
Radium-228	EPA 9320	1.42 ± 0.529 (0.789) C:69% T:84%	pCi/L	10/21/20 11:34	15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	1.68 ± 0.748 (1.16)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

1 ace 1 10ject 110 9249000	0					
Sample: GWC-21 PWS:	Lab ID: 9249 Site ID:	8068012 Collected: 09/30/20 10:49 Sample Type:	Received:	10/02/20 12:22	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	2.88 ± 0.770 (0.501) C:76% T:NA	pCi/L	10/15/20 07:5	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.945 ± 0.535 (0.993) C:69% T:79%	pCi/L	10/21/20 11:3	5 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	3.83 ± 1.31 (1.49)	pCi/L	10/22/20 10:2	0 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: GWC-15 PWS:	Lab ID: 9249 Site ID:	8068013 Collected: 09/30/20 12:30 Sample Type:	Received:	10/02/20 12:22	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.709 ± 0.358 (0.518) C:97% T:NA	pCi/L	10/15/20 07:57	7 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	1.43 ± 0.547 (0.848) C:71% T:86%	pCi/L	10/21/20 11:45	5 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	2.14 ± 0.905 (1.37)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: GWC-16	Lab ID: 9249	8068014 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	1.69 ± 0.552 (0.449) C:86% T:NA	pCi/L	10/16/20 06:44	4 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.781 ± 0.435 (0.789) C:74% T:82%	pCi/L	10/21/20 11:4	5 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	2.47 ± 0.987 (1.24)	pCi/L	10/22/20 10:20	0 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: GWC-20	Lab ID: 9249		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	3.50 ± 0.843 (0.419) C:93% T:NA	pCi/L	10/16/20 06:44	4 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	2.12 ± 0.638 (0.795) C:66% T:93%	pCi/L	10/21/20 11:35	5 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	5.62 ± 1.48 (1.21)	pCi/L	10/22/20 10:20	0 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

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Sample: GWB-4R PWS:	Lab ID: 92498068 Site ID:	3016 Collected: 10/01/20 08:50 Sample Type:	Received:	10/02/20 12:22	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Serv	vices - Greensburg				
Radium-226	EPA 9315	1.57 ± 0.530 (0.422) C:84% T:NA	pCi/L	10/16/20 06:44	4 13982-63-3	
	Pace Analytical Service	vices - Greensburg				
Radium-228	EPA 9320	1.03 ± 0.451 (0.721) C:68% T:81%	pCi/L	10/21/20 11:30	0 15262-20-1	
	Pace Analytical Serv	vices - Greensburg				
Total Radium	Total Radium Calculation	2.60 ± 0.981 (1.14)	pCi/L	10/22/20 10:20	0 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: EB-2-9-30-20 PWS:	Lab ID: 9249 Site ID:	8068017 Collected: 09/30/20 14:30 Sample Type:	Received:	10/02/20 12:22	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	0.132 ± 0.292 (0.685) C:88% T:NA	pCi/L	10/16/20 06:44	4 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.612 ± 0.386 (0.710) C:71% T:75%	pCi/L	10/21/20 11:30) 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.744 ± 0.678 (1.40)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Sample: DUP-2	Lab ID: 9249		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	3.50 ± 0.853 (0.441) C:96% T:NA	pCi/L	10/16/20 06:44	4 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	3.29 ± 0.864 (0.988) C:77% T:84%	pCi/L	10/21/20 11:36	6 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	6.79 ± 1.72 (1.43)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: GWC-17	Lab ID: 9249	8068019 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	1.06 ± 0.448 (0.493) C:83% T:NA	pCi/L	10/16/20 06:4	5 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	2.03 ± 0.646 (0.909) C:75% T:88%	pCi/L	10/21/20 11:36	6 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	3.09 ± 1.09 (1.40)	pCi/L	10/22/20 10:20	0 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: GWC-22	Lab ID: 92498	068020 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 S	Services - Greensburg			_	
Radium-226	EPA 9315	0.820 ± 0.408 (0.485) C:78% T:NA	pCi/L	10/16/20 06:45	5 13982-63-3	
	Pace Analytical S	ervices - Greensburg				
Radium-228	EPA 9320	1.97 ± 0.700 (1.08) C:74% T:79%	pCi/L	10/21/20 11:36	6 15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	2.79 ± 1.11 (1.57)	pCi/L	10/22/20 10:20) 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

