November 2021
Plant Gaston

ANCHOR QEA

Groundwater Remedy Selection Report

Prepared for Alabama Power Company

November 2021
Plant Gaston

Groundwater Remedy Selection Report

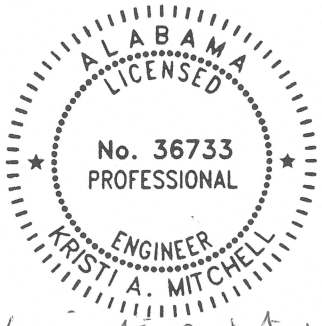
Prepared for
Alabama Power Company
600 18th Street North
Birmingham, Alabama 35203

Prepared by
Anchor QEA, LLC
9797 Timber Circle, Suite B
Daphne, Alabama 36527

Project Number: 201114-01.04
\\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\Remedy Selection Reports\Gaston\Text\Gaston Remedy Selection Report.docx

Engineer's Certification

This *Groundwater Remedy Selection Report* has been prepared in accordance with the U.S. Environmental Protection Agency's coal combustion residuals rule (40 Code of Federal Regulations Part 257, Subpart D) and the Alabama Department of Environmental Management Administrative Code Ch. 335-13-15. This report was prepared under the supervision and direction of the undersigned, whose seal as a registered professional engineer is affixed below. The undersigned is practicing through Anchor QEA, LLC, which is an authorized engineering business in the State of Alabama (Certificate of Authorization license number 5073; a copy of this license is provided in Appendix A).



Kristi A. Mitchell 11/29/21

Kristi A. Mitchell, Senior Engineer
Alabama Professional Engineer No. 36733

TABLE OF CONTENTS

FIGURES

APPENDICES

ABBREVIATIONS

ACM	*Assessment of Corrective Measures*
ADEM	Alabama Department of Environmental Management
Admin. Code	Administrative Code
APC	Alabama Power Company
CCR	coal combustion residuals
CFR	Code of Federal Regulations
cm/sec	centimeters per second
COI	constituent of interest
Facility Plan	*Facility Plan for Groundwater Investigation*
GWPS	groundwater protection standard
MNA	monitored natural attenuation
Plant Gaston	E.C. Gaston Electric Generating Plant
radium	combined radium 226 and 228
RCRA	Resource Conservation and Recovery Act
RO	reverse osmosis
Site	E.C. Gaston Electric Generating Plant Ash Pond
SSE	selective sequential extraction
SSI	statistically significant increase
SSL	statistically significant level
USEPA	U.S. Environmental Protection Agency

Executive Summary

Since submittal of the *Assessment of Corrective Measures* in June 2019 (Anchor QEA 2019a), extensive investigations have been performed to select effective corrective measures for arsenic, lithium, and molybdenum, also known as constituents of interest (COIs), in groundwater at the E.C. Gaston Electric Generating Plant Ash Pond (Site). The following corrective measures were selected:

- Source control to include dewatering, consolidation, and capping of the Site
- Permeation grouting in areas with relatively high permeability
- Monitored natural attenuation (MNA) over the entire Site

Closure of the Site—including dewatering, consolidation, and capping—will greatly reduce source contributions to groundwater. Permeation grouting was selected because, as a corollary to barrier walls, it impedes groundwater flow and helps prevent the migration of COIs away from the source area and facility boundary. MNA was selected because substantial evidence indicates it is currently occurring at the Site.

Existing monitoring wells will be used to monitor the effectiveness of the permeation grouting, and piezometers will be installed in the vicinity of the grout wall to demonstrate that the wall has cut off or greatly reduced groundwater flow as demonstrated by lower groundwater elevations downgradient of the wall. Reduction in groundwater flow will also reduce or eliminate mass flux of COIs away from the pond.

Extensive site-specific geochemical studies performed in 2020 and 2021 demonstrate that MNA is a viable corrective action for COIs in groundwater at the Site (Anchor QEA 2020a, 2020b, 2021). The preponderance of evidence indicates that Site conditions meet the U.S. Environmental Protection Agency's evaluation criteria for the use of MNA, specifically: area of impacts stable or shrinking, identified mechanisms for attenuation, stability of the attenuating mechanisms, sufficient aquifer capacity for attenuation, and time to achieve groundwater protection standards (GWPSs) considered reasonable when compared to other corrective action alternatives. The *Assessment of Corrective Measures* identified other corrective measures that could be used in conjunction with MNA should MNA not perform as expected. One of these corrective measures, permeation grouting, is planned for the Site.

Investigations performed to support MNA included preparation of concentration versus time and concentration versus distance graphs for COIs in groundwater; groundwater, well solids (precipitates), and soil sampling; laboratory analysis of solid samples for bulk chemistry (X-ray fluorescence), mineralogy (X-ray diffraction and scanning electron microscopy), and cation exchange capacity; geochemical modeling; selective sequential extraction (SSE) to determine associations of COIs with attenuating solids and stability of COIs and their host minerals; and column studies to assess aquifer capacity for attenuation.

The trends observed in concentration versus time and concentration versus distance graphs provide evidence that natural attenuation is occurring at the Site. Concentration versus time graphs indicated that arsenic, lithium, and molybdenum concentrations are generally stable in several areas, even without source control. Recent dewatering related to closure appears to be having a positive effect on wells in the area of dewatering; for example, molybdenum concentrations in GN-AP-MW-5 have been below the GWPS for three of the last four sampling events, and boron (an indicator parameter) shows a similar trend. Also, concentration versus distance graphs along the GN-AP-MW-5 downgradient transect indicate molybdenum concentrations are decreasing with distance from the Site.

Based on the geochemical investigations, multiple lines of evidence support multiple attenuating mechanisms, depending upon the COI. The major attenuating mechanisms include sorption on iron oxides (arsenic and molybdenum), cation exchange on clays and manganese oxides (lithium), and precipitation of arsenate and molybdate phases (arsenic and molybdenum). All COIs are subject to physical attenuation mechanisms such as dispersion and flushing, which will contribute to decreased concentrations with time and distance from the Site.

Column studies indicate that arsenic, lithium, and molybdenum are attenuated by aquifer media (soils) and that available attenuation capacity is significant. The attenuation capacity of aquifer soils determined from column testing was scaled up to the entire volume of the aquifer downgradient of the Site but within the property boundary. The extrapolation showed that attenuating capacity of the aquifer greatly exceeds the mass of arsenic, lithium, and molybdenum requiring attenuation.

SSE was performed on samples of well solids (precipitates) and soils used in the column studies to assess the stability of the attenuated COIs and their host minerals. Arsenic, lithium, and molybdenum are expected to remain immobile because they are attenuated primarily in stable mineral phases or occur in areas that will be treated by permeation grouting to prevent impacted groundwater flow beyond the closed pond boundary.

For molybdenum, estimated time to achieve GWPSs by MNA is 2 to 35 years. Depending on location, estimated time to achieve GWPSs for lithium by MNA ranges from less than 20 years to approximately 100 years (near GN-AP-MW-17). Though these time frames are reasonable to achieve GWPSs by MNA, permeation grouting is expected to accelerate time to achieve GWPSs, particularly in the area of GN-AP-MW-17. Permeation grouting, which will prevent future migration of COIs away from the facility boundary, is planned for the area near GN-AP-MW-17. During recent sampling events, arsenic concentrations were below the GWPS and are expected to continue to decrease as the selected remedies are implemented. However, due to short-term perturbations in groundwater flow and geochemistry due to consolidation (moving coal combustion residuals [CCR]) and dewatering, temporary increases in COI concentrations may be observed in some wells. Source control, permeation grouting, and MNA over the entire Site are expected to achieve GWPSs in

approximately 35 years, which is a reasonable time frame as compared to other, more aggressive methods investigated as part of the remedy selection process. More aggressive methods are not expected to achieve GWPSs sooner than 35 years.

Extensive sitewide monitoring will be performed to evaluate the remedial effectiveness of individual corrective actions such as permeation grouting, as well as the cumulative effects of closure (source control), grouting, and MNA. The certified compliance monitoring network will be supplemented to establish a comprehensive corrective action groundwater monitoring program meeting the requirements of CCR Rule 40 Code of Federal Regulations (CFR) § 257.98(a) and Alabama Department of Environmental Management (ADEM) Administrative Code (Admin. Code) r. 335-13-15-.06(9)(a). The corrective action groundwater monitoring program will be submitted within 90 days of this *Groundwater Remedy Selection Report* and include the following: 1) the certified CCR compliance monitoring that meets the assessment monitoring requirements of 40 CFR § 257.95 and ADEM Admin. Code r. 335-13-15-.06(6); 2) additional wells that document the effectiveness of the remedy; and 3) sample locations and data evaluation that demonstrate compliance with the GWPS and protection of potential human and ecological receptors.

Alabama Power Company will employ an adaptive site management approach to perform ongoing remedy system evaluation, consider adjustments to the remedy, and ensure achievement of corrective action objectives at the Site. Adaptive triggers will be developed, and additional actions (monitoring, analysis, and supplemental corrective action measures) will be implemented as needed. Details on the sitewide corrective action groundwater monitoring program, including adaptive triggers, will be provided in a detailed monitoring program to be submitted within 90 days of this *Groundwater Remedy Selection Report*.

1 Introduction

1.1 Purpose

This *Groundwater Remedy Selection Report* was prepared to meet the requirements of the U.S. Environmental Protection Agency's (USEPA's) coal combustion residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257.97, the Alabama Department of Environmental Management's (ADEM's) Administrative Code (Admin. Code) r. 335-13-15-.06(8), and Part C of Administrative Order No. 18-095-GW at Alabama Power Company's (APC's) E.C. Gaston Electric Generating Plant (Plant Gaston) Ash Pond (Site). Specifically, this report has been prepared to present a groundwater corrective action plan to address the occurrence of arsenic, lithium, and molybdenum in groundwater at the Site.

Prior to preparing this final *Groundwater Remedy Selection Report*, semiannual progress reports were prepared to describe the progress made in evaluating the selected remedy and alternative remedies and designing a remedy plan (Anchor QEA 2019b, 2020a, 2020b, 2021).

1.2 Site Location and Description

Plant Gaston is located in Shelby County, Alabama, near the city of Wilsonville. The physical address is 31972 Alabama Highway 25, Wilsonville, Alabama 35186. Plant Gaston lies in Sections 21, 22, 27, 28, 29, 32, 33, and 34, Township 20 South, Range 2 East and Sections 4, 5, and 6, Township 21 South, Range 2 East. Section, township, and range data are based on visual inspection of U.S. Geological Survey topographic quadrangle maps and GIS maps (USGS 2018a, 2018b).

The Site is located south-southwest of the main plant along the Coosa River. Figure 1 depicts the location of the Site with respect to the surrounding area. The Site was originally constructed in the early 1950s and is approximately 269 acres. The Site was constructed by excavating to elevations ranging from 389 to 418 feet. The Site was designed to receive and store CCR produced during the electric generating process at Plant Gaston, along with low-volume wastes and stormwater sump flows from the plant.

1.3 Site Closure

The Site will be closed by removing free liquid from CCR, consolidating the area of CCR to reduce the closure footprint from 269 acres to approximately 193 acres, sloping and grading the material to promote drainage, and installing a low-permeability final cover system to minimize infiltration. The Site will be dewatered sufficiently to remove free liquids and provide a stable base for the construction of an ash containment structure for the consolidated footprint, removal of ash outside the consolidated footprint, and construction of the final cover system. CCR will be excavated from the area outside the consolidated footprint, transported, and disposed of in the consolidated

footprint to create a subgrade for the final cover system. The planned closure schedule of major milestones and approximate time frames are shown in Figure 2. Additional information on Site closure is included in Section 3.1.

1.4 Hydrogeology and Groundwater Flow

The Site is underlain by two major hydrogeologic units, a clay-rich overburden (residuum) aquitard on top of rock and the fractured and possibly dissolutioned Knox Group carbonate (dolomite and limestone) aquifer underlying the overburden. Groundwater at the Site flows generally to the north-northwest, west, north-northeast, and east. Maps depicting groundwater flow direction inferred from groundwater elevation contour maps are presented in Appendix B. Groundwater flows through fractured rock and other secondary discontinuities within the rock fabric, such as weathered zones and bedding planes. Groundwater flow rates range between 0.03 and 0.16 feet per day, and groundwater elevations vary seasonally (SCS 2018a).

Geologic cross sections depicting subsurface conditions and conceptual closure details at the Site are included in Figures 3 through 5. As shown in these figures, the major components of the hydrogeological conceptual site model include the following (SCS 2018b):

- Unit 1: predominantly overburden silty or sandy, lean to fat clays that grade into gravelly clays; overburden soil thickness generally between 11 and 63 feet; vertical hydraulic conductivities ranging from 1.53×10^{-8} to 9.97×10^{-5} centimeters per second (cm/sec) and horizontal hydraulic conductivities (from slug tests) ranging from 4.27×10^{-8} to 1.37×10^{-4} cm/sec; may provide localized upper confining or leaky confining conditions for uppermost aquifer
- Unit 2 (Uppermost Aquifer): known locally as the Knox Dolomite, a portion of the Valley and Ridge Aquifer System; described as fine-grained to micritic, fractured dolomites; top of bedrock elevation occurs between 388 and 401 feet mean sea level; located 35 to 125 feet below the ground surface; consisting of fractured dolomites of the Knox Group

The soils beneath the Site are typically classified as low-permeability highly-plastic clays and silty clays. These clays are composed of residuum of dolomite, limestone, and shale. Bedded chert and chert boulders are encountered in some areas. Based on borings conducted prior to construction of the Site, the elevation of the top of the underlying bedrock ranges from approximately 380 feet to 410 feet. The geologic properties of the vicinity of the Site are characterized by carbonate rocks of the Knox Group of Cambrian and Ordovician age. When weathered, the carbonate rocks can yield cherty residual clay or incipient karst topography. Visible karst topography has not been noted within the Site.

One characteristic of the Knox Group rocks at the Site and elsewhere in Alabama is the presence of higher permeability zones, which create preferential pathways for groundwater flow. These zones are

created by the fracturing and subsequent dissolution of carbonate rock, usually within near-vertical fracture zones, but possibly within fault zones. One of these zones occurs in the vicinity of well GN-AP-MW-17 (Section 3.2). Twelve slug tests were performed in Unit 2 to estimate the horizontal hydraulic conductivity of the uppermost aquifer. Calculated horizontal hydraulic conductivities ranged from 4.79×10^{-6} to 8.15×10^{-4} cm/sec, with an average of 1.39×10^{-4} cm/sec (SCS 2018b).

Groundwater elevations fluctuate in response to rainfall infiltration. Seasonal variations of 0.25 to 14 feet are typical at the Site. Monitoring wells located along the Coosa River typically display the least variation. This is likely due to the well-maintained level of the Coosa River stabilizing groundwater water levels over time. Groundwater flow direction is consistent despite seasonal fluctuations. Groundwater elevation data indicate that water levels tend to be higher in the spring and early summer and lower during the fall and winter (SCS 2018b). Potentiometric surface maps are included in Appendix B.

1.5 Nature and Extent of Groundwater Exceedances

Based on groundwater monitoring performed pursuant to the federal CCR rule and ADEM's rules, arsenic, lithium, and molybdenum have been identified in Site groundwater at concentrations exceeding the groundwater protection standard (GWPS). Combined radium 226 and 228 (radium) was previously identified at concentrations exceeding the GWPS. An alternate source demonstration for radium was submitted to ADEM, and ADEM agreed with the demonstration that radium detections are not attributed to the Site (ADEM 2021). Therefore, radium is not included as a constituent of interest (COI) in this remedy selection process.

Statistically significant increases (SSIs) of Appendix III to 40 CFR Part 257 constituents were noted during the August 2017 compliance detection sampling event as described in the *2017 Annual Groundwater Monitoring and Corrective Action Report* (SCS 2018a). The Appendix III SSIs triggered assessment monitoring for Appendix IV constituents, with the first assessment sampling event occurring in January 2018.

As shown in Figure 6, molybdenum and lithium concentrations greater than the GWPS occur across the eastern portion of the Site. Molybdenum concentrations greater than the GWPS also occur in an area in the southeast portion of the Site. The occurrence of arsenic is historically constrained to one well (GN-AP-MW-17), has been steadily decreasing since the first sampling event, and was below the GWPS during the most recent sampling events. Geologic cross sections presented in Appendix C include isoconcentration lines depicting GWPS exceedances referenced to Site stratigraphy. GWPS exceedances occur within the Unit 2 rock aquifer.

A *Facility Plan for Groundwater Investigation* (Facility Plan; SCS 2018b) at the Site was completed to meet the requirements of Administrative Order No. 18-095-GW issued to APC by ADEM on August 15, 2018. Part B of the order required completion of a Facility Plan by November 13, 2018.

Details on groundwater data evaluation and monitoring well abandonments and installations (including wells installed for delineation) are provided in annual groundwater monitoring and corrective action reports (SCS 2018a, 2019, 2020, 2021). Several phases of investigation have been completed at the Site to delineate the extent of Appendix IV constituents exceeding GWPSs (SCS 2019, 2020, 2021). Delineation wells were installed to characterize the horizontal and vertical extent of GWPS exceedances identified during assessment monitoring. Horizontal delineation wells were installed using a stepping-out approach based on groundwater flow direction relative to monitoring wells exhibiting exceedances.

Figure 6 depicts the extent of arsenic, lithium, and molybdenum GWPS exceedances based on recent delineation data. The geologic sections in Appendix C show isocontours of COIs in section view.

2 Groundwater Remedy Selection Process

Groundwater remedy selection has occurred in two stages: 1) completing an *Assessment of Corrective Measures* (ACM) to identify potentially feasible remedies for the Site after the initial determination that GWPSs have been exceeded; and 2) evaluating potential remedies to develop this specific remedy plan.

2.1 Assessment of Corrective Measures

In June 2019, the ACM was prepared pursuant to USEPA's CCR rule (40 CFR Part 257.96), ADEM's Admin. Code r. 335-13-15, and an Administrative Order issued by ADEM (AO 18-095-GW) to evaluate potentially feasible groundwater corrective measures for the occurrence of arsenic, lithium, and molybdenum in groundwater (Anchor QEA 2019a). The ACM was the first step in developing a long-term corrective action plan to address GWPS exceedances identified at the Site.

As described in the ACM, the following remedies were considered as potentially feasible groundwater corrective measures:

- Geochemical manipulation via injection of treatment solutions
- Monitored natural attenuation (MNA)
- Hydraulic containment (pump-and-treat)
- Permeation grouting

As part of the ACM, some potential remedies were eliminated from consideration because they were technically infeasible or not applicable at the Site. Specifically, permeable reactive barrier walls and vertical barrier walls would need to be installed deep into bedrock which is not technically feasible. Due to its shallow depth of effectiveness, phytoremediation has no application at the Site. Since submittal of the ACM, desktop studies, field work, and laboratory studies have been performed to evaluate potential corrective measures for the Site. Results of these studies are summarized in the semiannual remedy selection progress reports (Anchor QEA 2019b, 2020a, 2020b, 2021).

2.2 Remedy Performance Standards

The ACM was only the first step in the process for developing a groundwater remedy. The CCR rule contemplated that multiple potential remedies would be identified as potentially effective at achieving the corrective action objectives outlined in 40 CFR § 257.97(b) and ADEM Admin. Code r. 335-13-15-.06(8)(b). Thus, following the ACM, remedial options were evaluated to identify a remedy plan that meets the five performance criteria listed in 40 CFR § 257.97(b) and ADEM Admin. Code r. 335-13-15-.06(8)(b). As required in the rules, a remedy must do the following:

1. Be protective of human health and the environment.
2. Attain applicable GWPSs as specified in the CCR rule.

3. Control the source(s) of the release to reduce or eliminate, to the extent feasible, further releases of Appendix IV to 40 CFR Part 257 constituents into the environment.
4. Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, considering factors such as avoiding inappropriate disturbances of sensitive ecosystems.[1]
5. 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.

2.3 Remedy Selection Considerations

In selecting a remedy plan to meet the above performance criteria, consideration factors are set forth in 40 CFR § 257.97(c) and ADEM Admin. Code r. 335-13-15-.06(8)(c) to weigh which option(s) may be most appropriate based on site-specific conditions. These factors include the following:

1. The long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:
    i. Magnitude of reduction of existing risks
    ii. Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy
    iii. The type and degree of long-term management required, including monitoring, operation, and maintenance
    iv. Short-term risks that might be posed to the community or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of contaminant
    v. Time until full protection is achieved
    vi. Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment
    vii. Long-term reliability of the engineering and institutional controls
    viii. Potential need for replacement of the remedy
2. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:
    i. The extent to which containment practices will reduce further releases

[1] The preamble to the CCR rule explains that this requirement is "more directly related to remediation of contamination associated with a release, such as from a collapse or structural failure of a CCR unit," not a release to groundwater (80 Federal Register 21302, 21407 [April 17, 2015]). The 40 CFR § 257.97(b)(4) remedial objective is not applicable to the groundwater corrective action for the Site, but it is included here for completeness when referencing the rule requirements. Because there was no release of material as contemplated by the rule, this requirement is not evaluated as a performance standard for the proposed remedy.

   ii. The extent to which treatment technologies may be used
3. The ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:
   i. Degree of difficulty associated with constructing the technology
   ii. Expected operational reliability of the technologies
   iii. Need to coordinate with and obtain necessary approvals and permits from other agencies
   iv. Availability of necessary equipment and specialists
   v. Available capacity and location of needed treatment, storage, and disposal services
4. The degree to which community concerns are addressed by a potential remedy(s)

None of the factors identified in 40 CFR § 257.97(c) and ADEM Admin. Code r. 335-13-15-.06(8)(c) are given greater weight over others. After balancing the various factors, the rules provide facilities with discretion in selecting the final remedy plan, so long as it will achieve the remedial objectives in 40 CFR § 257.97(b) and ADEM Admin. Code r. 335-13-15-.06(8)(b). Therefore, more technically or mechanically complex and aggressive approaches may not be the most suitable remedy option.

The CCR rules do not establish a set time frame for a facility to evaluate potential remedies and develop a final remedy plan. 40 CFR § 257.97(a) and ADEM Admin. Code r. 335-13-15-.06(a) require an owner or operator to select a remedy "as soon as feasible," and 80 Federal Register 21407 explains USEPA declined to set a specific time frame for selecting a remedy because sites vary in complexity.

2.4 Remedy Evaluation

As discussed in Section 2.1, the ACM identified potentially feasible remedies for groundwater corrective measures for the Site. Sections 2.4.1 through 2.4.4 provide details regarding the evaluation of each remedy relative to the considerations listed in 40 CFR § 257.97(c) and ADEM Admin. Code r. 335-13-15-.06(c).

2.4.1 Permeation Grouting

Permeation grouting was evaluated relative to the considerations listed in 40 CFR § 257.97(c) and ADEM Admin. Code r. 335-13-15-.06(c) and is retained as part of the planned remedy. At the Site, permeation grouting would be performed using cement-based grout to fill void spaces and fractures in weathered and intact rock to greatly reduce permeability and resultant impacted groundwater flow. Permeation grouting, which is a fractured rock corollary to a conventional vertical barrier wall, impedes groundwater flow and helps prevent migration of COIs away from the source area and facility boundary. Slower groundwater travel times should aid MNA because slower travel times allow more time for attenuation mechanisms to operate. At the Site, permeation grouting is proposed for use across identified preferential pathways for groundwater flow and would be effective over the

short and long terms. Based on the remedy selection considerations, permeation grouting is a viable and effective alternative for the Site.

2.4.2 Monitored Natural Attenuation

MNA was evaluated relative to the considerations listed in 40 CFR § 257.97(c) and ADEM Admin. Code r. 335-13-15-.06(c) and is retained as part of the planned remedy. Extensive geochemical and related studies demonstrate that MNA is a viable corrective action for groundwater impacts observed at the Site. The preponderance of evidence indicates that Site conditions meet USEPA's evaluation criteria for the use of MNA, specifically: area of impacts stable or shrinking, identified mechanisms for attenuation, stability of the attenuating mechanisms, sufficient aquifer capacity for attenuation, and time to achieve GWPSs reasonable as compared to other corrective action alternatives. The ACM identified alternative corrective measures, which is the last criteria should MNA not perform as expected. Permeation grouting is proposed in areas with higher concentrations of COIs in groundwater; therefore, MNA is one component of corrective action, rather than a stand-alone remedy. The *Monitored Natural Attenuation Demonstration* report is included as Appendix D.

2.4.3 Geochemical Manipulation via Injection of Treatment Solutions

Geochemical manipulation via injections may be a viable remedial technology but is not currently selected because it has not been proven in field applications for effective treatment of inorganic constituents in fractured rock settings. Treatment solutions have been proven effective for arsenic in both laboratory treatability studies and field applications in sand aquifers, as well as for lithium and molybdenum in laboratory treatability studies (Anchor QEA 2017, 2018, 2019c, 2019d; EPRI 2021). Injection treatments require that sufficient quantity of treatment solution be introduced into the aquifer and distributed adequately to capture the mass of COI; implementation techniques have not yet been tested for treatment of inorganic constituents in fractured rock aquifers. Related to distribution, injection treatment for inorganic constituents relies on creating solid particles in situ that incorporate COIs in their mineral structures and capture COIs on their surfaces (sorption). The solids created from injection treatment may clog the relatively narrow fractures in rock such that distribution of treatment is not adequate. Geochemical manipulation via injections may be considered for further analysis if the selected technologies do not perform as expected (which is unlikely).

2.4.4 Hydraulic Containment (Pump-and-Treat)

Based on the remedy selection considerations, hydraulic containment is not recommended for the Site because the long- and short-term effectiveness and degree to which the approach would be successful is uncertain. Furthermore, compared to other alternatives, hydraulic containment would be very difficult to implement, operate, and maintain over the long term. In summary, hydraulic

containment is not being considered for the Site for the following reasons (in no order of importance):

- Requires drilling a relatively high number of extraction wells relatively deep (up to 200 feet) in bedrock
- Uncertainty that the wells would intersect enough permeable (water-bearing) fractures to effectively capture and contain the impacts
- Inefficiency of the system extracting and treating high volumes of unimpacted water concurrent with impacted groundwater
- Difficult long-term operation and maintenance requirements
- Long time required to achieve GWPSs, likely beyond the post-closure period of 30 years
- Low sustainability (excessive use of resources)

The Site is bounded on the east side by the Coosa River. An effective hydraulic containment (pump-and-treat) system would likely pull water from the river into pumping wells and, ultimately, into the water treatment system. Treating large volumes of unimpacted groundwater would be inefficient and time-consuming and not contribute to achieving GWPSs.

Many pumping wells, extensive piping, and a water treatment system would be required to implement pump-and-treat at the Site. Depending upon fracture spacing and orientation, a high number of relatively deep wells (based on depths of COIs) would be required. For example, near-vertical fractures, as is typical for the area, would require close spacing of wells to intersect sufficient water-bearing fractures to extract impacted groundwater as compared to porous media, which has greater interconnectivity.

Pump-and-treat systems typically have high operation and maintenance requirements (USEPA 2002). These include keeping the wells, pumps, piping, and water treatment system in working order and replacing components as needed. Fouling of well screens and piping is not uncommon in pump-and-treat systems. Pumping wells often require cleaning; rehabilitation; and, under the most adverse conditions, periodic replacement of the wells due to fouling. Pumps and components of the water treatment system will need to be replaced periodically. In addition, water treatment for the three COIs at the Site will require an ongoing supply of water treatment chemicals such as ferric chloride and sodium hydroxide (for pH adjustment) and will produce significant volumes of sludge that will require dewatering and proper disposal. Water treatment for lithium may require reverse osmosis (RO). RO produces a significant amount of reject water, where the COIs are concentrated. RO reject water will likely require treatment (such as evaporation) and may produce a solid waste that requires disposal. Water treatment systems usually require an operator.

Hydraulic containment (pump-and-treat) will likely not offer any time advantage to achieving GWPSs over permeation grouting and MNA due to the slow release of COIs from the attenuating solids such

as iron oxides in weathered rock or fracture fillings. As described in Appendix D, COIs are adhered to relatively stable solids, such as iron oxides, in the aquifer. These attenuating solids will release COIs to groundwater very slowly (if at all) through time. To remove even very small amounts of the COIs from the solids, many pore volumes (possibly hundreds) of water would need to be passed over the attenuating solids. Passing this number of pore volumes over the aquifer solids would take decades, possibly more than 100 years. The long time period and resultant small concentrations in pumped groundwater produce large volumes of water requiring treatment for very small amounts of COIs. Natural attenuation is occurring at the Site, and pump-and-treat would operate against (essentially try to reverse) the natural processes already occurring. Pump-and-treat systems for inorganic constituents such as the COIs at the Site typically operate for decades (SCS 1997; Geosyntec 2021), some with no end in sight.

Pump-and-treat is also one of the least sustainable groundwater corrective actions, as it requires extensive resources to implement and operate. These resources are expended for decades and include raw materials for the infrastructure, ongoing electricity use, water treatment chemicals, water treatment system operation, pump replacement, well redevelopment and maintenance, equipment maintenance, and laborers for monitoring and maintenance.

3 Selected Groundwater Remedy

Since submittal of the ACM in June 2019 (Anchor QEA 2019a), extensive investigations have been performed to select effective corrective measures for COIs in groundwater at the Site. Semiannual status reports regarding investigation and evaluation have been submitted to ADEM and posted to the Site's CCR compliance webpage. Based on investigation and evaluation, the following combination of corrective measures are proposed to address GWPS exceedances at the Site:

- Source control
  - Dewatering and consolidating the Site footprint by approximately 28%
  - Installing a low-permeability geosynthetic cover system over the consolidated footprint
- Permeation grouting
  - Emplaced across identified preferential pathways for groundwater flow
  - Create a cutoff wall to prevent migration of COIs from the facility boundary
- MNA
  - Establish no-exceedance boundary monitoring
  - Monitor concentration reduction and natural attenuation mechanisms
- Adaptive site management (discussed in Section 5)
  - Routinely evaluate remedy system performance
  - Measure performance against interim performance standards (adaptive triggers)
  - Systematically re-evaluate remedy system performance against adaptive triggers

The selected remedy plan meets the four performance standards of 40 CFR § 257.97(b) and ADEM Admin. Code r. 335-13-15-.06(8)(b) and will achieve the following:

- Be protective of human health and the environment.
- Attain the GWPS specified in the rules.
- Control the source of release to reduce or eliminate, to the extent feasible, further releases to the environment.
- Comply with any relevant standards (i.e., all applicable RCRA requirements) for management of wastes generated by the remedial actions).

As required by 40 CFR § 257.97(a) and ADEM Admin. Code r. 335-13-15-.06(8)(a), Sections 3.1 through 3.3 describe the selected remedy.

3.1 Source Control

The Site will be closed in a manner that controls "the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in Appendix IV to this part into the environment," as required by 40 CFR § 257.97(b)(3) and ADEM Admin. Code r. 3351315.06(8)(b)3.

Closure of the Site will be accomplished by dewatering, consolidating the footprint to a smaller area, and capping the CCR with a final cover system. The proposed corrective action strategy incorporates the closure of the Site, which will effectively control the source of CCR constituents to groundwater by removing free liquid from the CCR, reducing the area of the Site footprint, and capping the CCR in place to prevent further stormwater infiltration. Specifically, the design for the Site closure calls for dewatering and consolidating the CCR material from the current Site footprint of approximately 269 acres to an area of approximately 193 acres within a diked area. Stormwater management features will be constructed around the perimeter of the consolidated CCR material, along with a final cover consisting of an engineered synthetic turf and geomembrane (APC 2020). Site closure activities began in 2019.

3.1.1 Dewatering and Consolidation

As part of closure, the CCR will be dewatered sufficiently to remove the free liquids. Removing free liquids will reduce the volume of water available to migrate from the Site during closure and minimize hydraulic head within the pond, thereby reducing pressure to cause migration from the CCR pond. CCR will be consolidated into a smaller footprint and graded prior to installation of the final cover system. Excavation will include removing all visible ash and over excavating into the subgrade soils.

Consolidation of the horizontal footprint by approximately 28%, from 269 acres to an area of approximately 193 acres, will reduce the CCR surface area potentially exposed to groundwater, thereby reducing the leaching potential of COIs to groundwater.

CCR excavation will occur in three distinct areas of the pond, referred to in the closure plan as the West Area, East Area, and South Dike Area along the Coosa River (APC 2020). The wet CCR will be excavated from these areas for initial dewatering and then loaded, hauled, and placed in the consolidated area for additional dewatering and processing with drier CCR. As the CCR is excavated and removal verified, soil borrow material from on-site or off-site sources will be hauled in directly to the backfill areas to meet the design backfill grades.

Recent dewatering related to closure appears to be having a positive effect on wells in the area of dewatering; for example, molybdenum concentrations in GN-AP-MW-5 have been below the GWPS for three of the last four sampling events, and boron (an indicator parameter) shows a similar trend. Also, concentration versus distance graphs along the GN-AP-MW-5 downgradient transect indicate molybdenum concentrations are decreasing with distance from the Site.

Excavating and subsequent placement of CCR could result in temporary releases of COIs due to physical disruption and, possibly, geochemical changes (e.g., temporary introduction of oxygen). Dewatering will also produce changes in groundwater flow. Therefore, geochemical and groundwater

flow disequilibria are expected during and, likely, for a few years after closure. Until the new flow and geochemistry equilibria are established, temporary increases in COI concentrations may be observed in some wells.

The perimeter around the consolidated footprint will be diked and contain updated stormwater components to convey runoff flows to the proposed stormwater ponds, where they will eventually discharge into the Coosa River. Additional details regarding consolidation and dewatering are provided in the previously submitted *Amended Closure Plan for Ash Pond* (APC 2020).

3.1.2 Final Cover System (Cap)

The final cover will be constructed to "control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration" of stormwater into the closed CCR unit, which will mitigate potential releases of COIs to groundwater. The final cover system, at a minimum, will meet or exceed the requirements of 40 CFR § 257.102(d)(3)(ii) and ADEM Admin. Code r. 335-13-15-.07(3)(d)3.(ii) (alternative cover system). Current design for the cover is the synthetic ClosureTurf cover system that utilizes a 50-mil linear low-density polyethylene geomembrane overlain by an engineered synthetic turf. The synthetic turf will contain a minimum 1/2-inch sand infill. The permeability of the final cover system will be less than the permeability of the natural subsoils beneath the surface impoundment. Final design will ensure the disruption of the integrity of the final cover system is minimized through a design that accommodates settlement and subsidence, in addition to providing an upper component for protection from wind or water erosion. The final cover system will have a permeability of 10^{-5} cm/sec or less (APC 2020).

Infiltration will also be impeded by providing sufficient grades and slopes to: 1) preclude the probability of future impoundment of water or sediment on the cover system; 2) ensure slope and cover system stability; 3) minimize the need for further maintenance; and 4) be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices (APC 2020).

3.2 Permeation Grouting

At the Site, the intent of permeation grouting will be to create a low-permeability subsurface wall to impede the flow of impacted groundwater away from the source. The wall is created by filling fractures, bedding planes, and other void spaces in the rock with cement grout. Permeation grouting has been performed successfully at Plant Gaston to improve foundation conditions to enable horizontal drilling for the installation of a natural gas pipeline under the Coosa River.

As shown in Figure 6, permeation grouting is proposed along the east side of the pond where groundwater is impacted. To determine the effectiveness and refine the implementation process of permeation grouting at the Site, a pilot test will be performed for approximately 150 feet in the

vicinity of wells GN-AP-MW-17, GN-AP-MW-17V, and GN-AP-MW-17SV, to a depth of approximately 150 feet (Figure 7). A detailed pilot test plan will be prepared prior to implementation of the permeation grouting pilot test. However, the pilot test is expected to contain the components as described below or similar components. Figure 6 includes the extent of both the pilot test plan and potential full-scale areas. The horizontal and vertical extent of the full-scale permeation grouting program are dependent on further evaluation and the results of the pilot test.

The location and depth of the grouting pilot test was selected based on hydrogeology (an apparent permeable zone) and the occurrence of groundwater impacts associated with wells GN-AP-MW-17, GN-AP-MW-17V, and GN-AP-MW-17SV. The carbonate (dolomite and limestone) bedrock at the Site exhibits a strong permeability contrast, which is typical for the Knox Group rocks in East Central Alabama (Redwine 1997). Permeability is primarily structural-geology controlled, such as where faults or near-vertical fracture zones penetrate the bedrock. Permeability can be relatively high in these zones, whereas the rock outside these zones may be relatively impermeable and even dry. One permeable zone is expected to occur in the vicinity of GN-AP-MW-17, based on geophysical (electrical resistivity) mapping of the top of rock (Figure 8) and occurrence of COIs in groundwater in monitoring wells installed in that zone. As shown in Figure 8, a low-resistivity (likely a high-permeability) zone exists between approximately 260 and 350 feet North American Vertical Datum of 1988 and from GN-AN-MW-16 to approximately 200 feet northeast of GN-AP-MW-18. The deepest portion of the low-resistivity zone in the vicinity of wells GN-AP-MW-36V to GN-AP-MW-17 could be a near-vertical zone of fracture concentration or a near-vertical fault, both of which could produce greater permeability upon widening of the fractures by dissolution of the carbonate rock.

The following grouting pilot test description is based on an ongoing (as of 2021) proof-of-concept field demonstration, which was approved by civil and geotechnical engineers at the Federal Energy Regulatory Commission, at Logan Martin Dam. The proposed pilot study utilizes the most current techniques for permeation grouting developed by the team of experts grouting Knox Group rocks at the Logan Martin Dam site.

Grouting programs typically include the drilling and testing of primary grout holes, followed by the injection of cement-based grout. Primary grout holes are drilled on a prescribed spacing, then secondary holes are placed between the primary holes. One measure of success of the grouting program is the reduction in permeability (as measured by packer hydraulic conductivity tests) in the secondary holes, and resultant less grout injection into the secondary holes, as compared to the primary holes. In addition, a grout wall typically consists of more than one row of grout holes as shown in Figure 9.

Both low- and high-mobility grout will be utilized in the pilot test program to ensure adequate filling of spaces in the rock and a resulting wall that is as impermeable as possible. The reactive ingredient in both grouts is Portland cement. Low-mobility grout typically contains sand to increase its viscosity,

limit its distance of travel, and fill larger spaces in the rock. High-mobility grout does not contain sand, can penetrate smaller spaces (e.g., smaller fractures) in the rock, and will travel greater distances from the grout hole. Other ingredients may be added to the grout to improve its properties and serve as fillers. Any additional additives used in the pilot test program will be determined to be environmentally acceptable based on their safety data sheets and other information. Prior to injection of grout into ground, a test block using the grout mix will be created, and USEPA Method 1315 (monolith leaching test) will be performed on the test block to ensure that the cement grout will not introduce COIs into the rock aquifer.

Grouting programs are, by nature, adaptive, and this approach is consistent with the adaptive site management approach for corrective action at the Site. Though an approximately 150-foot test grout section is proposed, cells within the section will be approximately 40 to 50 feet long. After emplacement of each cell, data will be analyzed, and specifications for the next cell will be adjusted accordingly.

The major measures of success of a grout wall include permeability reduction within the wall and a lower potentiometric surface on the downgradient side of the wall after grouting. Reduction in groundwater flow will also reduce or eliminate mass flux of COIs away from the closed pond. Slower groundwater travel times should aid MNA because slower travel times allow more time for attenuation mechanisms to operate. Most grout holes will be drilled using sonic drilling techniques. A few holes will be cored using wireline techniques to enable logging of rock and identification of permeable features. All grout holes will be permeability tested using packer tests. Permeability tests may be repeated in the same hole after grouting adjacent holes to quantify the permeability reduction during the grouting program. In addition, piezometers will be installed upgradient, side-gradient, and downgradient of the grout cells to monitor water levels and potentiometric surfaces. Instruments (multiparameter sondes such as Aqua TROLLs) will be installed in select grout holes and piezometers to collect continuous water level and pH data. A rise in pH indicates grout influence in the vicinity of a grout hole or piezometer due to the influence of the higher pH of Portland cement. A pH rise from grouting is expected to be temporary and observed very locally, i.e., in adjacent holes near the grout hole during grouting. pH is expected to move back toward pre-grouting (ambient) values after the grouting is completed.

3.3 Monitored Natural Attenuation

MNA has been a component of corrective action at RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) sites since the 1990s. MNA describes a range of physical, chemical, 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, dispersion, precipitation and coprecipitation, and ion exchange (USEPA 1999, 2007a, 2007b). MNA as a remedial alternative is dependent on a good understanding

of localized hydrogeologic and geochemical conditions and may require considerable information and monitoring over an extended period of time.

USEPA defines MNA as 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" (USEPA 1999, 2015). An MNA evaluation consists of the following steps or tiers (USEPA 2015):

1. Demonstrate that the area of impacts (plume) is stable or shrinking.
2. Determine the mechanisms and rates of attenuation.
3. Determine that 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 as expected.

Where site conditions are conducive to MNA, it has the potential to provide a more sustainable, lower-cost alternative to aggressive remediation technologies such as pump-and-treat. The Electric Power Research Institute has prepared a document describing implementation of MNA for 24 inorganic constituents, which include most Appendix III and IV constituents (EPRI 2015).

Attenuation mechanisms can be placed in two broad categories, physical and chemical. 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.

When properly implemented, MNA removes constituents from groundwater and immobilizes them onto aquifer solids. Decisions to use MNA as a remedy or remedy component should be thoroughly supported by site-specific data and analysis (USEPA 1999, 2015). In addition, though not an MNA tier per se, source control is presumed to precede MNA implementation. Extensive MNA investigations were performed for the Site in 2020 and 2021 and are documented in the MNA demonstration report provided in Appendix D.

Site closure (dewatering, consolidation, and capping) will meet the MNA criteria for source control. As described in Section 3.1, the Site will be closed by consolidating the Site footprint from approximately 269 acres to approximately 193 acres. CCR removed from outside the consolidated footprint will be dewatered, excavated, and compacted within the consolidated footprint. All visible CCR and a portion of the subgrade soils will be excavated outside the consolidated footprint. The final cover of the consolidated footprint will have a permeability of 10^{-5} cm/sec or less and be constructed to control and minimize or eliminate (to the extent possible) post-closure infiltration of

precipitation into the waste and potential releases of CCR from the unit. Site closure will greatly reduce any future discharges to groundwater.

3.3.1 Site-Specific MNA Evaluation Summary

As described in greater detail in Appendix D, the trends observed in concentration versus time and concentration versus distance graphs provide evidence that natural attenuation is currently occurring at the Site, even without source control. Concentration versus time graphs indicated that arsenic, lithium, and molybdenum concentrations are generally stable in several areas, even without source control. Recent dewatering related to closure appears to be having a positive effect on wells in the area of dewatering; for example, molybdenum concentrations in GN-AP-MW-5 have been below the GWPS for three of the last four sampling events, and boron (an indicator parameter) shows a similar trend. Also, concentration versus distance graphs along the GN-AP-MW-5 downgradient transect indicate molybdenum concentrations are decreasing with distance from the Site.

Based on the geochemical investigations, several lines of evidence support multiple attenuating mechanisms, depending upon the COIs. The major attenuating mechanisms include the following:

- Sorption on iron oxides (arsenic and molybdenum)
- Cation exchange on clays and manganese oxides (lithium)
- Precipitation of arsenate and molybdate phases (arsenic and molybdenum, respectively)

Rates of attenuation were determined by results of reactive transport modeling and by extrapolating decreasing trends on the concentration versus time graphs to the GWPS for areas where decreasing trends were observed. For molybdenum, estimated time to achieve GWPSs by MNA is 2 to 35 years. Depending on location, estimated time to achieve GWPSs for lithium by MNA ranges from less than 20 years to approximately 100 years (near GN-AP-MW-17). Though these time frames are reasonable to achieve GWPSs by MNA, permeation grouting is expected to accelerate time to achieve GWPSs, particularly in the area of GN-AP-MW-17. Permeation grouting, which will prevent future migration of COIs away from the facility boundary, is planned for the area near GN-AP-MW-17. During recent sampling events, arsenic concentrations were below the GWPS and are expected to continue to decrease as the selected remedies are implemented. However, due to short-term perturbations in groundwater flow and geochemistry due to consolidation (moving CCR) and dewatering, temporary increases in COI concentrations may be observed in some wells. Source control, permeation grouting, and MNA over the entire Site are expected to achieve GWPSs in approximately 35 years, which is a reasonable time frame as compared to other, more aggressive methods investigated as part of the remedy selection process. Based on MNA case histories for inorganic constituents, MNA time frames typically range from a few years to decades (EPRI 2015).

Column studies were performed to assess the ability for the aquifer (soil) to chemically attenuate COIs and help determine the stability of the attenuated COIs. Column studies indicate that arsenic,

lithium, and molybdenum are attenuated (sorbed) by aquifer media. The column attenuation capacity was extrapolated to the entire mass of the aquifer downgradient of the consolidated Site but within the property boundary. The extrapolation showed that the aquifer has an attenuating capacity of many more times the mass of arsenic, lithium, and molybdenum requiring attenuation.

Selective sequential extraction (SSE) was performed on samples of well solids (precipitates) and soils used in the column studies to assess the stability of the attenuated COIs and their host minerals. After attenuation of COIs occurred in the column experiments, most of the mass of arsenic in column soils was found to be bound in stable fractions: specifically, F3 (reducible), F4 (oxidizable), and F5 (residual). Most of the mass of arsenic is bound in the less stable F2 (exchangeable) fraction in soil from well GN-AP-MW-17V, which is in an area that will be treated by permeation grouting. Molybdenum is primarily in the F4 (oxidizable) and F5 (residual) fractions, which are very stable. However, most of the mass of molybdenum in soil from well GN-AP-MW-17V is in the less stable F1 (water soluble) and F2 (exchangeable) fractions. SSE results indicated that lithium is exclusively in the very stable F4 (oxidizable) and F5 (residual) fractions.

SSE results on well solids samples (precipitates) were similar to the column soil results though not as complete because data from many samples were below the method detection limits (Anchor QEA 2020b). Specifically, for data above the detection limit, most of the mass of arsenic, lithium, and molybdenum is in the F5 (residual) fraction, with a very small amount in the F1 (water soluble) and F2 (exchangeable) fractions. Based on both column soil and well solids (precipitate) data sets, arsenic, lithium, and molybdenum are expected to remain immobile because they are attenuated primarily in stable mineral phases or occur in areas that will be treated by permeation grouting to prevent impacted groundwater flow beyond the closed pond boundary.

3.3.2 Site-Specific MNA Monitoring Program

Corrective action performance monitoring consists of two major components: 1) monitoring for sitewide corrective action, which would include MNA and the positive benefits of source control and permeation grouting at the Site scale; and 2) remedial effectiveness monitoring in the areas of grouting. Sitewide monitoring applies to MNA because MNA will be implemented over the entire Site.

Implementation of MNA at the Site will be relatively easy. Most of the wells for MNA are already in place, though some additional wells may need to be installed to monitor progress in critical areas. The site-specific MNA plan will be composed of the following:

- A network of sentinel or clean-line monitoring points beyond the extent of GWPS exceedances

    - The clean-line network will consist of monitoring wells and surface water sampling locations and will be monitored to verify that GWPS exceedances do not occur at or beyond the locations.
- Monitoring wells located within the areas exhibiting GWPS exceedances
    - These wells will be monitored to verify attenuation mechanisms, document decreasing concentrations, calculate plume mass or mass flux, and provide monitoring data to demonstrate MNA effectiveness.
- A comprehensive data analysis and reporting plan
- Components of an adaptive site management plan

A key component of MNA is a detailed monitoring and reporting plan. Pursuant to 40 CFR § 257.98(a) and ADEM Admin. Code r. 335-13-15-.06(9)(a), a remedy and monitoring program must be implemented within 90 days of selecting a remedy. As documented in Appendix D, natural attenuation is already occurring at the Site. A comprehensive and specific MNA corrective action groundwater monitoring plan will be developed within 90 days of this report. A conceptual summary of the anticipated MNA monitoring network is included in Figure 10.

MNA monitoring will primarily be accomplished by sampling MNA monitoring wells and analyzing for the following list of constituents on a semiannual basis:

- Appendix IV constituents
- General parameters that influence geochemistry such as pH, temperature, oxidation-reduction potential, dissolved oxygen, and specific conductivity
- Natural attenuation indicator parameters specific to the identified attenuation mechanisms such as ferrous and ferric iron

Because MNA does not require design and construction of infrastructure other than new monitoring wells, the monitoring can be initiated within 6 months to a year, contingent upon regulatory review and approval of the monitoring plan. At least 1 year of groundwater monitoring data post closure is recommended to establish baseline conditions and trends. During closure, temporary variations in groundwater data are expected due to CCR disruption (excavation and placement within the consolidated footprint), dewatering, resultant changes in groundwater flow, and the time required for capping to reduce leaching from CCR.

The following will be performed to implement the MNA monitoring plan:

- Begin MNA-specific sampling and analysis using existing monitoring locations.
- Install additional monitoring wells as needed.
- Provide the first MNA evaluation monitoring report, considering the changes in groundwater chemistry due to closure activities.

4 Corrective Action Monitoring Program

As required by 40 CFR § 257.98(a) and ADEM Admin. Code r. 335-13-15-.06(9)(a), the owner/operator must implement the groundwater remedy within 90 days of selecting a remedy, including establishing a corrective action groundwater monitoring program. That monitoring program must perform the following actions: 1) meet the assessment monitoring requirements of 40 CFR § 257.95 and ADEM Admin. Code r. 335-13-15-.06(6); 2) document the effectiveness of the remedy; and 3) demonstrate compliance with the GWPS. A Site *Corrective Action Groundwater Monitoring Program* providing site-specific remedy monitoring details will be submitted within 90 days of this *Groundwater Remedy Selection Report*.

To meet the first requirement of the remedy monitoring program, assessment monitoring of the certified groundwater monitoring network must continue pursuant to 40 CFR § 257.96(b) and ADEM Admin. Code r. 335-13-15-.06(7)(b). The other two requirements are satisfied by developing a remedy-specific performance monitoring program. The corrective action groundwater monitoring program for the Site will include the following:

- Continued assessment monitoring of the certified CCR compliance groundwater monitoring network
- Groundwater monitoring to document remedy system effectiveness
  - Source control (dewatering, consolidation, and capping)
  - Permeation grouting performance
  - MNA
- Adaptive site management guidelines
- Sentinel and clean-line boundary monitoring
  - Verification of delineation boundaries
  - Potential receptor monitoring using risk-based screening levels

Within 90 days of selecting a remedy, a corrective action groundwater monitoring plan that describes the monitoring program and details the following will be developed:

- Sample locations
- Sampling schedules
- Monitoring parameters
- Data analysis methods
- Adaptive site management evaluation guidelines
- Reporting and notification requirements

Following certification of the Site's groundwater monitoring network, several additional wells were installed to perform delineation of GWPS exceedances. These wells have been added to the semiannual monitoring program pursuant to 40 CFR § 257.95(g)(1) and ADEM Admin. Code

r. 3351315-.06(6)(g)2. Based on remedy-specific monitoring needs, certain delineation wells may not be included as part of the groundwater remedy monitoring program. If wells are proposed for exclusion from the corrective action monitoring program, a justification for exclusion will be provided in the plan. A conceptual groundwater monitoring network for the Site is shown in Figure 10.

As shown in Figure 10, sentinel and clean-line boundary monitoring points will be located between known GWPS exceedances and the property boundary or potential receptors. These wells will be sampled at the same frequency as the CCR compliance monitoring wells. Surface water sampling locations were selected as sentinel/clean-line boundary monitoring points on the northeast side of the Site. Existing monitoring wells in this area have elevated concentrations of COIs, and additional downgradient monitoring wells cannot be installed due to the proximity of the river.