GROWINIAN ROAD SEINI ANNOAL RADS

Sample: GWB-6R PWS:	Lab ID: 924980 Site ID:	68021 Collected: 09/30/20 15:35 Sample Type:	Received:	10/02/20 12:22	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Se	ervices - Greensburg				
Radium-226	EPA 9315	3.02 ± 0.796 (0.521) C:90% T:NA	pCi/L	10/16/20 07:29	13982-63-3	
	Pace Analytical Se	ervices - Greensburg				
Radium-228	EPA 9320	3.37 ± 0.979 (1.28) C:73% T:70%	pCi/L	10/21/20 11:36	15262-20-1	
	Pace Analytical Se	ervices - Greensburg				
Total Radium	Total Radium Calculation	6.39 ± 1.78 (1.80)	pCi/L	10/22/20 10:20	7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

GROWINAN ROAD SEMI ANNOAL RADS

Sample: GWB-5R	Lab ID: 92498	068022 Collected: 09/30/20 17:30	Received:	10/02/20 12:22 N	Aatrix: Water	
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical S	Services - Greensburg				
Radium-226	EPA 9315	2.69 ± 0.719 (0.494) C:89% T:NA	pCi/L	10/16/20 08:56	13982-63-3	
	Pace Analytical S	Services - Greensburg				
Radium-228	EPA 9320	1.76 ± 0.671 (1.03) C:70% T:85%	pCi/L	10/21/20 13:22	15262-20-1	
	Pace Analytical S	Services - Greensburg				
Total Radium	Total Radium Calculation	4.45 ± 1.39 (1.52)	pCi/L	10/22/20 10:20	7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.: 92498068

Sample: FB-2-9-30-20	Lab ID: 9249	8068023 Collected: 09/30/20 15:2	5 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	0.0614 ± 0.242 (0.609) C:79% T:NA	pCi/L	10/16/20 06:5	1 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	0.534 ± 0.477 (0.974) C:71% T:83%	pCi/L	10/21/20 12:1	7 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	0.595 ± 0.719 (1.58)	pCi/L	10/22/20 10:2	0 7440-14-4	



Project: GRUMMAN ROAD SEMI ANNUAL RADS

Pace Project No.:	92498068
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Sample: GWC-9 PWS:	Lab ID: 92498 Site ID:	3068024 Collected: 10/01/20 08:21 Sample Type:	Received:	10/02/20 12:22	Matrix: Water	
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical	Services - Greensburg				
Radium-226	EPA 9315	1.20 ± 0.475 (0.488) C:83% T:NA	pCi/L	10/16/20 06:5	1 13982-63-3	
	Pace Analytical	Services - Greensburg				
Radium-228	EPA 9320	2.10 ± 0.972 (1.72) C:68% T:77%	pCi/L	10/21/20 14:38	8 15262-20-1	
	Pace Analytical	Services - Greensburg				
Total Radium	Total Radium Calculation	3.30 ± 1.45 (2.21)	pCi/L	10/22/20 10:25	5 7440-14-4	



Project:	GRUMMAN ROA	D SEMI ANNUAL	RADS				
Pace Project No.:	92498068						
QC Batch:	418039		Analysis Method:	EPA 9320			
QC Batch Method:	EPA 9320		Analysis Description:	9320 Radium 2	28		
			Laboratory:	Pace Analytical	Services - Greensbur	g	
Associated Lab Sa	mples: 9249806	8024					
METHOD BLANK:	2021122		Matrix: Water				
Associated Lab Sa	mples: 9249806	8024					
Para	meter	Act ± l	Jnc (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.



Project:	GRUM	IMAN ROAD SEMI ANNUAL I	RADS			
Pace Project No.:	92498	068				
QC Batch:	4180	38	Analysis Method:	EPA 9320		
QC Batch Method:	EPA	9320	Analysis Description:	9320 Radium 228		
Associated Lab Sar	nples:	92498068012, 9249806801	Laboratory: 6, 92498068007, 92498068008 3, 92498068014, 92498068015 0, 92498068021, 92498068022	, 92498068009, , 92498068016,		068011,
METHOD BLANK:	202112	21	Matrix: Water			
Associated Lab Sar	nples:	92498068012, 9249806801	6, 92498068007, 92498068008 3, 92498068014, 92498068015 0, 92498068021, 92498068022	, 92498068016,	,	,
Parar	neter	Act ± L	Inc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228		0.180 ± 0.316 (0	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.



Project:	GRUMMA	N ROAD SE	MI ANNUAL R	ADS					
Pace Project No.:	92498068								
QC Batch:	418032			Analysis M	lethod:	EPA 9315			
QC Batch Method:	EPA 9318	5		Analysis D	escription:	9315 Total Ra	dium		
Associated Lab San		,		,	, 92498068004	, 92498068005	al Services - Greensbu 5, 92498068006, 92498 2, 92498068013	0	
METHOD BLANK:	2021109			Matri	ix: Water				
Associated Lab San		,		,		,	5, 92498068006, 92498 2, 92498068013	8068007,	
Paran	neter		Act ± Ur	nc (MDC) Carr T	Trac	Units	Analyzed	Qualifiers	
Radium-226		0.10	06 ± 0.162 (0.	.345) C:92% T:N	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.



Project:	GRUM	MAN ROAD SEMI A	ANNUAL R	ADS			
Pace Project No.:	924980	068					
QC Batch:	4180	33		Analysis Method:	EPA 9315		
QC Batch Method:	EPA	9315		Analysis Description:	9315 Total Radi	um	
Associated Lab Sar	nples:			Laboratory: , 92498068016, 924980680 , 92498068023, 924980680	17, 92498068018, 9	Services - Greensbu 92498068019, 92498	0
METHOD BLANK:	202111	0		Matrix: Water			
Associated Lab Sar	nples:	,		, 92498068016, 924980680 , 92498068023, 924980680	, ,	92498068019, 92498	3068020,
Parar	neter		Act ± Ur	nc (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.



QUALITY CONTROL - RADIOCHEMISTRY

Project:	GRUMMAN ROA	D SEMI ANNUA	L RADS			
Pace Project No.:	92498068					
QC Batch:	418037		Analysis Method:	EPA 9320		
QC Batch Method:	EPA 9320		Analysis Description:	9320 Radium 2	28	
			Laboratory:	Pace Analytical	Services - Greensbu	irg
Associated Lab Sar	mples: 9249806	8001, 92498068	002, 92498068003, 924980680	04		
METHOD BLANK:	2021120		Matrix: Water			
Associated Lab Sai	mples: 9249806	3001, 92498068	002, 92498068003, 924980680	04		
Para	neter	Act :	LUnc (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



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.



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		
92498068015	GWB-4R	EPA 9320	418038		
92498068016	EB-2-9-30-20	EPA 9320	418038		
92498068017	DUP-2	EPA 9320 EPA 9320	418038		
92498068018	GWC-17		418038		
		EPA 9320			
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