As discussed in Section 5, APC will incorporate adaptive site management into the corrective action at the Site. Adaptive triggers will be developed, and additional actions (monitoring, analysis, and corrective action) will be implemented as needed. Adaptive triggers could include statistically increasing trends for multiple events after closure is complete and verification of GWPS exceedances at sentinel/clean-line boundary monitoring points.

During closure and dewatering, the pond-groundwater system will be in a state of hydraulic and geochemical disequilibrium, possibly leading to temporary increases in COI concentrations at some locations and decreases at other locations. Additionally, temporary increases could occur as the subsurface is disturbed by excavation, permeation grouting and possible localized changes in groundwater flow direction. Closure-induced variability will need to be considered when evaluating remedy performance monitoring data and establishing triggers for the adaptive management component of the monitoring program. Due to the probable geochemical and groundwater flow disequilibria, adaptive triggers will not be implemented until the second year post closure, after one year of baseline data has been established. However, data generated between the implementation of corrective action and post-closure period may be compared to risk-based screening levels to determine if immediate action is warranted.

5 Adaptive Site Management Plan

As applied here, adaptive site management is a component of the corrective action monitoring program, in which monitoring results are continually evaluated to determine if the system is making progress toward achieving remedy goals. Based on system performance—either achieving goals or not making expected progress—the remedy system may need to be adapted or changed. Adaptation of the system may include ceasing actions no longer necessary or changing the system because it is not performing as expected. The adaptive site management approach plans for changes at the Site and provides a process to make changes as necessary. Details regarding site-specific adaptive management metrics (adaptive triggers) and response will be included in the Site *Corrective Action Groundwater Monitoring Program*.

Changes in groundwater geochemistry are expected as closure (excavation, dewatering, and capping) of the CCR unit proceeds. Expected changes include concentration variability and short-term increasing or decreasing trends. Therefore, although the remedy will be monitored and evaluated continually during the closure period, the adaptive site management plan will not be implemented completely until closure activities are complete or near the end of closure, and groundwater chemistry has stabilized. Interim adaptive site management will be implemented during the closure period to evaluate groundwater concentrations with respect to standards that are protective of potential human or ecologic receptors, and prompt action will be taken if those standards are at risk of potentially being exceeded.

40 CFR § 257.98(b) and ADEM Admin. Code r. 335-13-15-.06(9)(b) require an owner or operator to implement other methods or techniques if it is determined that compliance is not being achieved by the existing remedies. As discussed above, the adaptive site management plan helps monitor to ascertain compliance with these rules.

In summary, adaptive site management for the Site will include the following:

1. Establishing adaptive triggers: adaptive triggers are performance goals or standards that will be used to measure progress toward achieving the long-term remedy goal of reducing concentrations to below the GWPS. Adaptive triggers may change over time as more is learned about system performance and as Site conditions change. Adaptive triggers are synonymous with "short-term goals" and "interim performance standards."
2. Evaluating remedy system performance against adaptive triggers: monitoring data from each monitoring event will be evaluated against the adaptive triggers established to measure the performance of the remedy system over the short term. Adaptive triggers will vary based on the system being monitored. For example, monitoring locations and adaptive triggers for the injection grouting system will differ from those established to monitor MNA performance.

3. Potentially adapting the system based on comparison to the adaptive triggers: if monitoring results hit an adaptive trigger, an evaluation process will be initiated. The process will include re-evaluating the adaptive trigger to ascertain if it is suitable or should be adjusted. The process may conclude that the remedy system requires adaptation to meet remediation goals.
4. Updating the Site conceptual model and knowledge base as new data become available: as the remedy is implemented, more will be learned about how the hydrogeologic system responds to remedy activities. Additional data that enhances the Site conceptual model may also be collected. The remedy plan, Site conceptual model, and adaptive triggers will be updated and evaluated as more is learned.

Figure 11 presents a generalized flow diagram of the adaptive site management process. It shows the process that will be used to evaluate monitoring data, determine if performance objectives are met, and determine if adaptation of the groundwater remedy system is needed. Performance monitoring is an integral component of the adaptive site management plan.

5.1 Interim Performance Standards and Monitoring

The long-term performance standards for the groundwater remedy system are defined in 40 CFR § 257.98(c) and ADEM Admin. Code r. 335-13-15-.06(9)(c): demonstrate compliance with the GWPS at all points that lie beyond the groundwater monitoring system established under 40 CFR § 257.91 and ADEM Admin. Code r. 335-13-15-.06(2) for 3 consecutive years based on semiannual monitoring.

Interim performance standards, or adaptive triggers, will be established to monitor each component of the remedy system as a means of assessing progress toward the final goal. The interim performance standards will measure short-term progress and are not regulatory compliance standards.

5.1.1 Permeation Grouting

The interim, or short-term, performance goal of the permeation grouting system is to document the following two items: 1) reduced permeability (hydraulic conductivity) within the injection area; and 2) an increase in groundwater pH in the vicinity of the wall during grouting. A series of piezometers will be installed within the grouting zone and monitored to demonstrate the performance of the grouting system during grouting.

After verifying that a low-permeability zone has been established, the next interim performance goals will be to demonstrate that reduced groundwater levels (potentiometric surfaces) occur downgradient of the grout wall and that decreasing trends in COIs are observed downgradient. The performance monitoring system will account for potential variability created during ongoing closure activities such as dewatering, excavation, and capping.

As described in Section 2.4.1, effectiveness of permeation grouting will be determined primarily by reduction in groundwater levels downgradient of the grout wall and reductions in COIs in the existing monitoring wells. However, if determined to be useful, select piezometers installed to monitor grouting performance during grouting may be left in place for future groundwater level and chemistry monitoring. The possibility exists that nearby groundwater monitoring wells (e.g., GN-AP-MW-17, GN-AP-MW-17V, and GN-AP-MW-17SV) may have greatly reduced water flow to them as a result of grouting such that sampling these wells would no longer be possible. If this happens, it is a clear indicator of success of the grouting program, and replacement wells (if needed) would be installed downgradient of the grout wall.

To the extent to which permeation grouting is performed during the ash pond closure period, adaptive triggers will be established to evaluate the short-term goals directly related to the permeation grouting performance.

5.1.2 Monitored Natural Attenuation

The interim goal of MNA is to document that, in conjunction with source control and permeation grouting, natural attenuation of the constituents is occurring. As described by USEPA (2015), the four tiers of MNA can be summarized as follows:

- Tier 1: plume size and stability
- Tier 2: attenuation mechanisms and rates
- Tier 3: attenuation mechanism capacity and reversibility
- Tier 4: performance monitoring program and alternative remedies should MNA not perform as expected

The performance of MNA Tiers 1 through 3 will be monitored by evaluating the following:

- Plume size and stability
  - The size and stability will be monitored by a network of groundwater monitoring wells within and around the perimeter of the area of groundwater exceedances (i.e., the plume). From a practical implementation standpoint, plume stability refers to an area of groundwater impacts that is not substantially expanding or adversely changing (by exhibiting new constituents or increasing mass). The interim (prior to completion of closure) performance standard for plume stability may be monitoring wells installed around the areas of groundwater impacts to exhibit trends that are statistically steady or decreasing and for no new statistically significant levels (SSLs) to occur within the plume area. The long-term performance objective is for statistically decreasing trends, continual reduction in the number or SSLs in the MNA performance monitoring network, a reduction in size of the plume, or a reduction in magnitude of COI concentration within the plume.

- Plume mass and mass reduction
  - MNA performance relative to Tier 2 criteria for attenuation mechanisms and rates, and Tier 3 criteria for attenuation capacity and reversibility may be demonstrated by monitoring the mass of each COI within the plume area and documenting changes in mass over time. Steady or decreasing mass indicates that attenuation mechanisms continue to be effective, attenuation capacity remains, and attenuation mechanisms have not reversed. The interim performance standard for mass reduction is for monitoring wells installed in and around the areas of groundwater impacts, in aggregate, to exhibit statistically steady or decreasing mass. Per USEPA guidance, mass flux across transects (cross sections) located in meaningful areas will also be calculated. The long-term performance objective is to demonstrate COI concentration decline to below GWPSs and reduction in COI mass.

Adjustments to the MNA performance monitoring network may be made as needed as MNA proceeds.

5.2 Adaptive Trigger Evaluation and Corrective Action System Adaptation

If monitoring results hit an adaptive trigger (e.g., statistically significant trends are observed for longer than the prescribed years), the first step will be to re-evaluate the interim performance standard and determine if it is a suitable measure of performance or if it requires updating based on other factors. Similarly, the nature of the adaptive trigger hit will be evaluated to determine if it warrants further response. For example, confirmed statistically significant increases in concentration may warrant immediate response; in contrast, a gradual and slight increase in concentration may be addressed differently.

If it is determined that the adaptive trigger is appropriate and that the groundwater remedy system is not achieving the interim goals, then the system may be adapted, optimized, or changed. Within a reasonable time following the adaptive trigger hit, a work plan or implementation schedule for remedy system adaptation will be provided. A semiannual report describing the progress made adapting the groundwater remedy system will be completed and placed in the operating record following 40 CFR § 257.105(h)(12) and ADEM Admin. Code r. 335-13-15-.08(1)(h)12. Amendments to this *Groundwater Remedy Selection Report* and the *Corrective Action Groundwater Monitoring Program* will also be completed and placed in the operating record as described in 40 CFR § 257.105(h)(12) and ADEM Admin. Code r. 335-13-15-.08(1)(h)12.

6 Remedy Performance Requirement Demonstration

As required in 40 CFR § 257.97(b) and ADEM Admin. Code r. 335-13-15-.06(8)(b), the groundwater remedy for the Site must meet the following performance standards:

1. Be protective of human health and the environment.
2. Attain applicable GWPSs as specified in the rules.
3. Control the source of release to reduce or eliminate, to the extent feasible, further releases to the environment.
4. Comply with any relevant standards (i.e., all applicable RCRA requirements) for management of wastes generated by the remedial actions.

The following subsections describe how the selected remedy plan meets the performance requirements of 40 CFR § 257.97(b) and ADEM Admin. Code r. 335-13-15-.06(8)(b).

6.1 Protection of Human Health and the Environment

A remedy is protective of human health and the environment when a quantitative risk assessment, conducted according to well-supported scientific principles, demonstrates that chemicals in relevant environmental media are at or below regulatory or health-based benchmarks for human health and the environment. Quantitative risk assessment approaches and the derivation of health-based benchmarks may vary by the competent authority or regulatory application. The State of Alabama has several reports that provide specific guidance on risk assessment approaches and the selection and derivation of appropriate health-based benchmarks for chemicals in groundwater and in surface water that will be protective of human health and the environment.

Current conditions are protective of human health and the environment. The proposed remedy plan will improve groundwater quality and result in a reduction in concentrations; therefore, the proposed remedy will be protective of human health and the environment as required by 40 CFR § 257.97(b)(1) and ADEM Admin. Code r. 335-13-15-.06(8)(b)1.

6.2 Attain Groundwater Protection Standard Requirements

As stated in 40 CFR § 257.97(b)(2) and ADEM Admin. Code r. 335-13-15-.06(8)(b)2, a groundwater remedy plan must be able to attain the GWPS specified in the rules. As described in this report, a three-pronged approach will be used to achieve the GWPS. A significant component of the groundwater remedy plan is the closure and source control measures being implemented at the Site. The combination of CCR consolidation, dewatering, and installation of a low-permeability geosynthetic cover system will greatly reduce release to the environment.

Permeation grouting in areas with significantly elevated concentrations of constituents will reduce or eliminate mass flux of COIs away from the Site. Permeation grouting has been performed

successfully at Plant Gaston for foundation improvement and should be effective for impeding the flow of impacted groundwater beyond the Site boundary. Applications of permeation grouting will be evaluated in the context of decreasing trends from source control and natural attenuation.

Finally, as discussed in Section 3.3.2 and Appendix D, COIs are currently being attenuated, and concentrations are declining as a result of natural attenuation processes. In concert with closure, source control, and permeation grouting, MNA will continue until COI concentrations are below the GWPS. Closure activities and permeation grouting will serve to enhance the natural attenuation already occurring.

Remedy evaluation has demonstrated that actions proposed for the Site result in decreasing concentrations in groundwater (Appendix D). Decreasing concentrations will ultimately result in constituents occurring at concentrations below the GWPS. Therefore, as required by 40 CFR § 257.97(b)(2) and ADEM Admin. Code r. 335-13-15-.06(8)(b)2, the groundwater remedy plan will be able to attain the GWPS specified in the rules.

Depending on constituent and well (location), the estimated time to achieve GWPSs from natural attenuation alone ranges from 2 to 100 years, not considering source control and permeation grouting. Most of this range is reasonable compared to durations of other corrective action technologies. Pump-and-treat for inorganic constituents, for example, typically takes decades because that process must reverse the natural attenuation processes already operating by desorbing constituents from aquifer solids by passing many pore volumes (sometimes hundreds) through the aquifer. Supporting information for time to attain GWPSs, including concentration versus time and concentration versus distance graphs, is included in Appendix D. Source control and permeation grouting are expected to accelerate this time frame, particularly in areas where little attenuation is currently observed.

6.3 Control Sources of Releases

As discussed in Section 3.1, Site closure will greatly reduce potential discharges to groundwater as required by 40 CFR § 257.97(b)(3) and ADEM Admin. Code r. 335-13-15-.06(8)(b)3. Source control will be accomplished by:

1. Dewatering and consolidating the CCR material to the northern portion of the existing Site and reducing the footprint from approximately 269 acres to approximately 193 acres. Slopes will be graded to provide stability, promote drainage, and prevent ponding in the disposal area. As shown in Figure 2, dewatering and consolidation are anticipated to proceed into 2026.
2. Placing final cover, consisting of an engineered synthetic turf and geomembrane, over the disposal area. The low-permeability cover system will promote and control runoff from the disposal area and prevent infiltration. Eliminating infiltration will prevent the mobilization of constituents within the disposal unit and further reduce the potential for future releases from

the Site. The final cover will be installed after consolidation is complete and the soil containment berm is constructed. The planned completion of the installation of the final cover system is scheduled for 2027.

The closure activities are, in themselves, anticipated to improve groundwater quality by isolating the source area, preventing infiltration of water, minimizing the mobilization of constituents, and impeding release to the environment. The closure and source control measures meet the requirements of 40 CFR § 257.97(b)(3) and ADEM Admin. Code r. 335-13-15-.06(8)(b)3 and will control the source of release to reduce or eliminate, to the extent feasible, further releases to the environment.

6.4 Standards for Waste Management

As specified in requirements of 40 CFR § 257.97(b)(5) and ADEM Admin Code r. 3351315.06(8)(b)5, any waste must be handled and disposed according to all applicable requirements under RCRA. Specifically, any liquid or solid waste generated must be handled and disposed according to applicable regulations in 40 CFR Parts 239 through 282 and ADEM Admin. Code chapters r. 335-13-1 through 335-13-16.

Based on the technologies selected, very little waste will be generated. Waste may be generated by additional well installations, completing grouting, and monitoring. All waste generated during completion of the remedy will be handled and disposed according to RCRA requirements for the type of waste. Therefore, the remedy plan meets the requirements of 40 CFR § 257.97(b)(5) and ADEM Admin. Code r. 335-13-15-.06(8)(b)5 for managing waste generated by the remedy.

As demonstrated here, the groundwater remedy plan meets the performance criteria of 40 CFR § 257.97(b) and ADEM Admin. Code r. 335-13-15-.06(8)(b).

7 Schedule

The following factors were considered when determining the schedule for remedial activities as required by 40 CFR § 257.97(d)(1 through 5) and ADEM Admin. Code r. 3351315.06(8)(d)1 through 5:

- Nature and extent of exceedances
- Reasonable probabilities of remedial technologies in achieving compliance with CCR rule GWPSs and other objectives of the remedy
- Availability of treatment or disposal capacity for CCR managed during implementation of the remedy (not applicate for the Site)
- Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy
- Resource value of the aquifer

In accordance with 40 CFR § 257.97(d) and ADEM Admin. Code r. 335-13-15-.06(8)(d), the following schedules are provided for implementing and completing remedial activities at the Site.

7.1 Site Closure and Source Control

Site closure and source control activities are currently being implemented and are expected to be completed as shown in the timeline in Figure 2. Anticipated project milestones are as follows:

- Mid-2023: final cover system installation begins
- Mid-2026: CCR consolidation complete
- Early 2027: final cover system installation complete
- Late 2027: site closure certification complete

7.2 Permeation Grouting

The anticipated permeation grouting pilot test implementation schedule is as follows:

- Design: 1 month
- Piezometer installation: 1 month
- Pilot test implementation: 8 months
- Data collection and analysis: 2 months

The schedule for additional permeation grouting will be developed after completion of the pilot test and subsequent data analysis.

7.3 Monitored Natural Attenuation

Strictly speaking, the MNA process is currently being implemented at the Site, although a formalized process to evaluate and document the process has not been established. MNA will be implemented by establishing the detailed MNA sampling, analysis, and evaluation plan in 90 days as part of the

corrective action groundwater monitoring program. Implementation of the MNA program is anticipated to include the following:

- Coordinate MNA sampling with the first semiannual compliance sampling event after new well installation
- Collect and analyze baseline data: 1 year post closure
- Remedy complete: depending on area, estimated 2 to 35 years after Site closure is complete, considering expected benefits of Site closure and permeation grouting

8 References

ADEM (Alabama Department of Environmental Management), 2021. Letter to: Dustin Brooks, PG, Alabama Power Company. Regarding: Alternate Source Demonstration for Combined Radium 226+228. June 30, 2021.

Anchor QEA (Anchor QEA, LLC), 2017. *Remedial Action Plan Final Report – Lynn Haven Pilot Test*. Lynn Haven Retired Substation. Prepared for Gulf Power Company. May 2017.

Anchor QEA, 2018. *Lynn Haven Full Site Remedy – Post-Construction Report*. Lynn Haven Retired Substation. Prepared for Gulf Power Company. October 2018.

Anchor QEA, 2019a. *Assessment of Corrective Measures.* Plant Gaston Ash Pond. Prepared for Alabama Power Company. June 2019.

Anchor QEA, 2019b. *Semi-Annual Remedy Selection and Design Progress Report.* Plant Gaston Ash Pond. Prepared for Alabama Power Company. December 2019.

Anchor QEA, 2019c. *Bench-Scale Study Results and Field-Scale Pilot Test Work Plan*. Former St. Andrews Substation Site. Prepared for Gulf Power Company. August 2019.

Anchor QEA, 2019d. *Lynn Haven Third Quarterly Remediation Monitoring Report*. Lynn Haven Retired Substation. Prepared for Gulf Power Company. October 2019.

Anchor QEA, 2020a. *Semi-Annual Remedy Selection and Design Progress Report.* Plant Gaston Ash Pond. Prepared for Alabama Power Company. June 2020.

Anchor QEA, 2020b. *Semi-Annual Remedy Selection and Design Progress Report.* Plant Gaston. Prepared for Alabama Power Company. December 2020.

Anchor QEA, 2021. *Semi-Annual Remedy Selection and Design Progress Report.* Plant Gaston. Prepared for Alabama Power Company. June 2021.

APC (Alabama Power Company), 2020. *Amended Closure Plan for Ash Pond.* Plant Gaston. April 1, 2020.

EPRI (Electric Power Research Institute), 2015. *Corrective Action for Closed and Closing Ash Ponds*. Final Report. 3002006292. December 2015.

EPRI, 2021. *Corrective Action Technology Profile: Permeable Reactive Zones for Groundwater Remediation at Coal Combustion Product Landfills and Impoundments*. 3002021966. October 2021.

Geosyntec (Geosyntec Consultants, Inc.), 2021. *2020 Annual Remedial Effectiveness Report*. Fort Walton Beach Substation. Prepared for Gulf Power Company. March 2021.

Redwine, J.C., 1997. *Controls on Porosity and Permeability in Fracture-Flow and Conduit-Flow (Karst) Rocks of the Knox Group, Southern Appalachian Fold-and-Thrust Belt, Alabama U.S.A*. unpublished PhD dissertation. University Park, Pennsylvania. The Pennsylvania State University, Department of Geosciences.

SCS (Southern Company Services, Inc.), 1997. *Remedial Action Plan*. Fort Walton Substation. Prepared for Gulf Power Company. March 1997.

SCS, 2018a. *2017 Annual Groundwater Monitoring and Corrective Action Report*. Plant Gaston Ash Pond. Prepared for Alabama Power Company. January 31, 2018.

SCS, 2018b. *Facility Plan for Groundwater Investigation*. Plant Gaston Ash Pond. Prepared for Alabama Power Company. October 2018.

SCS, 2019. *2018 Annual Groundwater Monitoring and Corrective Action Report*. Plant Gaston Ash Pond. Prepared for Alabama Power Company. January 31, 2019.

SCS, 2020. *2019 Annual Groundwater Monitoring and Corrective Action Report*. Plant Gaston Ash Pond. Prepared for Alabama Power Company. January 31, 2020.

SCS, 2021. *2020 Annual Groundwater Monitoring and Corrective Action Report*. Plant Gaston Ash Pond. Prepared for Alabama Power Company. January 31, 2021.

USEPA (U.S. Environmental Protection Agency), 1999. *Use of Monitored Natural Attenuation of Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*. Office of Solid Waste and Emergency Response. USEPA Office of Solid Waste and Emergency Response Directive 9200.4-17P. April 1999.

USEPA, 2002. *Elements for Effective Management of Operating Pump and Treat Systems*. USEPA Office of Solid Waste and Emergency Response Directive 9355.4-27FS-A. December 2002.

USEPA, 2007a. *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 1 – Technical Basis for Assessment*. EPA/600/R-07/139. October 2007.

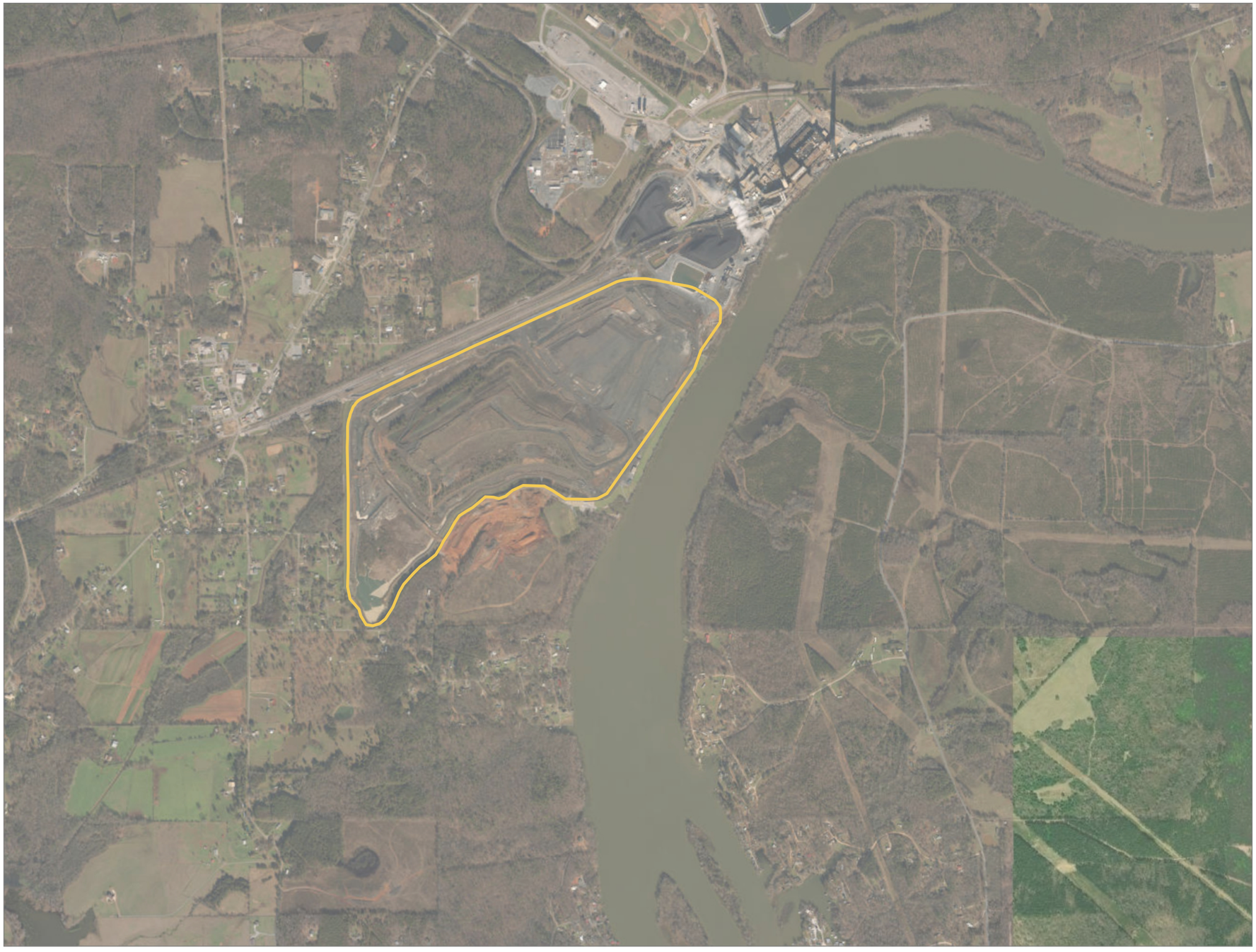
USEPA, 2007b. *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water. Volume 2. Assessment for Non-Radionuclides Including Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Nitrate, Perchlorate, and Selenium*. EPA/600/R-07/140. October 2007.

USEPA, 2015. *Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites.* USEPA Office of Solid Waste and Emergency Response Directive 9283.1-36. August 2015.

USGS (U.S. Geological Survey), 2018a. Wilsonville Alabama Quadrangle, 7.5 Minute Series Topographic Map.

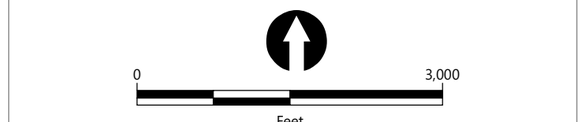
USGS, 2018b. Harpersville, Alabama, Quadrangle, 7.5 Minute Series Topographic Map.

Figures



LEGEND:

Ash Pond Boundary



Publish Date: 2021/11/09, 3:07 PM | User: jquinley
Filepath: \\orcas\GIS\Jobs\SouthernCompany_1114\PlantGaston\Maps\2021_GW_Remedy_Selection\AQ_PlantGaston_Fig01_SiteLocationMap.mxd

ANCHOR QEA

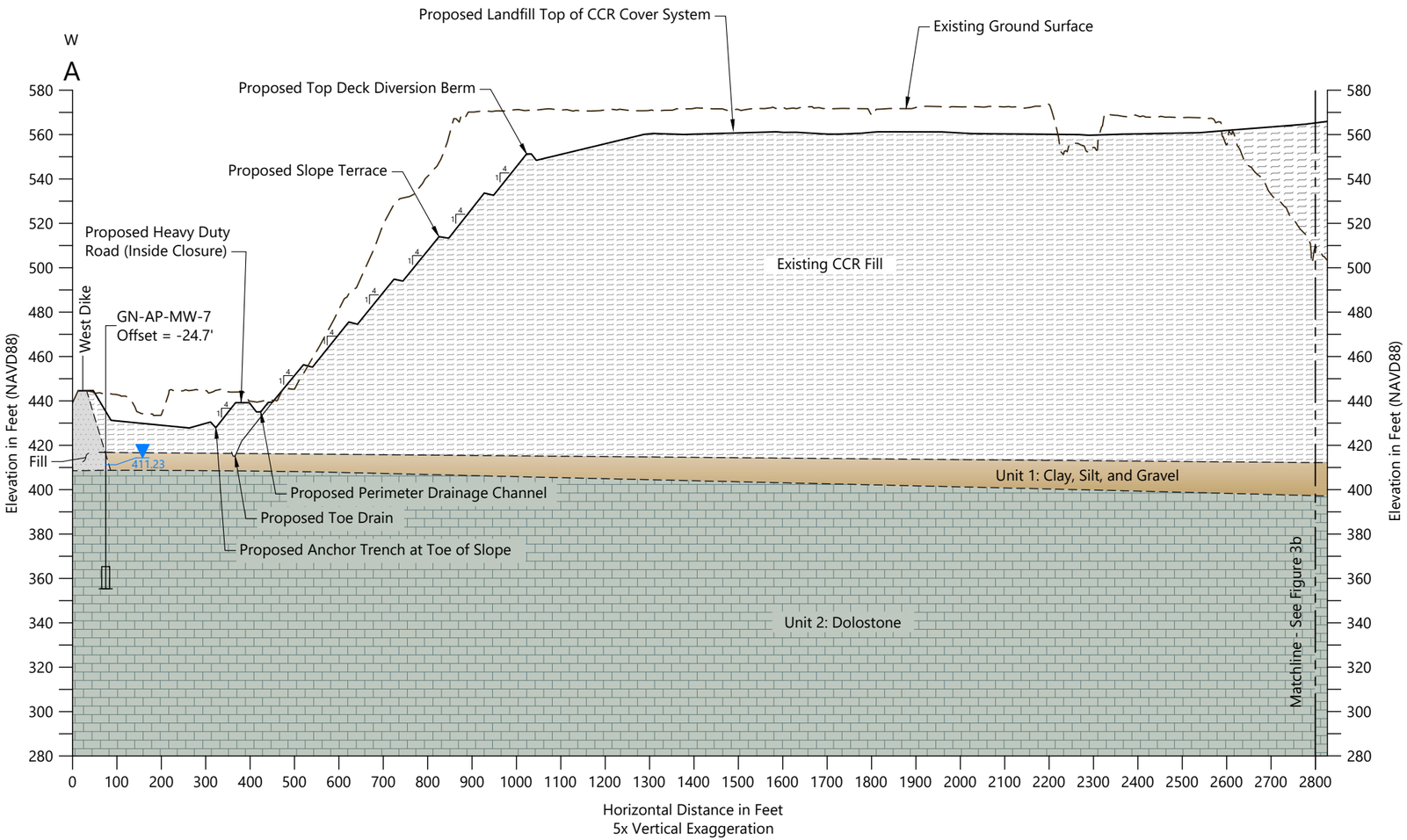
Figure 1
Site Location Map
Groundwater Remedy Selection Report
Plant Gaston

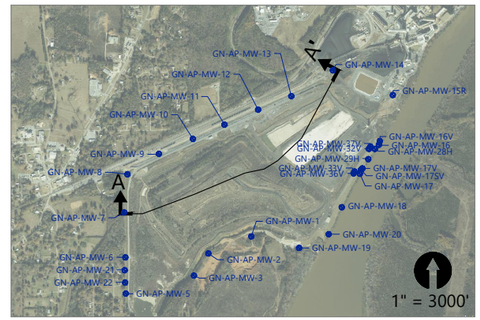
Notes:
Liner is part of final cover system (cap).
CCR: coal combustion residuals

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\Remedy Selection Reports\Gaston\Figures\Figure 2 - Closure Timeline.docx

ANCHOR QEA

Figure 2
Closure Timeline
Groundwater Remedy Selection Report
Plant Gaston





LEGEND:

- Existing Ground Surface
- Proposed Ground Surface
- Geologic Contact
- Existing Monitoring Well
- Water Elevation (Collected July 2020)
- Screened Interval

NOTES:

1. Water elevations are from the July 2020 groundwater monitoring event.
2. Proposed features are based on Plant Gaston CCR Pond Closure, Shelby County, Alabama, Wood, May 2019.
3. CCR: Coal Combustion Residuals

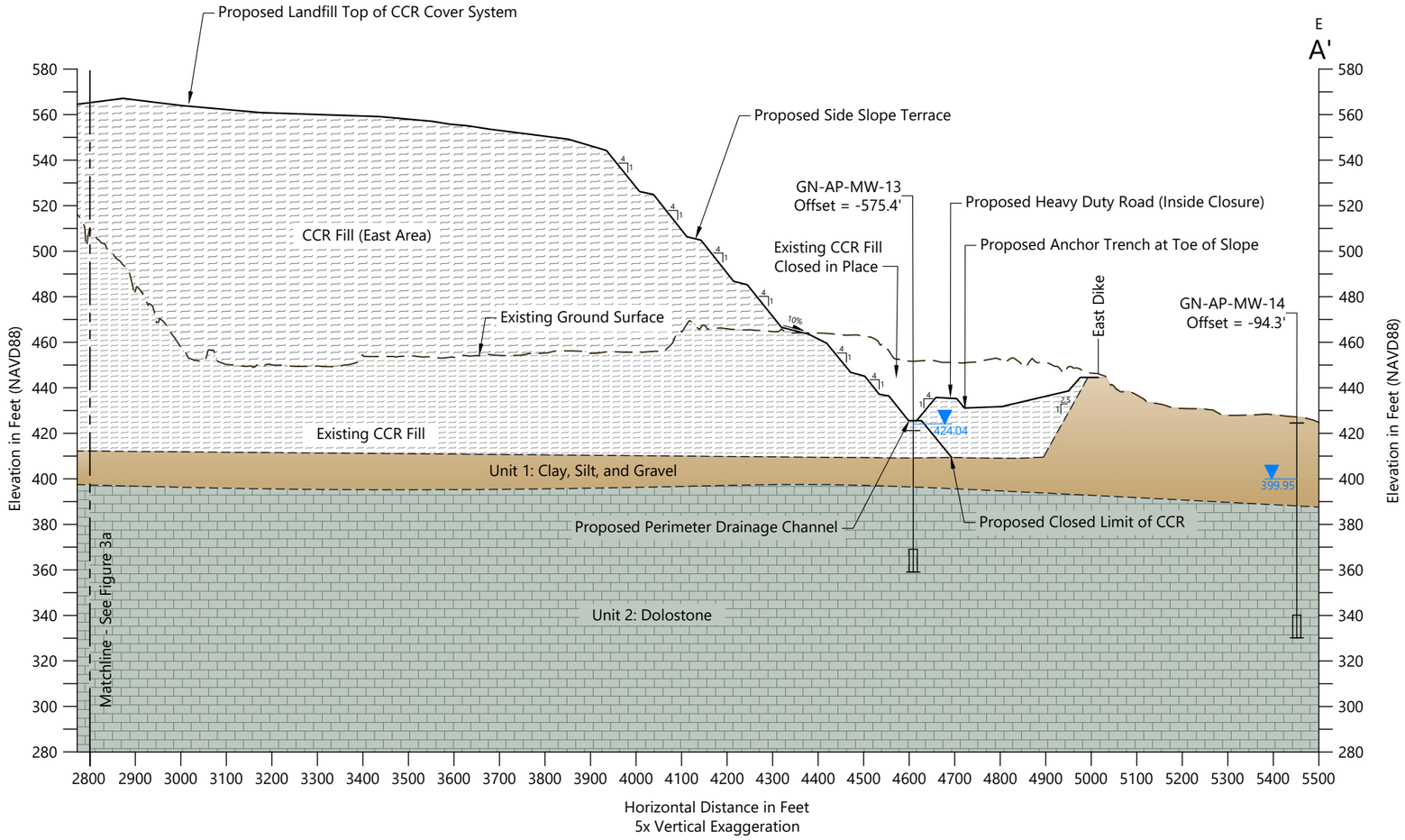
HORIZONTAL DATUM: Alabama State Plane West Zone, NAD83, U.S. Survey Feet
VERTICAL DATUM: NAVD88

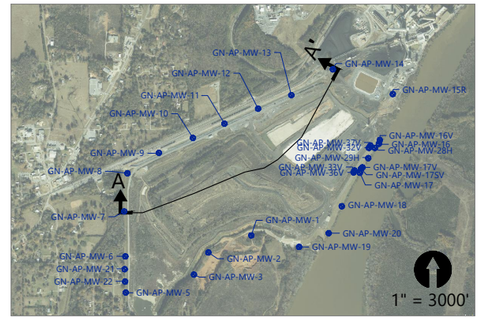
Publish Date: 2021/11/29 8:59 AM | User: hmerrick
Filepath: K:\Projects\1114-Southern Company\Gaston\Groundwater Remedy Selection Report\1114-RP-001 (Gaston Sections).dwg Figure 3a

ANCHOR QEA

Figure 3a
Conceptual Cross Section A-A'

Groundwater Remedy Selection Report
Plant Gaston





LEGEND:

- Existing Ground Surface
- Proposed Ground Surface
- Geologic Contact
- Existing Monitoring Well
- Water Elevation (Collected July 2020)
- Screened Interval

NOTES:

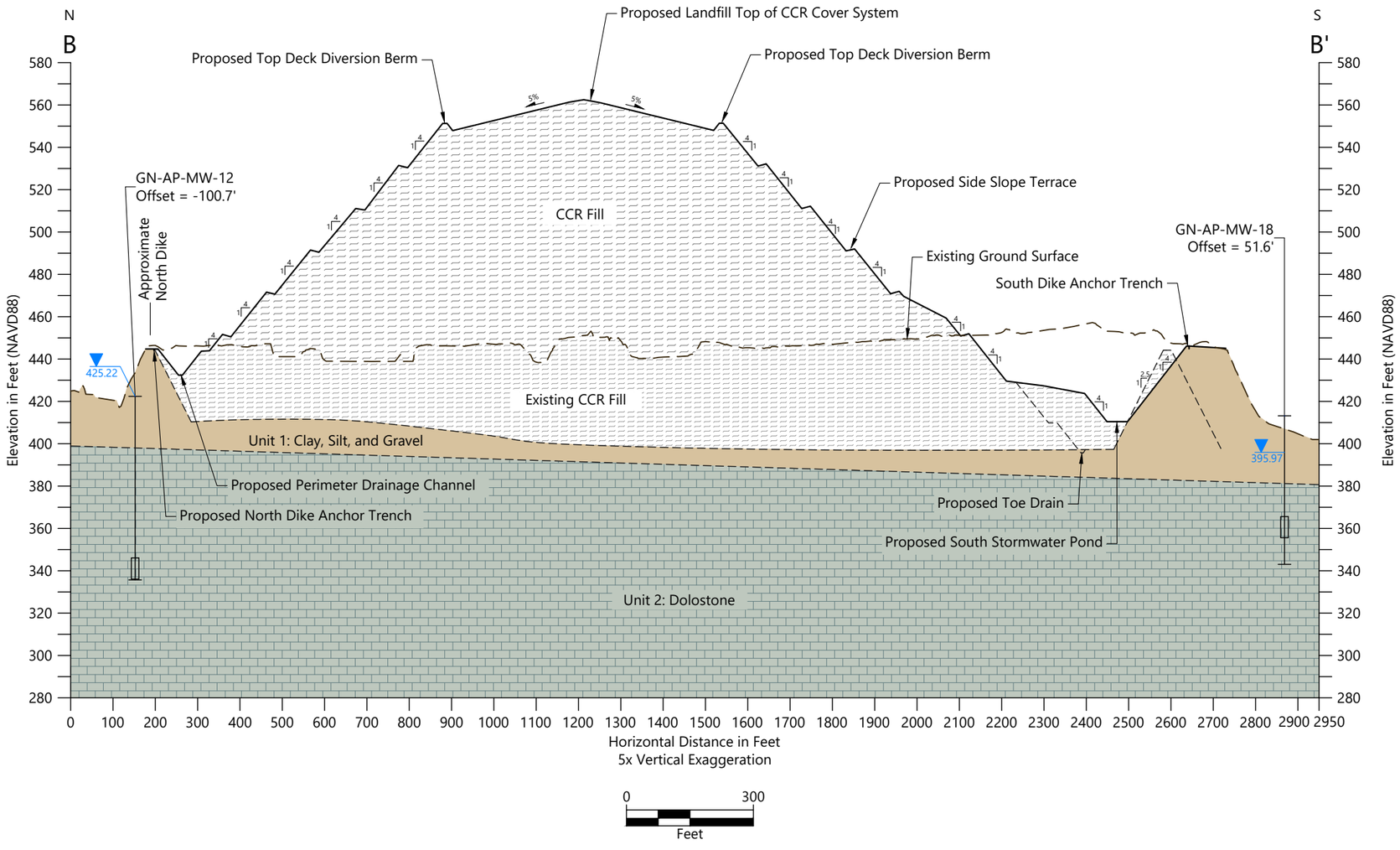
1. Water elevations are from the July 2020 groundwater monitoring event.
2. Proposed features are based on Plant Gaston CCR Pond Closure, Shelby County, Alabama, Wood, May 2019.
3. CCR: Coal Combustion Residuals

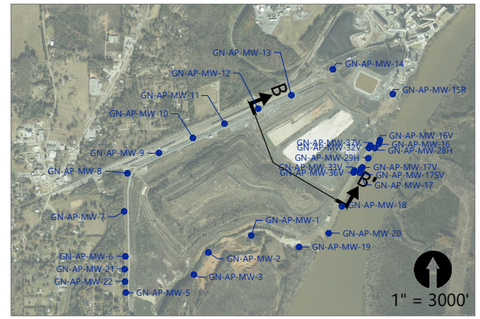
HORIZONTAL DATUM: Alabama State Plane West Zone, NAD83, U.S. Survey Feet
VERTICAL DATUM: NAVD88

Publish Date: 2021/11/29 8:59 AM | User: hmerrick
Filepath: K:\Projects\1114-Southern Company\Gaston\Groundwater Remedy Selection Report\1114-RP-001 (Gaston Sections).dwg Figure 3b

ANCHOR QEA

Figure 3b
Conceptual Cross Section A-A'
Groundwater Remedy Selection Report
Plant Gaston





LEGEND:

- Existing Ground Surface
- Proposed Ground Surface
- Geologic Contact
- Existing Monitoring Well
- Water Elevation (Collected July 2020)
- Screened Interval

NOTES:

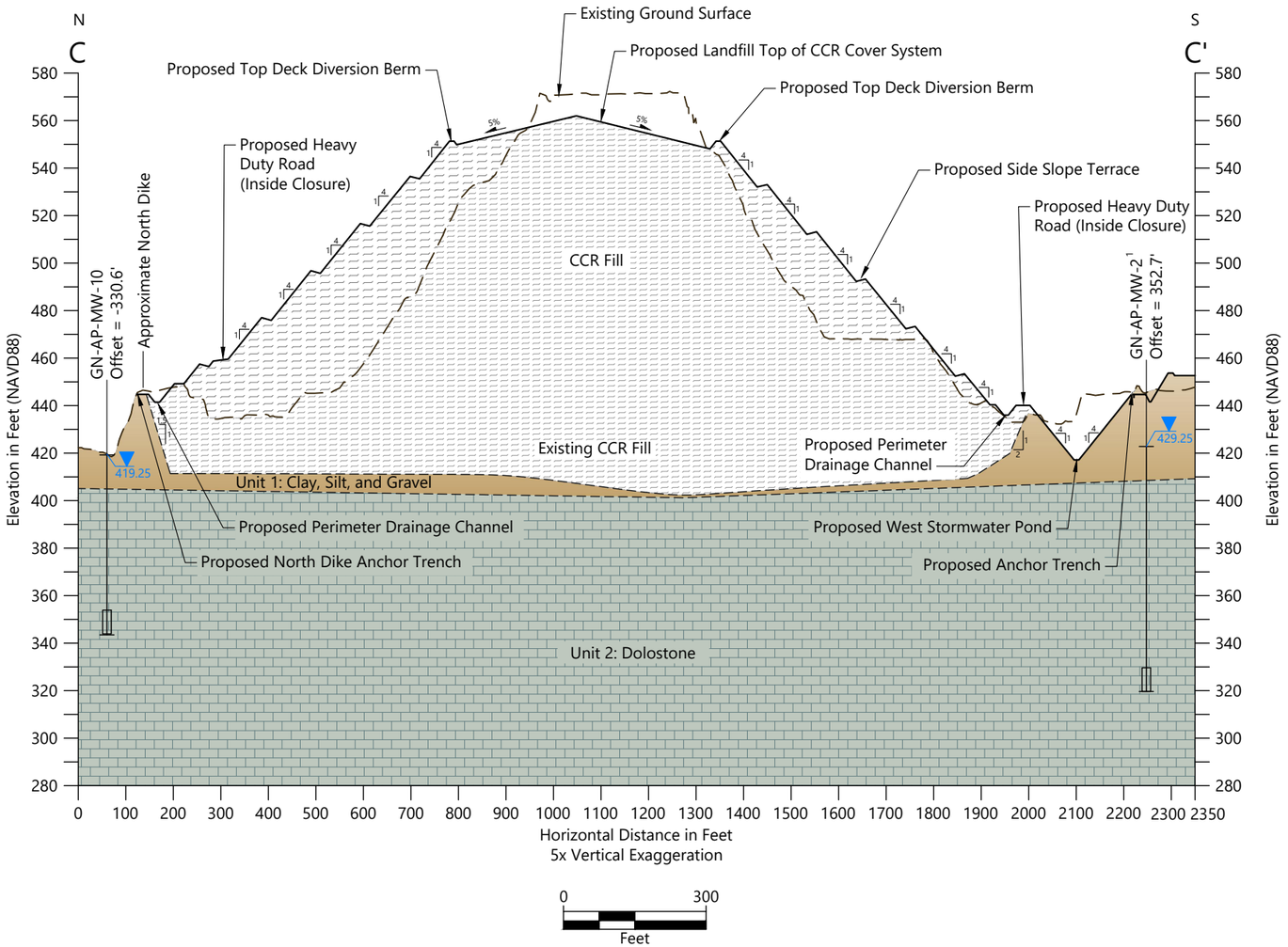
1. Water elevations are from the July 2020 groundwater monitoring event.
2. Proposed features are based on Plant Gaston CCR Pond Closure, Shelby County, Alabama, Wood, May 2019.
3. CCR: Coal Combustion Residuals

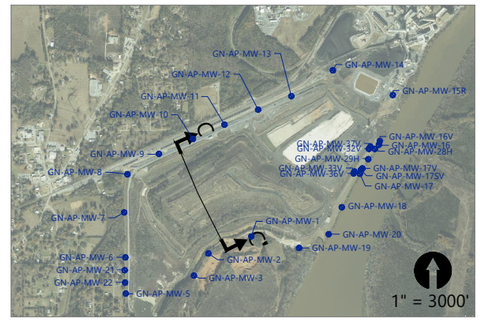
HORIZONTAL DATUM: Alabama State Plane West Zone, NAD83, U.S. Survey Feet
VERTICAL DATUM: NAVD88

Publish Date: 2021/11/29 8:59 AM | User: hmerrick
Filepath: K:\Projects\1114-Southern Company\Gaston\Groundwater Remedy Selection Report\1114-RP-001 (Gaston Sections).dwg Figure 4

ANCHOR QEA

Figure 4
Conceptual Cross Section B-B'
Groundwater Remedy Selection Report
Plant Gaston





LEGEND:

- Existing Ground Surface
- Proposed Ground Surface
- Geologic Contact
- Existing Monitoring Well
- Water Elevation (Collected July 2020)
- Screened Interval

NOTES:

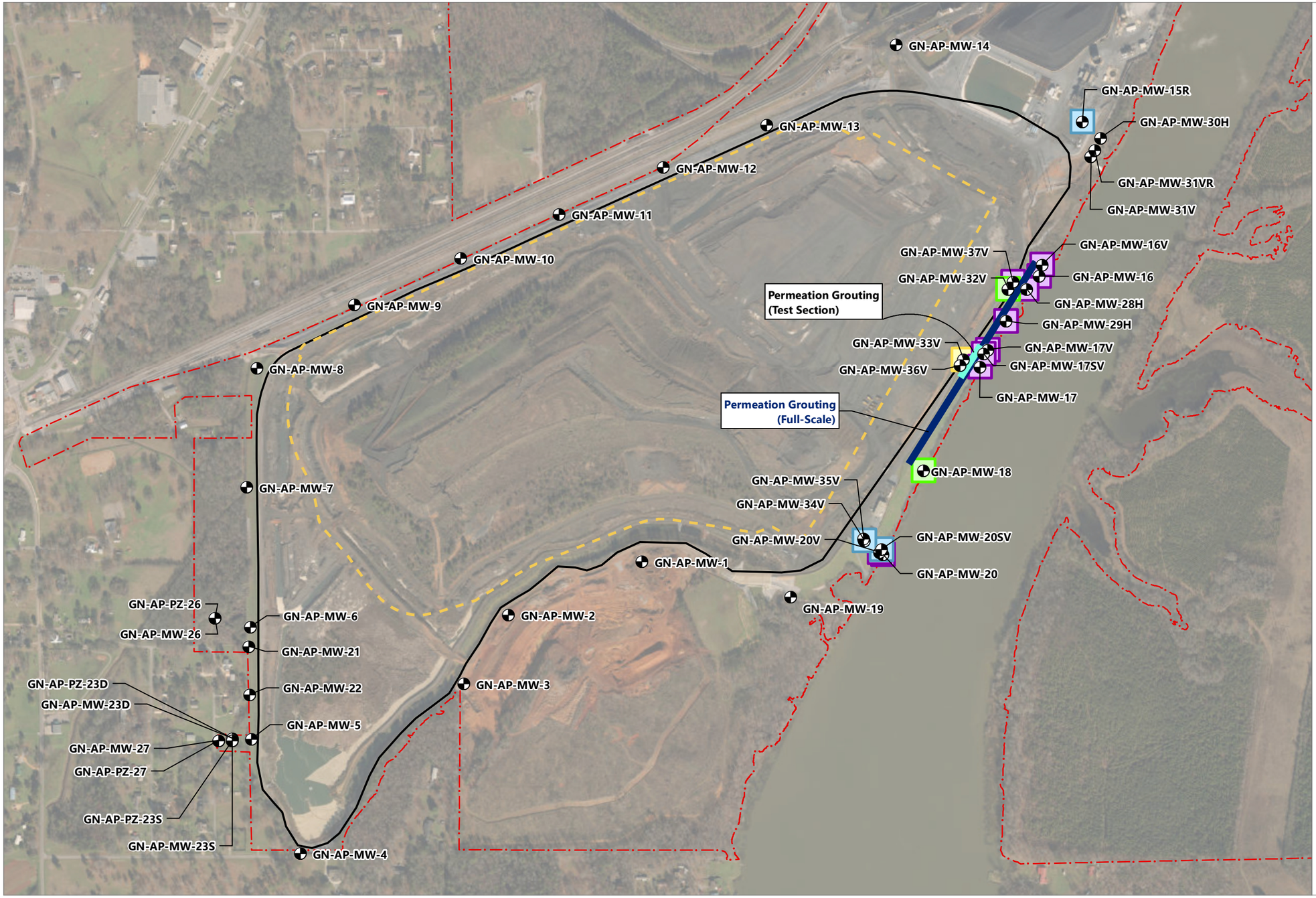
1. Water elevation for MW-2 is from the September 2019 groundwater monitoring event. All other water elevations are from the July 2020 groundwater monitoring event.
2. Proposed features are based on Plant Gaston CCR Pond Closure, Shelby County, Alabama, Wood, May 2019.
3. CCR: Coal Combustion Residuals

HORIZONTAL DATUM: Alabama State Plane West Zone, NAD83, U.S. Survey Feet
VERTICAL DATUM: NAVD88

Publish Date: 2021/11/29 8:59 AM | User: hmerrick
Filepath: K:\Projects\1114-Southern Company\Gaston\Groundwater Remedy Selection Report\1114-RP-001 (Gaston Sections).dwg Figure 5