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

San	nple Co	ondi	ition	W0# : 92498068
Face Analytical Client Name:	. A	H- r	Ъw	WU# · 92490000
Chefti Marie.	· <u> </u>	<u>n_r</u>	<u>v</u> w	
Courier: D Fed Ex DUPS DUSPS DClier		omme	rcial	Pace C 92498068
Tracking #:				Proj. Name:
Custody Seal on Cooler/Box Present: yes	nc)	Seals	
	Baos	N	one [Other DEEZiglock
Thermometer/Used 230				Blue None Samples on ice, cooling process has begun
Cooler Temperature 3, 7	0.5			is Frozen: Yes No Date and Initials of person examining contents:
Temp should be above freezing to 6°C				Comments:
Chain of Custody Present:	ØYes I	No		1
Chain of Custody Filled Out:	Øves (2
Chain of Custody Relinquished:	ØYes	□No		3
Sampler Name & Signature on COC:	ØYes	□No		4
Samples Arrived within Hold Time:	Øves I	No		5
Short Hold Time Analysis (<72hr):	□Yes	ØN0	□n/A	6
Rush Turn Around Time Requested:	□Yes			7
Sufficient Volume:	Ves	DN0		8
Correct Containers Used:	Pres		□n/A	9.
-Pace Containers Used:	Tyres	□No	□n/a	
Containers Infact:	Øves			10
Filtered volume received for Dissolved tests	□Yes	No	ÇİN/A	11.
Sample Labels match COC:	TYes	DN0	⊡n/A	12.
-Includes date/time/ID/Analysis Matrix:	Wil			
All containers needing preservation have been checked.	ØYes	□No	□n/A	13.
All containers needing preservation are found to be in	6 Yes	[]No		
compliance with EPA recommendation.	,			Initial when A The Lot # of added
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	ØYes	□No		completed () preservative
Samples checked for dechlorination:	□Yes	□no	Π/N/A	14
Headspace in VOA Vials (>6mm):	□Yes	No	∯N/A	15
Trip Blank Present:	□Yes	фNo		16.
Trip Blank Custody Seals Present	□Yes	□No	ØNIA	
Pace Trip Blank Lot # (if purchased):		_		
Client Notification/ Resolution:	and the second second second second second second second second second second second second second second secon			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)

F-ALLC003rev.3, 11September2006

1) CRA	naļy		•	!	T		84		Ide	nti	m	t N	For							Pac	is: e Ca	Pan suin aroli	ge 1 g Au nas	of 1 stho Qua	rity: lity (Off	2019 fice				
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Quality Contr	rol Sample Pe	Quality Control Sample Performance Assessment		
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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.

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Analyst Must Manually Enter All Fields Highlighted in Yellow.	Sample Matrix Spike Control Assessment Sample Collection Date: Sample I.D. Sample MSI I.D. Sample MSD I.D.	Spike I.D.: Spike Volume Used in MS (mU): Spike Volume Used in MS (mU): Spike Volume Used in MS (mU): Spike Volume Used in MS (mU): MS Target Conc. (pc/il., g. F): MSD Aliquot (L. g. F): MSD Aliquot (L. g. F): MSD Spike Uncertainty (calculated): MSD Spike Uncertainty (pc/il., g. F): MSD Spike Uncertainty (pc/il., g. F): Sample Result Counting Uncertainty (pc/il., g. F): Sample Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): MSD Natrix Spike Duplicate Sample Assessment Matrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): Sample MSD Lower % Recovery Limits: Matrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): Sample MSD Lower % Recovery Limits: Matrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): Sample MSD Lower % Recovery Limits: Matrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): Sample MSD Lower % Recovery Limits: Matrix Spike Duplicate Result Counting Uncertainty (pc/il., g. F): Sample MSD Lower % Spike Duplicate Result Counting Uncertainty (pc/il., g. F): Duplicate Numerical Priormance 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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Ra-226	LAL 10/15/2020 56677 DW	2021110 0.087 0.193 0.458 0.89 NVA Pass 0.458 0.055 19.033 24.044 0.10 0.10 0.10 0.55 3.940 0.10 0.55 3.940 0.055 3.940 0.55 3.940 0.055 3.940 0.055 3.940 0.73 2.40480 85.91% NVA Pass 19.033 2.92488068019 92488068019 92488068019 92488068019 0.73 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 85.91% 0.333 0.333 85.91% 0.333 0.333 85.91% 0.333 0.333 85.91% 0.333 85.91% 0.333 0.333 0.333 0.333 0.333 0.340 0.347 0.333 0.340 0.333 0.340 0.333 0.340 0.340 0.340 0.340 0.340 0.340 0.340 0.340 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.340 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.3333 0.3333 0.3333 0.3333 0.3333 0.3333 0.33330 0.3333 0.33330 0.33330 0.333300 0.33300000000	11.23% N/A Pass 25%
Pace Analytical Test	Analyst Date: Worklist Matrix:	Method Blank Assessment Method Blank Assessment M/B Counting Uncertainty M/B Counting Uncertainty M/B Counting Uncertainty M/B Counting Uncertainty M/B Counting Uncertainty M/B Counting Uncertainty Count Date Splue LD: Alguot Volume Used (mL): Alguot Volume (L, g, F): Uncertainty (Calculated): Result (pC)(L, g, F): Uncertainty (pC)(L, g, F): Uncertainty (pC)(L, g, F): Uncertainty (pC)(L, g, F): Uncertainty (pC)(L, g, F): Uncertainty (pC)(L, g, F): Uncertainty (pC)(L, g, F): Upper % Recovery Limits: Lower % Recovery Limits: Duplicate Sample LD: Sample Assessment Duplicate Result (pC)(L, g, F): Sample Result Counting Uncertainty (pC)(L, g, F): Sample Result (pC)(L, g, F): Sample Result Counting Uncertainty (pC)(L, g, F): Sample Result Counting Uncertainty (pC)(L, g, F): Sample Result Counting Uncertainty (pC)(L, g, F): Sample Result Counting Uncertainty (pC)(L, g, F): Sample Duplicate Result (pC)(L, g, F): Sample Result Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): Cuplicate Result Counting Uncertainty (pC)(L, g, F): And the Sample Assessment Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g, F): And the Counting Uncertainty (pC)(L, g,	Duplicate RPD: 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.

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Pace Analyticar	ol Sample Pe	Quality Control Sample Performance Assessment Analyst Must Manually Enter All Fields Highlighted in <u>Yellow.</u>	ŇŎ
Test Ra-226 Analyst LAL Date: 10/15/220 Worklist 56677 Matrix: DW	226 L 77 V	Anaryst must manually Enter All Freids Frignlignted In Tell Sample Matrix Spike Control Assessment Sample Collection Date: Sample I.D. Sample I.D.	MS/MSD 1 MS/MSD 2
Method Blank Assessment MB Sample ID 2021110 MB concentration: 0.087 M/B concentration: 0.193 MB Numerical Performance Indicator: 0.458 MB Numerical Performance Indicator: 0.89 MB Status vs. Nmc Pass	110 1333 140 158 158 159 150 150 150 150 150 150 150 150 150 150	MS/MSD Decay Corrected Spike Concentration (pC/imL): Spike Volume Used in MSD (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pC/u, g, F): MSD Target Conc. (pC/u, g, F):	
	NT NJ? N Pr NJ? N 26677 LCSD56677 265 244 265 265 265 265 265 265 273 288 288 288 293 293 293 293 293 293 293 293	MS Spike Uncertainty (calculated): MSD Spike Uncertainty (calculated): Sample Result Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result: Matrix Spike Duplicate Result: MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Numerical Performance Indicator: MSD Status vs Numerical Indicator: MSD Status vs Recovery: MSD Status vs Recovery: MSD Status vs Recovery: MS/MSD Upper % Recovery Limits: MS/MSD Upper % Recovery Limits:	
Duplicate Sample Assessment Sample I.D.; 92498068014 Duplicate Sample I.D.; 92498068014DUP Sample Result Counting Uncertainty (pc/L, g, F); 1.691 Sample Result Counting Uncertainty (pc/L, g, F); 0.495 Sample Duplicate Result Counting Uncertainty (pc/L, g, F); 0.435 Sample Duplicate Result Counting Uncertainty (pc/L, g, F); 0.435 Sample Duplicate Result Counting Uncertainty (pc/L, g, F); 0.435 Cuplicate Result Counting Uncertainty (pc/L, g, F); 0.435 Duplicate Result Counting Uncertainty (pc/L, g, F); 0.435 Counting Uncertainty (pc/L, g, F); 0.435 Sample Duplicate Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result Result	68014 Enter Duplicate 68014 Enter Duplicate 91 Enter Duplicate 95 other than 95 the space below. 75 the space below. 78 92498068014 92498068014 78 555014DUP	Matrix Spike/ M Matrix Spik (Based c	
## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC. Comments:	duplicate results are below t	he MDC.	21 NI 01 WAN