ANCHOR QEA

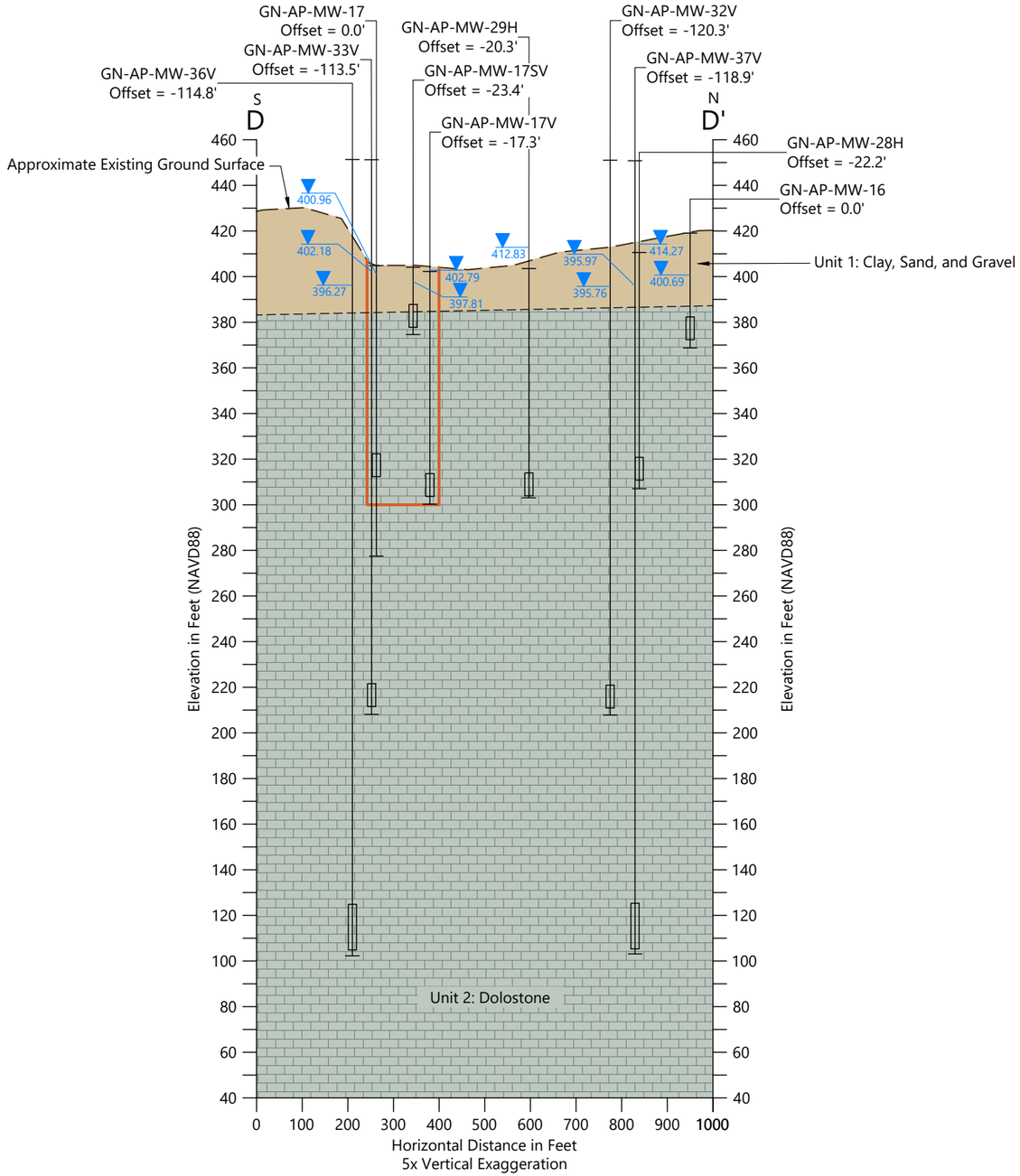
Figure 5
Conceptual Cross Section C-C'
Groundwater Remedy Selection Report
Plant Gaston

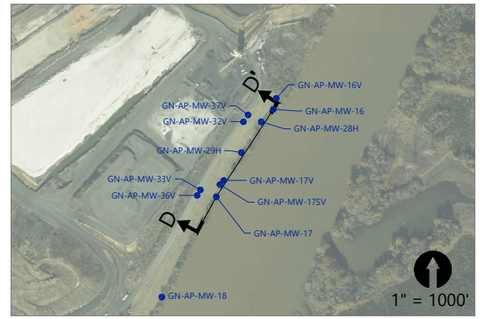


Publish Date: 2021/11/24, 11:52 AM | User: jquinley
Filepath: \\orcas\GIS\Jobs\SouthernCompany_1114\PlantGaston\Maps\2021_GW_Remedy_Selection\AQ_PlantGaston_Fig06_SiteLayoutMap.mxd

ANCHOR QEA

Figure 6
Site Layout Map
Groundwater Remedy Selection Report
Plant Gaston





LEGEND:

- Existing Ground Surface
- Geologic Contact
- Approximate Permeation Grouting Test Area
- Existing Monitoring Well
- Water Elevation (Collected July 2020)
- Screened Interval

0 300
Feet

NOTES:

1. Water elevations are from the July 2020 groundwater monitoring event.
2. Proposed features are based on Lithium Concentrations Along Geologic Cross Section B-B' Plant Gaston CCR Pond, Shelby County, Alabama, Southern Company, September 21, 2020.
3. CCR: Coal Combustion Residuals

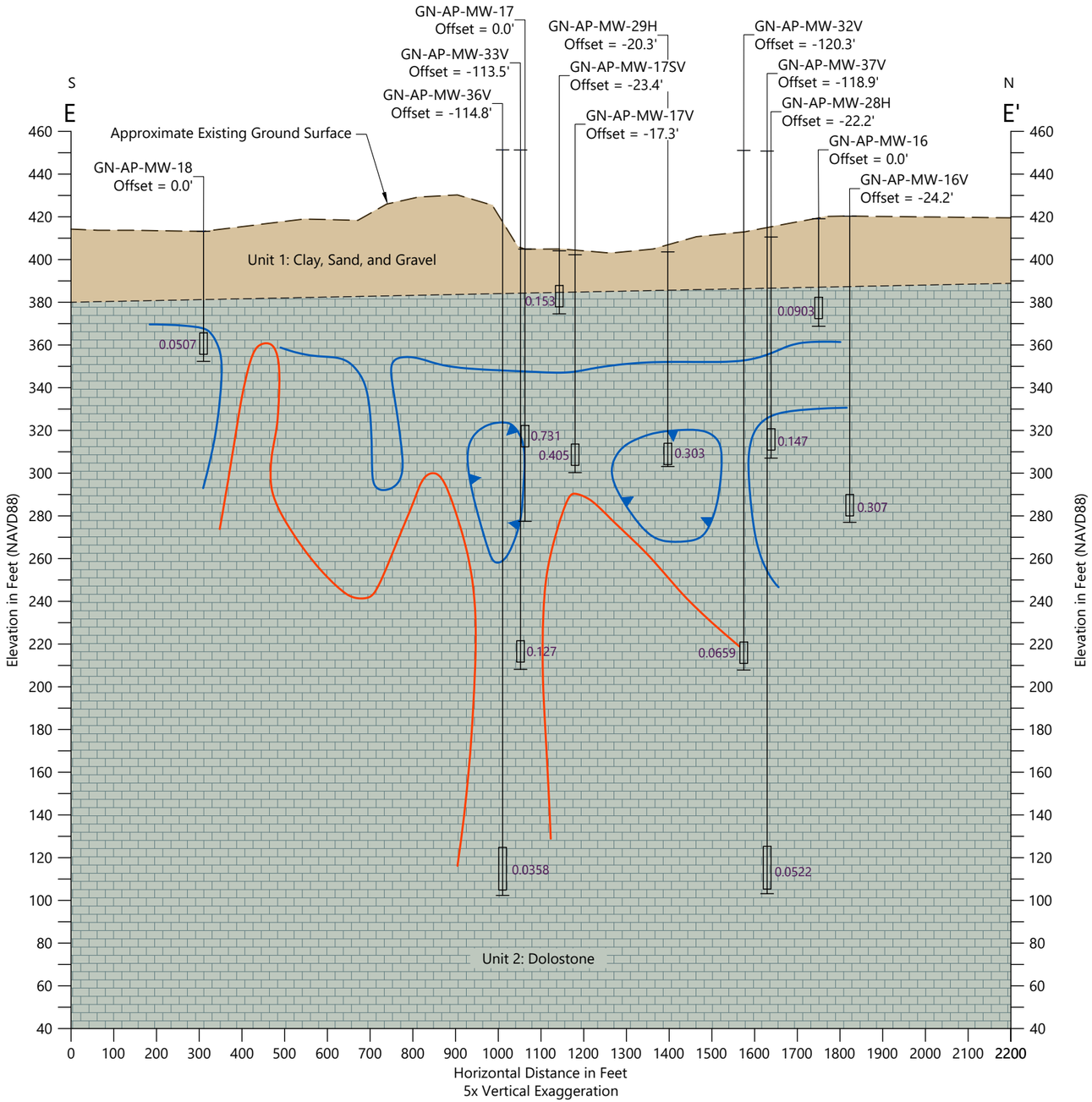
HORIZONTAL DATUM: Alabama State Plane West Zone, NAD83, U.S. Survey Feet
VERTICAL DATUM: NAVD88

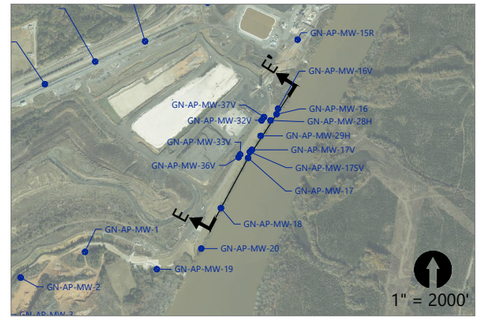
Publish Date: 2021/11/29 8:59 AM | User: hmerrick
Filepath: K:\Projects\1114-Southern Company\Gaston\Groundwater Remedy Selection Report\1114-RP-001 (Gaston Sections).dwg Figure 7

ANCHOR QEA

Figure 7
Conceptual Permeation Grouting Cross Section D-D'

Groundwater Remedy Selection Report
Plant Gaston





LEGEND:

- Existing Ground Surface
- Geologic Contact
- 150 Ohm-Meter (Poor Quality Rock)
- 400 Ohm-Meter (Competent Rock)
- Existing Monitoring Well
- Screened Interval
- 0.318 Lithium Concentration in mg/L

0 300
Feet

NOTES:

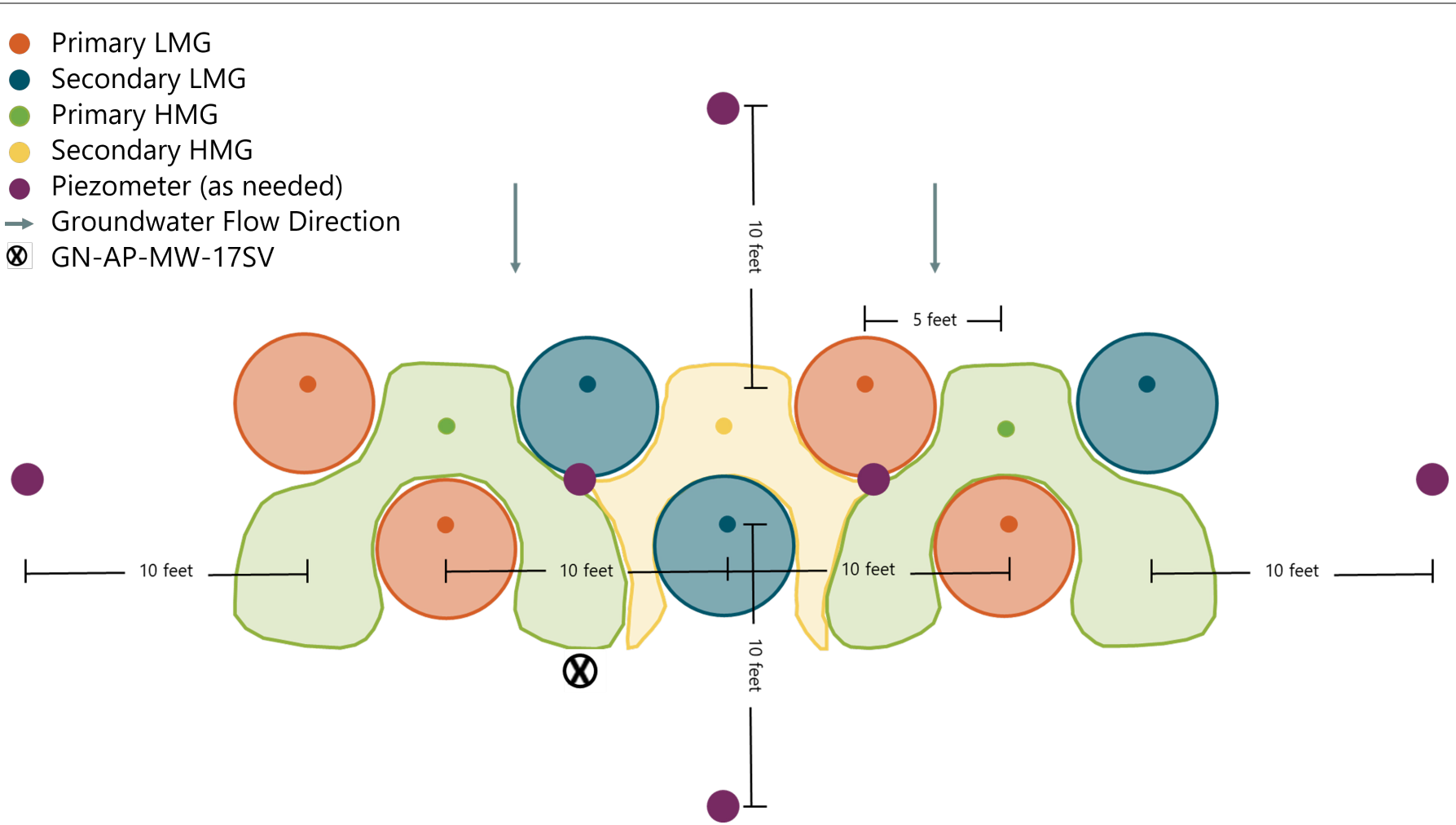
1. Lithium concentrations are from the July 2020 groundwater monitoring event.
2. Proposed features are based on Lithium Concentrations Along Geologic Cross Section B-B' Plant Gaston CCR Pond, Shelby County, Alabama, Southern Company, September 21, 2020.
3. CCR: Coal Combustion Residuals
4. mg/L: Milligrams per Liter

HORIZONTAL DATUM: Alabama State Plane West Zone, NAD83, U.S. Survey Feet
VERTICAL DATUM: NAVD88

Publish Date: 2021/11/29 8:59 AM | User: hmerrick
Filepath: K:\Projects\1114-Southern Company\Gaston\Groundwater Remedy Selection Report\1114-RP-001 (Section D Geophysics).dwg Figure 8

ANCHOR QEA

Figure 8
Geologic Cross Section E-E'
Groundwater Remedy Selection Report
Plant Gaston

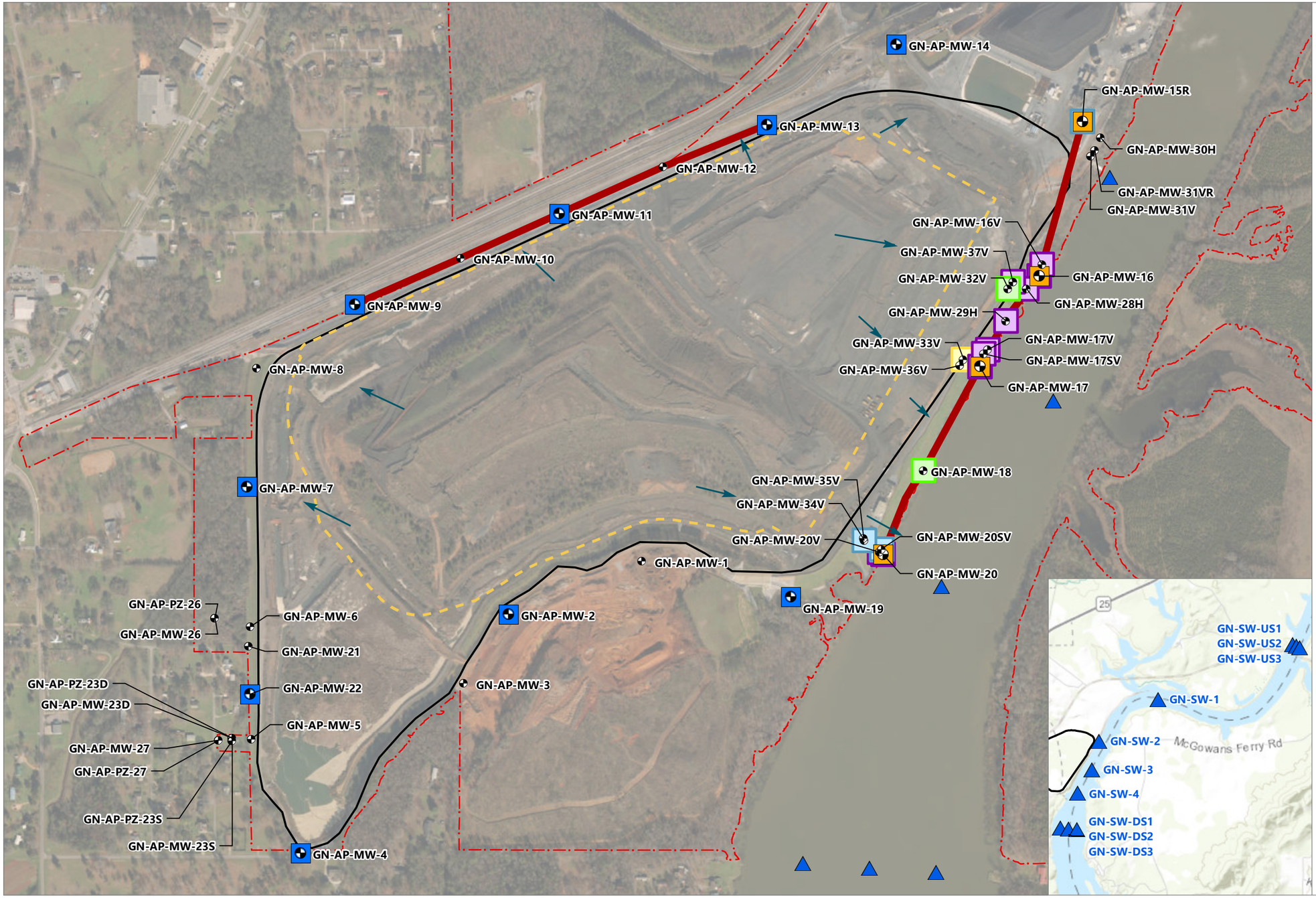


Notes:
HMG: high-mobility grout
LMG: low-mobility grout

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\Remedy Selection Reports\Gaston\Figures\Figure 9 - Pilot Plan Layout.docx

ANCHOR QEA

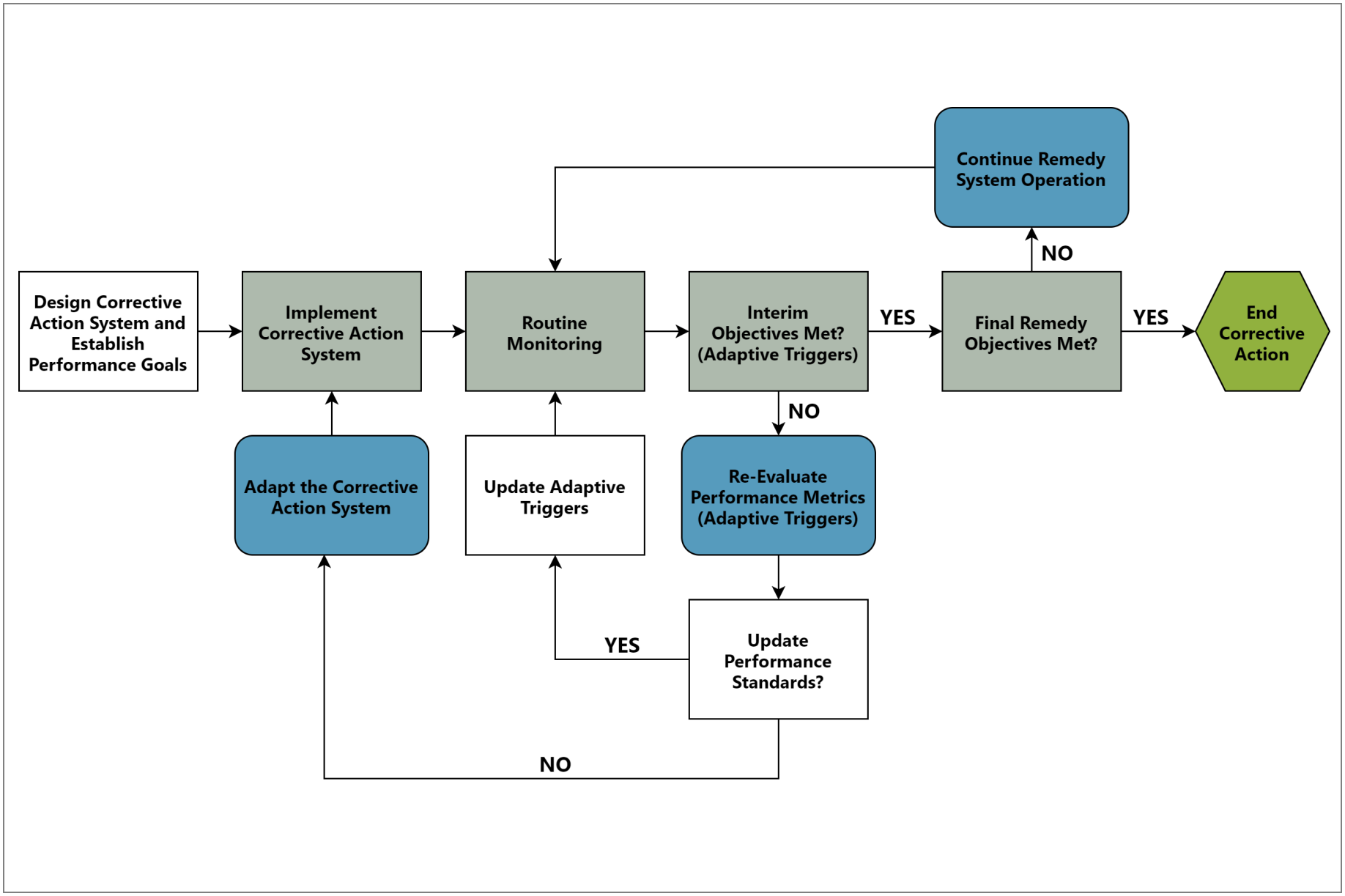
Figure 9
Typical Cell Layout, Pilot Grouting Program
Groundwater Remedy Selection Report
Plant Gaston



Publish Date: 2021/11/24, 11:49 AM | User: jquinley
Filepath: \\orcas\GIS\Jobs\SouthernCompany_1114\PlantGaston\Maps\2021_GW_Remedy_Selection\AQ_PlantGaston_Fig10_Conceptual_Corrective_Action_MP.mxd

ANCHOR QEA

Figure 10
Conceptual Corrective Action Monitoring Plan
Groundwater Remedy Selection Report
Plant Gaston



Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\Remedy Selection Reports\Gaston\Figures\Figure 11 - Site Management Framework.docx

ANCHOR QEA

Figure 11
Adaptive Site Management Framework
Groundwater Remedy Selection Report
Plant Gaston

Appendix A
Certificate of Authorization

State of Alabama

Board of Licensure for Professional Engineers and Land Surveyors

This is to certify that

ANCHOR QEA LLC

Having given satisfactory evidence of the necessary qualifications required by law has been duly certificated and is hereby issued Certificate of Authorization

CA- 5073 -E

authorizing the firm to provide or offer to provide

Engineering

services in the State of Alabama through individual licensed professional licensees as agents, employees, officers or partners.

This certificate requires the firm to operate in the State of Alabama as

ANCHOR QEA LLC

This certificate will lapse January 31, 2022 unless renewed.

In Testimony whereof, witness the signature of the Executive Director under seal of the Board on November 02, 2020

William R. Huett

Executive Director

RECEIPT NO.
20201102000023800

Appendix B
Potentiometric Surface Maps

Artesian Wells		
Well ID	Top of Casing Elevation (feet NAVD88)	Groundwater Elevation (feet NAVD88)
GN-AP-MW-12	425.22	> 425.22
GN-AP-MW-13	424.04	> 424.04
GN-AP-MW-17	407.75	> 407.75
GN-AP-MW-29H	407.06	> 407.06

Note: Above wells were not factored into potentiometric surface contours.

Legend

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Phase I Horizontal Delineation Well
- Phase I Vertical Delineation Well
- Phase II Horizontal Delineation Well
- Phase II Vertical Delineation Well
- Abandoned Monitoring Well
- Potentiometric Surface Contours (ft NAVD88)
- Approximate Groundwater Flow Direction
- Gaston_AP_DrainageDitch
- GN-AP-MW-3 Well ID
- 432.58 Groundwater Elevation

N

0 500 1,000 2,000 Feet

NOTE: NAVD88 indicates North American Vertical Datum of 1988.

SCALE	1:9000
DATE	7/23/2020
DRAWN BY	KWR
CHECKED BY	GBD

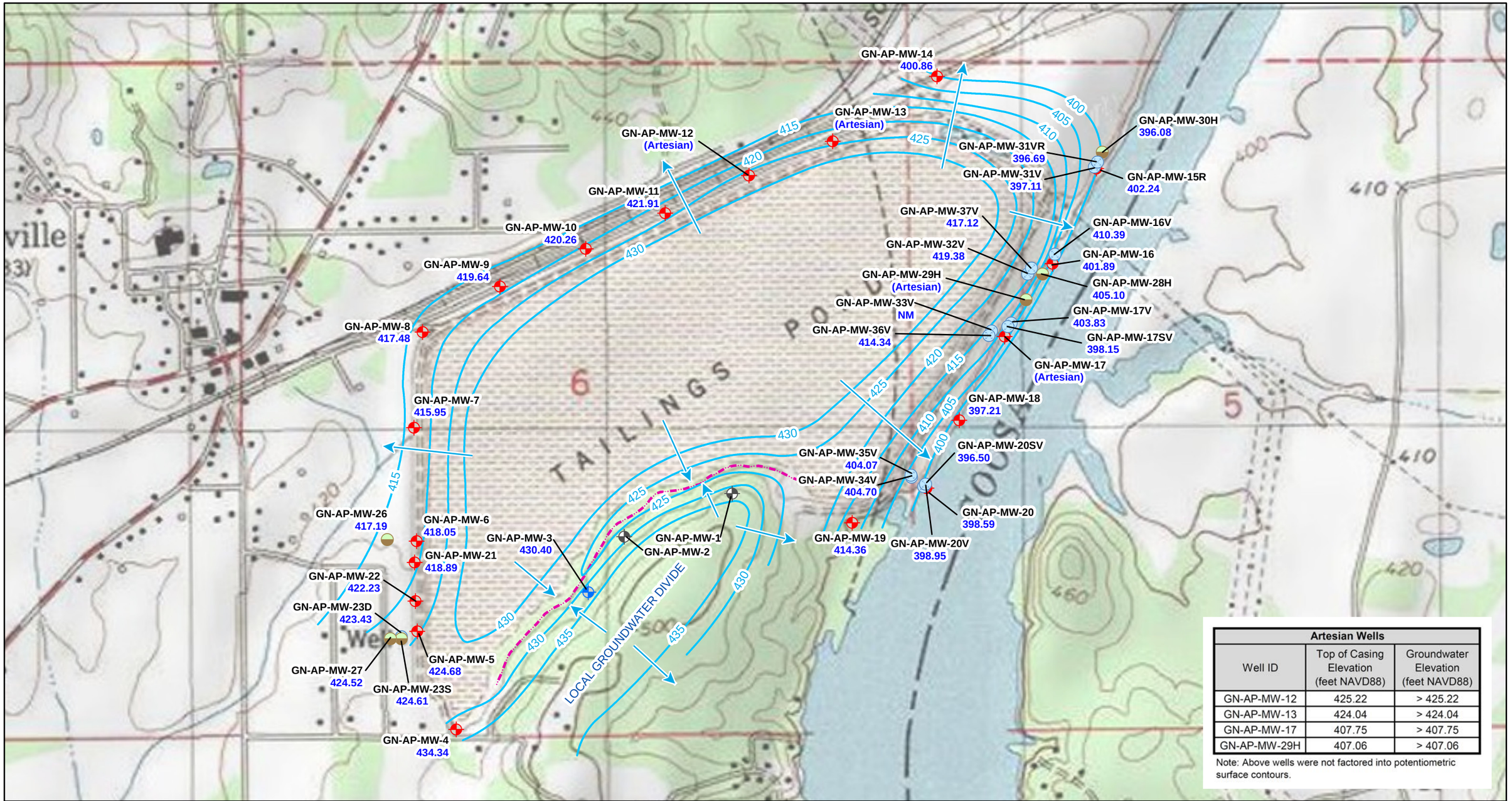
DRAWING TITLE

POTENTIOMETRIC SURFACE CONTOUR MAP FEBRUARY 17, 2020 PLANT GASTON ASH POND

FIGURE NO

FIGURE 6A

Southern Company



Artesian Wells		
Well ID	Top of Casing Elevation (feet NAVD88)	Groundwater Elevation (feet NAVD88)
GN-AP-MW-12	425.22	> 425.22
GN-AP-MW-13	424.04	> 424.04
GN-AP-MW-17	407.75	> 407.75
GN-AP-MW-29H	407.06	> 407.06

Note: Above wells were not factored into potentiometric surface contours.

Legend

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Horizontal Delineation Well
- Vertical Delineation Well
- Abandoned Monitoring Well
- Approximate Groundwater Flow Direction
- Potentiometric Surface Contours (ft NAVD88)
- Drainage Ditch

GN-AP-MW-3 Well ID
430.40 Groundwater Elevation

N

0 500 1,000 2,000 Feet

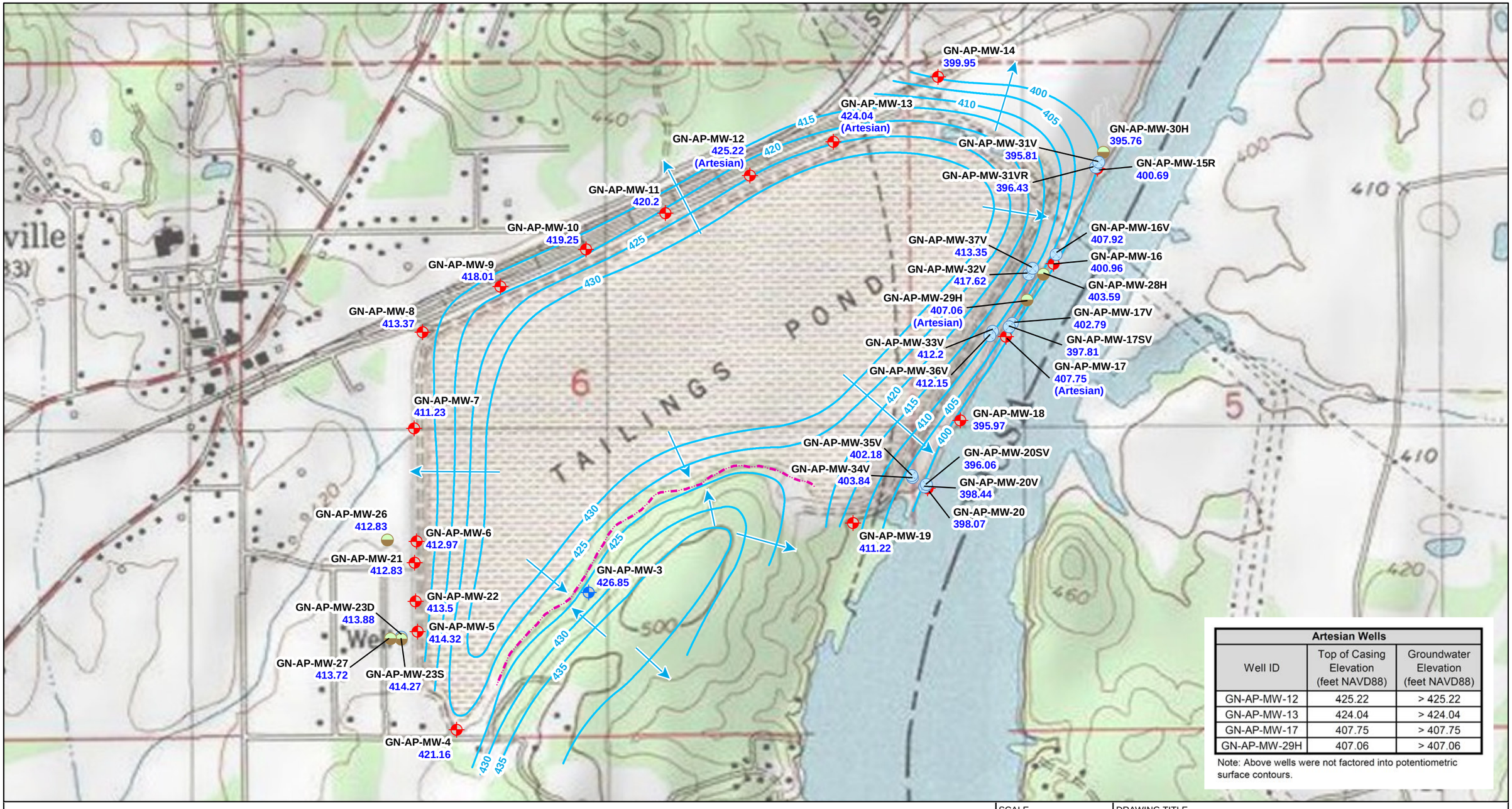
NOTES:
1. NAVD88 indicates North American Vertical Datum of 1988.
2. NM indicates not measured.

SCALE	1:9000
DATE	7/23/2020
DRAWN BY	KWR
CHECKED BY	GBD

DRAWING TITLE
POTENTIOMETRIC SURFACE CONTOUR MAP
APRIL 29, 2020
PLANT GASTON ASH POND

FIGURE NO
FIGURE 6B

Southern Company



Artesian Wells		
Well ID	Top of Casing Elevation (feet NAVD88)	Groundwater Elevation (feet NAVD88)
GN-AP-MW-12	425.22	> 425.22
GN-AP-MW-13	424.04	> 424.04
GN-AP-MW-17	407.75	> 407.75
GN-AP-MW-29H	407.06	> 407.06

Note: Above wells were not factored into potentiometric surface contours.

Legend

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Horizontal Delineation Well
- Vertical Delineation Well
- Abandoned Monitoring Well
- Potentiometric Surface Contour (ft NAVD88)
- Approximate Groundwater Flow Direction
- Drainage Ditch

GN-AP-MW-3 Well ID
426.85 Groundwater Elevation

N

0 500 1,000 2,000 Feet

NOTE: NAVD88 indicates North American Vertical Datum of 1988.

SCALE	1:9000
DATE	10/26/2020
DRAWN BY	KWR
CHECKED BY	GBD

DRAWING TITLE

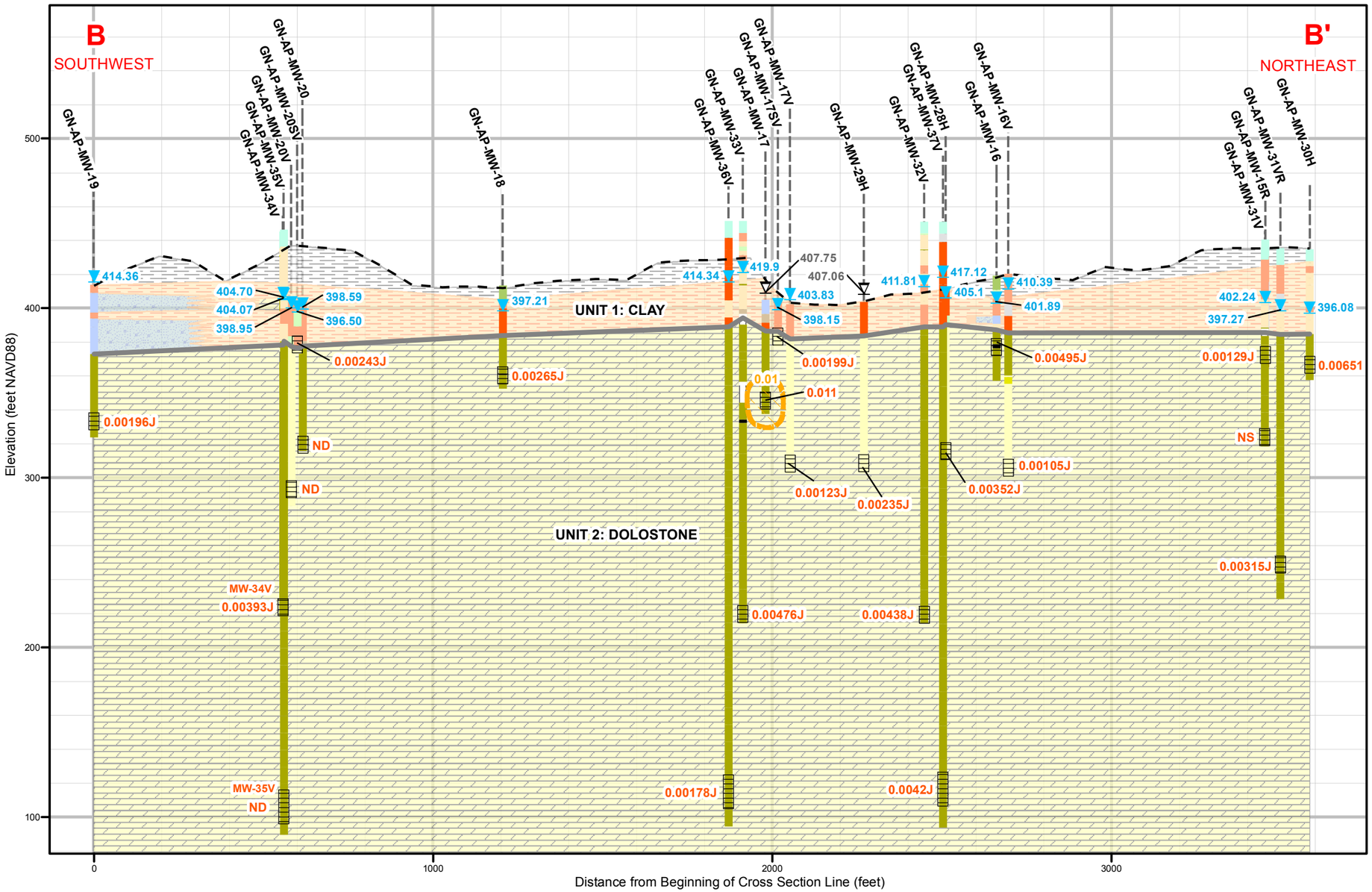
POTENTIOMETRIC SURFACE CONTOUR MAP
JULY 20, 2020
PLANT GASTON ASH POND

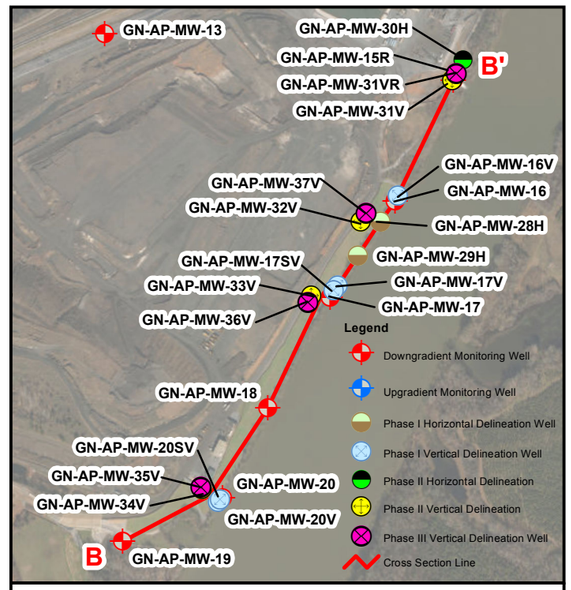
FIGURE NO

FIGURE 6C

Southern Company

Appendix C
Geologic Cross Sections (with Isoconcentration Lines)





Notes: 1. Source of ground surface elevation data: Lidar
2. NAVD88 indicates North American Vertical Datum of 1988.
3. Groundwater elevations were measured on April 29, 2020.
4. Water samples were collected between February 18 and February 26, 2020, except MW-31VR, MW-35V, MW-36V, and MW-37V were sampled on April 29, 2020.
5. mg/L indicates milligrams per liter.
6. J indicates a laboratory estimated concentration between the analytical method detection limit and the laboratory reporting limit.
7. ND indicates not detected above the laboratory method detection limit.
8. NS indicates not sampled.
9. GWPS indicates groundwater protection standard.
10. Vertical exaggeration = 5x.

Legend

- 414.36 Groundwater Elevation
- 407.08 Artesian Well: Top of Casing Elevation
- Well Location
- Ground Surface Elevation
- Screen Interval
- Arsenic GWPS Isoconcentration Contour
- Area Exceeding GWPS for Arsenic
- 0.011 Arsenic concentration (mg/L)
- 0.01 Arsenic GWPS (mg/L)

Borehole Description

- No Recovery
- Hydroexcavation
- Fill
- Rock Flour or Gypsum
- Topsoil
- Fat Clays
- Lean Clays
- Silty Clay
- Silt
- Clayey Sand
- Clayey Gravel
- Sandstone
- Limestone
- Partially Weathered Rock
- Dolostone
- Discontinuity

Geologic Units

- Fill
- Clays
- Bedrock Residuum Gravel with Clay
- Dolostone
- Discontinuity
- Unit Boundary

SCALE	AS SHOWN
DATE	9/28/2020
DRAWN BY	KWR
CHECKED BY	GBD

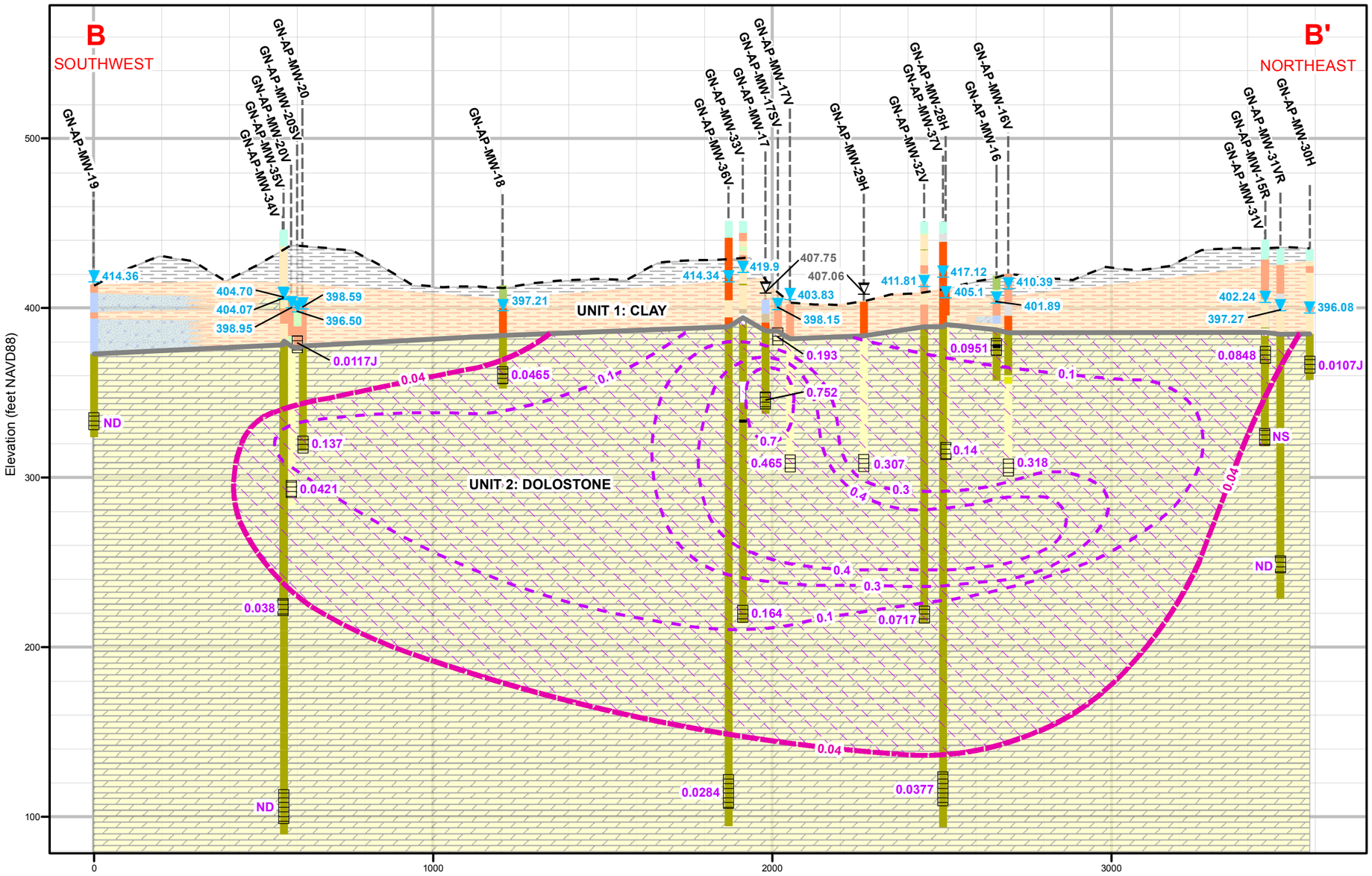
DRAWING TITLE

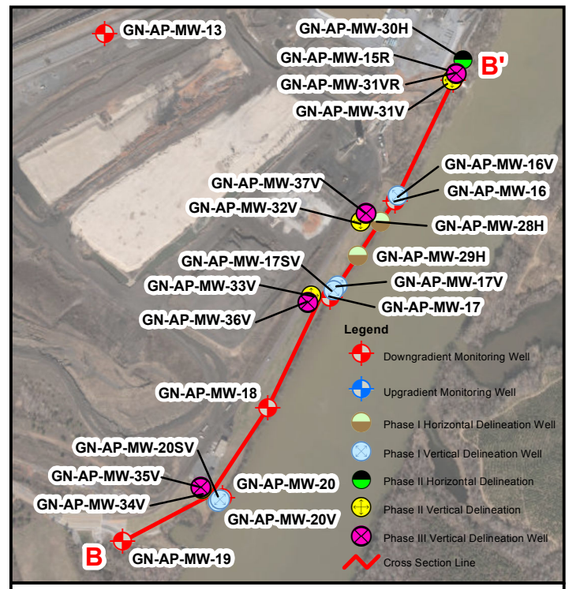
ARSENIC CONCENTRATIONS ALONG GEOLOGIC CROSS SECTION B - B' PLANT GASTON ASH POND

FIGURE NO

FIGURE 9A

Southern Company





Notes: 1. Source of ground surface elevation data: Lidar
2. NAVD88 indicates North American Vertical Datum of 1988.
3. Groundwater elevations were measured on April 29, 2020.
4. Water samples were collected between February 18 and February 26, 2020, except MW-31VR, MW-35V, MW-36V, and MW-37V were sampled on April 29, 2020.
5. mg/L indicates milligrams per liter.
6. J indicates a laboratory estimated concentration between the analytical method detection limit and the laboratory reporting limit.
7. ND indicates not detected above the laboratory method detection limit.
8. NS indicates not sampled.
9. GWPS indicates groundwater protection standard.
10. Vertical exaggeration = 5x.

Legend

- 414.36 Groundwater Elevation
- 407.08 Artesian Well: Top of Casing Elevation
- Well Location
- Ground Surface Elevation
- Screen Interval
- Lithium Isoconcentration Contour
- Lithium GWPS Isoconcentration Contour
- Area Exceeding GWPS for Lithium
- 0.137 Lithium concentration (mg/L)
- 0.04 Lithium GWPS (mg/L)

Borehole Description

- No Recovery
- Hydroexcavation
- Fill
- Rock Flour or Gypsum
- Topsoil
- Fat Clays
- Lean Clays
- Silty Clay
- Silt
- Clayey Sand
- Clayey Gravel
- Sandstone
- Limestone
- Partially Weathered Rock
- Dolostone
- Discontinuity

Geologic Units

- Fill
- Clays
- Bedrock Residuum Gravel with Clay
- Dolostone
- Discontinuity
- Unit Boundary

SCALE	AS SHOWN
DATE	8/6/2020
DRAWN BY	KWR
CHECKED BY	GBD

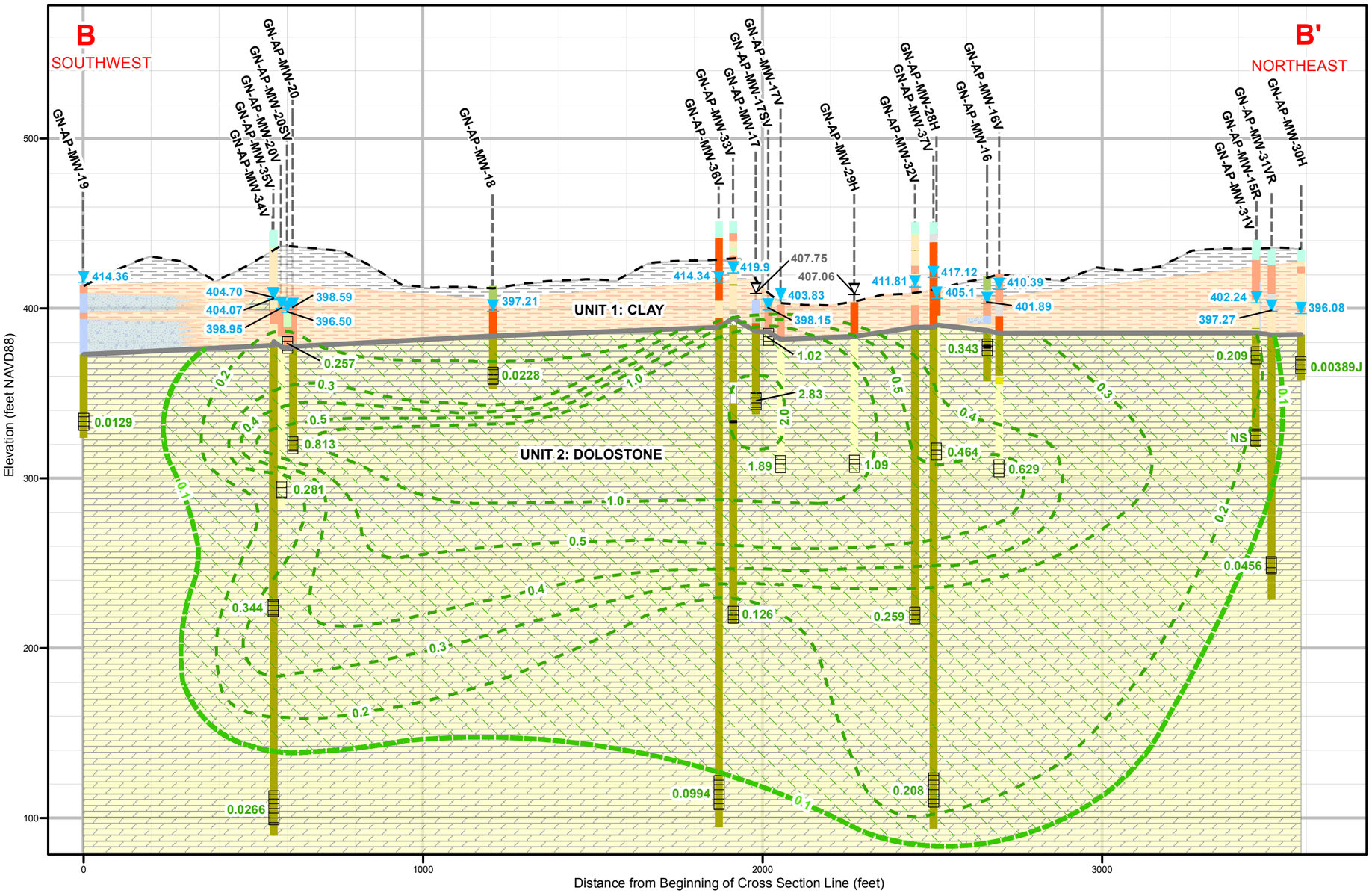
DRAWING TITLE

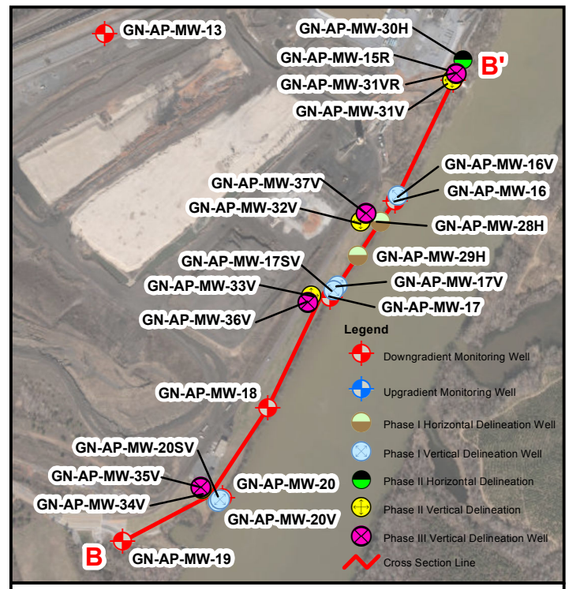
LITHIUM CONCENTRATIONS ON GEOLOGIC CROSS SECTION B - B' PLANT GASTON ASH POND

FIGURE NO

FIGURE 9B

Southern Company





Notes: 1. Source of ground surface elevation data: Lidar
2. NAVD88 indicates North American Vertical Datum of 1988.
3. Groundwater elevations were measured on April 29, 2020.
4. Water samples were collected between February 18 and February 26, 2020, except MW-31VR, MW-35V, MW-36V, and MW-37V were sampled on April 29, 2020.
5. mg/L indicates milligrams per liter.
6. J indicates a laboratory estimated concentration between the analytical method detection limit and the laboratory reporting limit.
7. NS indicates not sampled.
8. GWPS indicates groundwater protection standard.
9. Vertical exaggeration = 5x.