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Quality Control Sample Performance Assessment	<u>Analyst Must Manually Enter All Fields Highlighted in Yellow.</u>	Sample Matrix Spike Control Assessment MS/MSD 1 MS/MSD 2 Sample Collection Date: Sample LD. Sample MS LD. Sample MS LD.	Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCl/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MSD Aliquot (L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pClift, g, F): MSS Target Conc. (pClift, g, F):	MSD Spike Uncertainty (calcutated); MSD Spike Uncertainty (calcutated); Sample Result 2 Sigma CSU (pC/I, g, F); Matrix Spike Result 2 Sigma CSU (pC/I, g, F); Matrix Spike Result 2 Sigma CSU (pC/I, g, F); Matrix Spike Duplicate Result MSN Numerical Performance Indicator MSD Numerical Performance Indicator MSD Numerical Performance Indicator MSD Numerical Indicator MS Status ve Numerical Indicator MSD Status ve Recovery; MSD Numerical Indicator	MS/MSD Lower % Recovery Limits:	Matrix Spike/Matrix Spike Duplicate Sample Assessment Sample I.D. Sample MS I.D. Sample MS I.D. Sample Matrix Spike Result Matrix Spike Result 2 Sigma CSU (pC/I, g, F): Sample Matrix Spike Duplicate Result Matrix Spike Duplicate Result 2 Sigma CSU (pC/I, g, F): Duplicate Result 2 Sigma CSU (pC/I, g, F): Mark Spike Duplicate Result 2 Sigma CSU (pC/I, g, F): Duplicate Result 2 Sigma CSU (pC/I, g, F): MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs Numerical Results % RPD Limit;
ample Per		0		Y LCSD56680 10/16/2020 20-030 38.004 0.10 0.821 0.821 0.821 0.821 0.821 0.227 0.227 0.227 0.220 0.105 0.20 0.105 0.20 0.105 0.20	60%	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
ontrol S	Ra-228	VAL 10/14/2020 56680 WT	2021120 0.335 0.463 0.463 0.933 1.42 Pass Pass	LCSD (Y or N)? LCS56680 10/16/2020 32.004 32.004 0.10 0.814 4.668 0.814 4.668 0.814 4.668 0.814 0.814 0.814 0.814 0.814 0.814 0.824 0.229 0.326 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.824 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.8246 0.82466 0.82466 0.82466 0.824666 0.824666666666666666666666666666666666666	60%	LCS56680 LCS56680 3.956680 3.956680 3.956680 3.956680 0.924 4.745 1.105 NO 1.105 NO 1.105 NO 1.14% Pass Pass 26%
Quality C	Face Analytical Test.	Analyst Date: Worklist Matrix:	Method Blank Assessment MB Sample ID MB concentration: MB 2 Sigma CSU: MB Numerical Performance Indicator: MB Status vs Numerical Indicator: MB Status vs. MDC:		Lower % Recovery Limits:	Duplicate Sample Assessment Sample ID.: Sample ID.: Duplicate Sample ID.: Sample Result (Colif, g, F): Sample Result (Colif, g, F): Sample Duplicate Result 2 Sigma CSU (pCif, g, F): Sample and/or duplicate Result (Colif, g, F): Sample Duplicate Result 2 Sigma CSU (pCif, g, F): Puplicate Result 2 Sigma CSU (pCif, g, F): Reserve Result 2 Sigma CSU (pCif, g, F): Puplicate Result 2 Sigma CSU (pCif, g, F): Reserve Result 2 Sigma CSU (pCif, g, F): Puplicate Result 2 Sigma CSU (pCif, g, F): Reserve Result 2 Sigma CSU (pCif, g, F): Puplicate Result 2 Sigma CSU (pCif, g, F): Reserve Result 2 Sigma CSU (pCif, g, F): Puplicate Result 2 Sigma CSU (pcif, g, F): Reserve Result 2 Sigma CSU (pcif, g, F): Puplicate Result 2 Sigma CSU (pcif, g, F): Reserve Result 2 Sigma CSU (pcif, g, F): Puplicate Result 2 Sigma CSU (pcif, g, F): Reserve Resort 2 Sigma CSU (pcif, g, F): Puplicate Result 2 Sigma CSU (pcif, g, F): Reserve Resort 2 Sigma CSU (pcif, g, F): Puplicate Result 2 Sigma CSU (pcif, g, F): Reserve Resort 2 Sigma CSU (pcif, g, F): Puplicate Result 2 Sigma CSU (pcif, g, F):