Legend

- Groundwater Elevation (414.36)
- Artesian Well: Top of Casing Elevation (407.08)
- Well Location
- Ground Surface Elevation
- Screen Interval
- Molybdenum Isoconcentration Contour
- Molybdenum GWPS Isoconcentration Contour
- Area Exceeding GWPS for Molybdenum
- 0.281 Molybdenum concentration (mg/L)
- 0.1 Molybdenum GWPS (mg/L)

Borehole Description

- No Recovery
- Hydroexcavation
- Fill
- Rock Flour or Gypsum
- Topsoil
- Fat Clays
- Lean Clays
- Silty Clay
- Silt
- Clayey Sand
- Clayey Gravel
- Sandstone
- Limestone
- Partially Weathered Rock
- Dolostone
- Discontinuity

Geologic Units

- Fill
- Clays
- Bedrock Residuum Gravel with Clay
- Dolostone
- Discontinuity
- Unit Boundary

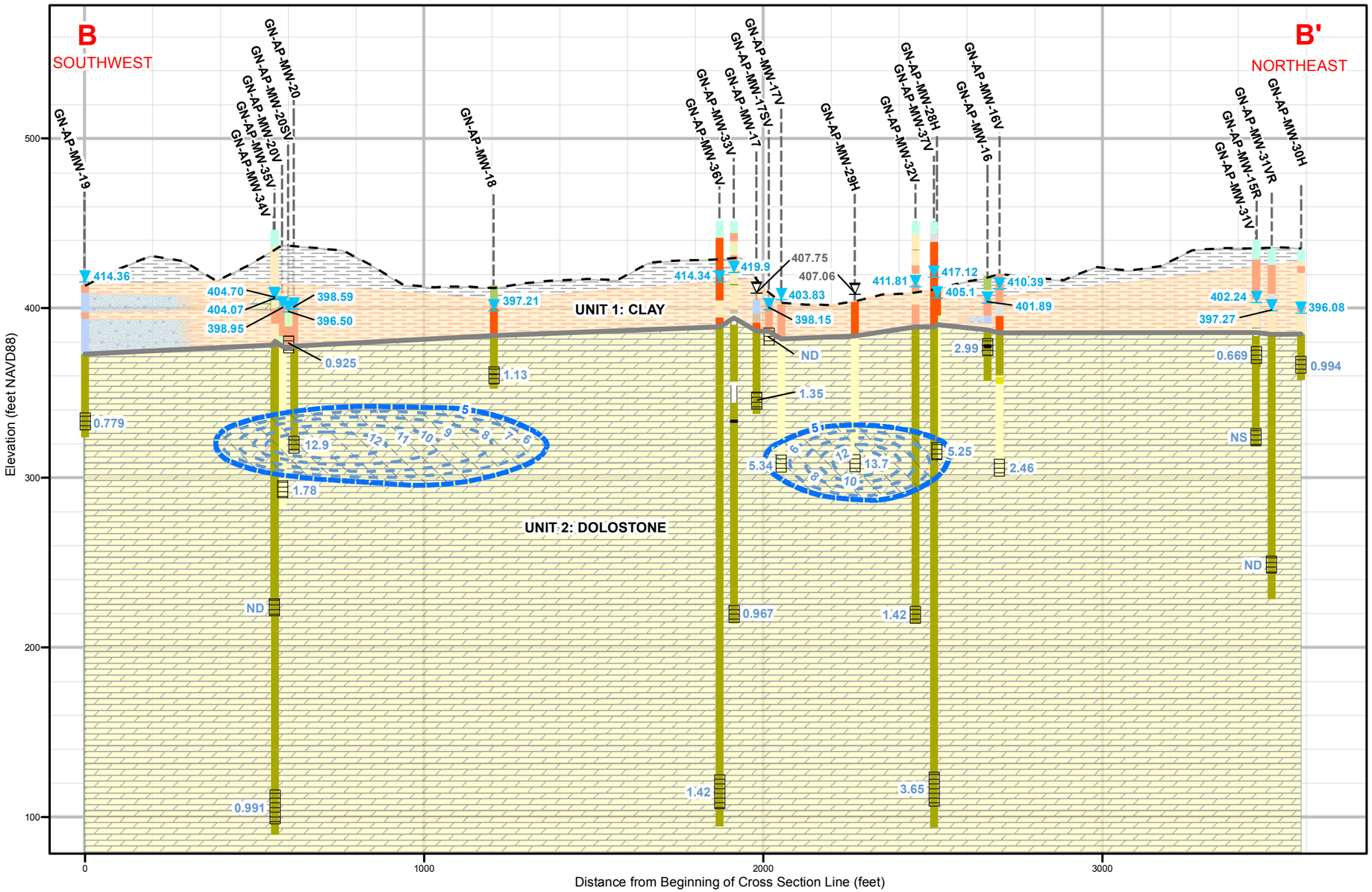
SCALE	AS SHOWN
DATE	8/6/2020
DRAWN BY	KWR
CHECKED BY	GBD

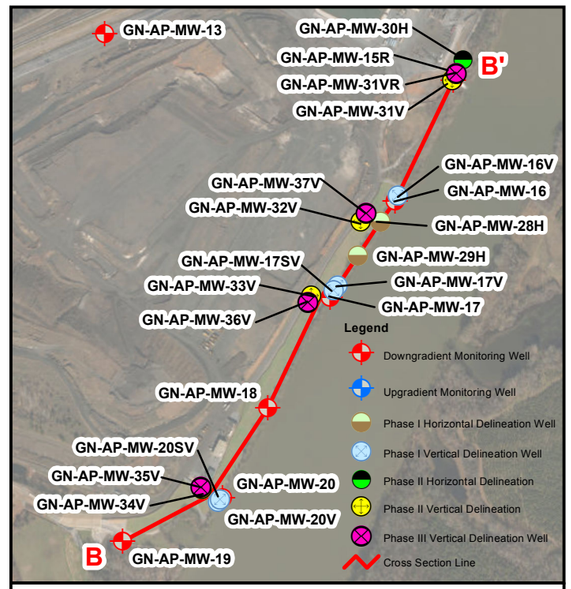
DRAWING TITLE

MOLYBDENUM CONCENTRATIONS ON GEOLOGIC CROSS SECTION B - B' PLANT GASTON ASH POND

FIGURE NO **FIGURE 9C**

Southern Company





Notes: 1. Source of ground surface elevation data: Lidar
2. NAVD88 indicates North American Vertical Datum of 1988.
3. Groundwater elevations were measured on April 29, 2020.
4. Water samples were collected between February 18 and February 26, 2020, except MW-31VR, MW-35V, MW-36V, and MW-37V were sampled on April 29, 2020.
5. pCi/L indicates picocuries per liter.
6. J indicates a laboratory estimated concentration between the analytical method detection limit and the laboratory reporting limit.
7. NS indicates not sampled.
8. GWPS indicates groundwater protection standard.
9. Vertical exaggeration = 5x.

Legend

- 414.36 Groundwater Elevation
- 407.08 Artesian Well: Top of Casing Elevation
- Well Location
- Ground Surface Elevation
- Screen Interval
- Combined Radium Isoconcentration Contour
- Combined Radium GWPS Isoconcentration Contour
- Area Exceeding GWPS for Molybdenum
- 0.779 Combined Radium 226 + 228 Concentration (pCi/L)
- 5 Combined Radium 226 + 228 GWPS (pCi/L)

Borehole Description

- No Recovery
- Hydroexcavation
- Fill
- Rock Flour or Gypsum
- Topsoil
- Fat Clays
- Lean Clays
- Silty Clay
- Silt
- Clayey Sand
- Clayey Gravel
- Sandstone
- Limestone
- Partially Weathered Rock
- Dolostone
- Discontinuity

Geologic Units

- Fill
- Clays
- Bedrock Residuum Gravel with Clay
- Dolostone
- Discontinuity
- Unit Boundary

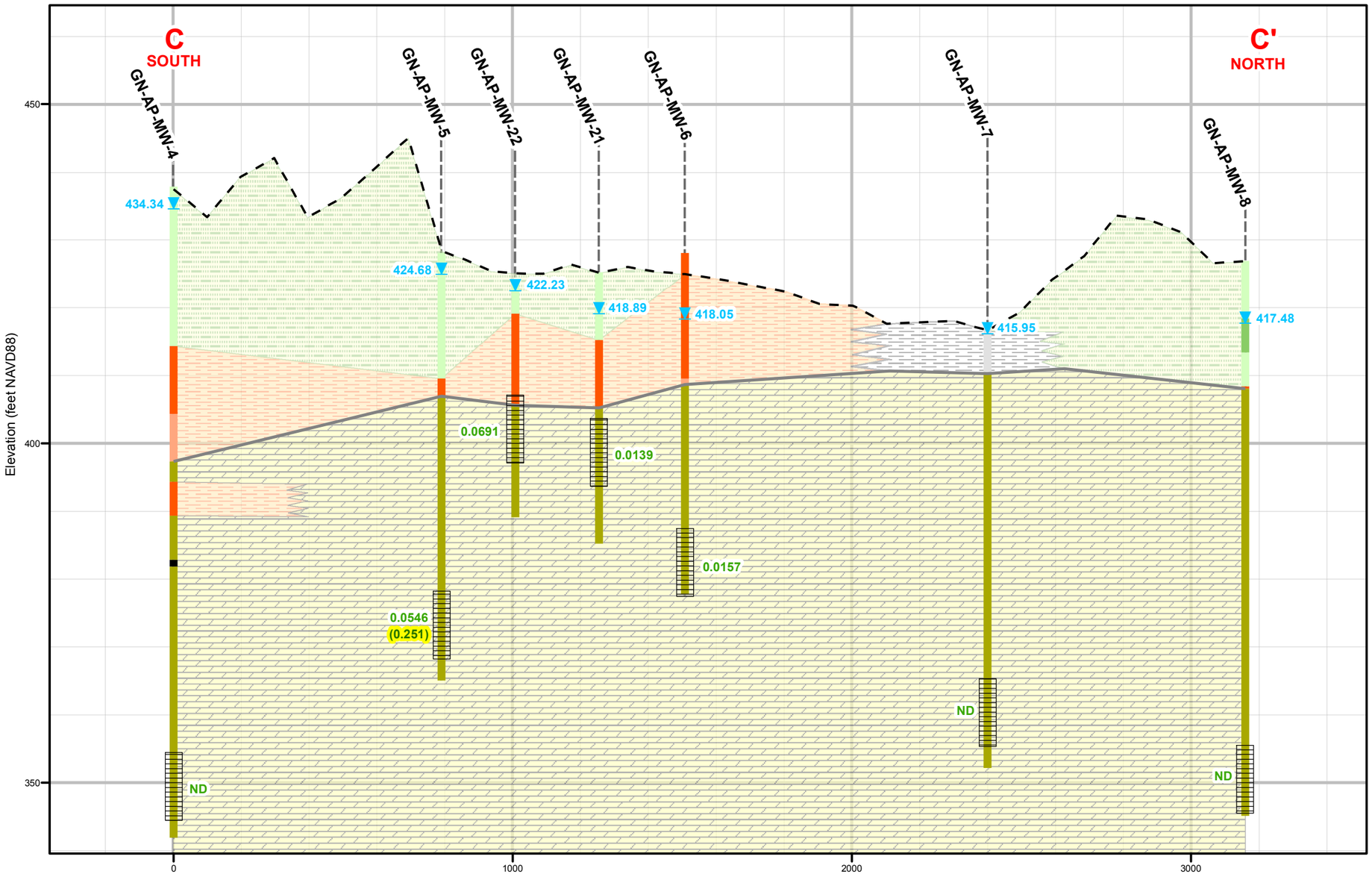
SCALE	AS SHOWN
DATE	9/4/2020
DRAWN BY	KWR
CHECKED BY	GBD

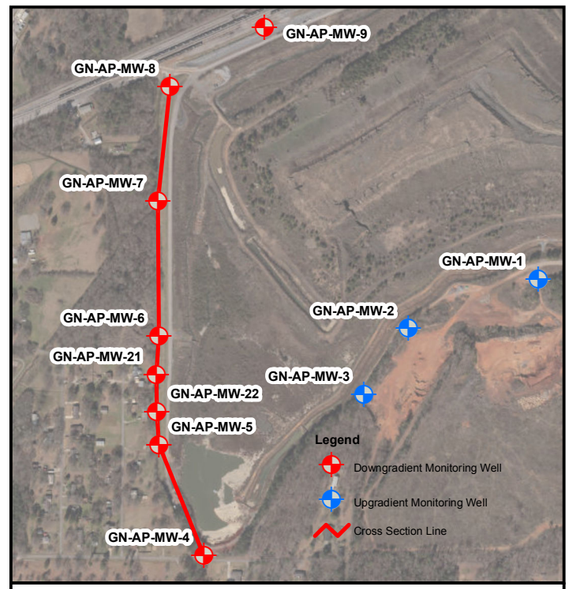
DRAWING TITLE

COMBINED RADIUM 226 + 228 CONCENTRATIONS ON GEOLOGIC CROSS SECTION B - B' PLANT GASTON ASH POND

FIGURE NO **FIGURE 9D**

Southern Company





Notes: 1. Source of ground surface elevation data: Lidar
2. NAVD88 indicates North American Vertical Datum of 1988.
3. Groundwater elevation data were measured on April 29, 2020.
4. Water samples were collected between February 18 and February 26, 2020.
5. mg/L indicates milligrams per liter.
6. ND indicates not detected above the laboratory method detection limit.
7. GWPS indicated groundwater protection standard.
8. The average molybdenum concentration for MW-5 was derived using concentration data from water samples collected between March 30, 2016 and February 26, 2020.
9. Vertical exaggeration = 20x.

Legend

- 434.34 Groundwater Elevation
- Well Location
- Ground Surface Elevation
- Screen Interval
- Molybdenum GWPS Isoconcentration Contour
- Area Exceeding GWPS for Molybdenum
- 0.0546 Molybdenum Concentration (mg/L)
- 0.251 Average Molybdenum Concentration (mg/L)
- 0.1 Molybdenum GWPS (mg/L)

Borehole Description

- Topsoil
- Lean Clay
- Silty Clay
- Silt
- Sandy Silt
- Dolostone
- Discontinuity

Geologic Units

- Fill
- Clays
- Silts
- Dolostone
- Discontinuity
- Unit Boundary

SCALE	AS SHOWN
DATE	8/10/2020
DRAWN BY	KWR
CHECKED BY	GBD

DRAWING TITLE

MOLYBDENUM CONCENTRATIONS ALONG GEOLOGIC CROSS SECTION C - C' PLANT GASTON ASH POND

FIGURE NO

FIGURE 10

Southern Company

Appendix D
Monitored Natural Attenuation Demonstration

November 2021
Plant Gaston

ANCHOR QEA

Monitored Natural Attenuation Demonstration

Prepared for Alabama Power Company

November 2021
Plant Gaston

Monitored Natural Attenuation Demonstration

Prepared for
Alabama Power Company
600 18th Street North
Birmingham, Alabama 35203

Prepared by
Anchor QEA, LLC
9797 Timber Circle, Suite B
Daphne, Alabama 36527

Project Number: 201114-01.05
\\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Text\Gaston MNA Demonstration.docx

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ABBREVIATIONS

µg/L	micrograms per liter
CCR	coal combustion residuals
CEC	cation exchange capacity
cm	centimeter
COI	constituent of interest
EGL	Anchor QEA Environmental Geochemistry Laboratory
GWPS	groundwater protection standard
meq/kg	milliequivalents per kilogram
MNA	monitored natural attenuation
PV	pore volume
SEM	scanning electron microscopy
Site	Plant Gaston Ash Pond
SSE	selective sequential extraction
SSL	statistically significant level
USEPA	U.S. Environmental Protection Agency
XRD	X-ray diffraction
XRF	X-ray fluorescence

Executive Summary

Extensive geochemical and related studies demonstrate that monitored natural attenuation (MNA) is a viable corrective action for groundwater impacts associated with the Plant Gaston Ash Pond (Site). The preponderance of evidence indicates that conditions at the Site meet the U.S. Environmental Protection Agency's evaluation criteria for the use of MNA, specifically: area of impacts stable or shrinking, identified mechanisms for attenuation, stability of the attenuating mechanisms, sufficient aquifer capacity for attenuation, and time to achieve groundwater protection standards (GWPSs) are reasonable compared to other corrective-action alternatives. However, MNA is one component of the Site's corrective-action remedy. As noted in the *Groundwater Remedy Selection Report*, the following corrective measures were selected for the Site: source control to include dewatering, consolidation, and capping of the Site; permeation grouting in areas of relatively high concentrations of constituents of interest (COIs); and MNA over the entire Site.

Investigations performed to support the use of MNA at the Site included preparation of concentration versus time and concentration versus distance graphs for COIs (arsenic, lithium, and molybdenum) in groundwater; groundwater, well solids (precipitates), and soil sampling; laboratory analyses of well solids samples for bulk chemistry (X-ray fluorescence), mineralogy (X-ray diffraction and scanning electron microscopy), and cation exchange capacity; geochemical modeling; selective sequential extraction (SSE) to determine associations of COIs with attenuating solids; and column studies to assess the aquifer (soil) capacity for attenuation.

The trends observed in concentration versus time and concentration versus distance graphs provide evidence that natural attenuation is occurring at the Site. Concentration versus time graphs indicated that arsenic, lithium, and molybdenum concentrations are decreasing or stable over time, even without source control. Recent dewatering related to closure appears to be having a positive effect on wells in the area of dewatering; for example, molybdenum concentrations in GN-AP-MW-5 have been below the GWPS for three of the last four sampling events, and boron (an indicator parameter) shows a similar trend. Also, a concentration versus distance graph along a downgradient transect indicates that molybdenum is generally decreasing with distance from the Site.

Based on the geochemical investigations, multiple lines of evidence support multiple attenuating mechanisms, depending upon the COI. The major attenuating mechanisms include sorption on iron oxides (for arsenic and molybdenum); cation exchange on clays and manganese oxides (for lithium); and precipitation of arsenate and molybdate phases (for arsenic and molybdenum). All COIs are also subject to physical attenuation mechanisms such as dispersion and flushing, which will contribute to decreased concentrations with time and distance from the Site.

Column studies indicate arsenic, lithium, and molybdenum are attenuated by aquifer media (soils) and that available attenuation capacity is significant. The attenuation capacity of aquifer soils

determined from column testing was scaled up to the entire volume of the aquifer downgradient of the Site but within the property boundary. The extrapolation showed that attenuating capacity of the aquifer greatly exceeds the mass of arsenic, lithium, and molybdenum requiring attenuation.

SSE was performed on samples of well solids (precipitates) and soils used in the column studies to assess the stability of the attenuated COIs and their host minerals. Most of the mass of detected COIs are associated with the F2 (exchangeable), F3 (reducible), F4 (oxidizable), and F5 (residual) fractions. Because very little of the mass of COIs are associated with the weakly bound F1 (water soluble) fraction, COIs are not expected to remobilize back into groundwater.

The slope of trend lines through recent data on concentration versus time graphs and results from reactive transport modeling were used to estimate time to achieve the applicable GWPS. For molybdenum, estimated time to achieve GWPSs by MNA is 2 to 35 years. Depending on location, estimated time to achieve GWPSs for lithium by MNA ranges from less than 20 years to approximately 100 years (near GN-AP-MW-17). Though these time frames are reasonable to achieve GWPSs by MNA, permeation grouting is expected to accelerate time to achieve GWPSs, particularly in the area of GN-AP-MW-17. Permeation grouting, which will prevent future migration of COIs away from the facility boundary, is planned for the area near GN-AP-MW-17. During recent sampling events, arsenic concentrations were below the GWPS and are expected to continue to decrease as the selected remedies are implemented. Source control, permeation grouting, and MNA over the entire Site are expected to achieve GWPSs in approximately 35 years, which is a reasonable time frame as compared to other, more aggressive methods investigated as part of the remedy selection process. More aggressive methods are not expected to achieve GWPSs sooner than 35 years.

1 Introduction

The Plant Gaston Ash Pond (Site), located in Shelby County, Alabama, is owned and operated by Alabama Power Company. As of April 15, 2019, the Site ceased receipt of all coal combustion residuals (CCR) and non-CCR waste streams.

Alabama Power Company has been monitoring groundwater at the Site in accordance with the U.S. Environmental Protection Agency (USEPA) CCR Rule 40 Code of Federal Regulations (CFR) § 257.97 and the Alabama Department of Environmental Management's Administrative Code r. 335-13-15-.06 since 2016. Constituents of interest (COIs) for the Site include arsenic, lithium, and molybdenum.

Though substantial evidence for natural attenuation exists for the Site, natural attenuation is expected to increase as source control measures are implemented (i.e., dewatering, consolidation, and capping).

USEPA defines monitored natural attenuation (MNA) as 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" (USEPA 1999, 2015). An MNA evaluation consists of the following steps or tiers (USEPA 2015):

1. Demonstrate that the area of impacts (plume) is stable or shrinking.
2. Determine the mechanisms and rates of attenuation.
3. Determine that 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 as expected.

As shown in Table 1, the field and laboratory investigations completed for this evaluation support Tiers 1 through 3. Tier 4 is addressed in the accompanying *Groundwater Remedy Selection Report*. A detailed sitewide corrective-action monitoring plan will be submitted within 90 days of the *Groundwater Remedy Selection Report*.

2 Stability of Areas of Impacts

Existing groundwater data were used to generate concentration versus time and concentration versus distance graphs to determine if attenuation is occurring over time and space and to assess natural attenuation occurrence and rates. COIs were plotted on the y-axis. For the concentration versus time plots, the time between sampling events (in days from 2016 through 2021) was plotted on the x-axis. For the concentration versus distance graphs, the distance between the pond boundary and monitoring well was plotted on the x-axis. Concentration versus distance graphs were made for molybdenum along the upgradient-downgradient flow path GN-AP-MW-5 to GN-AP-MW-23S to GN-AP-MW-27. Due to limited spatial distribution of wells, only one concentration versus distance graph was developed for the Site.

The trends observed in concentration versus time and concentration versus distance graphs provide evidence that natural attenuation is occurring at the Site (Figures 1 and 2, respectively). Concentration versus time graphs indicated arsenic, lithium, and molybdenum concentrations are generally stable in several areas, even without source control. Recent dewatering related to closure appears to be having a positive effect on wells in the area of dewatering; for example, molybdenum concentrations in GN-AP-MW-5 have been below the groundwater protection standard (GWPS) for three of the last four sampling events, and boron (an indicator parameter) shows a similar trend. Also, concentration versus distance graphs along the GN-AP-MW-5 downgradient transect indicate molybdenum concentrations are decreasing with distance from the Site. A selection of concentration versus time graphs is included in Figure 1. All concentration versus time graphs are included in Appendix A.

3 Groundwater Sampling and Analysis

Groundwater sampling and analyses were conducted to perform geochemical modeling to help determine attenuating mechanisms. Groundwater samples were collected by RDH Environmental, Inc., on March 5, 2020. The samples were submitted to the Alabama Power General Test Laboratory for analysis and to enable groundwater geochemical modeling. Groundwater samples were collected from monitoring wells as listed in Table 2. The samples were analyzed for major cations and anions and geochemical parameters influencing the chemical behavior of the COI. The analyzed constituents and associated laboratory analytical methods are summarized in Table 3.

Groundwater samples were collected from monitoring wells included in Table 2 using the dedicated pump installed in each well. Wells were purged at a low flow rate to minimize drawdown and sampled using low-flow sampling techniques in accordance with 40 CFR § 257.93(a) and Alabama Department of Environmental Management Administrative Code r. 335-13-15-.06(4)(a). Prior to sampling, each monitoring well was purged until field parameters (pH, temperature, specific conductance, dissolved oxygen, and oxidation-reduction potential) stabilized. Turbidity was measured during sampling but was not used as a stabilization criterion.

4 Geochemical Stability and Speciation Calculations

Geochemical equilibrium modeling was performed to determine mineral phases that may be controlling the dissolved concentrations, mobility, and attenuation of arsenic, lithium, and molybdenum, as well as the behavior of other species (such as iron, manganese, and aluminum) that influence the behavior of the COIs.

The Geochemist's Workbench software (Bethke and Yeakel 2013) was used to construct Pourbaix (Eh-pH) diagrams for iron, arsenic, molybdenum, and manganese based on Site groundwater chemistry to assess the geochemical stability of phases potentially controlling COI concentrations under Site conditions (Figures 3 through 6, respectively). Blue fields indicate dissolved/mobile species, and yellow fields indicate solid/attenuated species. Eh-pH data from the March 2020 groundwater sampling event are also plotted to determine the most stable species under Site conditions. The Pourbaix stability diagrams indicate the following associations and attenuating mechanisms:

- Site Eh-pH data fall within the thermodynamic stability boundaries of amorphous iron hydroxide [$Fe(OH)_3(a)$] (Figure 3). Amorphous iron oxides are strong sorbents for many metals and metalloids, including arsenic and molybdenum.
- Site Eh-pH data also plot within the stability field of a barium arsenate mineral phase [$Ba_3(AsO_4)_2$], which may control dissolved arsenic concentrations in areas where barium concentrations exceed those of arsenic (Figure 4).
- Site Eh-pH data also plot within the stability field of a calcium molybdate mineral phase [$CaMoO_4$], which may control dissolved molybdenum concentrations (Figure 5).
- Lithium is often associated with manganese oxides, and the mineral lithiophorite [$(Li,Al)Mn_2O_2(OH)_2$] is an example of a lithium-bearing manganese oxide. The thermodynamic properties of lithiophorite and other lithium-bearing manganese oxides are not well known, and its stability field shown in Figure 6 is approximate. Groundwater samples plot outside but close to the predicted stability field of lithiophorite. One downgradient location (MW-17) plots within the stability field of the manganese oxide mineral hausmannite [Mn_3O_4].

Geochemical speciation-solubility calculations were also performed using the U.S. Geological Survey computer program PHREEQC (Parkhurst and Appelo 2013) with the WATEQ4F thermodynamic database (augmented with data for lithiophorite [Parc et al. 1989] and molybdenum species from the MINTEQv4 database) to calculate aqueous speciation and determine the saturation state of groundwater samples with respect to possible mineral phases. Saturation index calculations can be used to infer solid phases potentially present in the aquifer. The solubility of these phases may be controlling dissolved concentrations. If a groundwater solution is saturated or supersaturated with respect to a mineral phase, then that phase could be precipitating and attenuating COIs as it

precipitates. Saturation indices for groundwater samples collected in March 2020 are presented in Table 4, and geochemical speciation modeling results indicate the following:

- Groundwater with detectable iron is slightly supersaturated with respect to amorphous iron hydroxide [$Fe(OH)_{3(a)}$] and supersaturated with respect to the more crystalline iron oxides (goethite, hematite, and magnetite).
- Groundwater with detectable arsenic is supersaturated with respect to a barium arsenate mineral phase.
- Groundwater is slightly supersaturated close to equilibrium with respect to a calcium molybdate mineral phase [$CaMoO_4$].
- Groundwater with both detectable aluminum and manganese is supersaturated with respect to lithiophorite (lithium aluminum manganese oxide), suggesting lithiophorite as a potential attenuating phase for lithium at the Site. However, groundwater samples are generally undersaturated with respect to manganese oxides[1] and are slightly supersaturated or close to equilibrium with respect to rhodochrosite [$MnCO_3$], suggesting redox conditions may be slightly more reducing than required to stabilize manganese oxides.

[1]Downgradient well GN-AP-MW-17 is slightly supersaturated with respect to hausmannite and manganite.

5 Solids Sampling and Analysis

Precipitation and coprecipitation reactions can be important mechanisms for natural attenuation of COIs. Soil and aquifer media can also sorb COIs, and their geochemistry can indicate if natural attenuation is occurring or has the potential to occur. If well solids (precipitates) are forming and incorporating COIs, then natural attenuation is occurring.

5.1 Sample Collection

To evaluate specific mechanisms of attenuation (sorption, cation exchange, precipitation, and coprecipitation), solid particles were collected from the bottom of monitoring wells (if present) and analyzed (summarized in Table 2). The well solids (precipitates) may include precipitates forming in situ in the aquifer, as well as finer-grained particles of the aquifer matrix that have been transported through the well screen and deposited in the bottom of the well. Regardless, the recovered well solids provide insights into aquifer geochemistry and mineralogy, and attenuation mechanisms for COIs.

Well solids (precipitates) samples were collected as follows:

- Well solids were pumped from the bottom of the wells via polyethylene tubing.
- Groundwater and well solids were pumped through an inline filter holder and stand (for example, those manufactured by Geotech Environmental Equipment, Inc.) with a 0.45-micron filter membrane until the filter clogged or the water ran clear. Up to five filters containing well solids were collected at each well (with the objective to collect as much solid material as possible from the bottom of each well).
- All filters from each well were placed in a single plastic petri dish, and the petri dish lid was secured with duct tape.
- Each sealed petri dish was placed in a Mylar bag with oxygen-absorbent packets to minimize oxidation of the well solids samples during transport.
- The Mylar bags were sealed with no headspace and placed in a secured iced cooler.
- Samples were stored on ice and shipped to the Anchor QEA Environmental Geochemistry Laboratory (EGL) in Portland, Oregon, for analysis.

Unconsolidated residual material (soil) and rock samples were also collected for laboratory studies to help determine capacity, rates, and stability of MNA. Soil and/or rock samples were collected from GN-AP-MW-16V, GN-AP-MW-17V, GN-AP-MW-20V, GN-AP-MW-23V, GN-AP-MW-30H, and GN-AP-MW-31V the week of April 5, 2021. Samples were collected from core boxes in a core storage area, sealed in zip-top bags, and shipped to the EGL.

5.2 Sample Analysis

Upon arrival at the EGL, well solids (precipitates) and soil samples were inspected and checked against the chain of custody. Samples were then stored under refrigeration until processing. Well solids were recovered from the filters in a glove box under a nitrogen atmosphere to prevent oxidation prior to analysis for geochemical characterization. Solids accumulated on the filters were scraped and collected in centrifuge tubes. The wet material was then centrifuged, and the solids were transferred into a pre-weighed glass jar. The solids were then dried under a nitrogen atmosphere at 38°C for 24 to 72 hours until dry.

The well solids (precipitates) and soil samples were analyzed by the following methods:

- X-ray fluorescence (XRF) to determine the chemical composition of the matrix (e.g., iron compounds) and presence of detectable COIs
- X-ray diffraction (XRD) to determine crystalline mineral phases
- Selective sequential extraction (SSE) to determine association of COIs with attenuating phases, determine relative strength of attenuation, and provide a sense of permanence
- Cation exchange capacity (CEC) to assess cation exchange as a mechanism for attenuation
- Scanning electron microscopy (SEM) to directly observe and determine the composition of attenuating phases (Soil was not examined by SEM.)

Additional detail (including the relevance of each analysis to the MNA evaluation) is included in Table 5.

All well solids (precipitates) samples with sufficient mass and all aquifer solids were analyzed by XRF to determine bulk chemical composition. After drying, processed samples were loaded and sealed in plastic sample containers for elemental analysis by XRF. XRF testing was performed by EGL staff using a Niton XL3t GOLDD+ XRF Analyzer. Individual samples were analyzed by XRF using the "Test All Geo" method under the "Mining" profile, which includes most elements heavier than sodium.

Powder XRD analysis was performed on selected well solids (precipitates) and aquifer soil samples to determine mineralogy. Samples were selected based on several factors, including well location; groundwater chemistry; bulk chemical composition data (XRF); and, for well solids samples, available sample mass.

Following XRF analysis, samples for SSE analysis were selected using the criteria above and results of the XRF analysis. SSE measures the distribution of COIs bound to the solid phase in different forms in order of decreasing solubility and mobility from F1 to F5. Samples are extracted stepwise with chemical solutions of increasing aggressiveness into fractions, which are operationally defined as follows:

- F1: Water soluble

- F2: Exchangeable (e.g., bound to clay minerals)
- F3: Reducible (e.g., associated with amorphous or poorly crystalline oxides such as ferrihydrite, a hydrous iron oxide)
- F4: Strong acid/oxidizable (e.g., associated with crystalline oxides and/or sulfide minerals)
- F5: Residual (e.g., bound in insoluble silicate phases)

Each successive step generally represents stronger attenuation and greater stability of the COIs and attenuating solids. The F3, F4, and F5 fractions represent COIs associated with relatively stable (permanent) attenuating mechanisms, provided Site geochemical conditions do not change drastically in the future.

Cation exchange on clays can be an important attenuation mechanism for some COIs, such as lithium. After XRF analysis, samples for CEC analysis were selected using the criteria above and the results of the XRF analysis. CEC was determined by leaching samples with ammonium acetate and analyzing the leachate for exchangeable cations, including lithium.

Select well solids (precipitates) samples, including point microanalysis and elemental mapping, were also submitted for examination by SEM to confirm the identity and chemical compositions of attenuating mineral phases and document the presence of amorphous iron and aluminum oxide coatings on mineral grains that can attenuate COIs.

5.3 Well Solids Results

The XRF chemical analysis of the well solids (precipitates; Table 6) showed relationships of arsenic and molybdenum with iron. Figure 7 shows the relationship between arsenic and iron, and Figure 8 shows the relationship between molybdenum and iron concentrations in the well solids. These relationships are consistent with sorption on iron oxides as a likely attenuating mechanism for arsenic and molybdenum. The highest arsenic detection in well solids samples was also associated with elevated barium, possibly indicating a mineral association between the two constituents (e.g., barium arsenate).

XRD identified quartz and calcite or dolomite as the major constituent minerals in the well solids (precipitates). Muscovite-illite, a potential attenuating clay mineral phase, was identified as a minor component in one sample (Table 7).

SEM and associated elemental mapping were conducted on select samples to confirm mineral phases and attenuating mechanisms. SEM results indicate that the solids collected from MW-11S[2] are predominantly silica (quartz) interspersed with occasional small feldspar and iron-rich grains. Some alteration, with dissolution pitting in some grains, coatings of aluminum and iron-rich material on others, and small iron precipitates on still other grains were observed. SEM images show secondary

[2] MW-11S is an existing site monitoring well not part of the CCR monitoring network.

mineral growth on quartz sand grains (Figure 9). These secondary minerals are iron rich (red shading in the top image of Figure 9). The colors in Figure 9 are not natural but are added to show the locations of the various elements analyzed. SEM results indicate that the solids collected from GN-AP-MW-20 are predominantly large (approximately 500 microns), rounded quartz grains interspersed with approximately 200-micron calcite and feldspar grains, and iron-rich (reddish) grains. Some alteration, with coatings of aluminum, calcium, and iron-rich material, was observed on many grains.

Based on the results from the XRF and XRD analyses and available sample volume, samples were selected and analyzed for SSE by the technique described in Section 5.2. Figure 10 shows the results of SSE for five well solids samples from the Site. Arsenic and molybdenum are detected primarily in the F5 (residual) fraction, less in the F2 (exchangeable) fraction, and much less in the F1 (water soluble) fraction. The SSE detection limits for COI in fractions F3 and F4 are somewhat elevated due to the small sample mass. Lithium was non-detect in F3 and F5, as detection limits were high due to low sample mass.

Select samples with suspected clay content were submitted for CEC testing. CEC was low to moderate, ranging from 7.4 to 221 milliequivalents per kilogram (meq/kg; Table 8), which reflects the minor clay mineralogy. Exchangeable lithium was detected in solids from downgradient wells with higher CEC, confirming attenuation by cation exchange as an attenuation mechanism for lithium.

SSE results for the well solids (precipitates) samples indicate all three COIs (arsenic, lithium, and molybdenum) are associated predominantly with the F5 (residual) fraction, less with the F2 (exchangeable) fraction, and much less with the F1 (water soluble) fraction (Figure 10). SSE detection limits for COIs in fractions F3 (reducible) and F4 (strong acid/oxidizable) fractions are somewhat elevated due to the small sample masses.

5.4 Aquifer Solids (Soil) Results

XRF analysis of aquifer soil samples show high total iron content in the range of 37,000 to 53,000 milligrams per kilogram, consistent with the well solids samples, and indicating presence of iron oxide coatings, which provide substantial attenuating capacity for COIs (Table 9). The mineralogy of the soil samples (as determined by XRD) consists predominantly of quartz with abundant muscovite-illite, clay minerals (dominantly bentonite and kaolinite), and lesser amounts of feldspar and iron oxide minerals (Table 10). Although muscovite was identified by XRD, it is likely a mixture of muscovite and illite. Illite is a clay mineral, with an XRD pattern similar to that of muscovite, that possesses moderate CEC.

CEC for the soil samples ranges from 50.6 to 170 meq/kg, reflecting the nature and abundance of clay minerals in the aquifer soil samples (Table 11). These values are within the range of CEC reported for the well solids (precipitates) samples and are consistent with the expected CEC of the clay

minerals identified via XRD analysis. Exchangeable lithium was detected in several CEC extracts, again indicating that cation exchange on clays is an attenuating mechanism for this COI.

Extractable iron, manganese, and aluminum oxides in aquifer soil samples and simultaneously extractable arsenic, lithium, and molybdenum are presented in Table 12. The data indicate that aquifer soils contain a mixture of aluminum, iron, and manganese oxides. These are likely present as both discrete iron-rich grains, as well as coatings on mineral particles, as indicated by SEM and groundwater geochemical modeling results (Eh-pH diagrams; Figures 3 through 6) that indicate iron oxides are stable at the Site. The aluminum oxides may also reflect surface coatings on feldspars, mica, or clay minerals. Arsenic and molybdenum were detected in the oxide extracts of all aquifer soil samples, indicating arsenic and molybdenum are being attenuated by sorption and incorporation in iron oxides. Lithium was also detected in the extracts of several samples, suggesting an association with clays and, potentially, manganese oxides.

Analytical results are included in Appendix B.

6 Mechanisms for Natural Attenuation

To support MNA, the following laboratory analyses of groundwater and well solids (precipitates) and aquifer solids (soils) were conducted:

- Performed groundwater geochemical modeling using PHREEQC
- Analyzed samples by XRF, XRD, SEM, CEC, and extractable oxide content to identify attenuating mechanisms for COIs
- Determined association of COIs with attenuating phases, determined relative strength of attenuation mechanisms, and evaluated stability by SSE

As discussed in Section 5, results from groundwater data analysis, geochemical modeling, well solids (precipitates), and aquifer solids (soil) analyses provide multiple lines of evidence for natural attenuation of COIs by specific mechanisms (summarized in Table 13). The major attenuating mechanisms include sorption on iron oxides (for arsenic and molybdenum), cation exchange on clays and manganese oxides (for lithium), and precipitation of barium arsenate and calcium molybdate phases (for arsenic and molybdenum).

XRF detected at least one COI and elements associated with natural attenuation (iron, aluminum, barium, calcium, and manganese). The XRF bulk chemical analysis showed sufficient concentrations of iron for attenuation, ranging between 2,140 and 217,000 milligrams per kilogram. The positive correlation between arsenic and molybdenum with iron (Figures 7 and 8, respectively) indicates iron compounds are attenuating these two COIs. Aluminum concentrations from the XRF analysis also support the presence of clay minerals.

XRD identified several minerals among seven soil samples that can attenuate COIs, including the iron oxide goethite and the following clay minerals: muscovite-illite, kaolinite, nacrite (a polymorph of kaolinite), bentonite, and vermiculite. The aquifer solids (soils) samples possess moderate CEC (50.6 to 170 meq/kg), and results indicate that lithium is attenuated by cation exchange reactions.

SEM elemental mapping showed that iron and aluminum oxide grain coatings are common, supporting other lines of evidence for amorphous iron oxides as an important attenuating phase for arsenic and molybdenum (Figure 9).

As discussed in greater detail in Sections 5.3 and 5.4, SSE and extractable oxide analyses revealed associations of COIs and related attenuating constituents with multiple attenuation mechanisms in well solids (precipitates) and aquifer solids (soil) as follows:

- Arsenic: Detected predominantly in the F5 (residual) and, to a lesser degree, the F2 (exchangeable) fractions of well solids and in oxide extracts of aquifer soils
- Molybdenum: Detected predominantly in the F5 (residual) and, to a lesser degree, the F2 (exchangeable) fractions of well solids and in oxide extracts of aquifer soils

- Lithium: Detected predominantly in the F5 (residual) and, to a lesser degree, the F2 (exchangeable) fractions of well solids and in oxide extracts of some aquifer soils
- Iron and manganese: Iron detected predominantly in the F4 (strong acid/oxidizable) fraction of well solids, and iron and manganese in oxide extracts of all aquifer soil samples

Because very little of the COI mass is associated with the weakly bound F1 (water soluble) fraction, COIs are not expected to remobilize back into groundwater.

7 Reactive Transport Modeling

Reactive transport modeling was performed to assess the post-closure fate and transport of COIs (arsenic, molybdenum, and lithium) along representative groundwater flow paths such as fracture zones (zones of fracture concentration) at the Site. The objective of the modeling was to quantitatively assess the effectiveness of natural attenuation processes to achieve and maintain COI concentrations below the applicable GWPS outside Site boundaries following Site closure (source control) and, for cases where these are predicted to not be achieved, to conservatively estimate the rate of migration of COI concentrations exceeding GWPSs to support remedy selection and implementation time frames.

Two 1D transects extending along fracture-zone groundwater flow paths from the boundary of the Site to downgradient surface water features were modeled using PHREEQC (Figure 11). Following Site closure, groundwater currently present along these transects will be progressively replaced by groundwater from precipitation recharge with COI concentrations less than the GWPS. In addition, COI concentrations will be attenuated along the flow path due to reactions with soil residuum present in fracture zones within the rock mass. Specific attenuating mechanisms for the three COIs included in the models are as follows:

- Arsenic: Sorption to iron and aluminum oxide binding sites in the residual soil
- Molybdenum: Sorption to iron and aluminum oxide binding sites in the residual soil
- Lithium: Cation exchange on clay minerals in the soil residuum within the fracture zones

Inclusion of these attenuation mechanisms in the models was based on analysis of trends in groundwater monitoring data, geochemical modeling, and laboratory studies described previously, including data on extractable iron and aluminum oxides and CEC of residual soil samples collected in the vicinity of the model transects (Tables 12 and 11, respectively).

Sorption reactions of COIs and other species on iron oxides were modeled using the surface complexation model of Dzombak and Morel (1990). For sorption on clays, the aluminum oxide binding site model presented in Karamalidis and Dzombak (2010) was used. Transect-specific data, including groundwater chemistry, as well as CEC and extractable iron and aluminum oxide concentration data for residual soils, were used to define initial groundwater and fracture-zone soil residuum geochemistry.

Initial groundwater chemistry along each transect was based on data for samples collected in July 2020 for which complete chemical analyses (major and minor constituents, including COIs) were available. Initial chemistry was defined by data from two wells along each transect and background[3]

[3] "Background" here refers to groundwater chemical composition but not necessarily hydraulically upgradient, i.e., groundwater not impacted by the Site.

groundwater chemistry defined by data from a Site well with no statistically significant levels (SSLs). Along each flow path, groundwater chemistry was assigned in segments, extending to the midpoints between adjacent wells. The groundwater chemistry data used in the models are presented in Table 14. Average CEC and extractable iron and aluminum oxide data (Table 15) for residual soil samples collected adjacent to each transect were used to assign cation exchange and sorption capacity (concentrations of iron and aluminum binding sites) parameters in the models.

Model simulations for each transect were run for a total simulation time of 100 years post-closure. Groundwater velocities were calculated from hydraulic conductivity, hydraulic gradients, and effective porosity data. The average horizontal hydraulic conductivity (0.39 foot per day) for Unit 2 (dolostone) and a value of 0.1 for effective porosity were taken from the *Plant Gaston Ash Pond Facility Plan for Groundwater Investigation, AO 18-095-GW* (SCS 2018). Hydraulic gradients were calculated from July 2020 groundwater elevation data for wells along each transect.

Reactive transport models for the two transects, including model results, are described in more detail as follows:

- Transect 1: Molybdenum and lithium at SSLs
  - Transect length = 140 feet; hydraulic gradient = 0.09; linear groundwater velocity = 129 feet per year.
  - Transect wells for chemistry: background = MW-11; downgradient = MW-37V (1 to 70 feet), MW-16 (71 to 140 feet).
  - Post-closure lithium concentrations are predicted to be attenuated over time and decrease below the GWPS along this transect within 20 years (Figure 12a).
  - Post-closure molybdenum concentrations are predicted to be attenuated over time and decrease below the GWPS along this transect within 35 years (Figure 12b).
- Transect 2: Arsenic, molybdenum, and lithium at SSLs
  - Transect length = 130 feet; hydraulic gradient = 0.034; linear groundwater velocity = 48.9 feet per year.
  - Transect wells for chemistry: background = MW-11; downgradient = MW-33V (1 to 65 feet), MW-17 (66 to 130 feet).
  - Post-closure arsenic concentrations are predicted to eventually drop below the GWPS due to natural attenuation processes occurring along this transect, although slightly elevated concentrations (approximately twice the GWPS) may persist in some areas for several decades (Figure 13a).
  - Post-closure lithium concentrations are predicted to be attenuated over time, decrease to less than a factor of 2 above the GWPS within 85 years, and nearly achieve the GWPS along this transect within 100 years (Figure 13b).
  - Post-closure molybdenum concentrations are predicted to be attenuated over time and decrease below the GWPS along this transect within 55 years (Figure 13c).

The reactive transport model results presented here, representative of groundwater flow paths along fracture zones downgradient of the Site boundary, indicate that, following completion of source control measures that will reduce COI concentrations in groundwater, natural attenuation processes will play an important role in achieving the GWPS. For arsenic, model predictions indicate that concentrations slightly higher than the GWPS (i.e., a factor of two) may persist in some areas after source control measures are implemented. For molybdenum, the GWPS is predicted to be achieved within 35 to 55 years. For lithium, the GWPS is predicted to be achieved within 20 to 100 years, and as such, natural attenuation likely is not an effective standalone remedy. The modeling results indicate that, while natural attenuation of COIs is occurring and can be a component of the final remedy for portions of the Site, additional treatment such as permeation grouting may need to be applied in some areas to stop the transport of COIs in groundwater away from the facility boundary.

8 Column Studies

8.1 Methodology (Setup)

Column tests were performed using unconsolidated Site aquifer media (residuum or soil) and impacted groundwater to document COI removal and uptake capacity of the soils under flow conditions and to provide a basis for estimating the natural attenuation capacity of the aquifer matrix (part of USEPA's Tier 3).

Groundwater for column testing was collected from monitoring wells GN-AP-MW-16, GN-AP-MW-17, and GN-AP-MW-15R. These wells were selected for column testing, based on COI concentrations, to provide high COI mass loading to the soils. Upon receipt, groundwater samples were submitted to ALS Environmental in Kelso, Washington, for chemical analysis prior to beginning the column testing. Lithium and molybdenum are COIs at SSLs in all three groundwater wells, and arsenic is also a COI at SSLs in GN-AP-MW-17. Analytical results are summarized in Table 16 and included in Appendix B. Six column tests were prepared with combinations of the three groundwaters and six Site soils: GN-AP-MW-16V 11.5'-12.5', GN-AP-MW-16V 19.5'-20.0', GN-AP-MW-17V 12.0'-15.0', GN-AP-MW-17V 19.0'-20.0', GN-AP-MW-30H 20.4'-21.2', and GN-AP-MW-31V 30.5'-31.5' (Table 17). The laboratory column test setup is shown in Figure 14, and a detailed schematic is provided in Figure 15.

Column tests were carried out in 12.8-centimeter (cm)-long, 2.6-cm-diameter polypropylene columns. Because the Site soils were fine-grained, preferential flow paths would form in columns packed only with Site soils. To avoid preferential flow paths, the dried Site soils were mixed with clean quartz sand (Accusand) in a 50:50 mass ratio. The Site soil/sand mixtures were packed into the columns to achieve a total depth of 12.8 cm. Site groundwater was pumped in an upflow direction through the columns at a flow rate of approximately 0.4 milliliters per minute for 7 to 12 days (approximately 150 to 300 pore volumes [PVs]) using a peristatic pump with a multichannel pump head. Flow rates were regularly checked and adjusted as needed to maintain a constant flow rate. The influent reservoirs were purged with nitrogen and kept in sealed Mylar bags with oxygen-absorbing packets during the column tests. Table 18 provides a summary of the column test operating conditions.

The initial arsenic concentration in GN-AP-MW-17 groundwater was lower than expected based on historical data (10.7 micrograms per liter [µg/L] versus historical concentration of approximately 20 µg/L in GN-AP-MW-17). For the column tests, the GN-AP-MW-17 groundwater was, therefore, spiked with arsenic. An arsenic stock solution was prepared from sodium arsenate heptahydrate and added to the influent reservoir of GN-AP-MW-17 to produce an influent concentration of approximately 120 µg/L. The initial lithium concentrations in GN-AP-MW-16, GN-AP-MW-17, and GN-AP-MW-15R were 111, 865, and 31.5 µg/L, respectively. The initial molybdenum concentration in

GN-AP-MW-16, GN-AP-MW-17, and GN-AP-MW-15R were 626, 4,000, and 175 µg/L, respectively. These results were similar to historical monitoring data; therefore, no lithium or molybdenum spikes were needed for the column tests.

Column influents and effluents were sampled periodically over the duration of the tests, and pH was measured at the time of sampling. The samples were filtered using 0.45-micron nylon syringe filters and preserved with nitric acid for metals analysis. Flow rates and cumulative flow volumes were also recorded for each column at the time of sampling to calculate the total number of PVs treated. The column influent and effluent samples were analyzed for dissolved COIs by USEPA Method 200.8 (inductively coupled plasma mass spectrometry) at ALS Environmental.

The laboratory column tests were operated at a higher linear velocity (102 cm per day) than the estimated range of groundwater flow velocities in the vicinity of the Site (0.41 to 70 cm per day, SCS 2018). The hydraulic residence time in the laboratory columns was also shorter than the field hydraulic residence time, and, as a result, the extent of reaction under field conditions may be greater than observed in the column tests. The attenuation measured in the columns, therefore, provides a conservative (lower) estimate of the expected attenuation under field conditions.

8.2 Column Test Results

Column test results for arsenic, lithium, and molybdenum are summarized in Table 19 and shown in Figures 16 through 21. Arsenic, lithium, and molybdenum concentrations in the influent reservoirs were stable throughout the column tests, and results are plotted as the concentration ratio of effluent to influent as a function of PVs of groundwater passed through each column. In addition, cumulative COI mass uptake graphs were prepared to evaluate attenuation capacity. Analytical summary reports are included in Appendix B.

The attenuation capacity of lithium and molybdenum in soil from GN-AP-MW-16V was reached after approximately 175 PV (Figures 16a and 17a) and 50 PV (Figures 18a and 19a), respectively. The attenuating capacity of arsenic in soil from GN-AP-MW-17V was significant: excess capacity for attenuation remained after 250 PV, with deeper soils showing a higher capacity for attenuation than shallower soils (Figures 20 and 21. Arsenic concentrations in the effluent from the GN-AP-MW-17V 19.0'-20.0' column (deeper soils) were less than 3 µg/L after 250 PV. The attenuating capacity of lithium and molybdenum in soils from GN-AP-MW-17V was reached after approximately 75 PV (Figures 16b and 17b) and 150 PV (Figures 18b and 19b), respectively. The attenuating capacity of lithium (Figures 16c and 17c) and molybdenum (Figures 18c and 19c) in soils from GN-AP-MW-30H was reached after approximately 150 PV, with deeper soils showing a higher capacity for attenuation than shallower soils.

Overall, Site soils attenuated COIs. Excess capacity for attenuating arsenic remained after more than 250 PV. Depending on Site soil and groundwater, the capacity for attenuating lithium was reached at approximately 75 PV to excess capacity remaining after 175 PV. Similarly, the capacity for attenuating molybdenum was reached at approximately 50 PV to excess capacity remaining after 150 PV. Based on calculations performed to support reactive transport modeling, one PV is equivalent to approximately 1.1 to 2.7 years at the Site.

9 Aquifer Capacity for Attenuation

Geospatial methods were used to calculate the estimated saturated volume of the aquifer and estimated mass of COIs in the aquifer. ArcGIS software (Esri 2021a) was used to perform all geospatial operations. Saturated aquifer thickness data (interpreted from boring and well construction logs), groundwater chemistry data (collected from Site monitoring wells), and previously reported Site porosity values (SCS 2018) were used to create interpolated Thiessen polygons showing saturated aquifer thickness and COI concentration polygons for the entire Site (Esri 2021b).

Vector and raster geospatial data, in combination with results from the column tests, were used as inputs for calculations to estimate the aquifer capacity for attenuating COIs. Vector data consist of points, lines, and polygons and are used to spatially represent precise locations or discrete boundaries in real-world space. Raster data are matrices of cells organized into rows and columns (i.e., a grid) in which each cell carries a data value. Thiessen polygons delineate area around each input point such that any location within the polygon is closer to that point than any other input points, effectively allocating area to each point based on the way the points are distributed across a site. A value, such as aquifer thickness, encoded in the point is applied across the entire area of the Thiessen polygon surrounding the point.

The primary geospatial data sources used in this analysis are as follows:

- Aquifer extent (estimated maximum lateral extent of the aquifer available for attenuating COIs based on parcel boundaries in the downgradient flow direction)
- Isoconcentration boundaries (estimated extent of COIs at concentrations greater than the GWPS)
- Sitewide estimates for saturated aquifer thickness and COI concentrations

A workflow was developed using the ArcGIS Model Builder application to calculate estimated saturated aquifer volumes and the mass of COIs in the aquifer. The workflow was divided into modular steps, with separate models created to execute one or more steps. A summary of each step in the workflow is as follows:

1. Interpolate Saturated Aquifer Thickness Using Thiessen Polygons: The saturated aquifer thickness across the Site was determined by interpolating saturated aquifer thickness values from boring and well construction logs. Thiessen polygons were generated from the aquifer thickness points. Because data within the Site footprint is limited, Thiessen polygons were used because they are an interpolation method that estimates data values across large distances between data points without reducing the magnitude of the values, allowing for the estimate of aquifer thickness in the interior portion of the Site where no data points were available.
2. Convert Saturated Aquifer Thickness Thiessen Polygons into Saturated Aquifer Thickness Raster: Saturated aquifer thickness Thiessen polygons were then converted into a saturated aquifer

thickness raster surface with a grid cell resolution of 50 feet by 50 feet, where each cell is encoded with the interpolated saturated aquifer thickness at that location. A 50-foot by 50-foot grid captures adequate detail, given that the Site is hundreds of acres in size.

3. Create Saturated Aquifer Volume Raster: The saturated aquifer thickness raster was used to create a saturated aquifer volume raster by multiplying all thickness cells by their respective area (i.e., 50 feet by 50 feet equals 2,500 square feet). The saturated aquifer volume could then be estimated by taking the summation of all the grid cell values in the saturated aquifer volume raster.
4. Create Plume Volume Raster: For a given COI, a plume volume raster was created by taking the summation of all the grid cell values from the saturated aquifer volume raster within the isoconcentration boundary.
5. Interpolate COI Concentrations Using Thiessen Polygons: Thiessen polygons were created from the groundwater chemistry data for each COI following the same methods used to create the saturated aquifer thickness polygons by applying groundwater chemistry data, instead of aquifer thickness values, to the areas surrounding each point.
6. Convert COI Concentrations Thiessen Polygons into COI Concentrations Raster Surfaces: COI concentration Thiessen polygons were then converted into COI concentration raster surfaces using the same 50-foot by 50-foot cell size.
7. Estimate COI Mass Within Plumes: For each COI, mass within the plume was estimated using Equation 1.
8. Extrapolate Column Test Results to Entire Aquifer: Aquifer capacity for attenuation was determined by multiplying the mass of COIs attenuated in the column studies by the total volume of saturated aquifer calculated in Step 3.

To calculate to mass of COI attenuated during the column study, the influent minus effluent concentrations were plotted on the y-axis (in µg/L), and the volume of water used in the column study was plotted on the x-axis (in liters). The area under the curve was calculated to determine the mass of COI (in micrograms) attenuated by column soil. An example graph is included as Figure 22. The average mass of COI attenuated by the columns was used to estimate the attenuating capacity of the entire aquifer.

The aquifer has far more potential for attenuation than the mass of arsenic, lithium, and molybdenum requiring attenuation. Specifically, the aquifer has an attenuating capacity of many more times the mass of arsenic, lithium, and molybdenum in groundwater. Aquifer capacity for attenuation results is summarized in Table 20.

Equation 1

$$M_C = \sum_{i=1}^{n} (V_i \times C_i) \times A \times B \times p$$

where:

M_c	=	estimated mass of COIs within the plume
n	=	number of grid cells in raster
V	=	volume of grid cell
C	=	COI concentration at grid cell
A	=	conversion factor for cubic feet to liters
B	=	conversion factor for either microgram or milligram to kilogram
p	=	porosity

10 Time to Achieve Groundwater Protection Standards (Rates) and Stability of Attenuated COIs

The slope of trend lines through recent monitoring data on concentration versus time graphs and results from reactive transport modeling were used to estimate time to achieve the applicable GWPS. Figure 1 shows typical concentration versus time graphs that served as the basis for the rate analysis, and Appendix A contains all time versus concentration graphs. Constituents already less than their applicable GWPSs were not included in this analysis. During recent sampling events, arsenic concentrations were below the GWPS and are expected to continue to decrease as the selected remedies are implemented.

For molybdenum, estimated time to achieve GWPSs by MNA is 2 to 35 years. Depending on location, estimated time to achieve GWPSs for lithium by MNA ranges from less than 20 years to approximately 100 years (near GN-AP-MW-17). Though these time frames are reasonable to achieve GWPSs by MNA, source control (closure) and permeation grouting are expected to accelerate time to achieve GWPSs, particularly in the area of GN-AP-MW-17 where permeation grouting is proposed.

Source control, permeation grouting, and MNA over the entire Site are expected to achieve GWPSs in approximately 35 years, which is a reasonable time frame as compared to other, more aggressive methods investigated as part of the remedy selection process. More aggressive methods are not expected to achieve GWPSs sooner than 35 years.

SSE performed on soils used in the column studies provides a measure of relative stability of the attenuated COIs and their hosts, such as iron oxides. The SSE fractions, from least to most stable, are as follows:

- F1: Water soluble
- F2: Exchangeable (e.g., clay minerals)
- F3: Reducible (e.g., poorly crystalline metal oxides such as iron oxides)
- F4: Oxidizable (e.g., crystalline oxide and crystalline sulfide minerals)
- F5: Residual (e.g., silicate phases)

As described in Section 5.3, results from the well precipitates indicate all three COIs (arsenic, lithium, and molybdenum) are associated predominately with the F5 (residual) fraction, less with the F2 (exchangeable) fraction, and much less with the F1 (water soluble) fraction (Figure 10). The SSE detection limits for COIs in the F3 (reducible) and F4 (strong acid/oxidizable) fractions are somewhat elevated due to the small sample masses.

SSE was also performed on Site soils used in the column uptake experiments (Table 21 and Figure 23) to help determine the attenuating mechanisms and stability of the COIs and their hosts. Much of the post-column SSE data were below detection limits due to the lab having to dilute those

samples prior to analysis due to matrix interference. However, for detected data (bold in Table 21), most of the arsenic was in the F2 (exchangeable) and F5 (residual) fractions, with some in the F3 (reducible) and F4 (oxidizable) fractions, which is consistent with the well solids (precipitates) results. Lithium and molybdenum concentrations were mostly below detection limits, but detectable lithium and molybdenum were mostly in the F5 (residual) fraction. Except for one value for molybdenum, none of the COI concentrations were in the F1 (soluble) fraction. Iron compounds, which are the hosts (attenuating species) for arsenic and molybdenum, also occur in the F3 (reducible), F4 (oxidizable), and F5 (residual) fractions. Lithium can be associated with manganese, which occurs in the F2 through F5 fractions.

Because very little of the mass of COIs are associated with the weakly bound F1 (water soluble) fraction, COIs are not expected to remobilize back into groundwater.

11 Conclusions and Interpretation

Extensive geochemical and related studies demonstrate that MNA is a viable corrective action for groundwater impacts associated with the Site. The preponderance of evidence indicates that Site conditions meet USEPA's evaluation criteria for the use of MNA, specifically: area of impacts stable or shrinking, identified mechanisms for attenuation, stability of the attenuating mechanisms, sufficient aquifer capacity for attenuation, and time to achieve GWPSs reasonable as compared to other corrective-action alternatives. However, MNA is one component of the Site's corrective-action remedy. As noted in the *Groundwater Remedy Selection Report*, the following corrective measures were selected for the Site: source control to include dewatering, consolidation and capping of the Site; permeation grouting in areas of relatively high concentrations of COIs; and MNA over the entire Site.

Investigations performed to support the use of MNA at the Site included the following:

- Preparation of concentration versus time and concentration versus distance graphs for COIs in groundwater
- Groundwater, well solids (precipitates), and soil sampling and analysis
- Laboratory analysis of well solids samples for bulk chemistry (XRF), mineralogy (XRD and SEM), and CEC
- Geochemical equilibrium modeling
- SSE to determine associations of COIs with attenuating solids and the stability of the COIs and their hosts
- Column studies to assess the attenuation capacity of the aquifer and determine the stability of the attenuating phases
- Determination of the aquifer capacity for attenuation of the COIs
- Calculation of the time to achieve natural attenuation

Graphs of concentration versus time for COIs at the Site indicate a reduction of arsenic, lithium, and molybdenum in groundwater through time in several areas, even without source control. Specifically, arsenic is generally stable over time at well GN-AP-MW-17, lithium at GN-AP-MW-15R, and molybdenum at wells GN-AP-MW-5 and GN-AP-MW-15R. The concentration versus distance transect for molybdenum at GN-AP-MW-5 indicates that concentrations are decreasing with distance from the Site.

Results from existing groundwater data analysis, geochemical modeling, and well solids (precipitates) analyses provide multiple lines of evidence for attenuation mechanisms for COIs operating at the Site. The major attenuation mechanisms operating at the Site include the following:

- Sorption on iron oxides (for arsenic and molybdenum)
- Cation exchange on clays and manganese oxides (for lithium)

- Precipitation of arsenate and molybdate phases (arsenic and molybdenum)

All COIs are also subject to physical attenuation mechanisms such as dispersion and flushing, which will contribute to decreased concentrations with time and distance from the Site.

Column studies were performed to assess the ability and capacity of the aquifer media (soil) to take up COIs. Laboratory results were then extrapolated to the entire saturated mass of aquifer (downgradient of the consolidated pond footprint) using quantitative GIS-based techniques. Based on the column studies and saturated volume of the downgradient aquifer, the aquifer has much higher capacity to attenuate (sorb) arsenic, lithium, and molybdenum than the mass of the COIs currently in groundwater.

SSE was performed on samples of well solids (precipitates) and soils used in the column studies to assess the stability of the attenuated COIs and their host minerals. Most of the mass of detected COIs are associated with the F2 (exchangeable), F3 (reducible), F4 (oxidizable), and F5 (residual) fractions. Because very little of the mass of COIs are associated with the weakly bound F1 (water soluble) fraction, COIs are not expected to remobilize back into groundwater.

Trend lines through recent groundwater data and results from reactive transport modeling were used to estimate time to achieve the applicable GWPS. For molybdenum, estimated time to achieve GWPSs by MNA is 2 to 35 years. Depending on location, estimated time to achieve GWPSs for lithium by MNA ranges from less than 20 years to approximately 100 years (near GN-AP-MW-17). Though these time frames are reasonable to achieve GWPSs by MNA, Site closure and permeation grouting are expected to accelerate time to achieve GWPSs, particularly in the area of GN-AP-MW-17. Permeation grouting, which will prevent future migration of COIs away from the facility boundary, is planned for the area near GN-AP-MW-17. During recent sampling events, arsenic concentrations were below the GWPS and are expected to continue to decrease as the selected remedies are implemented. Source control, permeation grouting, and MNA over the entire Site are expected to achieve GWPSs in approximately 35 years, which is a reasonable time frame as compared to other, more aggressive methods investigated as part of the remedy selection process. More aggressive methods are not expected to achieve GWPSs sooner than 35 years.

12 References

Bethke, C.M., and S. Yeakel, 2013. *The Geochemist's Workbench – Release 9.0. GWB Essentials Guide*. Champaign, Illinois: Aqueous Solutions, LLC.

Dzombak, D.A., and F.M.M. Morel, 1990. *Surface Complexation Modeling: Hydrous Ferric Oxide*. New York: John Wiley and Sons, Inc.

Esri, 2021a. ArcGIS Desktop: Release 10.8. Redlands, CA: Environmental Systems Research Institute.

Esri, 2021b. *ArcGIS Help, Create Thiessens Polygons Tool.*

Karamalidis, A.K., and D.A. Dzombak, 2010. *Surface Complexation Modeling: Gibbsite*. New Jersey: John Wiley and Sons, Inc.

Parc, S., D. Nahon, Y. Tardy, and P. Vieillard, 1989. "Estimated Solubility Products and Fields of Stability for Cryptomelane, Nsutite, Birnessite, and Lithiophorite Based on Natural Lateritic Weathering Sequences." *American Mineralogist*. 74:466-475.

Parkhurst, D.L., and C.A.J. Appelo, 2013. "Description of Input and Examples for PHREEQC Version 3—A Computer Program for Speciation, Batch-Reaction, One-Dimensional Transport, and Inverse Geochemical Calculations." *U.S. Geological Survey Techniques and Methods, Book 6*. Washington, DC: U.S. Department of the Interior; p. 497.

SCS (Southern Company Services, Inc.), 2018. *Facility Plan for Groundwater Investigation*. Plant Gaston Ash Pond. Prepared for Alabama Power Company. October 2018.

USEPA (U.S. Environmental Protection Agency), 1999. *Use of Monitored Natural Attenuation of Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*. Office of Solid Waste and Emergency Response. EPA/OSWER No. 9200.4-17P. April 1999.

USEPA, 2015. *Use of Monitored Natural Attenuation for Inorganic Contaminants in Groundwater at Superfund Sites.* USEPA Office of Solid Waste and Emergency Response Directive 9283.1-36. August 2015.

Tables

Table 1
Monitored Natural Attenuation Demonstration Status

Tier	Approach	Status of MNA Demonstration
Tier 1: Area of Impacts Stable or Shrinking	Concentration versus time and distance graphs, statistics; isoconcentrations in plan and section views; Ricker Method (part of ongoing monitoring)	Satisfied
Tier 2a: Determine Mechanisms of Attenuation	Analysis of well solids: XRF, XRD, SEM, CEC, and SSE; complete analysis of groundwater (major cations and anions); geochemical modeling	Satisfied
Tier 2b: Determine Rates of Attenuation	Derived from concentration versus time graphs; batch and column tests; geochemical modeling	Satisfied
Tier 3a: Determine System (Aquifer) Capacity for Attenuation	Batch and column tests; geochemical modeling	Satisfied
Tier 3b: Determine Stability of the Attenuating Mechanisms (Solids) and COIs	SSE on tested materials from batch and column tests; geochemical modeling; inference from mechanisms	Satisfied
Tier 4a: Design a Performance Monitoring Program	Additional wells; repeat well solids and complete groundwater analysis; adaptive triggers	Satisfied
Tier 4b: Identify Alternative Remedies Should MNA Not Perform as Expected	Completed as part of the ACM; some technologies may need further testing and/or development (bench and pilot)	Satisfied

Notes:

ACM: *Assessment of Corrective Measures*

CEC: cation exchange capacity

COI: constituent of interest

MNA: monitored natural attenuation

SEM: scanning electron microscopy

SSE: selective sequential extraction

XRD: X-ray diffraction

XRF: X-ray fluorescence

Table 2
Sampling Locations

Groundwater Sampling Locations			
GN-AP-MW-5	GN-AP-MW-16	GN-AP-MW-17	GN-AP-MW-20
Well Solids Sampling Locations			
MW-1*	MW-1S*	MW-2*	MW-2D*
MW-3S*	MW-4*	MW-9*	MW-10*
MW-11*	MW-11S*	GN-AP-MW-5	GN-AP-MW-16
GN-AP-MW-17	GN-AP-MW-20		

Note:

*: indicates existing site monitoring well that is not part of coal combustion residuals monitoring network

Table 3
Analyzed Constituents and Laboratory Analytical Methods

Constituent	Analytical Method	Constituent	Analytical Method
Alkalinity (total as $CaCO_3$)	SM 2320 B	Lead (dissolved)	EPA 200.8
Antimony (dissolved)	EPA 200.8	Lead (total)	EPA 200.8
Antimony (total)	EPA 200.8	Lithium (total)	EPA 200.7
Arsenic (dissolved)	EPA 200.8	Magnesium (total)	EPA 200.7
Arsenic (total)	EPA 200.8	Manganese (dissolved)	EPA 200.8
Barium (total)	EPA 200.8	Manganese (total)	EPA 200.8
Beryllium (dissolved)	EPA 200.8	Molybdenum (dissolved)	EPA 200.8
Beryllium (total)	EPA 200.8	Molybdenum (total)	EPA 200.8
Bicarbonate alkalinity (calculated)	SM 4500CO2 D	Nitrogen nitrate (calculated)	EPA 353.2
Boron (total)	EPA 200.7	Nitrogen nitrate/nitrite	EPA 353.2
Cadmium (dissolved)	EPA 200.8	Nitrogen nitrite	EPA 353.2
Cadmium (total)	EPA 200.8	Ortho phosphate	SM 4500PF-OP
Calcium (total)	EPA 200.7	Potassium (total)	EPA 200.8
Carbonate Alkalinity (calculated)	SM 4500CO2 D	Selenium (dissolved)	EPA 200.8
Chloride	SM 4500Cl E	Selenium (total)	EPA 200.8
Chromium (dissolved)	EPA 200.8	Silica (total; calculated)	EPA 200.7
Chromium (total)	EPA 200.8	Silicon (total)	EPA 200.7
Cobalt (dissolved)	EPA 200.8	Sodium (total)	EPA 200.7
Cobalt (total)	EPA 200.8	Sulfate	SM 4500SO4 E
Fluoride	SM 4500F G 2017	Thallium (dissolved)	EPA 200.8
Iron (dissolved)	EPA 200.7	Thallium (total)	EPA 200.8
Iron (total)	EPA 200.7	Total organic carbon	SM 5310 B

Notes:

$CaCO_3$: calcium carbonate

EPA: U.S. Environmental Protection Agency (method)

SM: Standard Method

Table 4
Saturation Indices for Groundwater Samples

Sample ID	Well Designation	Gibbsite	$Fe(OH)_3(a)$	Goethite	Hematite	Magnetite	Siderite	$Ba_3(AsO_4)_2$	$CaMoO_4$	$FeMoO_4$	Pyrolusite	Bixbyite	Birnessite	Hausmannite	Manganite	Pyrochroite	Lithiophorite	Rhodochrosite
GN-AP-MW-5	Downgradient	--	--	--	--	--	**0.76**	--	-1.50	--	--	--	--	--	--	--	--	--
GN-AP-MW-16	Downgradient	--	**1.97**	**7.68**	**17.4**	**16.1**	--	**7.37**	-0.80	-4.81	-5.09	-3.64	-6.54	-4.16	-1.56	-4.70	--	**0.08**
GN-AP-MW-17	Downgradient	-0.31	--	--	--	--	-2.02	**12.8**	**0.32**	--	-4.12	-0.76	-5.28	**0.49**	**0.03**	-2.78	**30.1**	-1.47
GN-AP-MW-20	Downgradient	--	--	--	--	--	**0.99**	**6.99**	-0.10	--	-11.7	-12.5	-12.8	-15.5	-5.83	-7.00	--	-2.17

Notes:

Bold indicates positive SI values (i.e., groundwater supersaturated with respect to mineral phase).

SIs are for Plant Gaston groundwater samples collected in March 2020.

--: No SI calculated because one or more constituent(s) in phase was not detected in groundwater sample.

SI: saturation index

Table 5
Geochemical Analysis of Monitoring Well and Aquifer Solids

Analysis	Description	Relevance to MNA Demonstration
CEC	Determines if cation exchange on clays is an attenuating mechanism.	Supports Tier 2 (mechanisms) and Tier 3 (stability) of cation exchange.
SEM	Allows direct visual observation of attenuating phases, such as framboidal pyrite and iron oxide coatings on sand grains.	Supports Tier 2 (mechanisms) and Tier 3 (stability) of attenuating phases.
SSE	Determines which attenuating solid phases are associated with constituents of interest.	Supports Tier 2 (mechanisms) and Tier 3 (stability) of attenuating phases.
XRD	Identifies and provides mineralogy of crystalline attenuating phases.	Supports Tier 2 (mechanisms) and Tier 3 (stability) of attenuation involving crystalline mineral phases.
XRF	Provides bulk chemistry and presence of constituents of interest. (Lithium is too light to be detected by XRF.)	Relationships are determined among elements in attenuating phases (e.g., iron and manganese) and constituents of interest. Supports Tier 2 (mechanisms) and Tier 3 (stability).

Notes:

CEC: cation exchange capacity

MNA: monitored natural attenuation

SEM: scanning electron microscopy

SSE: selective sequential extraction

XRD: X-ray diffraction

XRF: X-ray fluorescence

Table 6
Bulk Chemistry of Well Solids Samples by XRF

Well ID	Arsenic	Molybdenum	Iron	Manganese	Aluminum	Calcium	Magnesium	Potassium	Silicon	Sulfur	Barium
GN-AP-MW-5	20	3	19,000	ND	5,790	135,000	10,200	4,820	59,400	709	ND
GN-AP-MW-16	4	ND	10,800	ND	7,290	102,000	5,940	3,640	119,000	853	208
GN-AP-MW-17	ND	ND	2,140	ND	1,610	85,900	4,360	641	108,000	643	ND
GN-AP-MW-20	ND	8	6,860	ND	2,470	69,700	ND	789	164,000	2,275	146
MW-1S*	ND	8	163,000	1,590	10,500	5,460	ND	2,870	185,000	1,003	180
MW-1*	ND	3	43,300	ND	10,500	2,440	ND	2,100	243,000	481	51
MW-2D*	72	ND	217,000	1,570	6,700	54,500	ND	3,380	34,700	906	294
MW-3S*	38	3	69,800	ND	7,400	2,040	ND	1,610	194,000	11,899	ND
MW-4*	ND	ND	8,730	333	8,320	886	ND	1,970	227,000	437	128
MW-9*	ND	3	42,500	970	7,630	43,100	ND	5,820	219,000	132	245
MW-10*	ND	ND	15,900	ND	5,030	68,400	ND	4,390	192,000	113	149
MW-11*	14	ND	56,600	758	17,400	69,900	ND	8,830	152,000	2,823	303
MW-11S*	ND	ND	14,000	89	6,050	1,250	ND	1,310	255,000	439	178

Notes:

Direct analysis of lithium is not possible with portable XRF due to X-ray physics limitations.

Units are in milligrams per kilogram.

*: existing site monitoring well that is not part of the coal combustion residuals rule monitoring network

ND: below limit of detection

XRF: X-ray fluorescence

Table 7

Minerals Identified in Well Solids Samples by XRD[1]

Well ID	Quartz	Muscovite/Illite	Calcite	Dolomite
GN-AP-MW-5	XXX	X	--	XX
GN-AP-MW-16	XXX	--	--	XX
GN-AP-MW-17	XXX	--	--	XX
GN-AP-MW-20	XXX	--	--	XX
MS-11S*	XXX	--	--	--
MW-1*	XXX	--	--	--
MW-2D*	XXX	--	--	--
MW-11*	XXX	--	XX	--

Notes:

1: Estimated relative concentration (weight %) reported where available.

*: existing site monitoring well that is not part of the Coal Combustion Residuals Rule monitoring network

--: not detected

X: <10%

XX: 10% to 50%

XXX: >50%

XRD: X-ray diffraction

Table 8
Cation Exchange Capacity of Well Solids Samples

Well ID	Aluminum	Calcium	Lithium	Magnesium	Potassium	Sodium	Sum
GN-AP-MW-16	<0.015	81	0.057 J	27	1.2	3.5	113
GN-AP-MW-20	0.056 J	204	0.054 J	16	0.38	1.4	221
MW-11S*	0.014	5.9	<0.0035	0.84	0.11	0.61	7.4

Notes:

Results are in milliequivalents per kilogram.

*: existing site monitoring well that is not part of the coal combustion residuals rule monitoring network

<: indicates the compound was analyzed for but not detected

J: detected but result is below the method reporting limit

Table 9
Bulk Chemistry of Aquifer Solids Samples by XRF

Sample ID	Depth Interval (ft bgs)	Units	Arsenic	Molybdenum	Iron	Aluminum	Barium	Calcium	Magnesium	Manganese	Potassium	Silicon
GN-AP-MW-16V	11.5–12.5	ppm	19	3	45,352	44,242	356	2,714	4,690	984	20,404	222,581
GN-AP-MW-16V	19.5–20	ppm	21	4	53,141	29,855	301	2,170	<LOD	290	11,047	299,761
GN-AP-MW-17V	12–15	ppm	6	3	44,535	60,639	812	647	6,185	1,556	25,655	239,936
GN-AP-MW-17V	19–20	ppm	19	9	39,687	59,589	330	3,787	3,983	471	12,645	230,141
GN-AP-MW-30H	20.4–21.2	ppm	22	8	37,092	53,920	361	6,783	3,908	388	15,363	250,180
GN-AP-MW-31V	30.5-31.5	ppm	31	6	48,000	56,064	345	8,119	2,575	218	12,007	236,272

Notes:

Samples were analyzed on June 17, 2021.

<LOD: less than limit of detection

ft bgs: feet below ground surface

ppm: parts per million

XRF: X-ray fluorescence

Table 10

Minerals Identified in Aquifer Solids Samples by XRD[1]

			Mica	Feldspar		Clay Minerals				Iron Oxide
Sample ID	Depth Interval (ft bgs)	Quartz	Muscovite/Illite	Albite	Anorthite	Bentonite	Kaolinite	Nacrite	Vermiculite	Goethite
GN-AP-MW-16V	11.5–12.5	55	42					3.2		
GN-AP-MW-16V	19.5–20	92				4	1			3
GN-AP-MW-17V	12–15	40	42	9			8		0.5	
GN-AP-MW-17V	19–20	54	22		4		20			
GN-AP-MW-30H	20.4–21.2	73				27			0.1	
GN-AP-MW-31V	30.5–31.5	61		1		19	17			1.5

Notes:

1. Estimated concentration (weight %) reported where available.

ft bgs: feet below ground surface

XRD: X-ray diffraction

Table 11

Cation Exchange Capacity and Exchangeable Cations in Aquifer Soils

Sample ID	Depth Interval (ft bgs)	Exchangeable Cations (meq/kg soil)								CEC (meq/kg soil)
		Aluminum	Calcium	Iron	Lithium	Magnesium	Manganese	Potassium	Sodium	
GN-AP-MW-16V	11.5–12.5	0.0695 U	**80.8**	0.0336 U	0.009 U	**32.2**	**0.00782**	**2.94**	**0.63**	**116.6**
GN-AP-MW-16V[1]	11.5–12.5	0.0694 U	**65**	0.0335 U	**0.00963 J**	**28.6**	**0.00732**	**3.52**	**0.664**	**97.8**
GN-AP-MW-16V	19.5–20	0.0694 U	**43.4**	0.0335 U	0.00899 U	**4.81**	**0.38**	**1.44**	**0.545**	**50.6**
GN-AP-MW-17V	12–15	0.0695 U	**18.7**	0.0336 U	**0.0156 J**	**81.1**	**0.584**	**2.93**	**1.19**	**104.5**
GN-AP-MW-17V	19–20	0.0695 U	**93.6**	0.0336 U	**0.457**	**15.4**	**0.0704**	**5.79**	**1.75**	**117.1**
GN-AP-MW-30H	20.4–21.2	0.0694 U	**128**	0.0335 U	0.00899 U	**14.5**	**0.236**	**3.56**	**1.35**	**147.6**
GN-AP-MW-31V	30.5–31.5	0.0695 U	**144**	0.0336 U	0.009 U	**22.1**	**0.0513**	**2.25**	**1.63**	**170.0**

Notes:

Bold indicates detected values.

1. Duplicate

J: estimated value

CEC: cation exchange capacity

ft bgs: feet below ground surface

meq/kg: milliequivalents per kilogram

U: compound analyzed for but not detected above detection limit

Table 12

Extractable Aluminum, Manganese, and Iron Oxides in Aquifer Soils

Sample ID	Depth Interval (ft bgs)	Extractable Oxides (mg/kg soil)			Simultaneously Extractable Metals (mg/kg)		
		Aluminum	Iron	Manganese	Arsenic	Lithium	Molybdenum
GN-AP-MW-16V	11.5–12.5	**624**	**1270**	**606**	**2.56**	**1.56 J**	**0.39**
GN-AP-MW-16V[1]	11.5–12.5	**627**	**979**	**509**	**2.56**	**1.16 J**	**0.413**
GN-AP-MW-16V	19.5–20	**503**	**1390**	**117**	**3.7**	0.961 U	**0.651**
GN-AP-MW-17V	12–15	**618**	**1780**	**281**	**1.05**	0.976 U	**0.232 J**
GN-AP-MW-17V	19–20	**952**	**1220**	**210**	**4.5**	**5.52**	**4.5**
GN-AP-MW-30H	20.4–21.2	**1130**	**7880**	**392**	**7.35**	0.947 U	**1.19**
GN-AP-MW-31V	30.5–31.5	**1180**	**648**	**43.3**	**4.37**	0.976 U	**0.555**

Notes:

Extractable oxides were determined by the acid ammonium oxalate method.

Bold indicates detected values.

1. duplicate

J: estimated value

ft bgs: feet below ground surface

mg/kg: milligrams per kilogram

U: compound analyzed for but not detected above detection limit

Table 13
Geochemical Evidence for Attenuation Mechanisms

Mechanism	Geochemical Modeling	XRF	XRD	SSE	CEC
Sorption on iron oxides (arsenic and molybdenum)	X	X	X	X	
Precipitation of arsenate and molybdate phases (arsenic and molybdenum)	X			X	
Cation exchange on clays and manganese oxides (lithium)	X		X		X

Notes:

CEC: cation exchange capacity

SSE: selective sequential extraction

XRD: X-ray diffraction

XRF: X-ray fluorescence

Table 14
Groundwater Chemistry Data Used in 1D Reactive Transport Models

		Transect 1			Transect 2		
Sample Location ID:		**MW-11**	**MW-37V**	**MW-16**	**MW-11**	**MW-33V**	**MW-17**
Analyte	**Units**	**Background**	**Downgradient**	**Downgradient**	**Background**	**Downgradient**	**Downgradient**
Eh[1]	V	0.289	0.180	0.100	0.769	0.758	0.653
pe[1]	SU	4.92	3.05	1.70	13.0	12.8	11.0
pH	SU	7.76	7.80	8.02	7.76	7.51	9.38
DO	mg/L	2.79	0.41	1.06	2.79	0.47	1.16
Alkalinity	mg/L	127	107	21.7	127	264	12.1
Arsenic	mg/L	0.005 U	0.002	0.005 U	0.005 U	0.011	0.009
Barium	mg/L	0.008	0.035	0.036	0.008	0.065	0.098
Calcium	mg/L	39.0	40.6	48.1	39.0	46.8	103
Chloride	mg/L	6.75	12.4	17.4	6.75	27.7	26.5
Cobalt	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Iron	mg/L	0.05 U	0.035	0.139	0.05 U	0.129	0.05 U
Lithium	mg/L	0.02 U	0.052	0.090	0.02 U	0.127	0.731
Magnesium	mg/L	20.0	19.7	8.52	20.0	23.2	5.33
Manganese	mg/L	0.005 U	0.003	0.281	0.005 U	0.141	0.002
Molybdenum	mg/L	0.01 U	0.213	0.328	0.01 U	0.031	2.79
Potassium	mg/L	0.320	1.97	12.1	0.320	6.21	30.3
Sodium	mg/L	5.22	16.2	19.0	5.22	42.3	34.8
Sulfate	mg/L	45.3	94.9	143	45.3	24.4	309

Notes:

1. Eh and pe for Transect 2 are calculated based on equilibrium with dissolved oxygen.

Thick border indicates transect constituent of interest at a statistically significant level.

Groundwater chemistry data is from July 2020.

DO: dissolved oxygen

mg/L: milligrams per liter

SU: standard unit

U: compound analyzed for but not detected above detection limit

V: volts

Table 15
Cation Exchange and Sorption Capacity for 1D Model Transects

Constituent	Units	Transect 1	Transect 2
Cation exchange capacity[1,2]	meq/kg	103	122
X	mol/L	2.46	2.91
Extractable iron oxides[1,2]	mg/kg	1157	1500
≡FeOH (weak)	mol/L	0.099	0.128
≡FeOH (strong)	mol/L	0.0025	0.0032
Extractable aluminum oxides[1,2]	mg/kg	585	785
≡AlOH	mol/L	0.017	0.023

Notes:

1. GN-AP-MW-16V residual soil samples average value was used for Transect 1.
2. GN-AP-MW-17V residual soil samples average value was used for Transect 2.

X: ion exchange site

≡FeOH (weak): weak surface binding site on $Fe(OH)_3$

≡FeOH (strong): strong surface binding site on $Fe(OH)_3$

≡AlOH: surface binding site on $Al(OH)_3$

meq/kg: milliequivalents per kilogram

mg/kg: milligrams per kilogram

mol/L: moles per liter

Table 16
Initial Groundwater Characterization Results

Parameter	Result			Units
	MW-16	MW-17	MW-15R	
Alkalinity	30	23	87	mg/L as $CaCO_3$
Ammonia as N	0.578	1.06	0.5	mg/L
Total organic carbon	0.16 J	0.80	0.07 U	mg/L
Chloride	23.9	66.3	79.7	mg/L
Fluoride	0.01 U	0.01 U	0.01 U	mg/L
Nitrate as N[1]	0.02 U	0.02 U	0.03 J	mg/L
Nitrite as N	0.006 U	0.006 U	0.006 U	mg/L
Orthophosphate	0.02 U	0.02 U	0.02 U	mg/L
Sulfate	187	453	228	mg/L
Aluminum, dissolved	15 J	93	5 J	µg/L
Aluminum, total	16 J	93	100	µg/L
Antimony, dissolved	0.1 U	0.39	0.1 U	µg/L
Arsenic, dissolved	5	9.2	1.6 J	µg/L
Barium, dissolved	51.3	126	62	µg/L
Beryllium	0.03 U	0.03 U	0.03 U	µg/L
Boron, dissolved	1,520	3,380	2,190	µg/L
Cadmium, dissolved	0.06 J	0.31	0.04 U	µg/L
Calcium, dissolved	63.3	157	89.7	mg/L
Chromium, dissolved	0.2 U	0.2 U	0.2 U	µg/L
Cobalt, dissolved	1.21	0.05 U	0.67	µg/L
Iron, dissolved	5 J	2 U	2 J	µg/L
Iron, total	94	2 U	120	µg/L
Lead, dissolved	0.03 U	0.03 U	0.03 U	µg/L
Lithium, dissolved	114	890	35.7	µg/L
Magnesium, dissolved	8.64	8.67	28.1	mg/L
Manganese, dissolved	579	12.2	834	µg/L
Manganese, total	570	11.6	825	µg/L
Molybdenum, dissolved	610	3580	122	µg/L
Nickel, dissolved	0.5 J	1.1	1	µg/L
Potassium, dissolved	14.8	37.8	6.94	mg/L
Selenium, dissolved	1 U	1 U	1 U	µg/L
Silicon, dissolved	2.63	2.82	3.59	mg/L
Silver, dissolved	0.05 U	0.05 U	0.05 U	µg/L
Sodium, dissolved	21.8	41.2	52.1	mg/L
Thallium, dissolved	0.06 J	0.06 J	0.05 U	µg/L
Zinc, dissolved	3 U	3 U	3 U	µg/L
pH	7.24	8.38	7.77	--

Notes:
Samples were field filtered with a 0.45-micron filter at the time of collection and filtered again prior to analysis for dissolved constituents.
1. Calculated as: (nitrogen, nitrate + nitrite) – (nitrogen, nitrite)
--: not applicable
µg/L: micrograms per liter
$CaCO_3$: calcium carbonate
J: Indicates that the result is an estimated value.
mg/L: milligrams per liter
N: nitrogen
U: indicates that the compound was analyzed for but not detected.

Table 17
Site Soils and Groundwater Used in Column Tests

Column Number	Soil ID	Groundwater ID	COI(s) in Groundwater
1	GN-AP-MW-16V 11.5'-12.5'	MW-16	Cobalt and lithium
2	GN-AP-MW-16V 19.5'-20.0'	MW-16	Cobalt and lithium
3	GN-AP-MW-17V 12.0'-15.0'	MW-17	Arsenic, cobalt, and lithium
4	GN-AP-MW-17V 19.0'-20.0'	MW-17	Arsenic, cobalt, and lithium
5	GN-AP-MW-30H 20.4'-21.2'	MW-15R	Cobalt and lithium
6	GN-AP-MW-31V 30.5'-31.5'	MW-15R	Cobalt and lithium

Note:
COI: constituent of interest

Table 18
Column Test Operating Conditions

Parameter	Value	Unit
Soil/sand mixture depth	12.8	cm
Column inside diameter	2.68	cm
Flow rate	0.40	mL per minute
Empty bed contact time	3.01	hours
Porosity	30–42	%
Dry mass of soil in column	47.5–62.5	grams
Mass of clean sand in column	47.5–62.5	grams
Hydraulic residence time	0.90–1.26	hours
Darcy flux	30.6–42.8	cm per day
Linear velocity	102	cm per day
Column test duration	8–12	days

Notes:
cm: centimeter
mL: milliliter

Table 19
Summary of Column Test Results

Column Number	Soil	Groundwater	COI	Results
1	GN-AP-MW-16V 11.5'-12.5'	MW-16	Mo	Capacity for attenuation reached at approximately 50 PV.
			Li	Capacity for attenuation reached at approximately 175 PV.
2	GN-AP-MW-16V 19.5'-20.0'		Mo	Capacity for attenuation reached at approximately 50 PV.
			Li	Capacity for attenuation reached at approximately 175 PV.
3	GN-AP-MW-17V 12.0'-15.0'	MW-17	As	Excess capacity for attenuation after 300 PV.
			Mo	Capacity for attenuation reached at approximately 150 PV.
			Li	Capacity for attenuation reached at approximately 75 PV.
4	GN-AP-MW-17V 19.0'-20.0'		As	Excess capacity for attenuation reached after 250 PV; deeper soils showed a higher capacity for attenuation than shallower soils did.
			Mo	Capacity for attenuation reached at approximately 150 PV.
			Li	Capacity for attenuation reached at approximately 75 PV.
5	GN-AP-MW-30H 20.4'-21.2'	MW-15R	Mo	Excess capacity for attenuation after 150 PV; deeper soils showed a higher capacity for attenuation than shallower soils did.
			Li	
6	GN-AP-MW-31V 30.5'-31.5'		Mo	
			Li	

Notes:
As: arsenic
COI: constituent of interest
Li: lithium
Mo: molybdenum
PV: pore volume

Table 20
Estimated Aquifer Capacity

COI	Estimated Maximum Mass of COI in Aquifer (kg)	Estimated Maximum Attenuating Capacity of Aquifer (kg)	Estimated Excess Attenuating Capacity of Aquifer
Arsenic	0.004	>>1.6	>>400 times
Lithium	40	>16,000	>400 times
Molybdenum	110	>41,250	>375 times

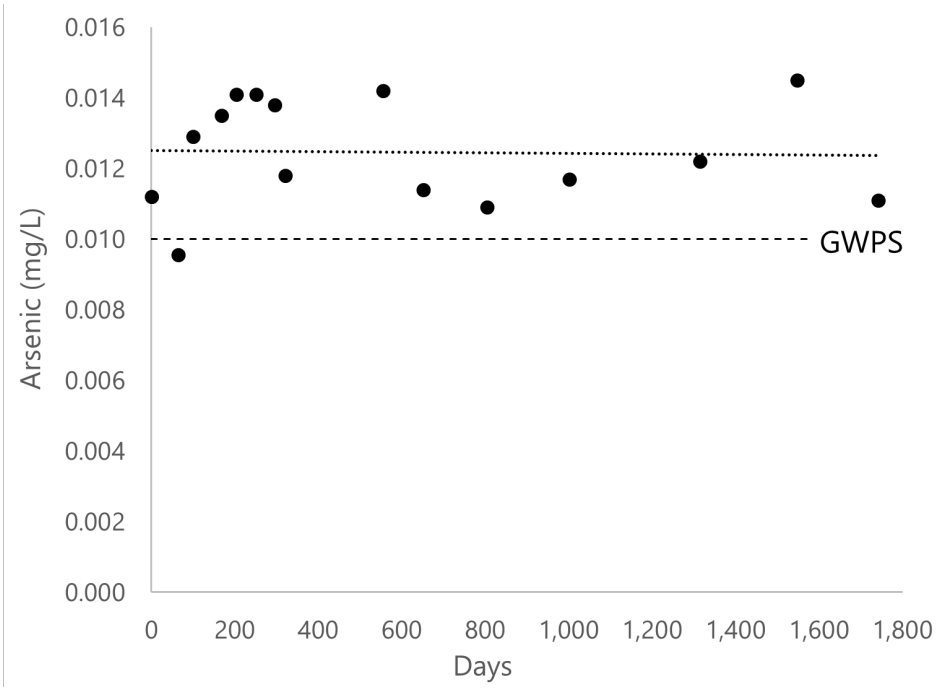
Notes:
>>: significantly greater than
COI: constituent of interest
kg: kilogram

Table 21
Post-Column Test Soil SSE Results

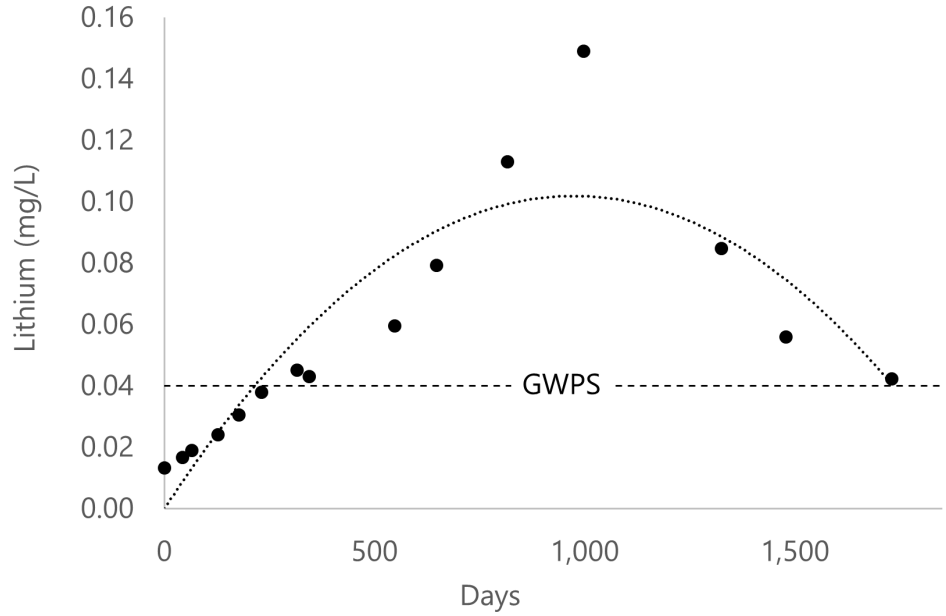
Sample ID	Arsenic (mg/kg)					Molybdenum (mg/kg)					Lithium (mg/kg)					Iron (mg/kg)					Manganese (mg/kg)				
	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5
GN-AP-MW-16V 11.5-12.5	1.92 U	1.92 U	0.216 U	**0.363 J**	**5.88**	1.92 U	1.92 U	0.216 U	0.192 U	**0.942 J**	9.62 U	9.62 U	1.08 U	0.962 U	**6.02**	--	96.2 U	**112**	**392**	**15700**	--	**11.8**	**195**	**29.9**	**128**
GN-AP-MW-16V 19.5-20	1.98 U	2.98 U	0.198 U	**0.268 J**	**3.63**	1.98 U	2.98 U	0.198 U	0.198 U	0.486 U	9.92 U	14.9 U	0.992 U	0.992 U	2.43 U	--	149 U	**103**	**368**	**10500**	--	**13.5**	**16.8**	**4.82**	**26.7**
GN-AP-MW-17V 12-15	2.05 U	**2.84 J**	0.205 U	**0.371 J**	**0.915 J**	**4.6**	**2.25 J**	0.205 U	**0.461**	**0.927 J**	10.2 U	10.2 U	1.02 U	**1.8 J**	**4.14 J**	--	102 U	**118**	**1520**	**8030**	--	**5.37**	**83.6**	**52.3**	**33.9**
GN-AP-MW-17V 19-20	2.17 U	**8.68**	**0.34 J**	**0.718**	**1.8**	2.17 U	2.17 U	0.217 U	0.217 U	0.493 U	10.9 U	10.9 U	1.09 U	1.09 U	**4.44 J**	--	109 U	**157**	**817**	**3940**	--	**23.3**	**68.1**	**15.7**	**15.3**
GN-AP-MW-17V 19-20[1]	2.16 U	**10.7**	**0.364 J**	**0.862**	**1.66**	2.16 U	2.16 U	0.216 U	0.216 U	0.483 U	10.8 U	10.8 U	1.08 U	1.08 U	**4.75 J**	--	108 U	**161**	**948**	**3970**	--	**23.4**	**67.1**	**19.7**	**15.1**
GN-AP-MW-30H 20.4-21.2	1.94 U	1.94 U	**0.336 J**	**0.876**	**6.08**	1.94 U	1.94 U	0.194 U	**0.321 J**	**1.37**	9.69 U	9.69 U	0.969 U	0.969 U	**4.34 J**	--	96.9 U	**708**	**2460**	**18200**	--	**24.6**	**58.5**	**38.8**	**35.8**
GN-AP-MW-31V 30.5-31.5	1.97 U	1.97 U	0.197 U	**0.461**	**8.33**	1.97 U	1.97 U	0.197 U	0.197 U	**1.85**	9.84 U	9.84 U	0.984 U	0.984 U	**2.92 J**	--	98.4 U	**55.3**	**312**	**18900**	--	**10**	**11.8**	**2.97**	**40.7**
GN-AP-MW-31V 30.5-31.5[1]	1.94 U	1.94 U	**0.194 J**	**0.66**	**7.76**	1.94 U	1.94 U	0.194 U	**0.246 J**	**1.22**	9.69 U	9.69 U	0.969 U	0.969 U	2.43 U	--	96.9 U	**98.4**	**449**	**15200**	--	**10.5**	**11.8**	**4.6**	**33.8**

Notes:
Bold indicates detected values.
1. Duplicate
--: not measured
F1: soluble
F2: exchangeable
F3: reducible (iron/manganese oxide bound)
F4: oxidizable (sulfide/organic/crystalline oxide bound)
F5: residual
J: estimated value
mg/kg: milligrams per kilogram
SSE: selective sequential extraction
U: compound analyzed for but not detected above detection limit