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

Comments: Tipas

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Pare Analytical

Quality Control Sample Performance Assessment

Test	Ra-228 VAI	~" L	elds Highlighted in Ye	.1	C CONVOI
Analyst: Date: 1 Worklist: Matrix:	VAL 10/14/2020 56681 WT	******	Sample Matrix Spike Control Assessment MS/MSD Sample Collection Date: Sample MS.I.D. Sample MS.I.D. Sample MS.I.D.	1021	MS/MSD 2
Method Blank Assessment MB Sample ID	2021121		Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCl/mL):		
MB concentration: MB 2 20ma CSU: MB ADC:	0.180 0.316 0.690		Spike Volume Used in MS (mL): Spike Volume Used in MS (mL): MS Alicund (1 o F):		
MB Numerical Performance Indicator. MB Status vs Numerical Indicator. MB Status vs MDC-	1.12 Pass Pass		MS Target Conc. (pc)(L, g, F): MSD Aliquot (L, g, F): MSD Tarmet Conc. (nc)(1, g, E):		
			MS Spike Uncertainty (calculated):		
Laboratory Control Sample Assessment	LCSD (Y or N)?	N I CSD56684	MSD Spike Uncertainty (calculated): Samula Beentr		
Count Date:			Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Matrix Softe Result:		
Decay Corrected Spike Concentration (pCi/mL): Volume Used (mL):	37.943 0.10		Matrix Spike Result 2 Sigma CSU (pCi/L, g, F): Samule Matrix Snike Dunilcate Result:		
Aliquot Volume (L, g, F): Target Conc. (pCi/L, g, F):	0.812 4.670		Matrix Spike Duplicate Result 2.5 Signa CSU (pc/d, g, F): Matrix Spike Duplicate Result 2.5 Signa CSU (pc/d, g, F): MS Numerical Performance Indicator:		
Uncertainty (Calculated):	0.229		MSD Numerical Performance Indicator:		
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	1.004		MS Percent Recovery: MSD Percent Recovery:		
Numencal Performance Indicator: Percent Recovery:	-0.58 93.51%		MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator:		
Status vs Numerical Indicator:	N/A		MS Status vs Recovery:		
Status vs Recovery: Upper % Recovery Limits:	Pass 135%		MSD Status vs Recovery: MS/MSD Upper % Recovery Limits:		
Lower % Recovery Limits:	60%		MS/MSD Lower % Recovery Limits:		
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.: 92498068019 Duplicate Sample I.D. 92498068019DUP Sample Result (pCi/L, g, F): 2.028 Sample Result (pCi/L, g, F): 0.648		Enter Duplicate sample IDs if other than	Sample I.D. Sample MS I.D. Sample MSD I.D.		
		the space below.	Matrix Spike Result 2 Sigma CSU (D(i)L, g, F): Sample Matrix Spike Duplicate Result Matrix Shiba Dunicate Deamilt 3 Scient CSU (ACIII) of E).		
	1 100	92498068019 82498068019DUP	(Based on the Percent Recoverties) MS/ MSD Duplicate Recoverties)		
Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD:	Pass Pass		MS/ MSD Duplicate Status vs Nurmerical Indicator: MS/ MSD Duplicate Status vs RPD:		
	30%0		% RPU LIMIC		