Figures



GN-AP-MW-17



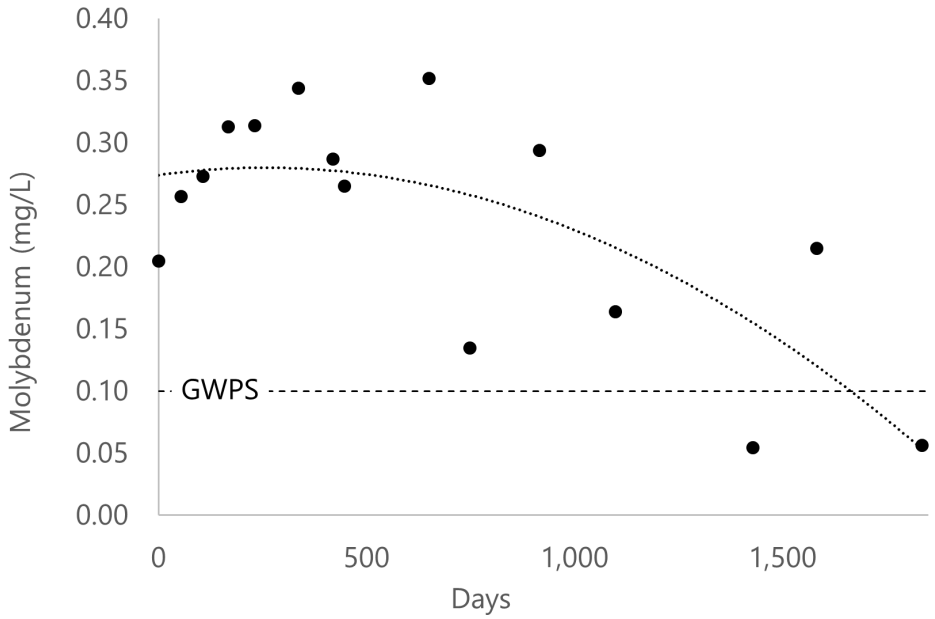
GN-AP-MW-15R

Notes:
GWPS: groundwater protection standard
mg/L: milligrams per liter

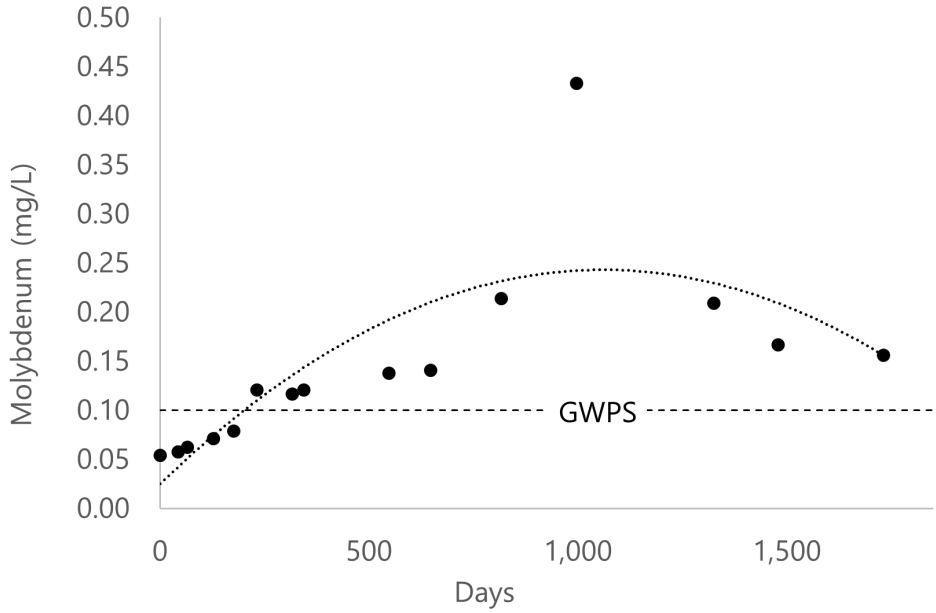
Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 1a - Concentration vs Time.docx

ANCHOR QEA

Figure 1a
Concentration Versus Time Graphs
Monitored Natural Attenuation Demonstration
Plant Gaston



GN-AP-MW-5



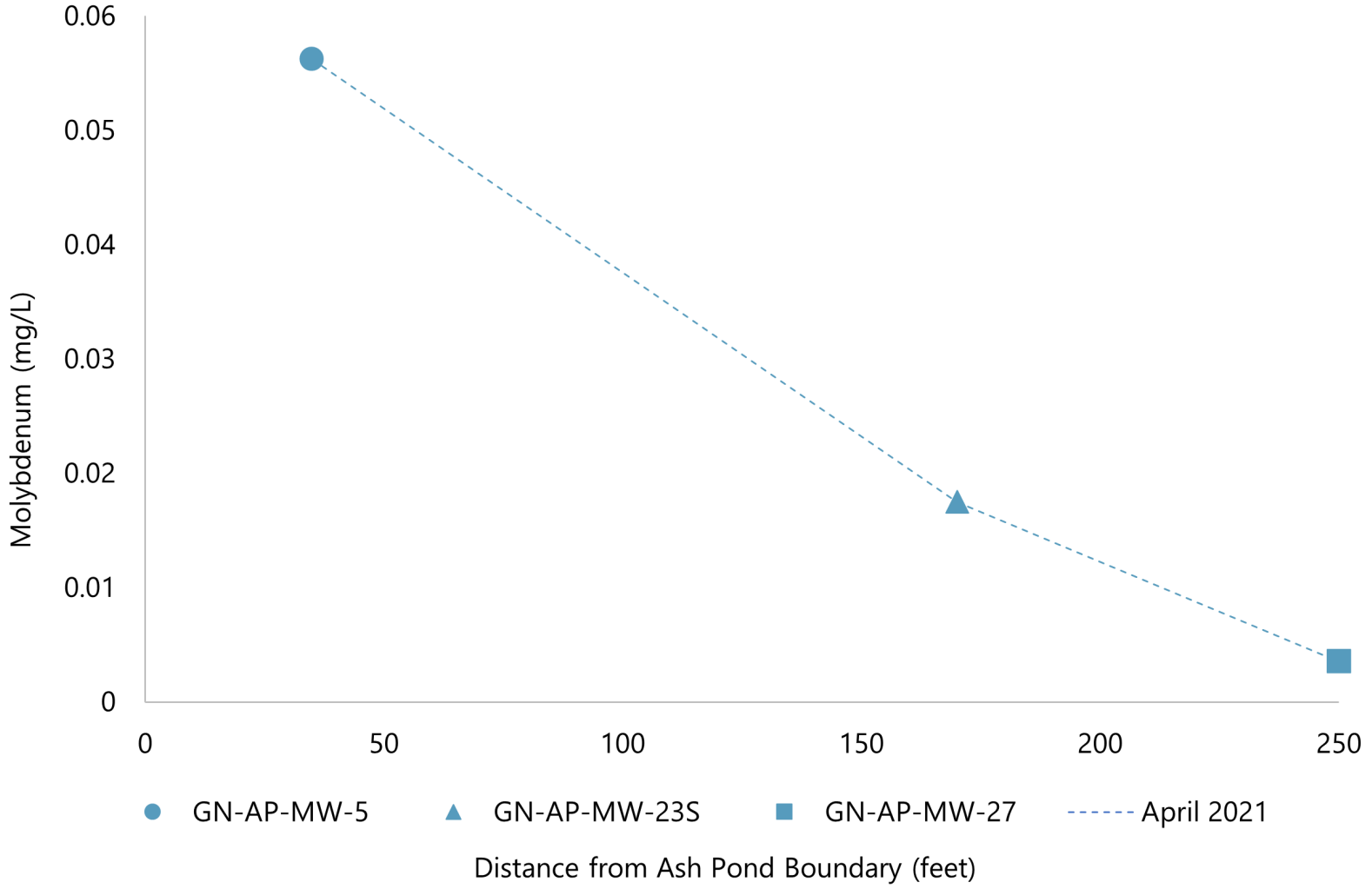
GN-AP-MW-15R

Notes:
GWPS: groundwater protection standard
mg/L: milligrams per liter

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 1b - Concentration vs Time.docx

ANCHOR QEA

Figure 1b
Concentration Versus Time Graphs
Monitored Natural Attenuation Demonstration
Plant Gaston

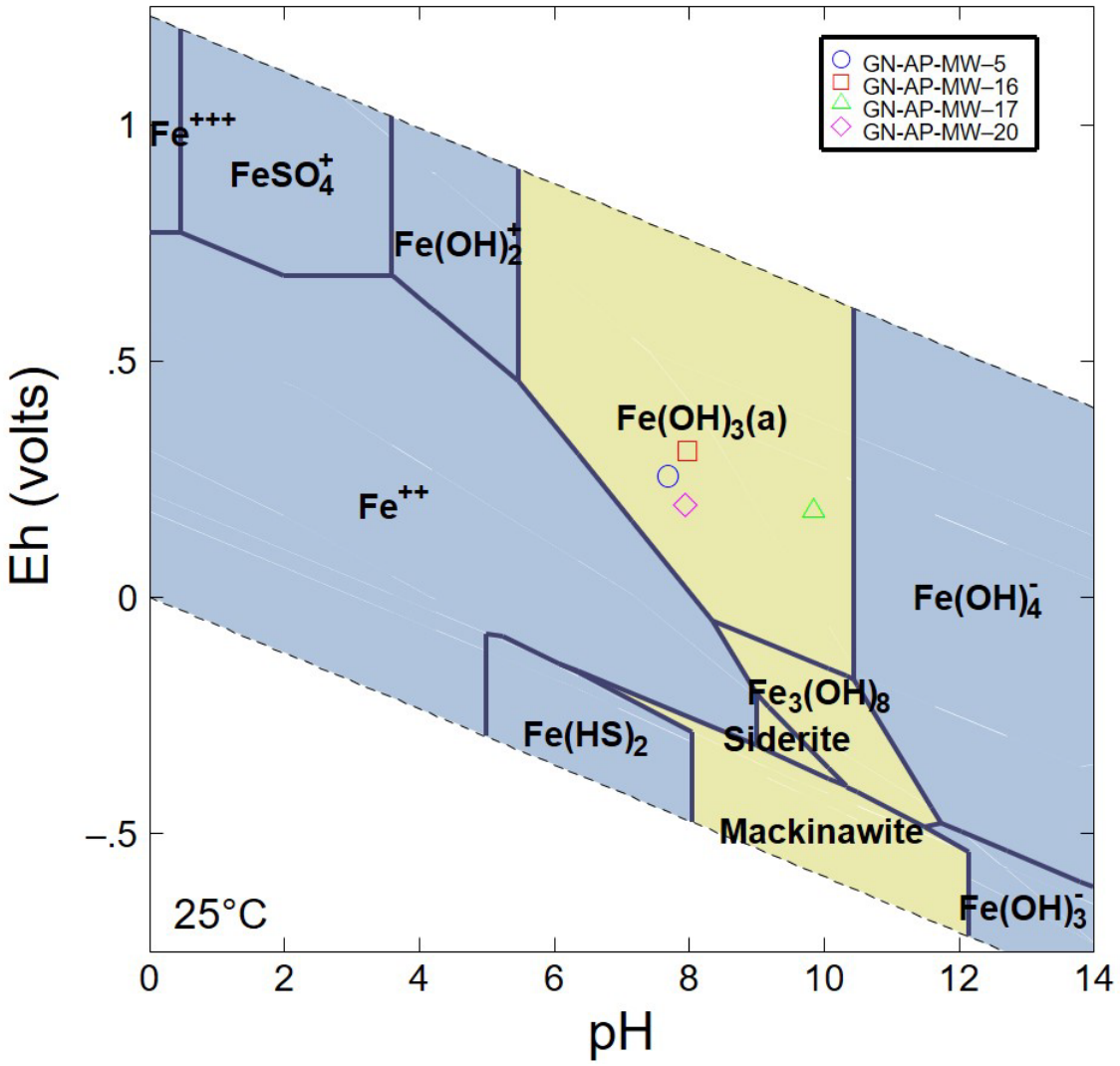


Note:
mg/L: milligrams per liter

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 2 - Concentration vs Distance.docx

ANCHOR QEA

Figure 2
Concentration Versus Distance Graph
Monitored Natural Attenuation Demonstration
Plant Gaston

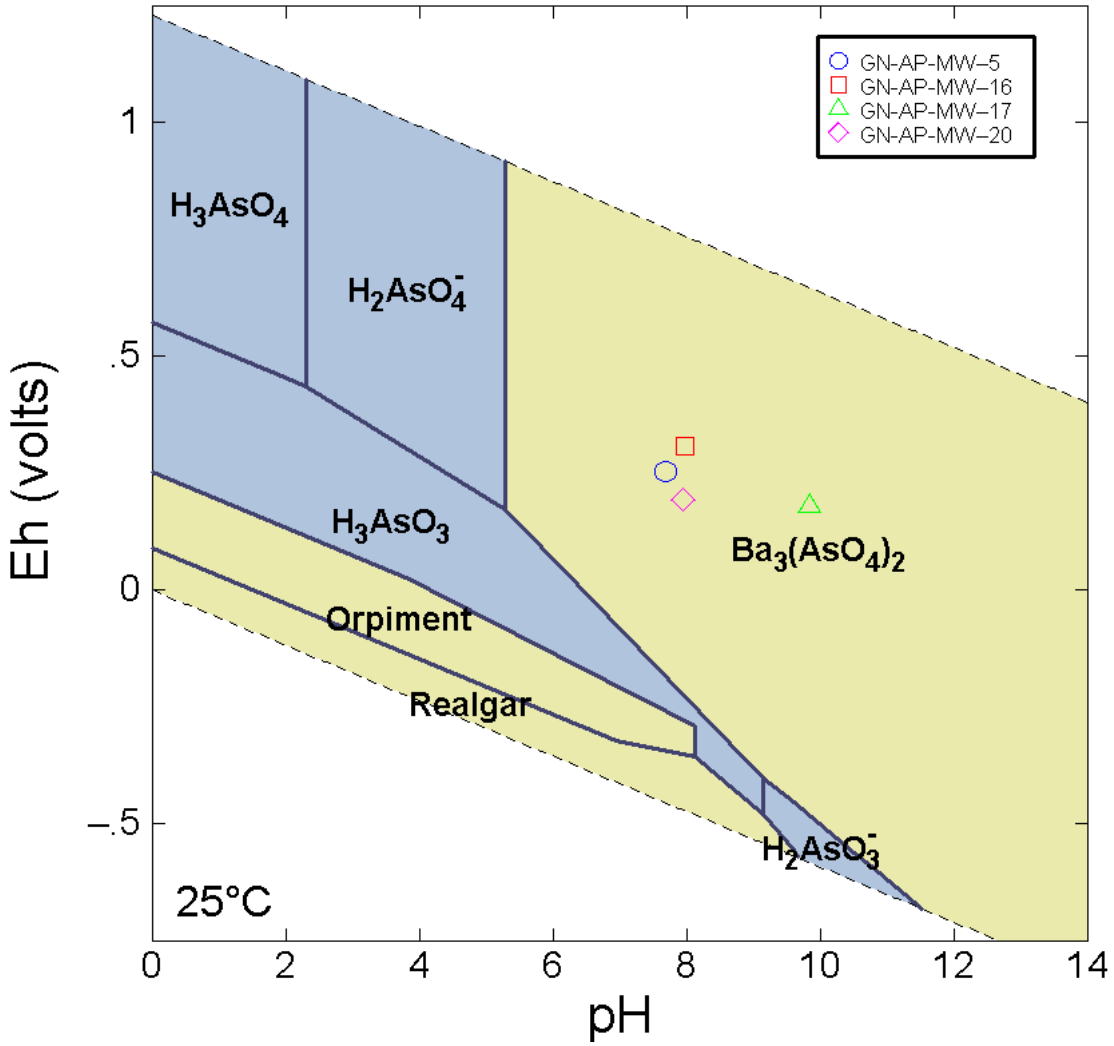


Note:
Blue fields indicate dissolved/mobile species. Yellow fields indicate solid/attenuated species.

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 3 - Eh-pH - Fe.docx

ANCHOR QEA

Figure 3
Eh-pH Stability Diagram for Dissolved and Solid Iron Phases
Monitored Natural Attenuation Demonstration
Plant Gaston

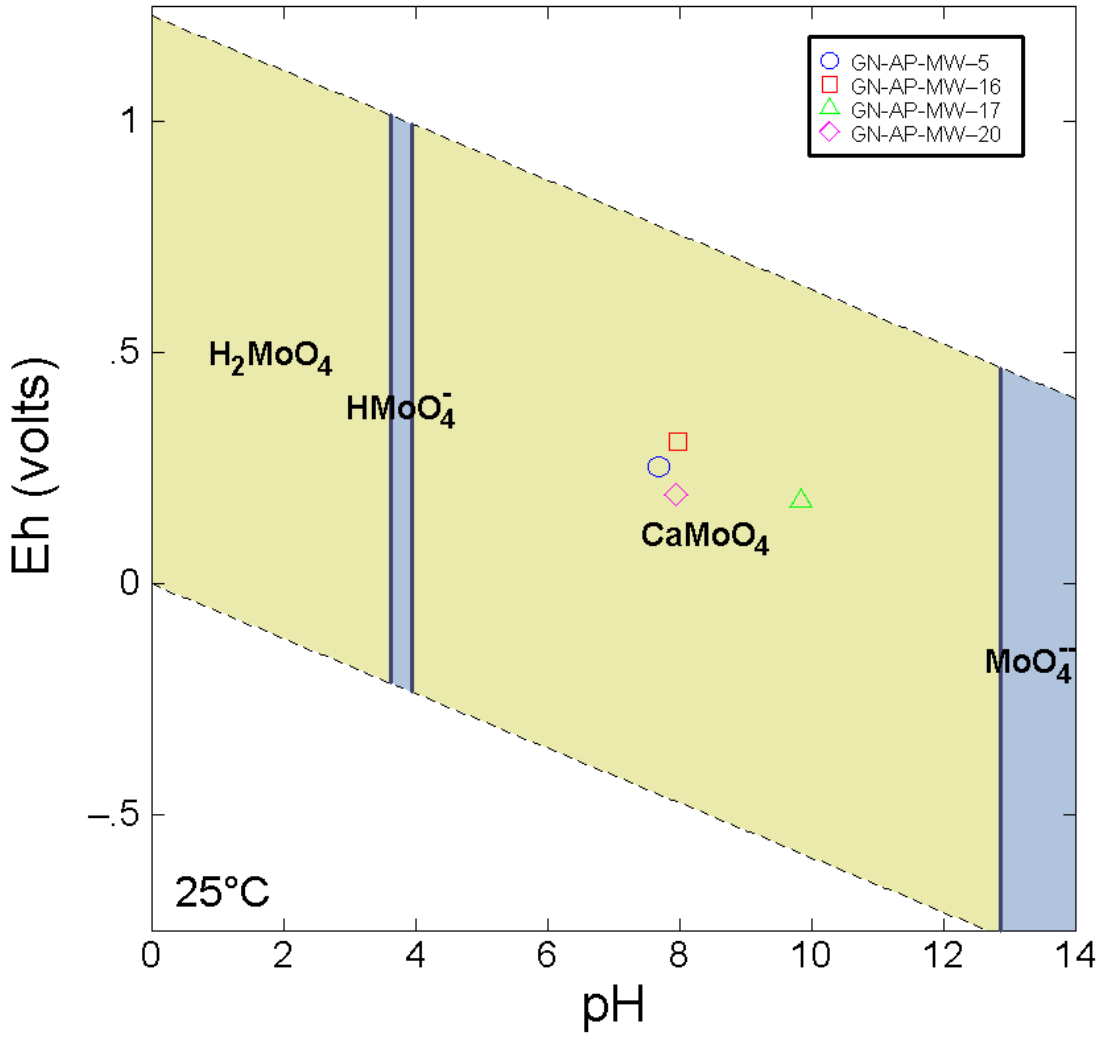


Note:
Blue fields indicate dissolved/mobile species. Yellow fields indicate solid/attenuated species.

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 4 - Eh-pH - As.docx

ANCHOR QEA

Figure 4
Eh-pH Stability Diagram for Dissolved and Solid Arsenic Phases
Monitored Natural Attenuation Demonstration
Plant Gaston

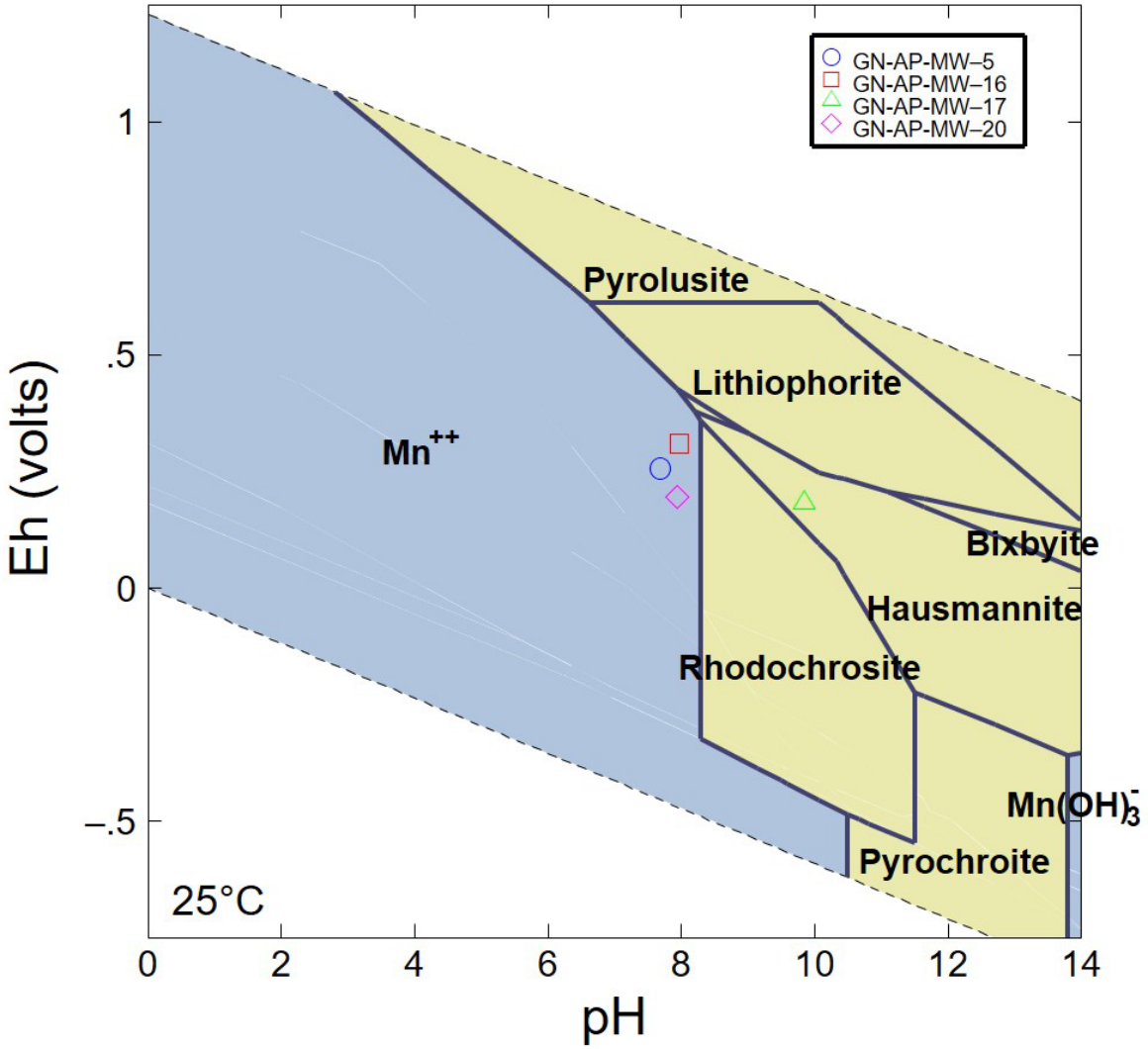


Note:
Blue fields indicate dissolved/mobile species. Yellow fields indicate solid/attenuated species.

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 5 - Eh-pH - Mo.docx

ANCHOR QEA

Figure 5
Eh-pH Stability Diagram for Dissolved and Solid Molybdenum Phases
Monitored Natural Attenuation Demonstration
Plant Gaston

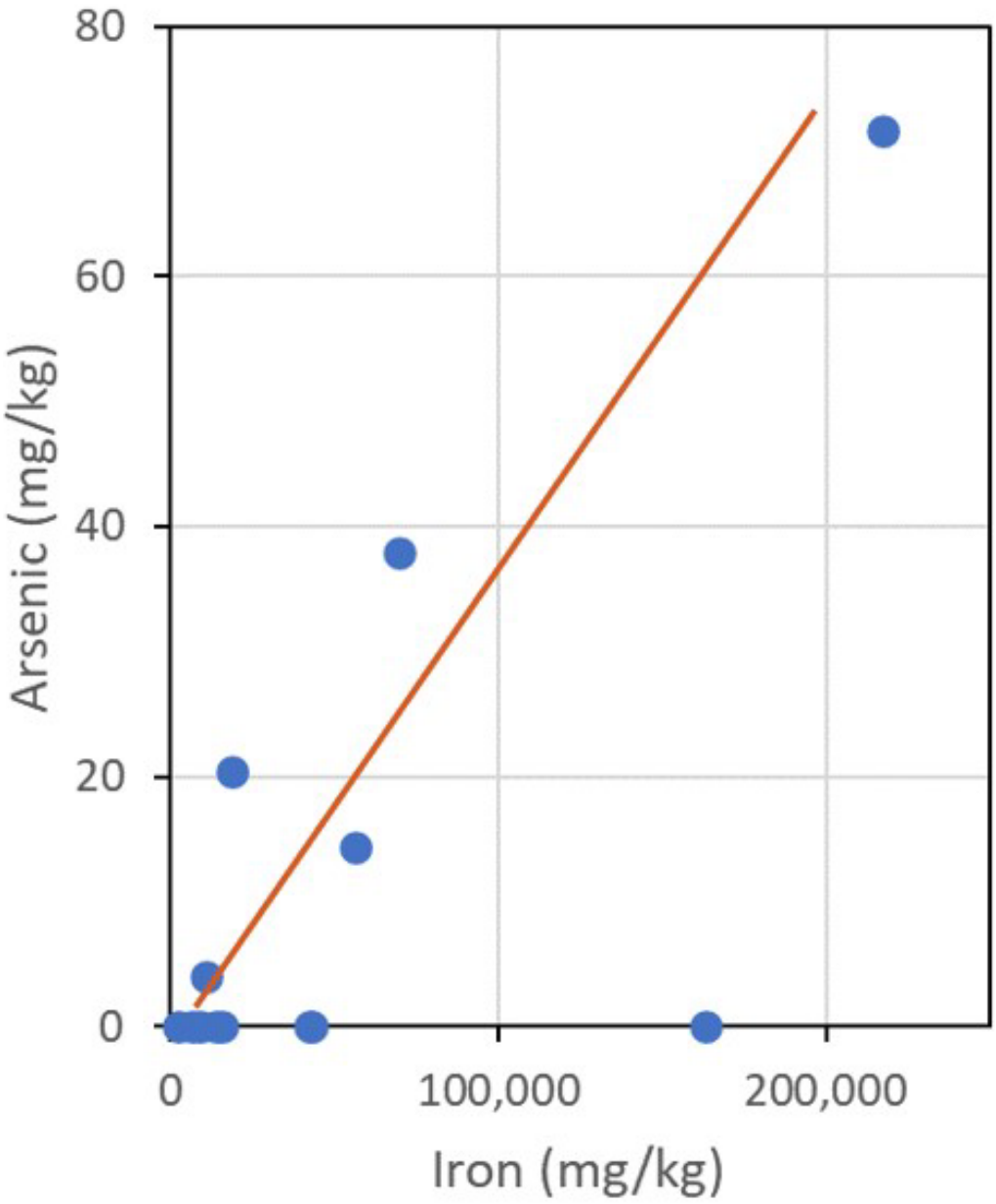


Note:
Blue fields indicate dissolved/mobile species. Yellow fields indicate solid/attenuated species.

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 6 - Eh-pH - Mn.docx

ANCHOR QEA

Figure 6
Eh-pH Stability Diagram for Dissolved and Solid Manganese Phases
Monitored Natural Attenuation Demonstration
Plant Gaston

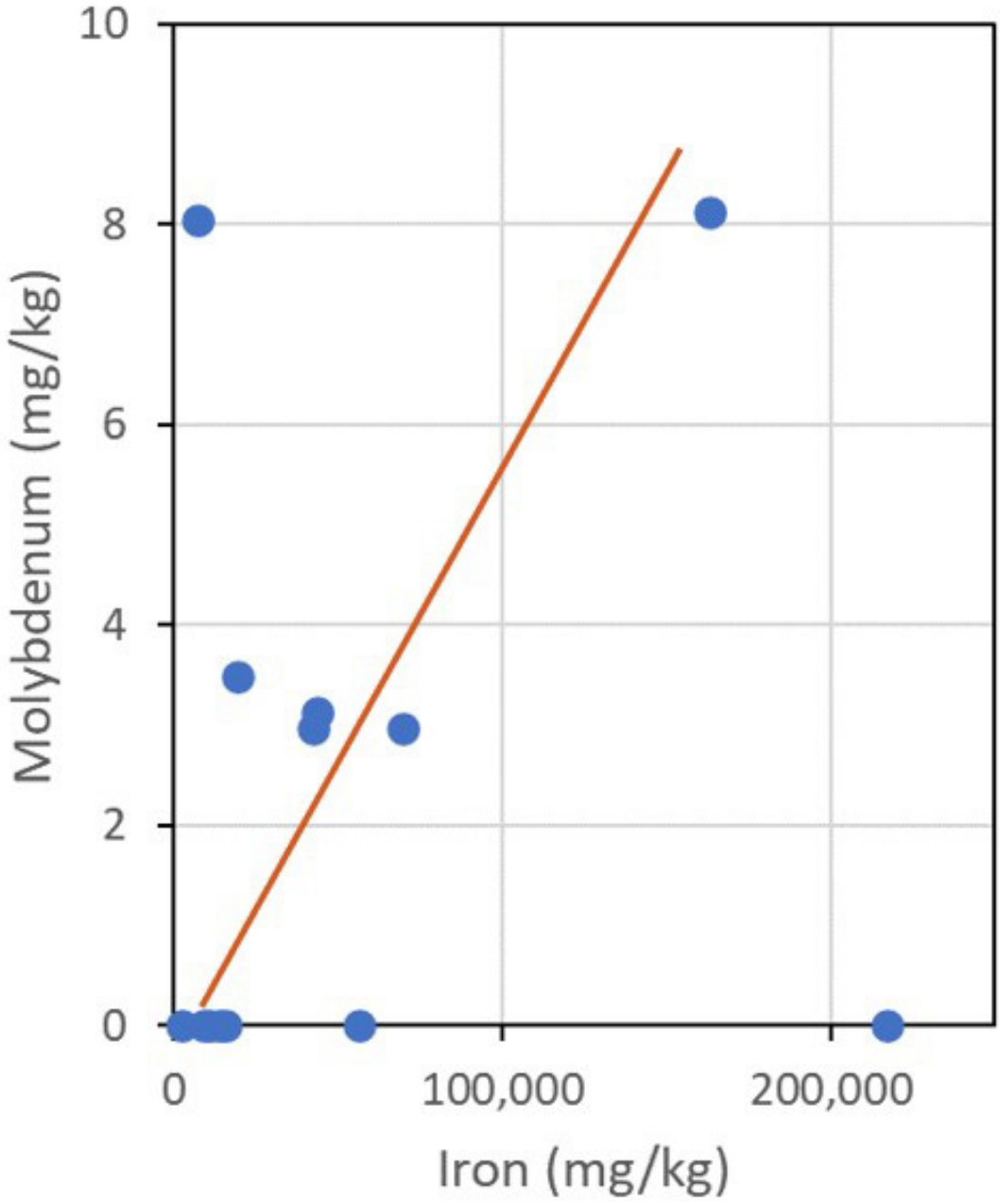


Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 7 - Bulk Chemistry Arsenic and Iron.docx

ANCHOR QEA

Figure 7
Bulk Chemistry Relationship Between Arsenic and Iron
Monitored Natural Attenuation Demonstration
Plant Gaston

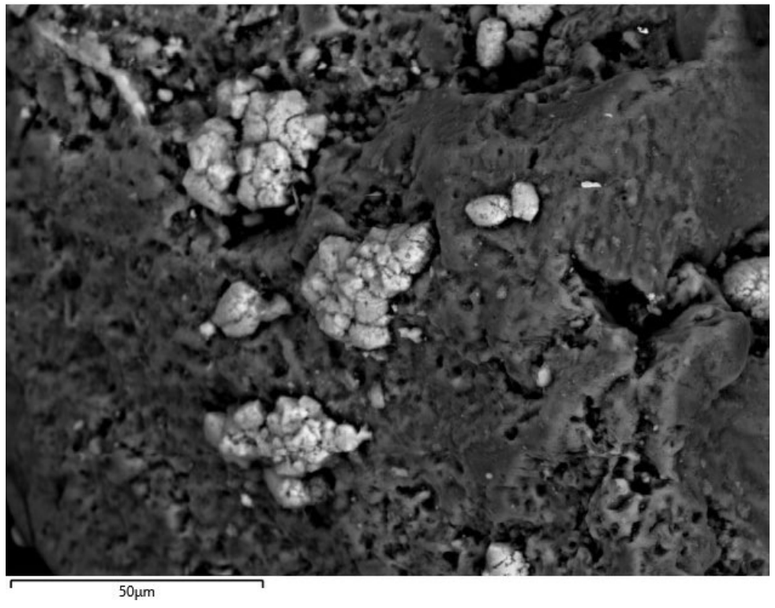


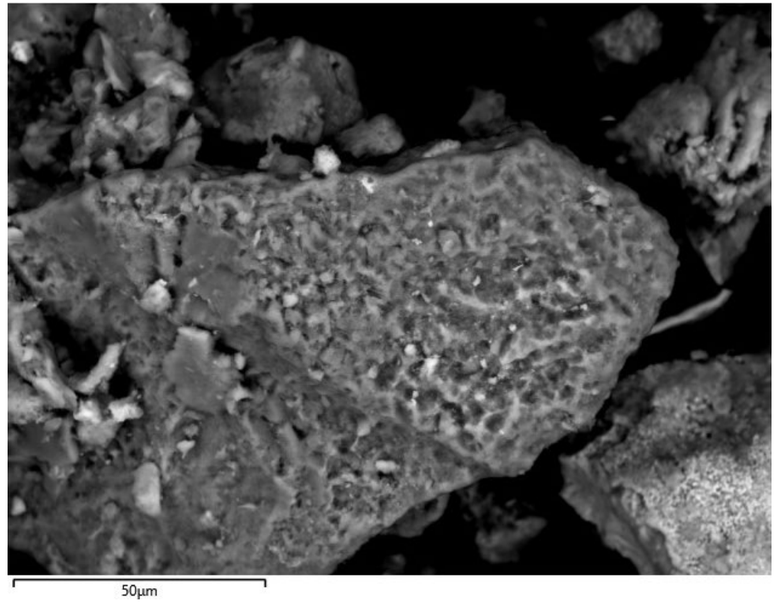
Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 8 - Bulk Chemistry Molybdenum and Iron.docx

ANCHOR QEA

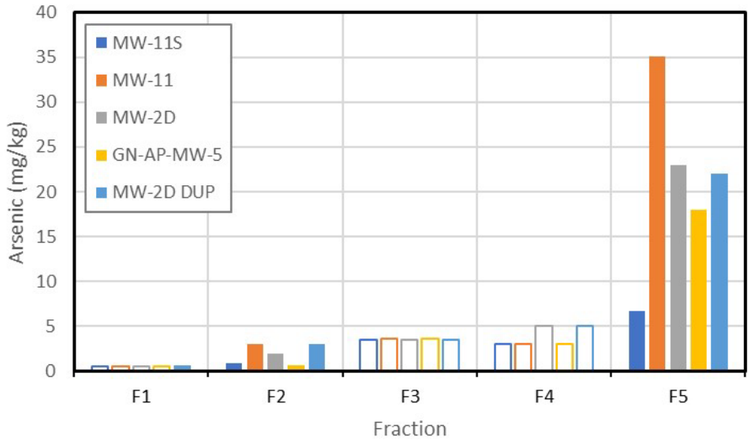
Figure 8
Bulk Chemistry Relationship Between Molybdenum and Iron
Monitored Natural Attenuation Demonstration
Plant Gaston

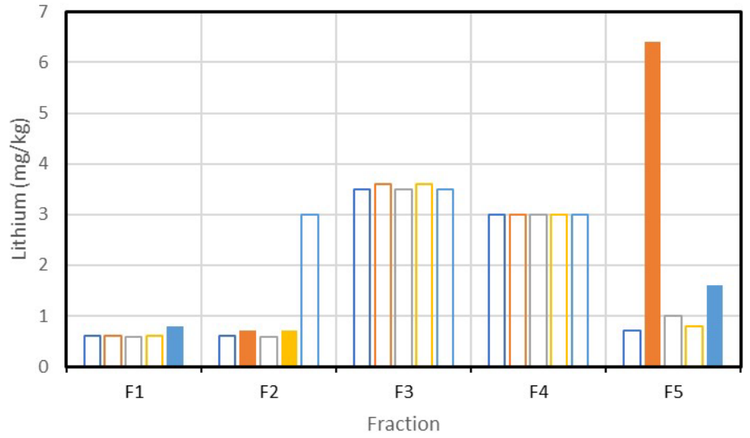


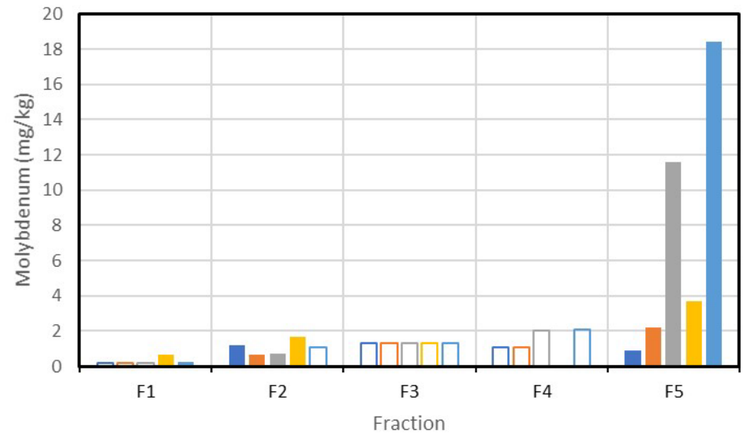


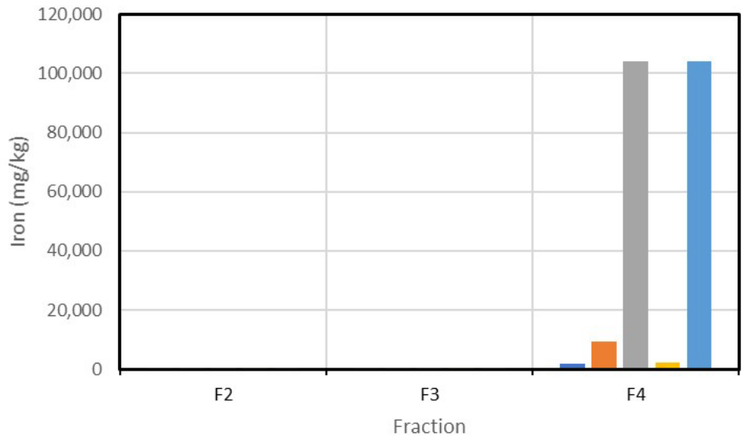
Note:
µm: micron

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 9 - SEM Results for MW-11S.docx

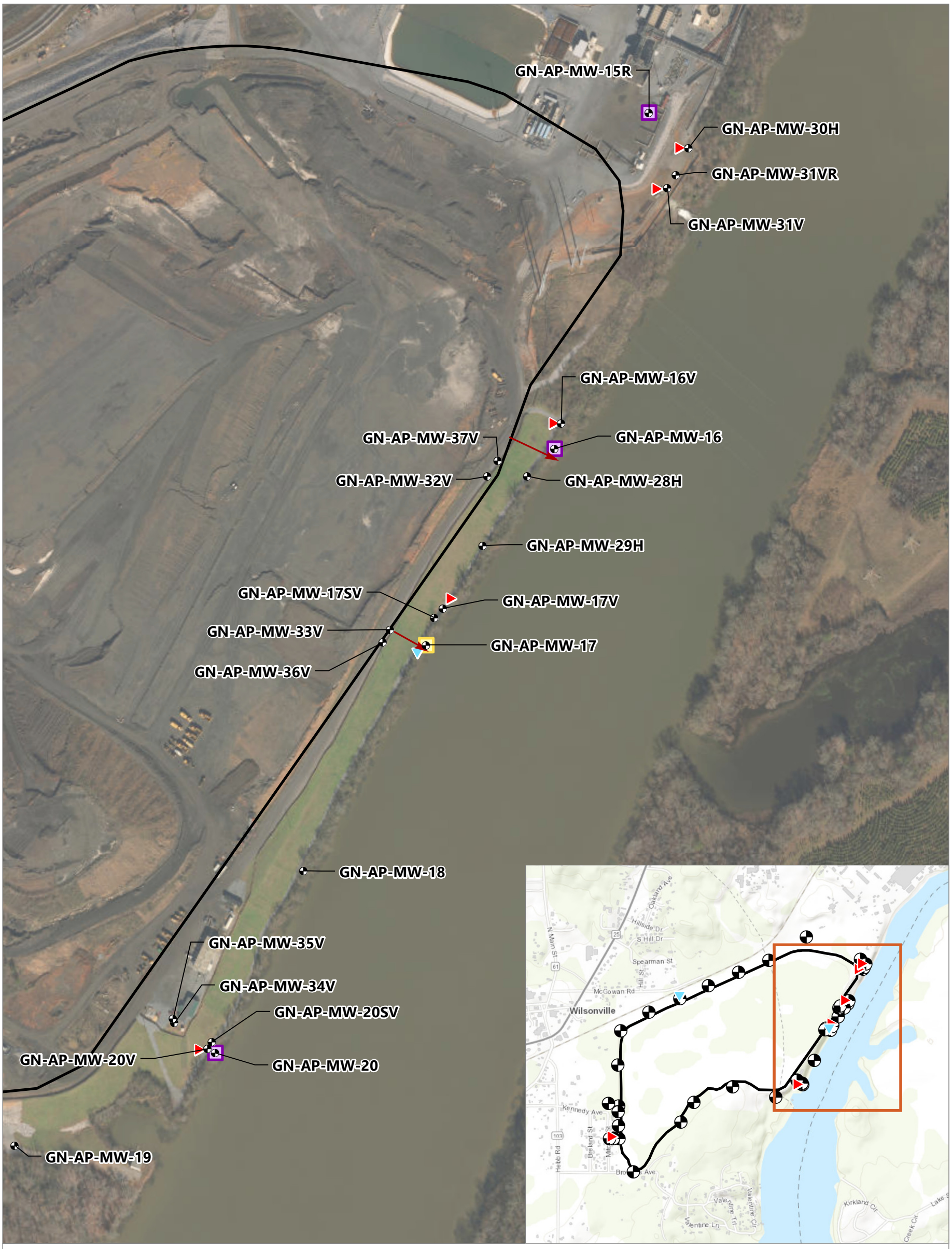








Notes:
Non-detect results are shown as unfilled bars plotted at the detection limit.
F1: water soluble
F2: exchangeable (e.g., clay minerals)
F3: reducible (e.g., poorly crystalline metal oxides such as iron oxides)
F4: oxidizable (e.g., crystalline oxide and crystalline sulfide minerals)
F5: residual (e.g., silicate phases)
DUP: duplicate
mg/kg: milligrams per kilogram
SSE: selective sequential extraction



LEGEND:

- Ash Pond Boundary
- Plant Gaston Wells
- Groundwater Sample
- Soil/Rock Sample
- Lithium and Molybdenum SSLs
- Arsenic, Lithium, and Molybdenum SSLs
- Model Transect

NOTES:
1. There is a near vertical geophysical anomaly in the area of GN-AP-MW-17.
2. SSL: statistically significant level

Groundwater Samples:
- GN-AP-MW-17
- GN-AP-MW-10

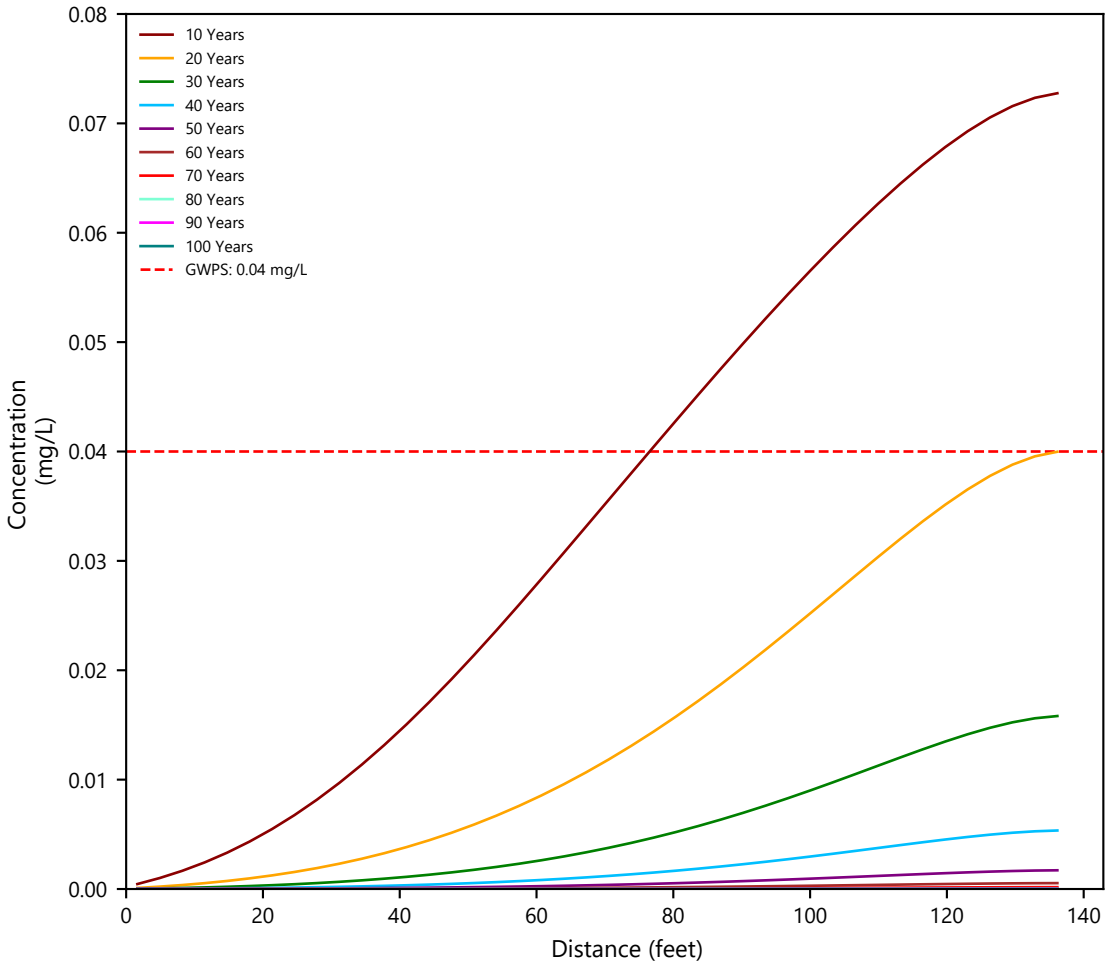
Soil/Rock Samples:
- GN-AP-MW-16V
- GN-AP-MW-17V
- GN-AP-MW-20V
- GN-AP-MW-31V
- GN-AP-MW-30H
- GN-AP-MW-23D

0 400
Feet

Publish Date: 2021/11/16, 4:00 PM | User: nwagner
Filepath: \\orcas\gis\Jobs\SouthernCompany_1114\PlantGaston\Maps\2021_MNA_Demonstration\AQ_PlantGaston_1D_ModelTransect.mxd

ANCHOR QEA

Figure 11
1D Model Transects
Monitored Natural Attenuation Demonstration
Plant Gaston

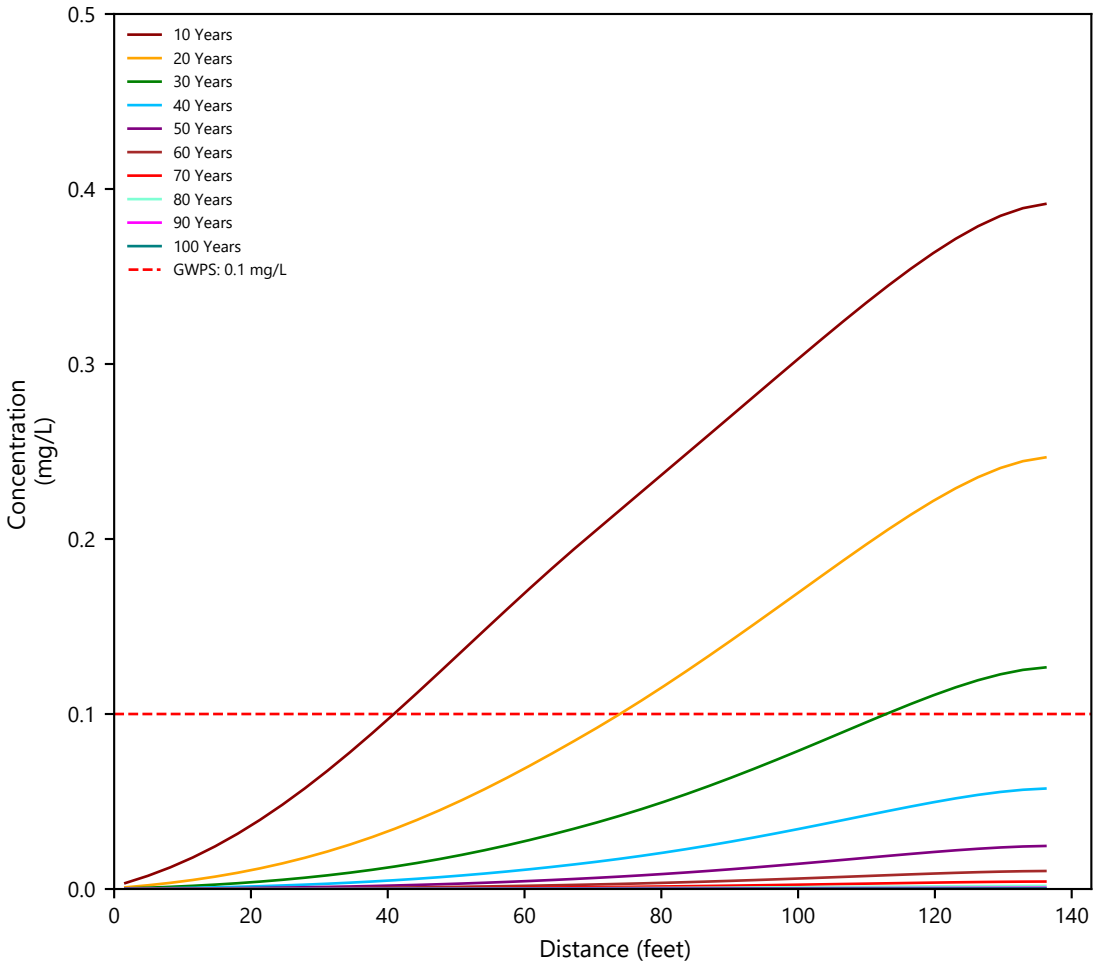


Notes:
Model reactions include surface complexation, cation exchange, and mineral precipitation.
GWPS: groundwater protection standard
mg/L: milligrams per liter

Publish Date: 11/08/2021 17:52 PM | User: pspina
File Path: \\athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Data\Post Modeling Results\AP_ModelOutput_with_withoutCOI.py

ANCHOR QEA

Figure 12a
Simulated Lithium Concentrations Along Model Transect 1
Monitored Natural Attenuation Demonstration
Plant Gaston

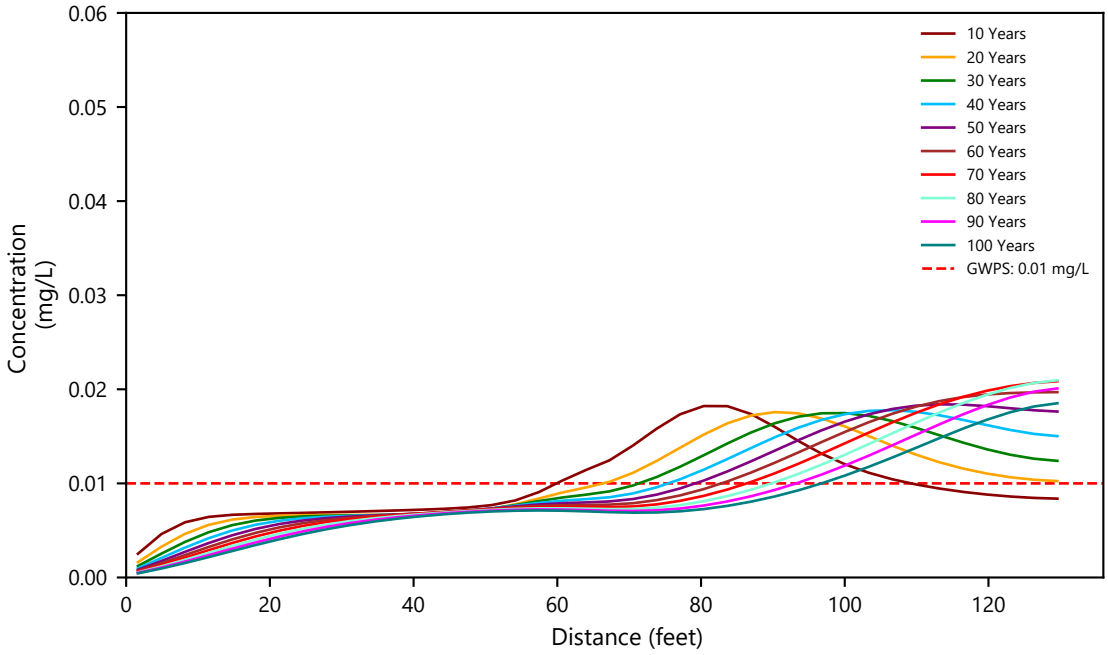


Notes:
Model reactions include surface complexation, cation exchange, and mineral precipitation.
GWPS: groundwater protection standard
mg/L: milligrams per liter

Publish Date: 11/08/2021 17:52 PM | User: pspina
File Path: \\athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Data\Post Modeling Results\AP_ModelOutput_with_withoutCOI.py

ANCHOR QEA

Figure 12b
Simulated Molybdenum Concentrations Along Model Transect 1
Monitored Natural Attenuation Demonstration
Plant Gaston

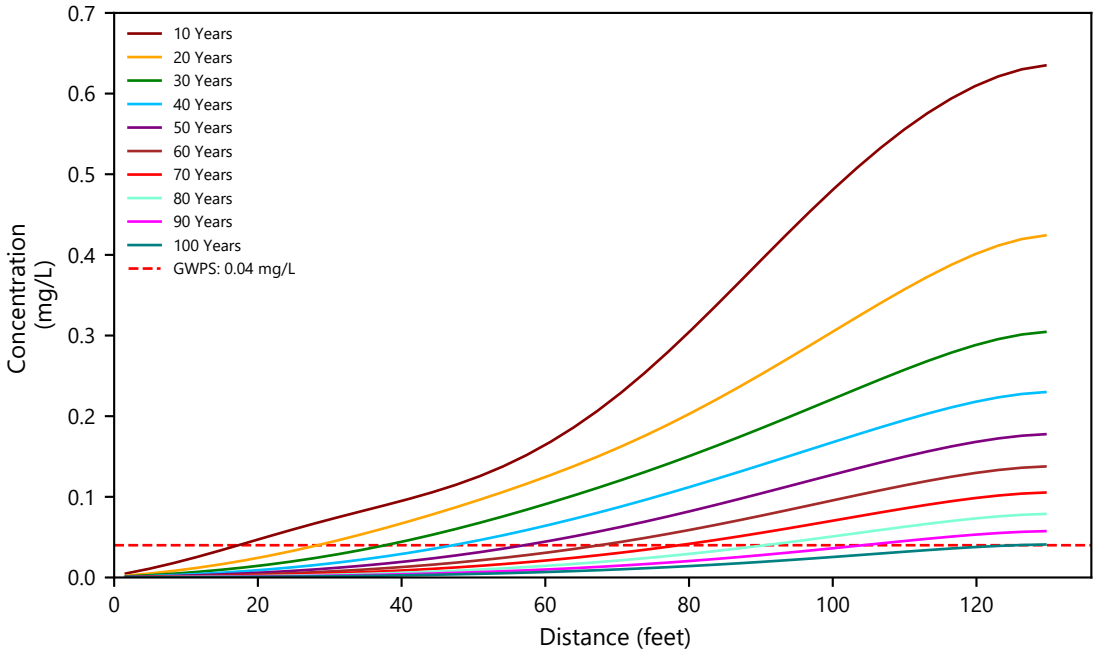


Notes:
Model reactions include surface complexation, cation exchange, and mineral precipitation.
GWPS: groundwater protection standard
mg/L: milligrams per liter

Publish Date: 11/29/2021 16:56 PM | User: mcarey
File Path: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Data\Post Modeling Results\AP_ModelOutput_with_withoutCOI.py

ANCHOR QEA

Figure 13a
Simulated Arsenic Concentrations Along Model Transect 2
Monitored Natural Attenuation Demonstration
Plant Gaston

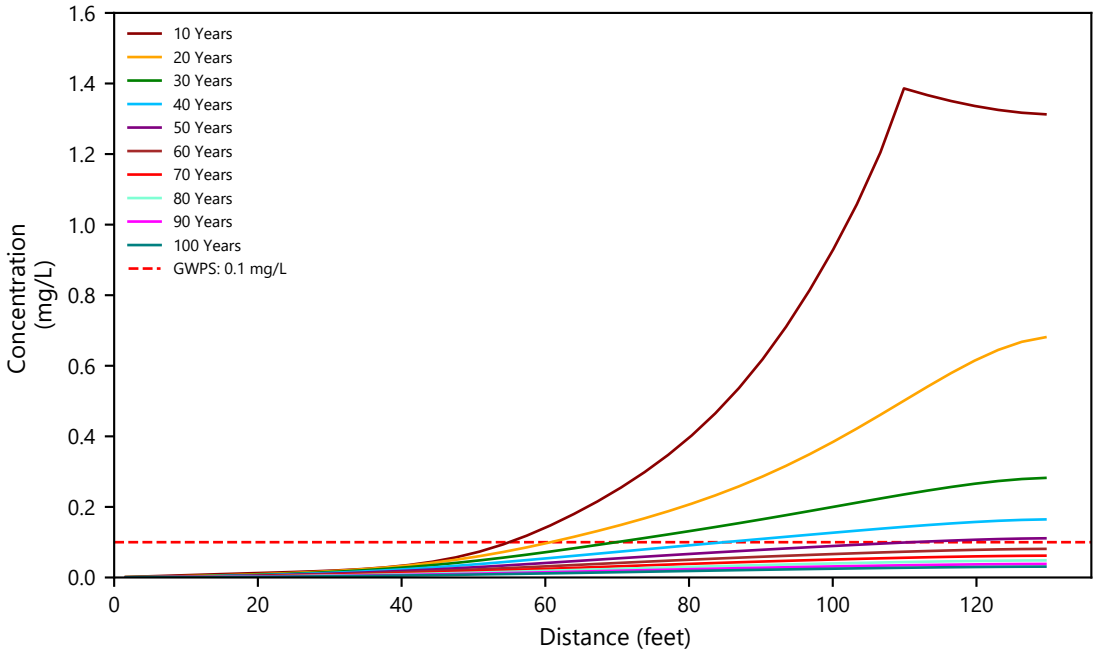


Notes:
Model reactions include surface complexation, cation exchange, and mineral precipitation.
GWPS: groundwater protection standard
mg/L: milligrams per liter

Publish Date: 11/29/2021 16:56 PM | User: mcarey
File Path: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Data\Post Modeling Results\AP_ModelOutput_with_withoutCOI.py

ANCHOR QEA

Figure 13b
Simulated Lithium Concentrations Along Model Transect 2
Monitored Natural Attenuation Demonstration
Plant Gaston

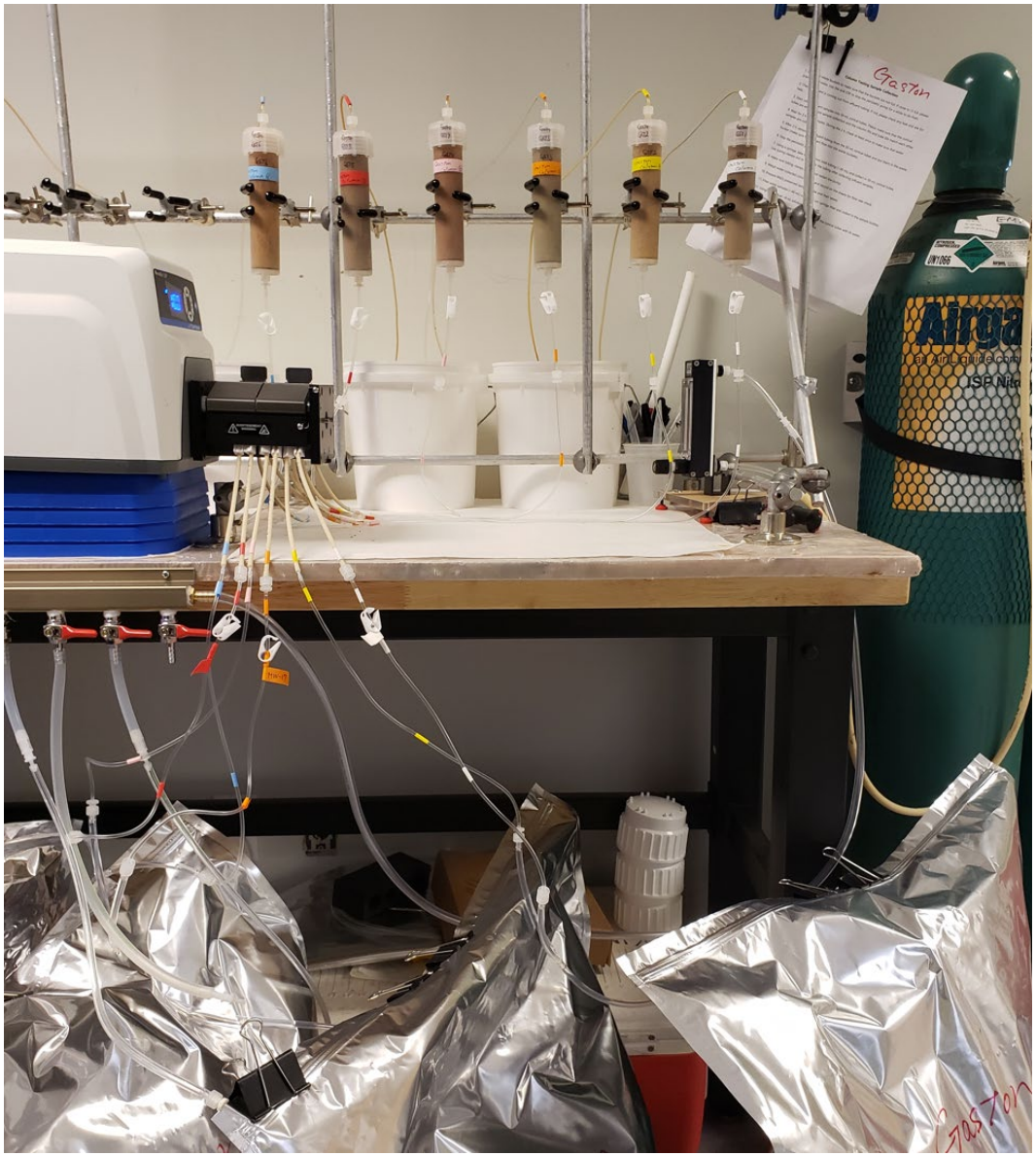


Notes:
Model reactions include surface complexation, cation exchange, and mineral precipitation.
GWPS: groundwater protection standard
mg/L: milligrams per liter

Publish Date: 11/29/2021 16:56 PM | User: mcarey
File Path: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Data\Post Modeling Results\AP_ModelOutput_with_withoutCOI.py

ANCHOR QEA

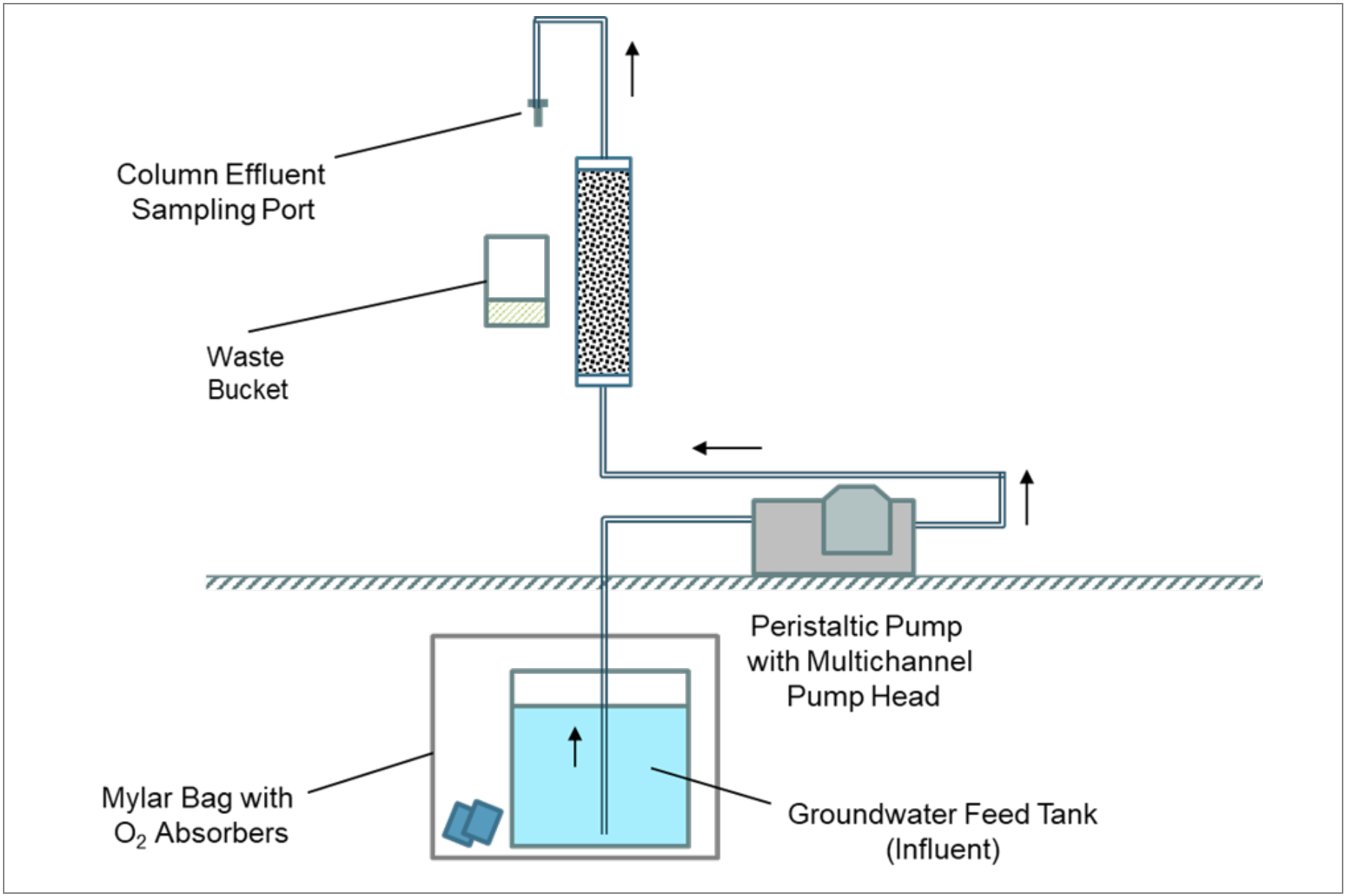
Figure 13c
Simulated Molybdenum Concentrations Along Model Transect 2
Monitored Natural Attenuation Demonstration
Plant Gaston



Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 14 - Column Test Equipment Setup.docx

ANCHOR QEA

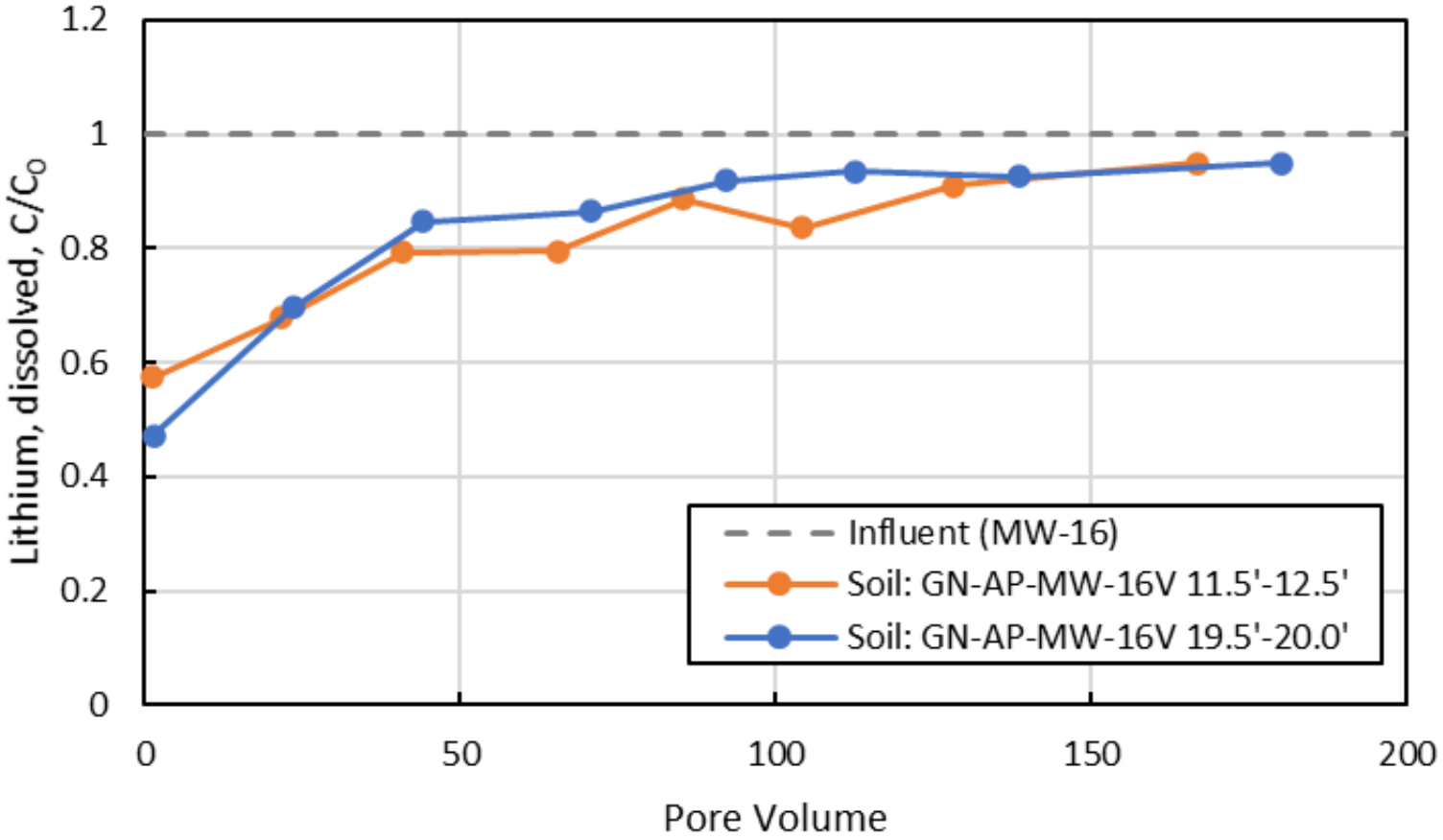
Figure 14
Column Test Equipment Setup
Monitored Natural Attenuation Demonstration
Plant Gaston



Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 15 - Schematic of Columns.docx

ANCHOR QEA

Figure 15
Schematic of Column Test Setup
Monitored Natural Attenuation Demonstration
Plant Gaston

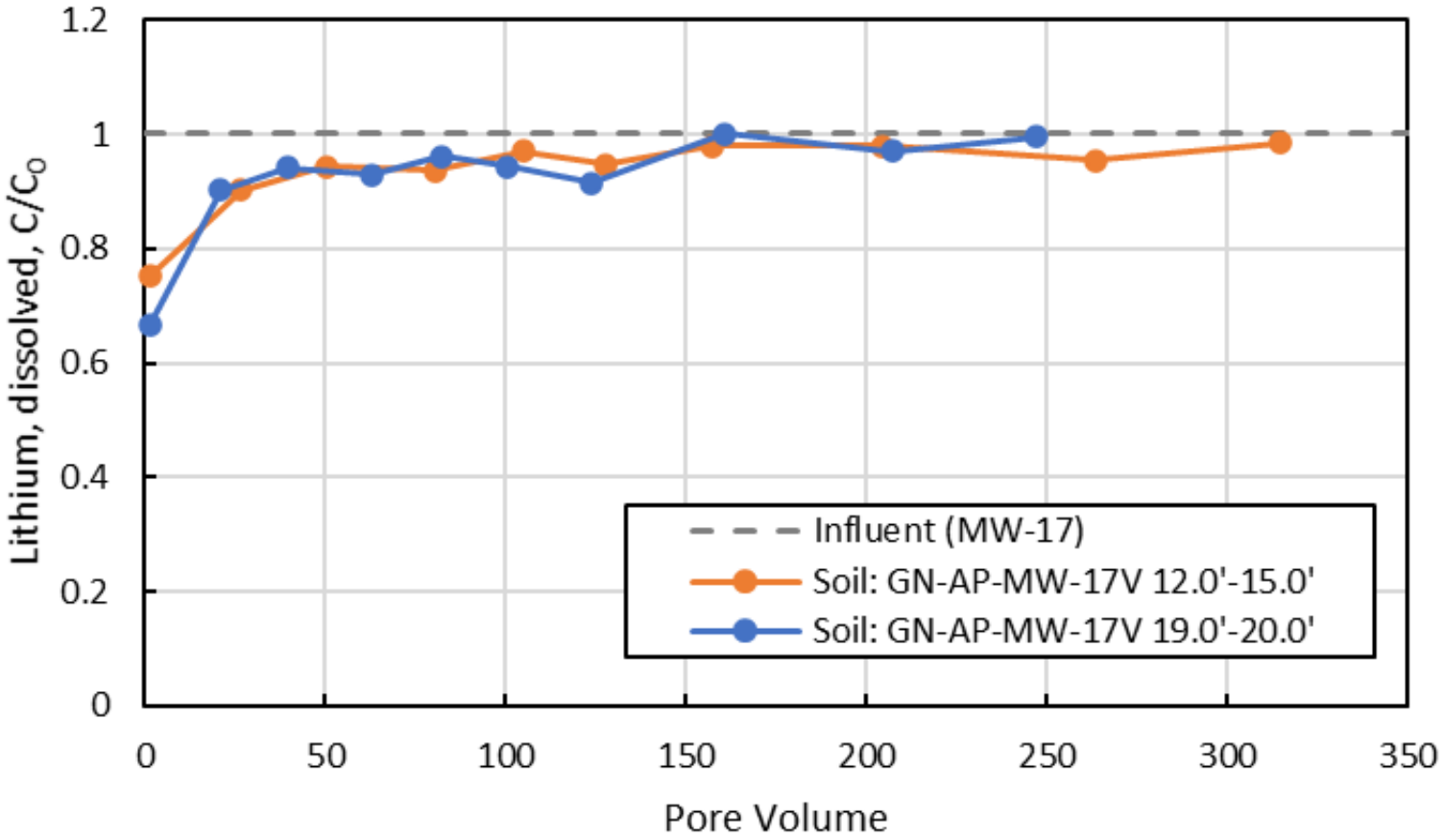


Notes:
Dashed line indicates effluent concentrations equal influent concentrations (i.e., capacity for attenuation has been consumed).
C/C_0: ratio of concentration in column effluent to that in column influent solution

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 16a - Column Li Breakthrough 1.docx

ANCHOR QEA

Figure 16a
Dissolved Lithium Breakthrough Curves: Columns 1 and 2
Monitored Natural Attenuation Demonstration
Plant Gaston

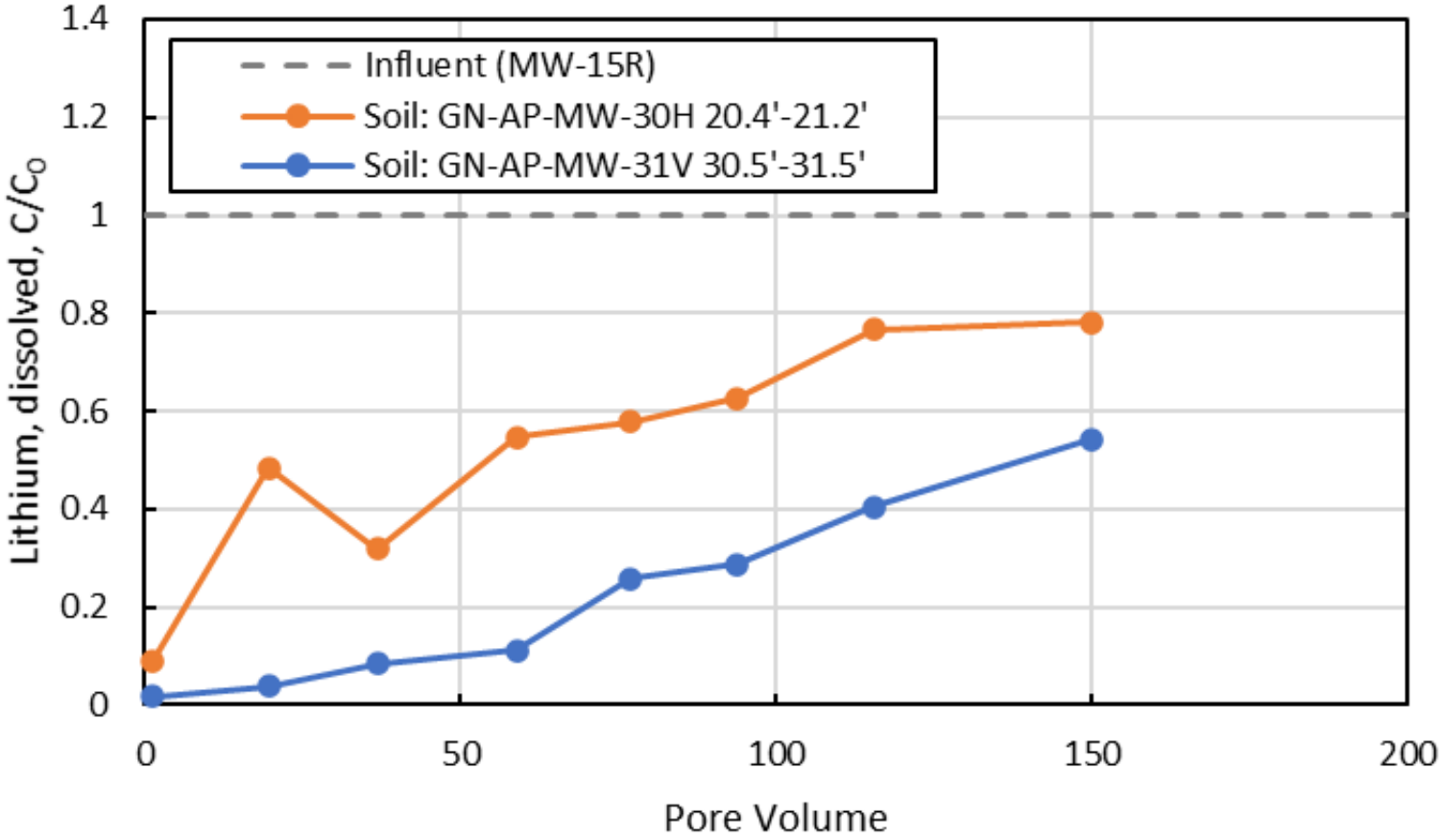


Notes:
Dashed line indicates effluent concentrations equal influent concentrations (i.e., capacity for attenuation has been consumed).
C/C0: ratio of concentration in column effluent to that in column influent solution

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 16b - Column Li Breakthrough 2.docx

ANCHOR QEA

Figure 16b
Dissolved Lithium Breakthrough Curves: Columns 3 and 4
Monitored Natural Attenuation Demonstration
Plant Gaston

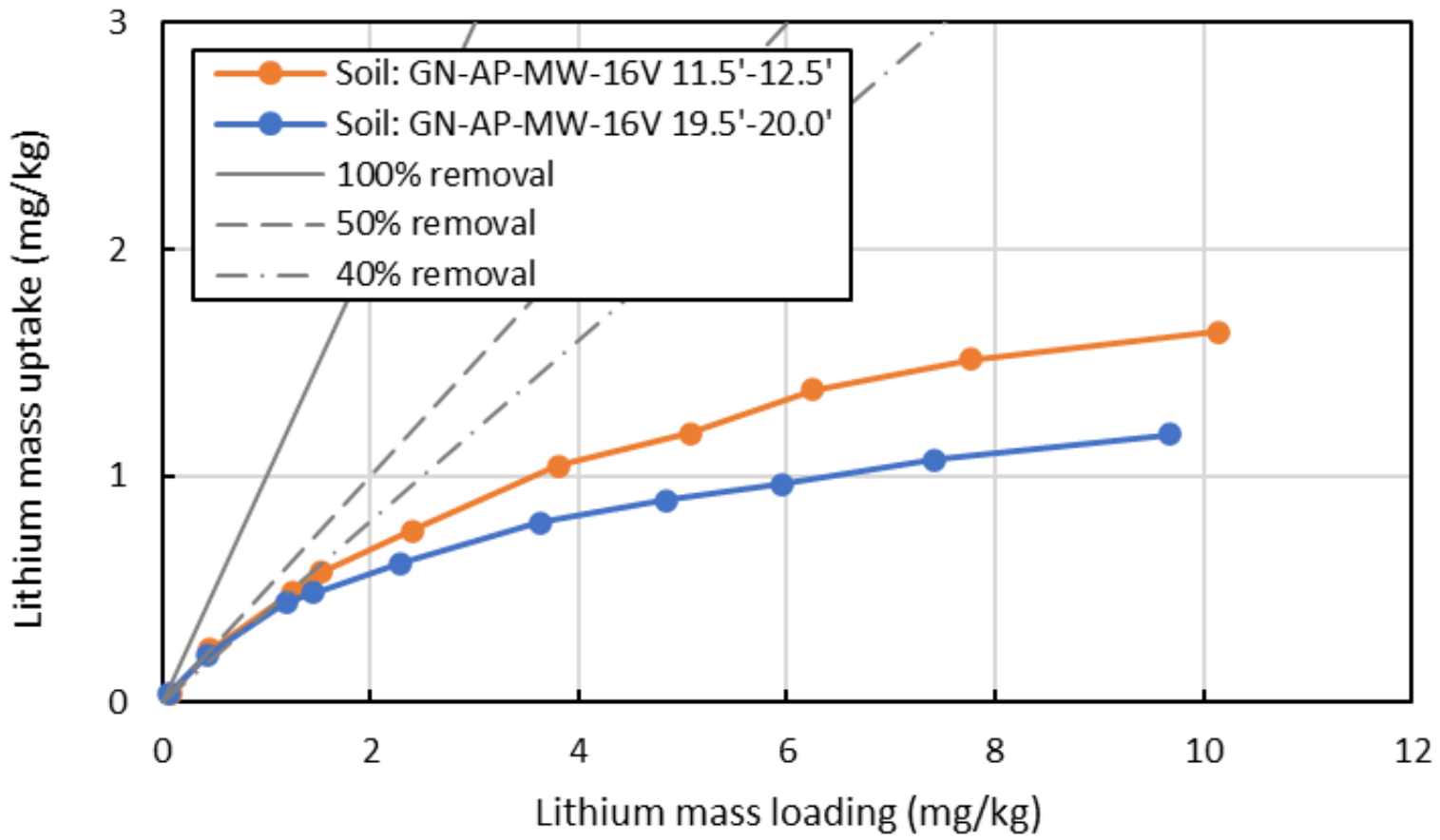


Notes:
Dashed line indicates effluent concentrations equal influent concentrations (i.e., capacity for attenuation has been consumed).
C/C_0: ratio of concentration in column effluent to that in column influent solution

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 16c - Column Li Breakthrough 3.docx

ANCHOR QEA

Figure 16c
Dissolved Lithium Breakthrough Curves: Columns 5 and 6
Monitored Natural Attenuation Demonstration
Plant Gaston

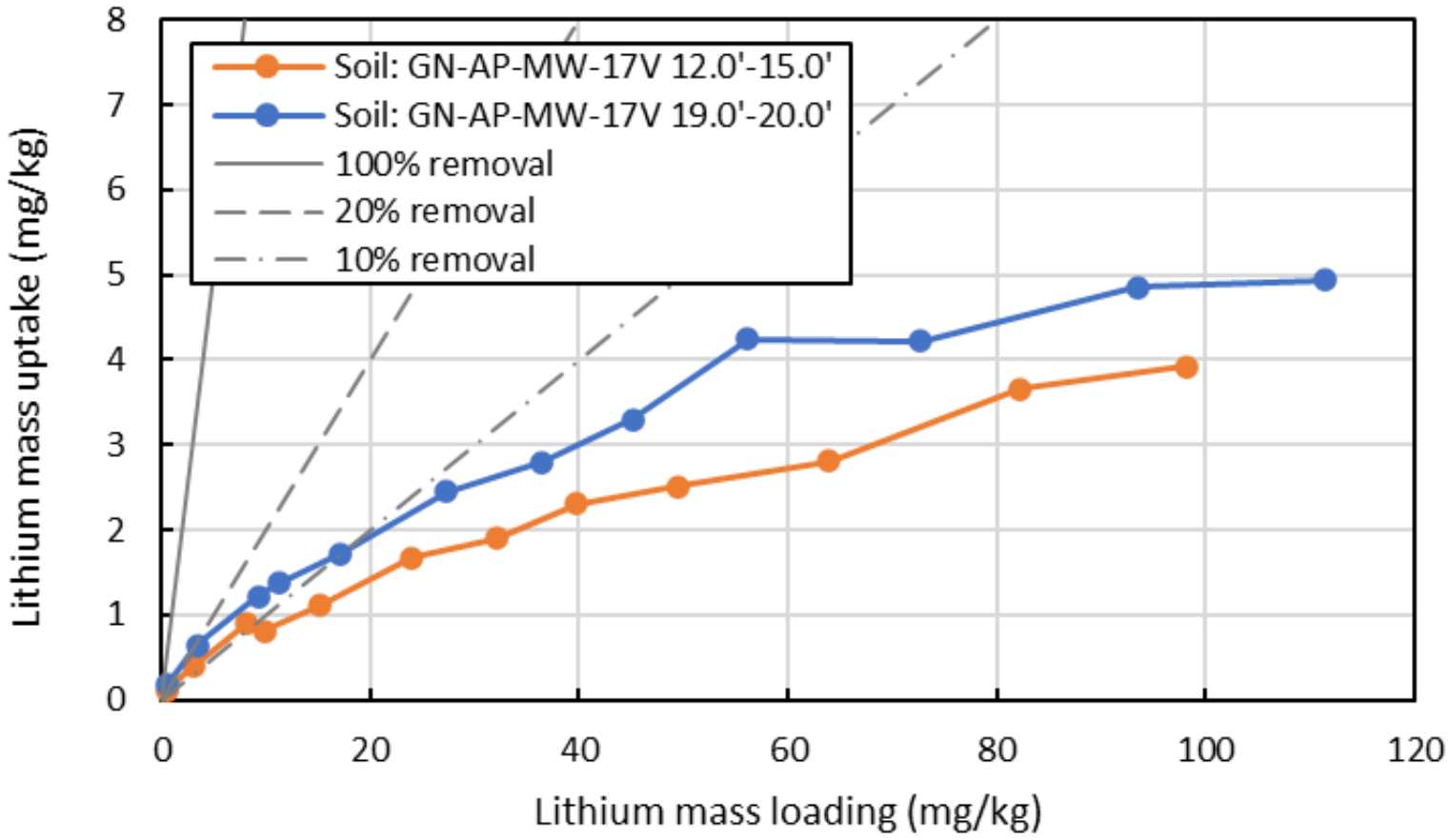


Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 17a - Li Mass Uptake vs Li Mass Loading 1.docx

ANCHOR QEA

Figure 17a
Cumulative Lithium Removal by Soil Columns as a Function of Loading: Columns 1 and 2
Monitored Natural Attenuation Demonstration
Plant Gaston

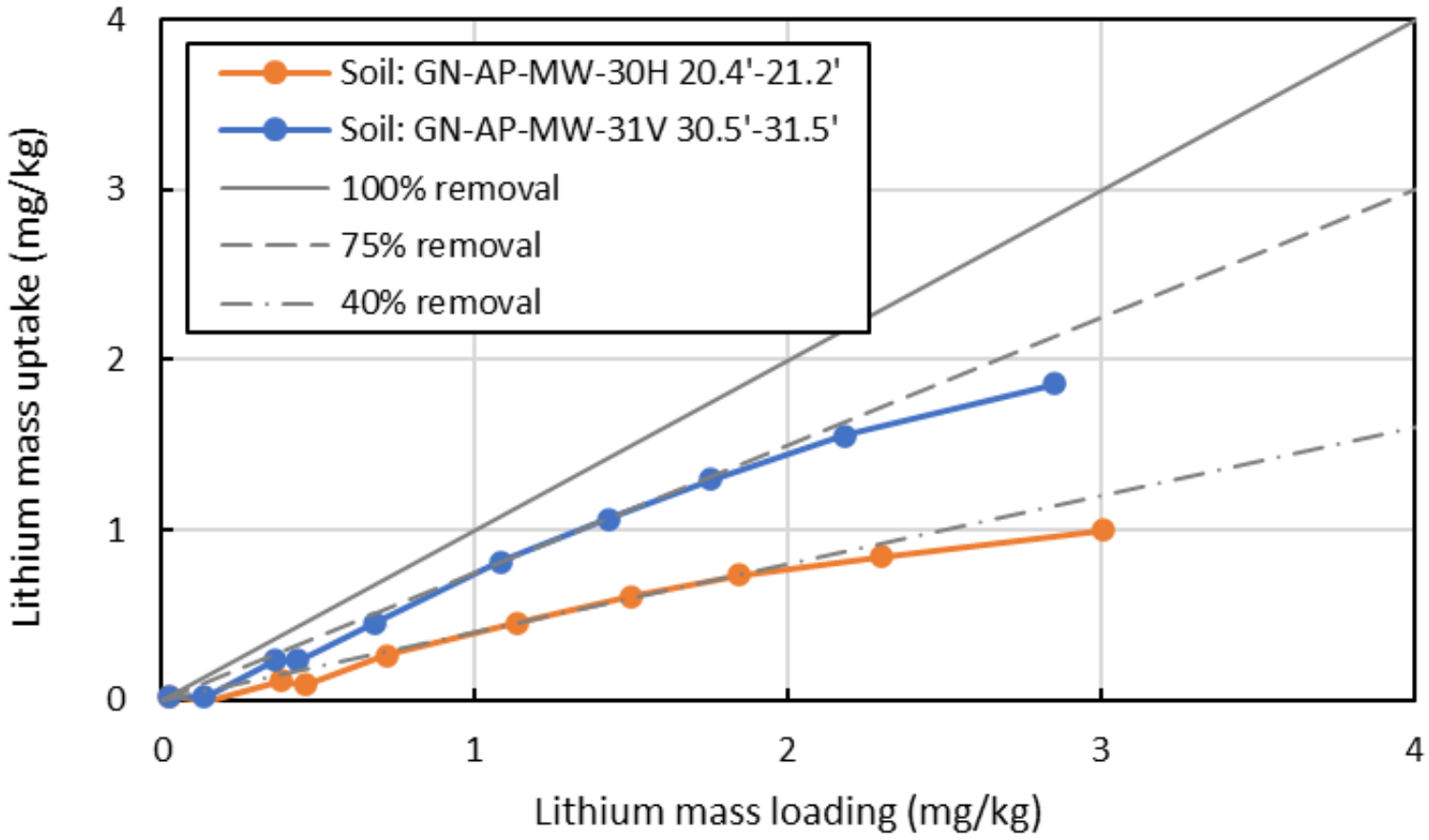


Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 17b - Li Mass Uptake vs Li Mass Loading 2.docx

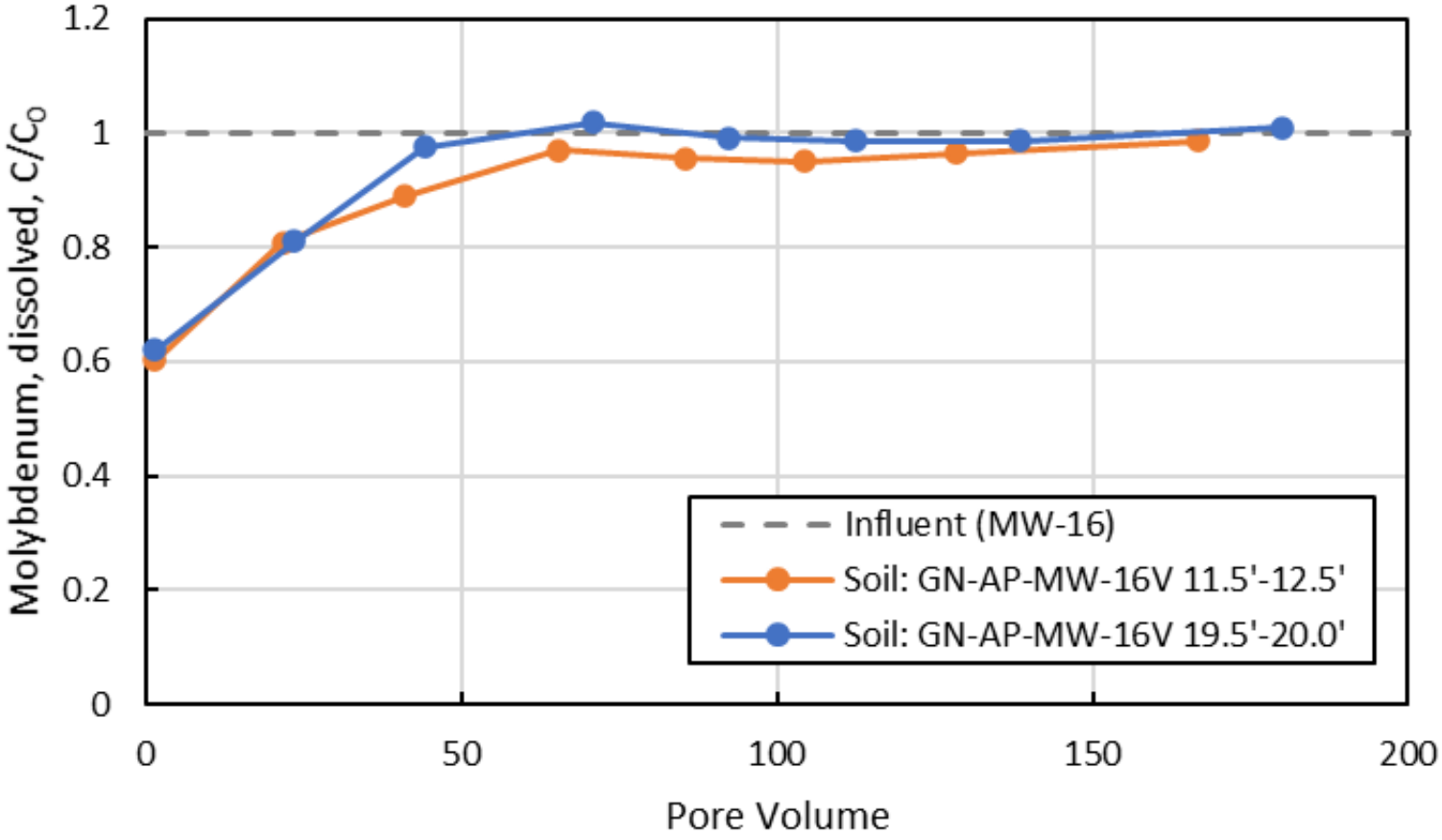
ANCHOR QEA

Figure 17b
Cumulative Lithium Removal by Soil Columns as a Function of Loading: Columns 3 and 4
Monitored Natural Attenuation Demonstration
Plant Gaston



Note:
mg/kg: milligrams per kilogram

Figure 17c
Cumulative Lithium Removal by Soil Columns as a Function of Loading: Columns 5 and 6
Monitored Natural Attenuation Demonstration
Plant Gaston

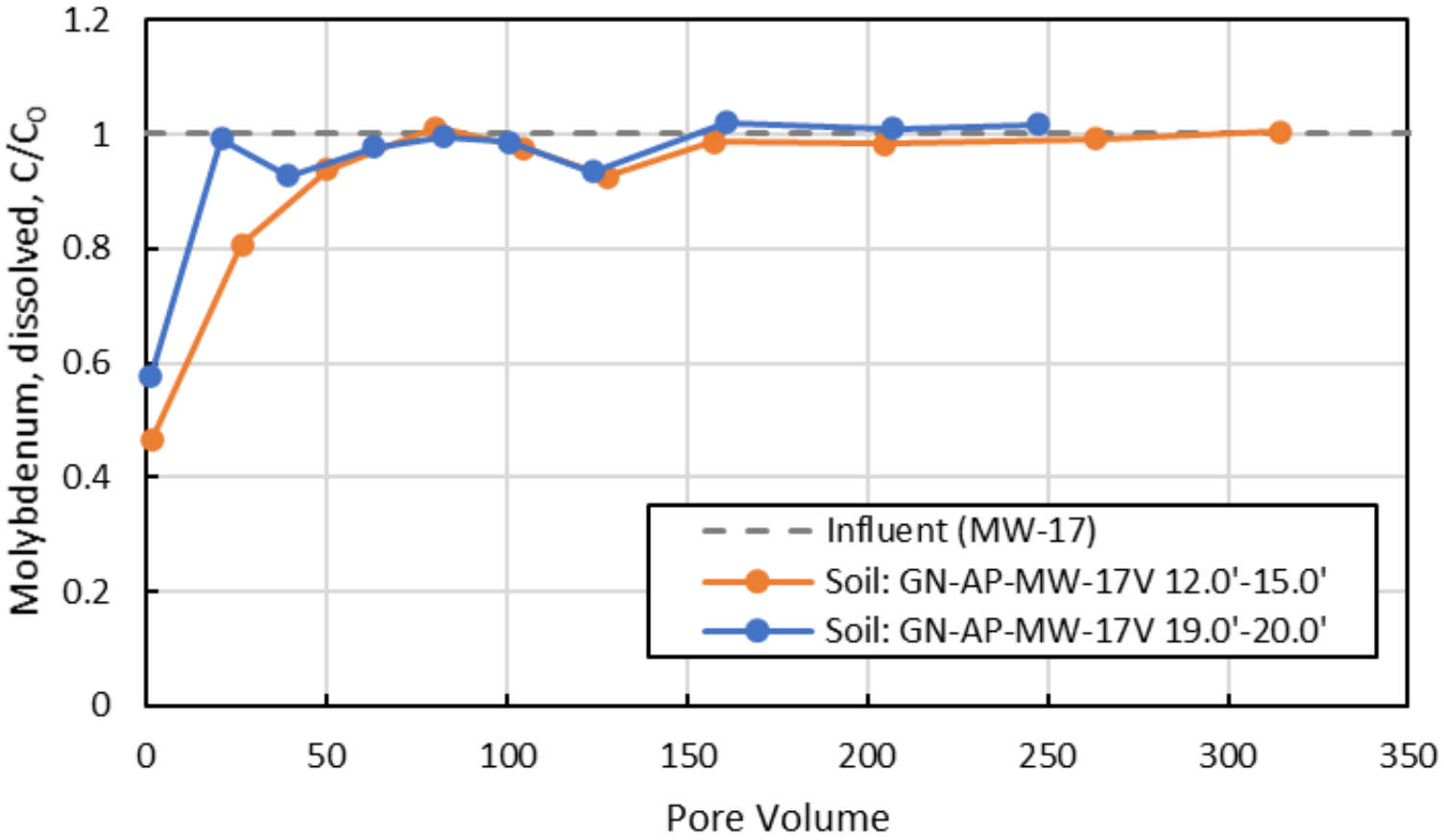


Notes:
Dashed line indicates effluent concentrations equal influent concentrations (i.e., capacity for attenuation has been consumed).
C/C0: ratio of concentration in column effluent to that in column influent solution

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 18a - Column Mo Breakthrough 1.docx

ANCHOR QEA

Figure 18a
Dissolved Molybdenum Breakthrough Curves: Columns 1 and 2
Monitored Natural Attenuation Demonstration
Plant Gaston

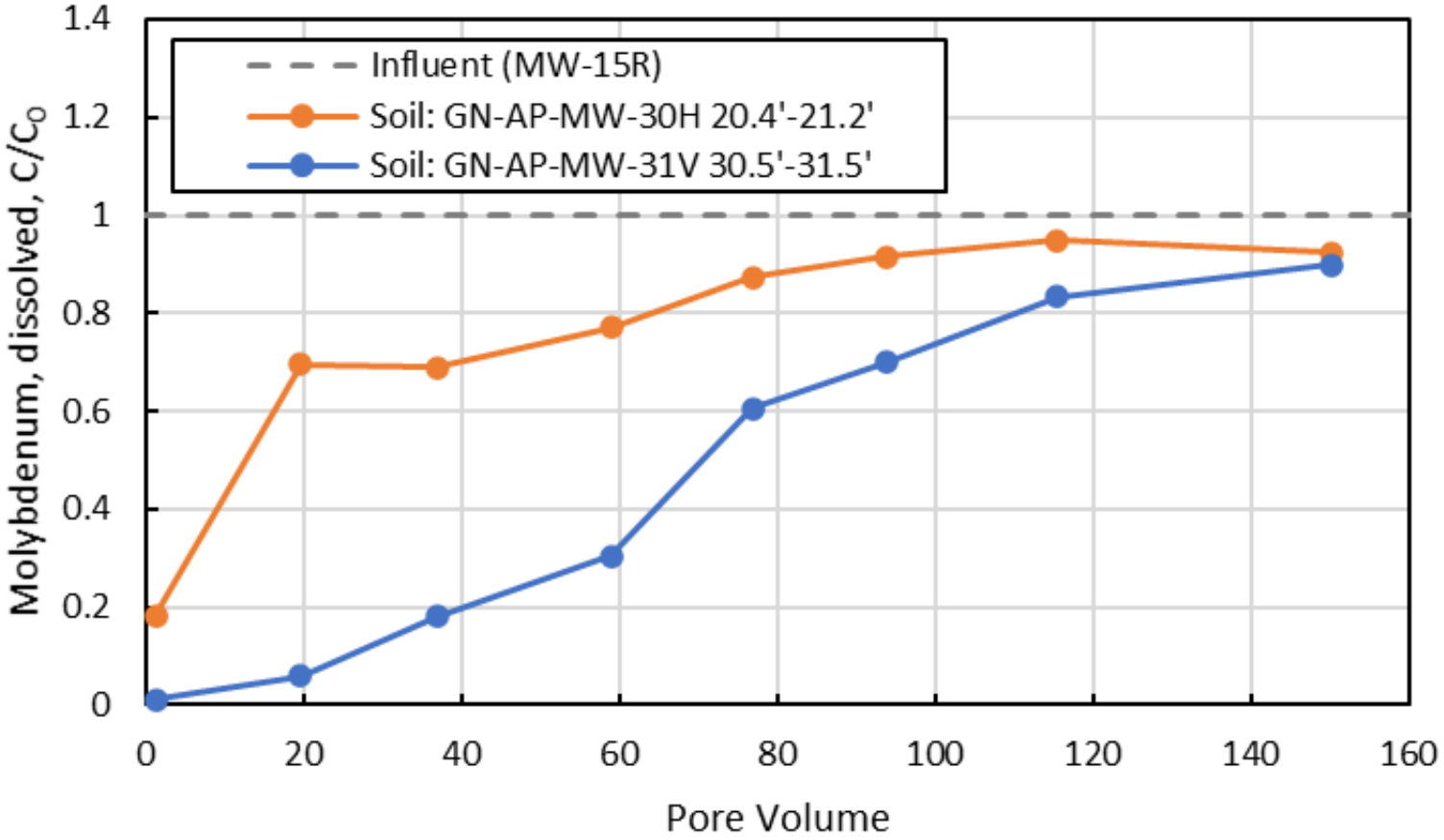


Notes:
Dashed line indicates effluent concentrations equal influent concentrations (i.e., capacity for attenuation has been consumed).
C/C_0: ratio of concentration in column effluent to that in column influent solution