 A
 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:

Pace Analytical

Quality Control Sample Performance Assessment

	000 °C		Analyst Must Manually Enter All Fields Highlighted in Yellow.	<u>'ellow.</u>	
Iest	Na-220				
Analyst Date:	VAL 10/14/2020		Sample Matrix Spike Control Assessment Sample Collection Date:	MS/MSD 1	MS/MSD 2
Worklist Matrix	56682 WT		Sample I.D. Sample MS.I.D. Sample MS.D.I.D.		
Method Blank Assessment			Spike LD:		
MB concentration	2021122 0.318		MS/MSD Decay Corrected Spike Concentration (pC/mt.): Snike Volume Heed in MS (mt):		
M/B 2 Sigma CSU: M/B 2 Sigma CSU: M/B MDC:	0.365		Spike Volume Used in MSD (mL): Spike Volume Used in MSD (mL): MS Aliment (L o E):		
MB Numerical Performance Indicator:	1.70		MS Target Conc. (pCi/L, g, F):		
MB Status vs Numerical Indicator: MB Status vs. MDC:	Pass Pass		MSD Aliquot (L, 9, F) MSD Target Conc. (pC/L, 9, F)		
			MS Spike Uncertainty (calculated):		
Laboratory Control Sample Assessment	LCSD (Y or N)?	٢	MSD Spike Uncertainty (calculated);		
	LCS56682	LCSD56682	Sample Result:		
Count Date:	10/21/2020	10/21/2020 20.030	Sample Result 2 Sigma CSU (pCi/L, g, F):		
Decay Corrected Spike Concentration (pCi/mL):	37,943	37.943	Matrix Spike Result 2 Sigma CSU (pCi/L. g. F):		
Volume Used (mL):	0.10	0.10	Sample Matrix Spike Duplicate Result:		
Aliquot Volume (L, g, F):	0.813	0.813	Matrix Spike Duplicate Result 2 Sigma CSU (pCi/l., g, F):		
Incertainty (Coloridae)	4,003	4.0/0	WSD Numercal Performance Indicator		
Uncertainty (varculated): Result (pCi/L., d, F):	0.223 4.756	0.223	MSU NUMERCAL PERFORMANCE INDICATOR		
LCS/LCSD 2 Sigma CSU (pCi/L, g, F).	1.070	1.314	MSD Percent Recovery:		
Numerical Performance Indicator:	0.16	1.93	MS Status vs Numerical Indicator.		
Percent Recovery:	101.86%	128.20%	MSD Status vs Numerical Indicator:		
Siatus vs Numencal Indicator	N/A	ΨN 6	MS Status vs Recovery:		
I Inner % Decryber 1 inner	Pass 12602	Pass 1280	MSMSD I locar & Booward I initation		
Lower % Recovery Limits:	60%	%09	MS/MSD Lower % Recovery Limits.		
Duplicate Sample Assessment			Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.:	LCS56682	Enter Duplicate	Sample I.D.		
Duplicate Sample I.D.	LCSD56682	sample IDs if	Sample MS I.D.		
Sample Result (pCi/L, g, F):	4.756	other than	Sample MSD I.D.		
Sample Result 2 Sigma CSU (pCi/L, g, F): Sample Dunificate Result (nCi/L, n F):	1.070	the snace helow	Sample Matrix Solke Result 2 Sinne CSII (2014 - 5)-		
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F);	1.314		Sample Matrix Spike Duplicate Result:		
Are sample and/or duplicate results below RL?	Q		Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator	-1.424		Duplicate Numerical Performance Indicator:		
Udased of the EUCREDOUL Fercerit Recoveries) Udpitcate Nr D. Durbingto Status to Munocond Indinator	0/.02777		(Dased of the Fercent Recoveries) Mo/ MoD Dupildate KFD.		
Duplicate Status vs Numerical mulcator	Pass		MO/ MOU DUPICARE ORANS VS (VUITERICAL INUCACO). MS/ MSD DUDICARE Status vs RPD:		
% RPD Limit	36%		% 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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