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 18b - Column Mo Breakthrough 2.docx

ANCHOR QEA

Figure 18b
Dissolved Molybdenum Breakthrough Curves: Columns 3 and 4
Monitored Natural Attenuation Demonstration
Plant Gaston

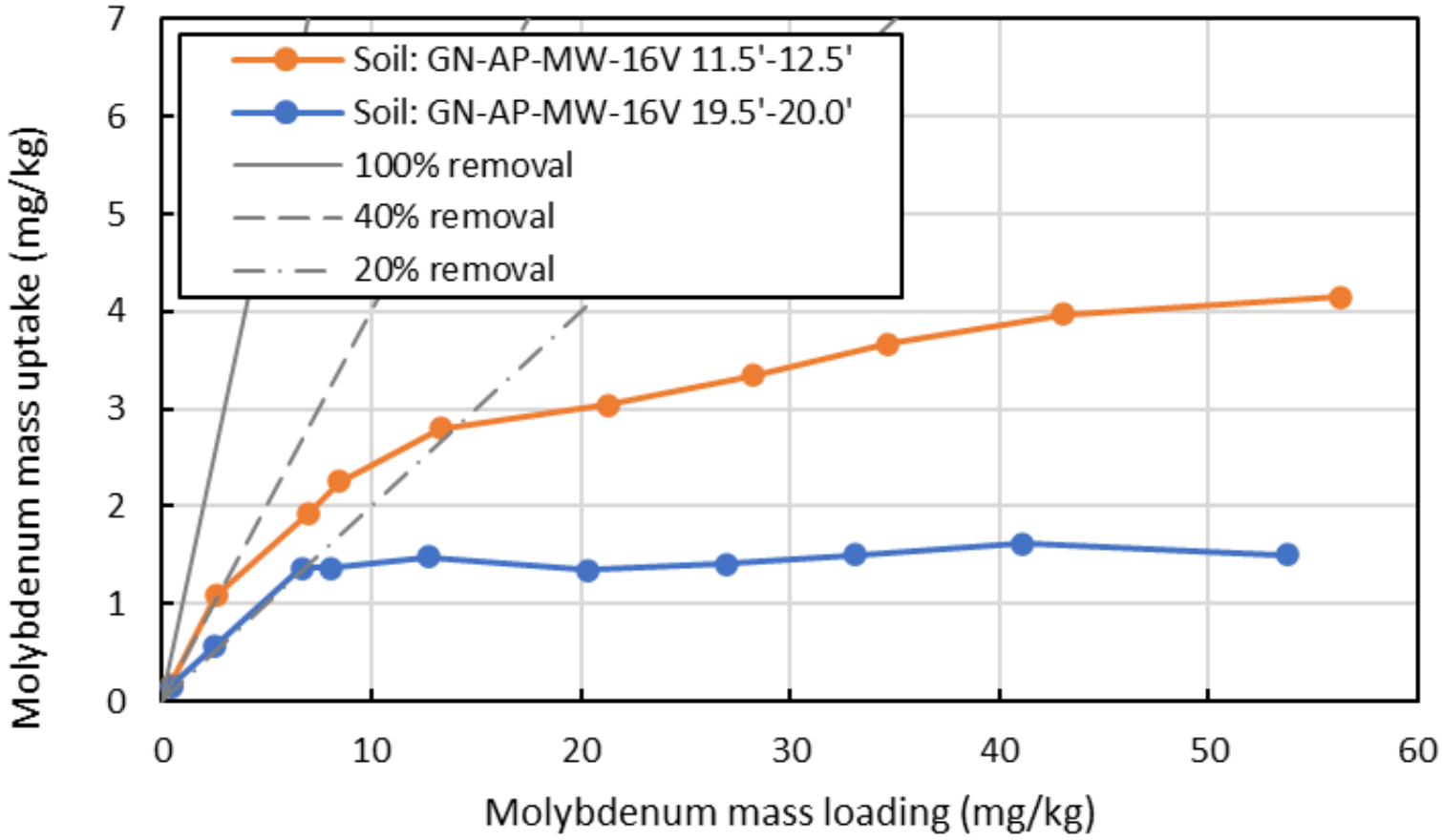


Notes:
Dashed line indicates effluent concentrations equal influent concentrations (i.e., capacity for attenuation has been consumed).
C/C_0: ratio of concentration in column effluent to that in column influent solution

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 18c - Column Mo Breakthrough 3.docx

ANCHOR QEA

Figure 18c
Dissolved Molybdenum Breakthrough Curves: Columns 5 and 6
Monitored Natural Attenuation Demonstration
Plant Gaston

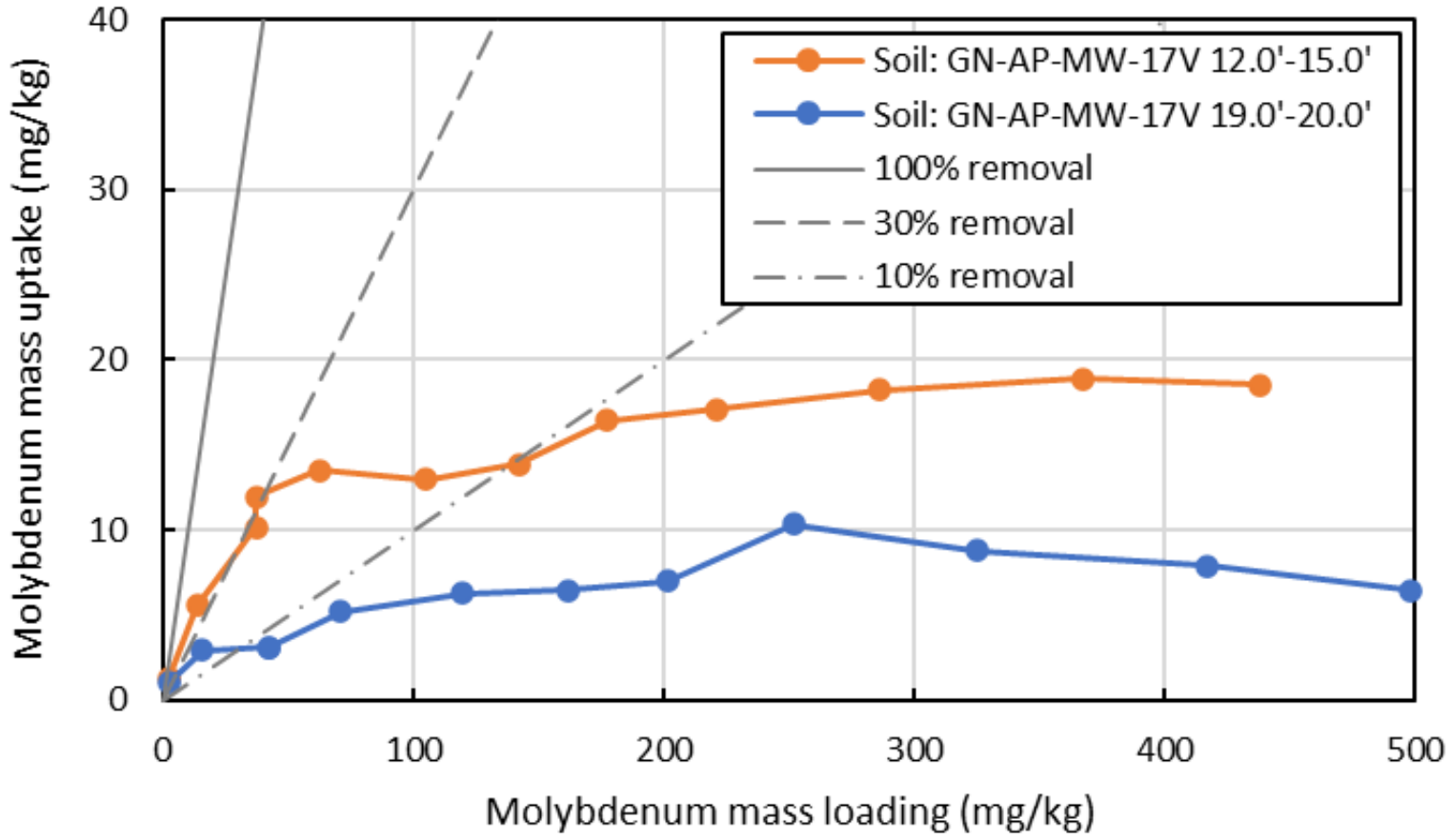


Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 19a - Mo Mass Uptake vs Mo Mass Loading 1.docx

ANCHOR QEA

Figure 19a
Cumulative Molybdenum Removal by Soil Columns as a Function of Loading: Columns 1 and 2
Monitored Natural Attenuation Demonstration
Plant Gaston

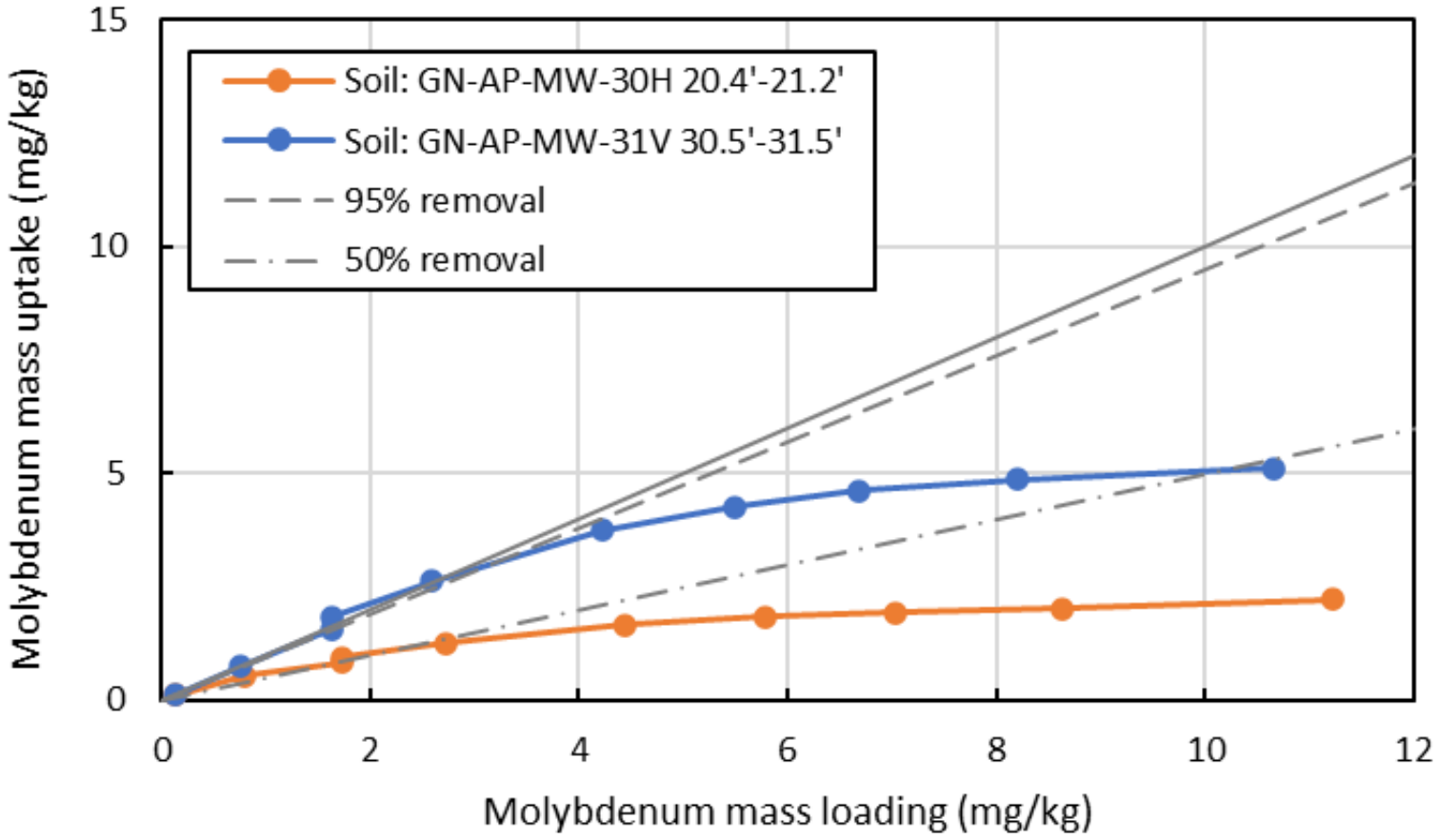


Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 19b - Mo Mass Uptake vs Mo Mass Loading 2.docx

ANCHOR QEA

Figure 19b
Cumulative Molybdenum Removal by Soil Columns as a Function of Loading: Columns 3 and 4
Monitored Natural Attenuation Demonstration
Plant Gaston

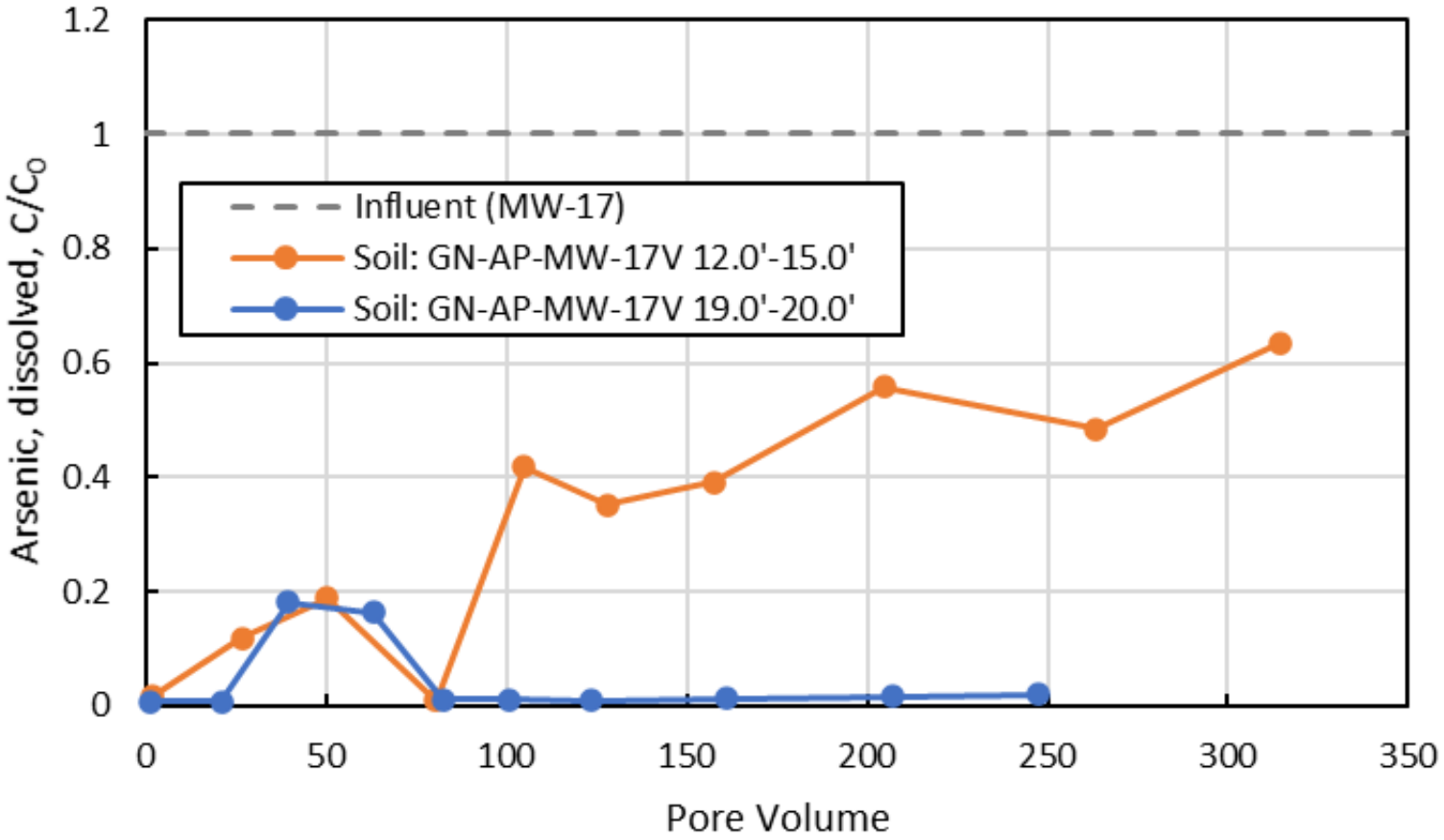


Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 19c - Mo Mass Uptake vs Mo Mass Loading 3.docx

ANCHOR QEA

Figure 19c
Cumulative Molybdenum Removal by Soil Columns as a Function of Loading: Columns 5 and 6
Monitored Natural Attenuation Demonstration
Plant Gaston

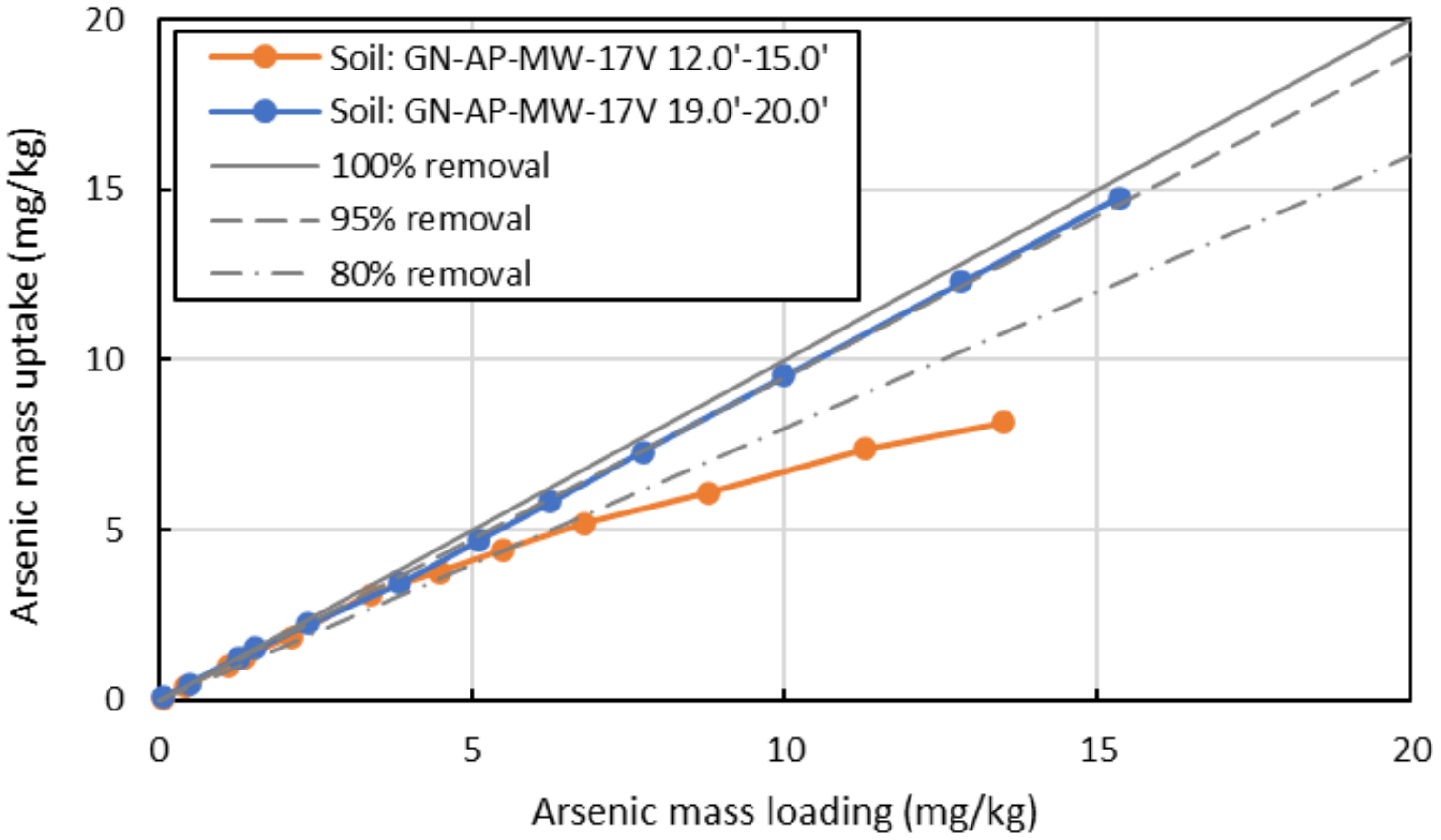


Notes:
Dashed line indicates effluent concentrations equal influent concentrations (i.e., capacity for attenuation has been consumed).
C/C0: ratio of concentration in column effluent to that in column influent solution

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 20 - Column As Breakthrough.docx

ANCHOR QEA

Figure 20
Dissolved Arsenic Breakthrough Curves: Columns 3 and 4
Monitored Natural Attenuation Demonstration
Plant Gaston

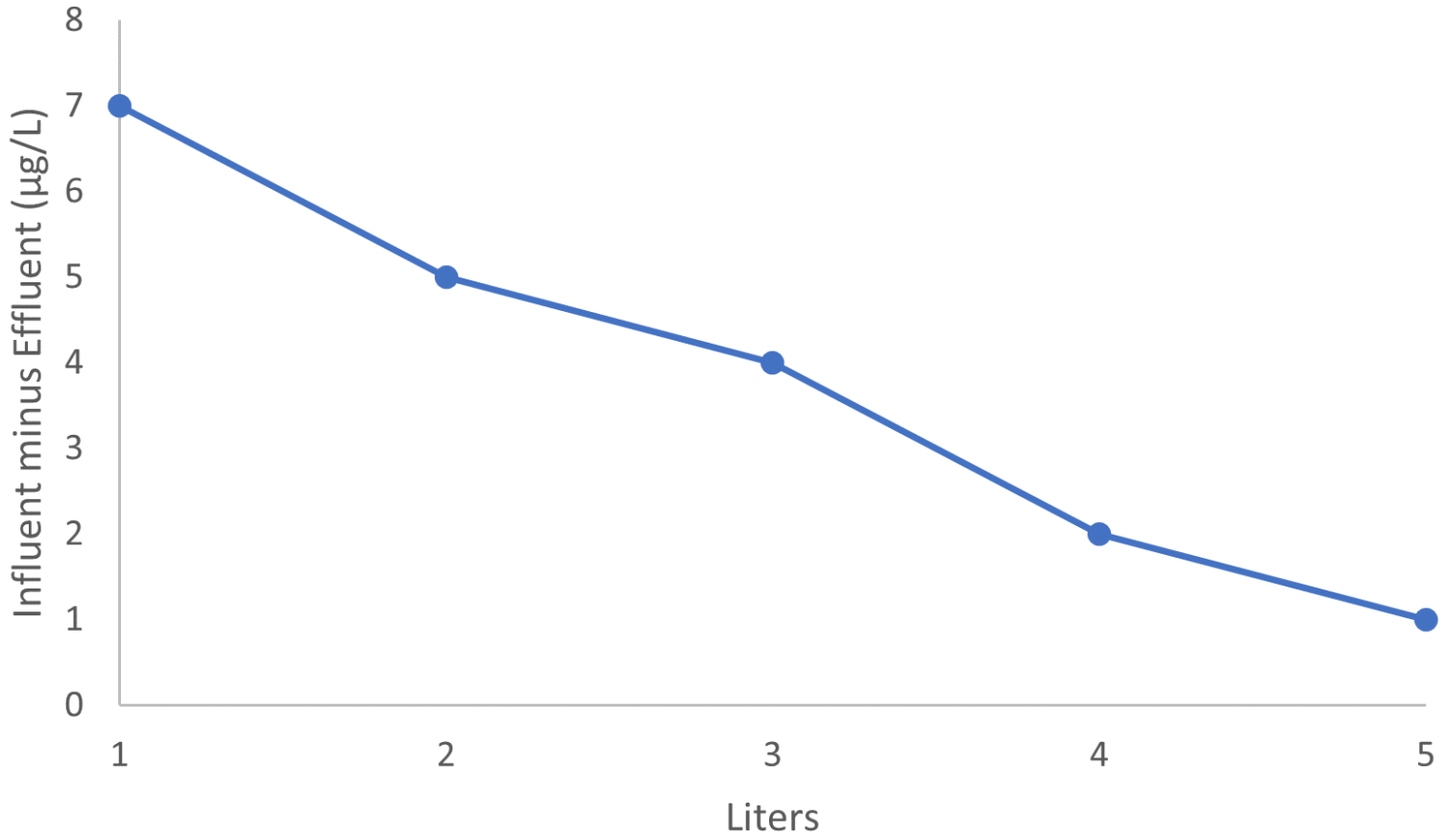


Note:
mg/kg: milligrams per kilogram

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 21 - As Mass Uptake vs As Mass Loading 1.docx

ANCHOR QEA

Figure 21
Cumulative Arsenic Removal by Soil Columns as a Function of Loading: Columns 3 and 4
Monitored Natural Attenuation Demonstration
Plant Gaston

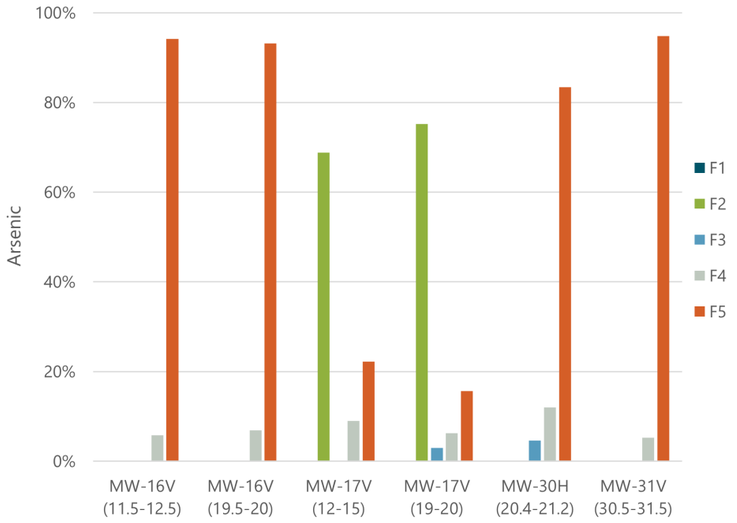


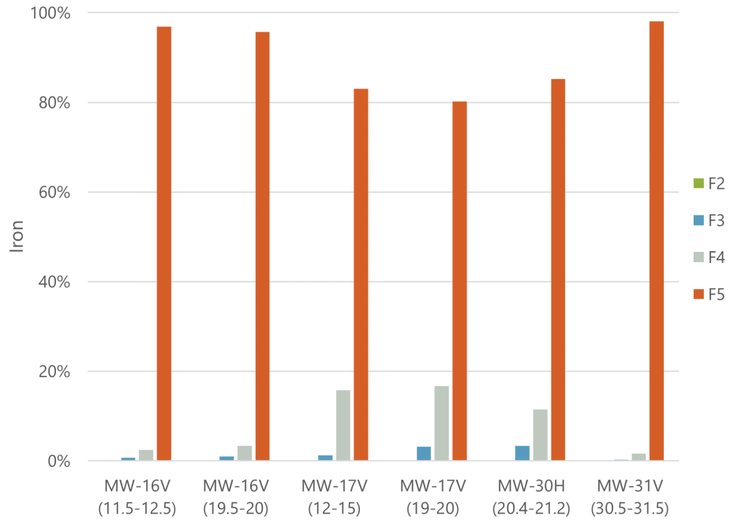
Note:
µg/L: micrograms per liter

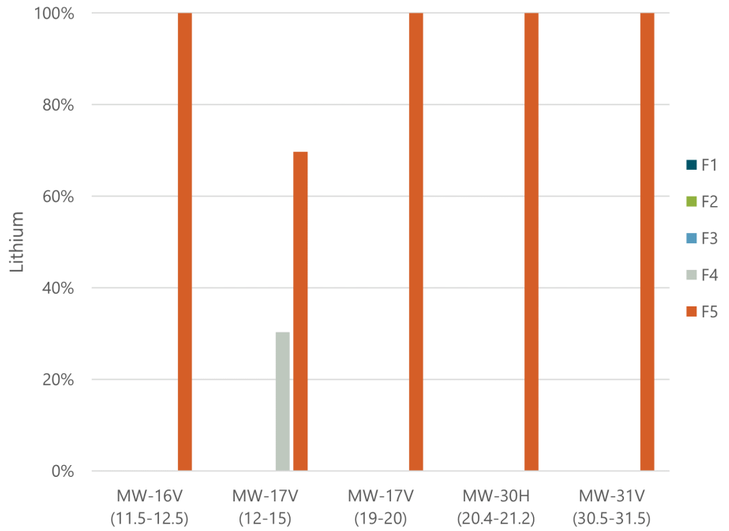
Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 22 - Example Attenuated Mass Graph.docx

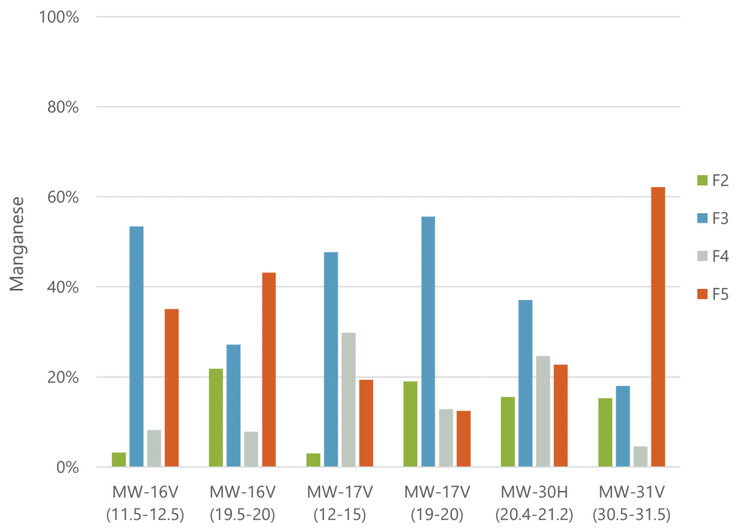
ANCHOR QEA

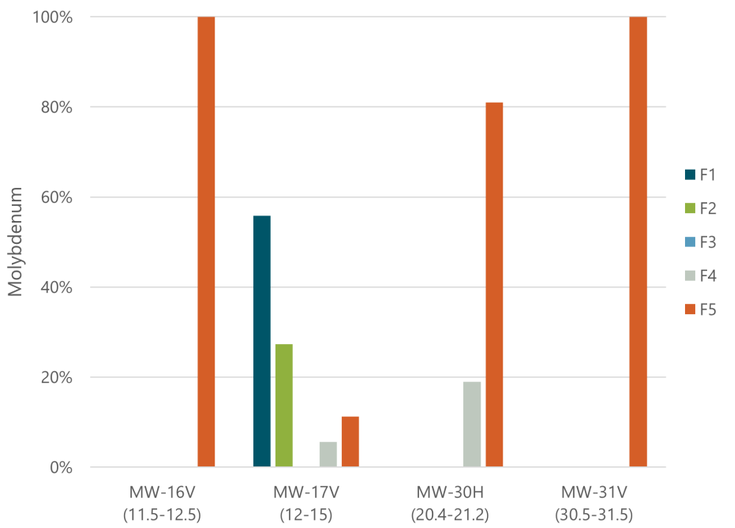
Figure 22
Example Graph to Calculate Mass Attenuated by Columns
Monitored Natural Attenuation Demonstration
Plant Gaston











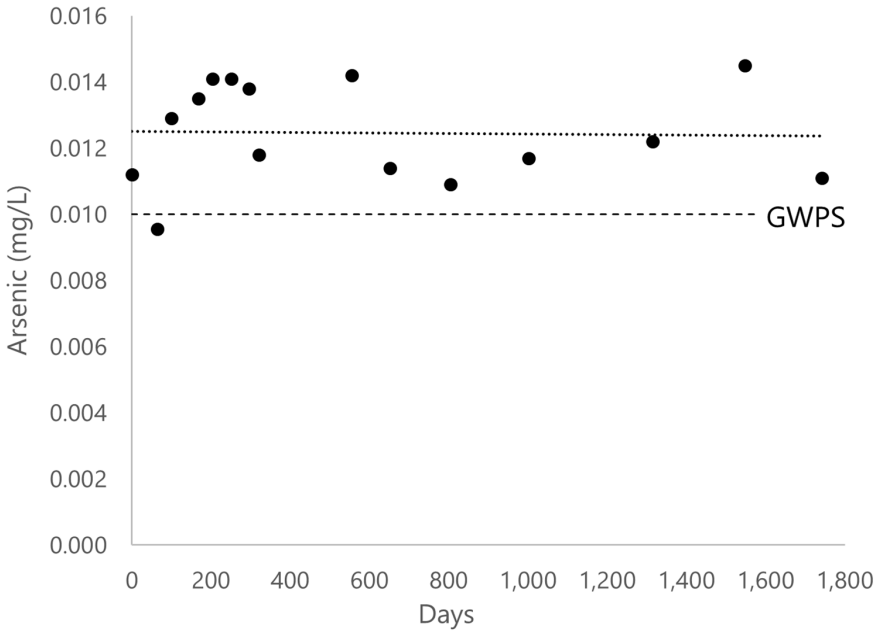
Notes:
F1: water soluble
F2: exchangeable (e.g., clay minerals)
F3: reducible (e.g., poorly crystalline metal oxides such as iron oxides)
F4: oxidizable (e.g., crystalline oxide and crystalline sulfide minerals)
F5: residual (e.g., silicate phases)
SSE: selective sequential extraction

Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Figures\Figure 23 - SSE Aquifer Results.docx

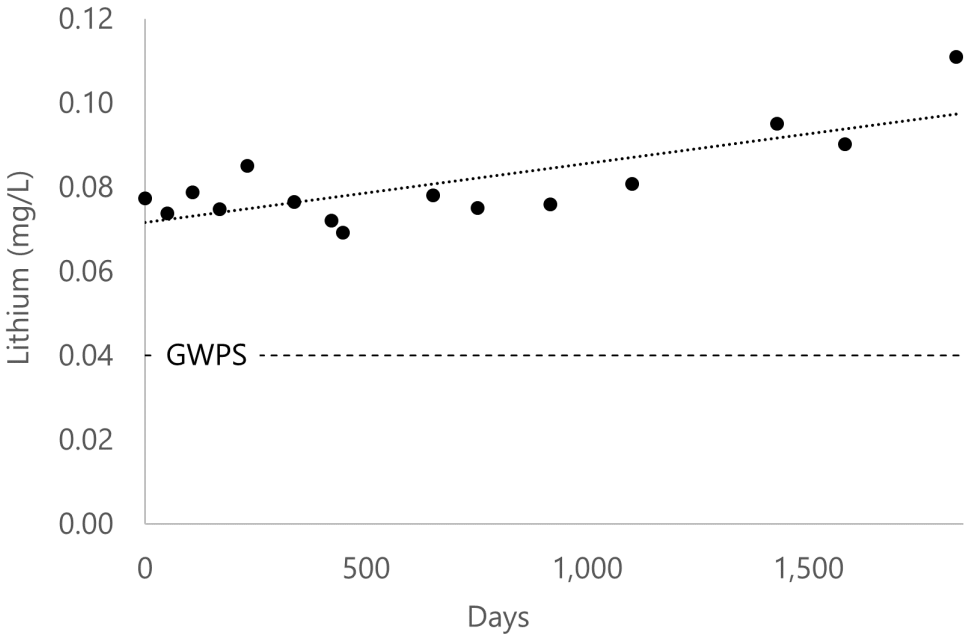
ANCHOR QEA

Figure 23
SSE Results for Aquifer Solids
Monitored Natural Attenuation Demonstration
Plant Gaston

Appendix A
Concentration Versus Time Graphs

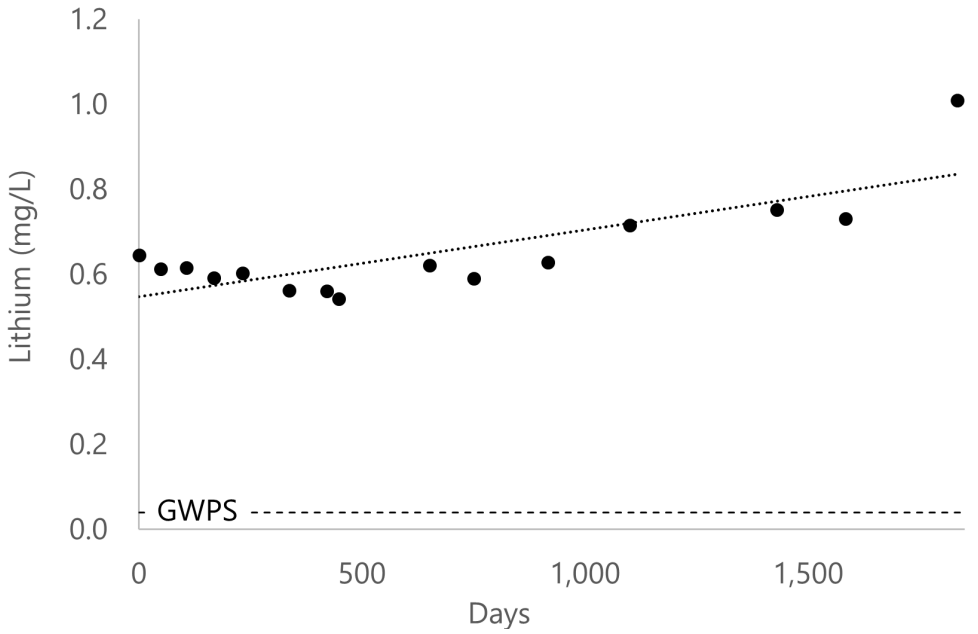


GN-AP-MW-17

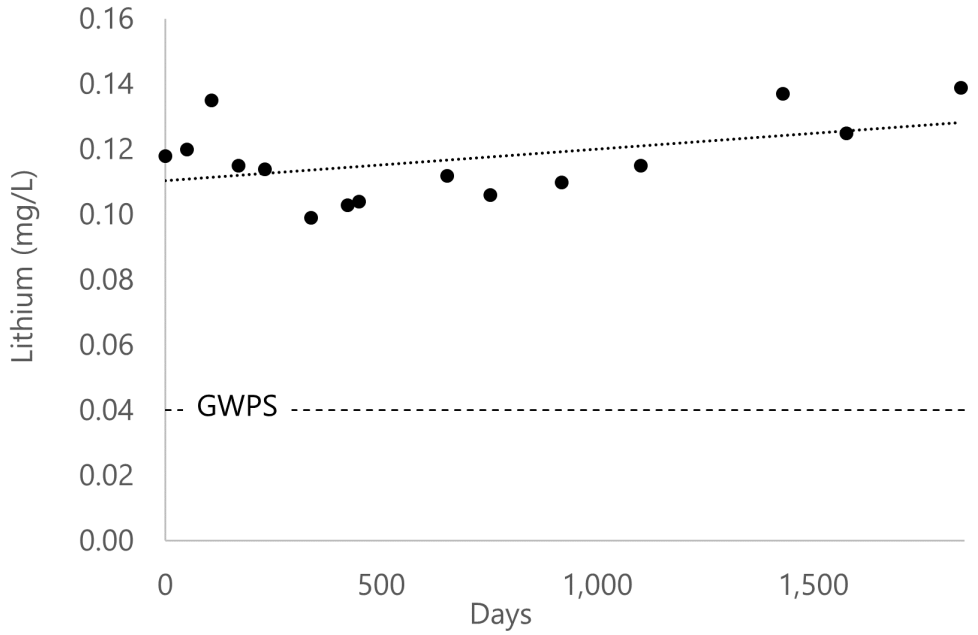


GN-AP-MW-16

Notes:
GWPS: groundwater protection standard
mg/L: milligrams per liter



GN-AP-MW-17



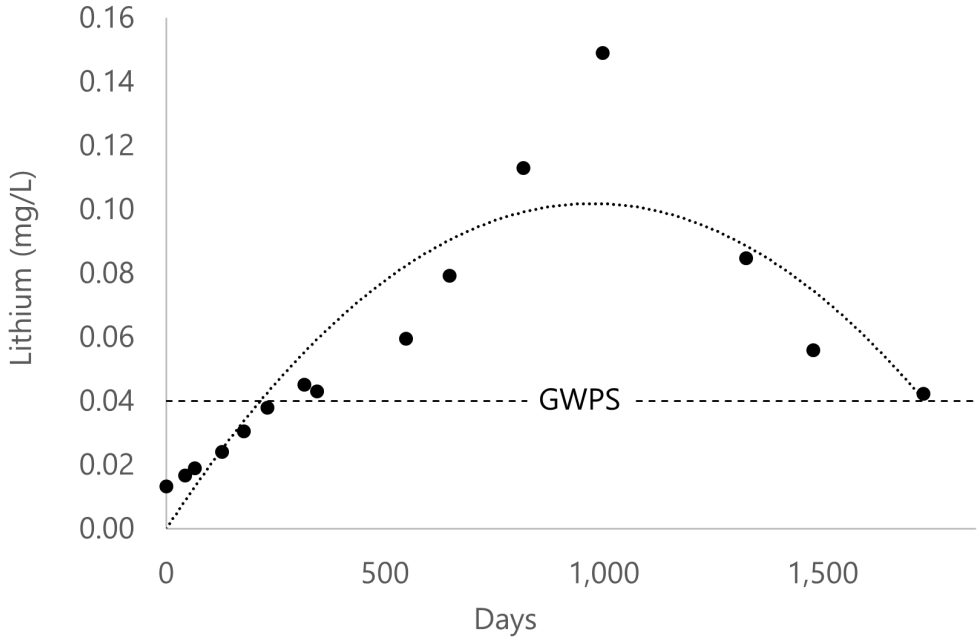
GN-AP-MW-20

Notes:
GWPS: groundwater protection standard
mg/L: milligrams per liter

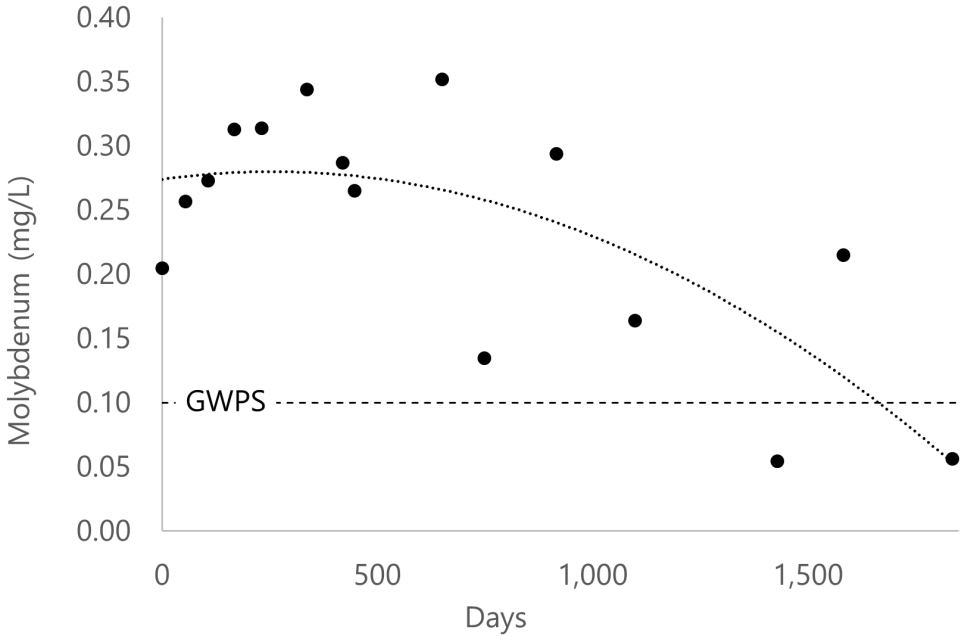
Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Appendices\Appendix A - Concentration vs Time Graphs\Appendix A-1b - Concentration vs Time.docx

ANCHOR QEA

Figure A-1b
Concentration Versus Time Graphs
Monitored Natural Attenuation Demonstration: Appendix A
Plant Gaston

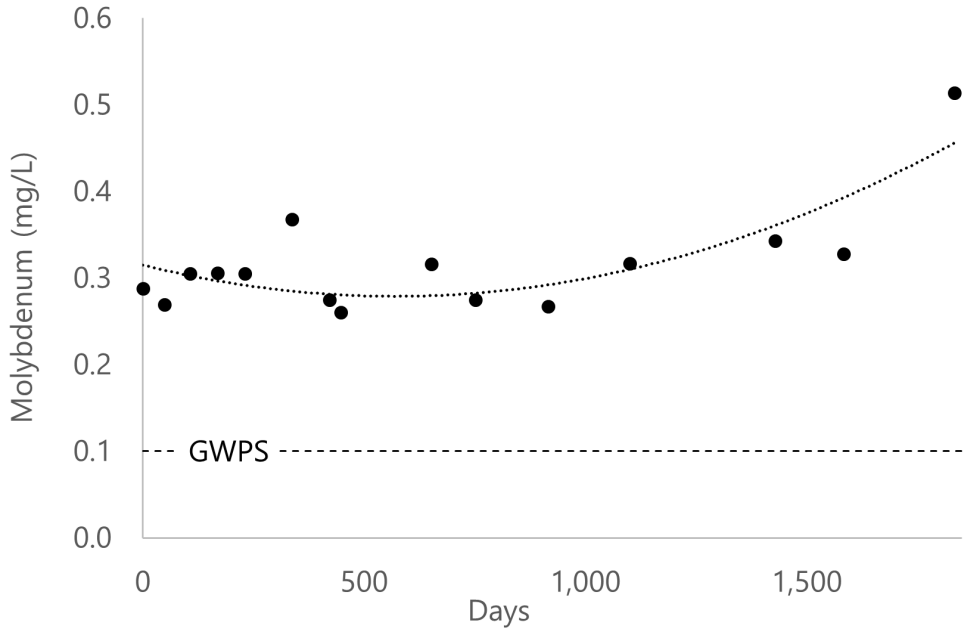


GN-AP-MW-15R

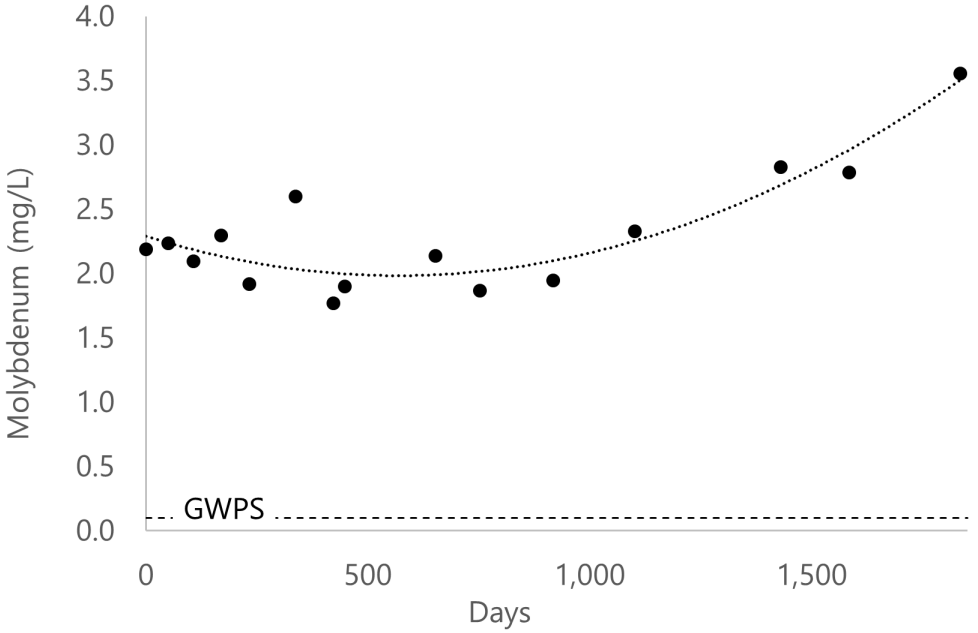


GN-AP-MW-5

Notes:
GWPS: groundwater protection standard
mg/L: milligrams per liter

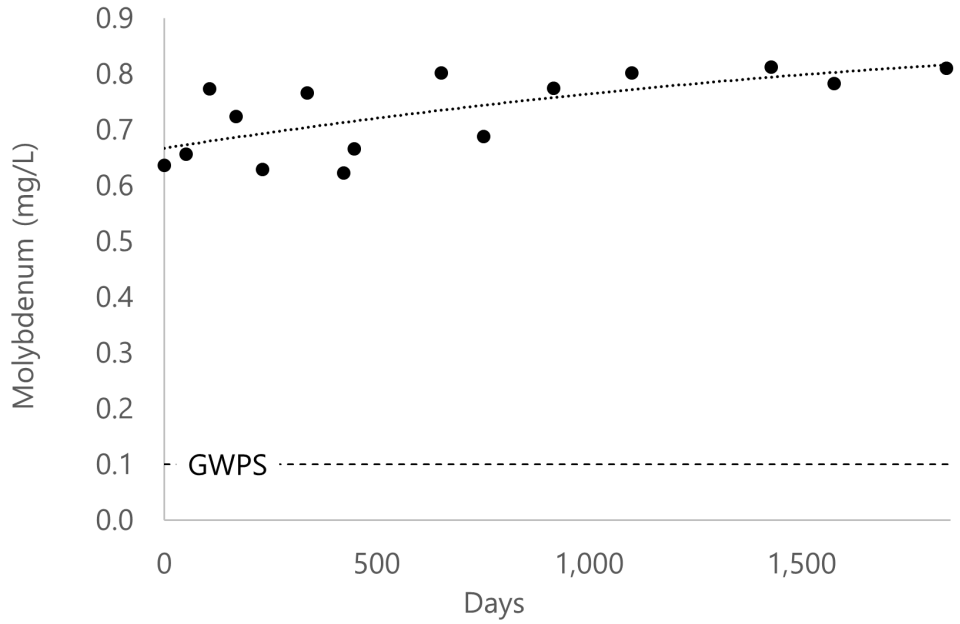


GN-AP-MW-16

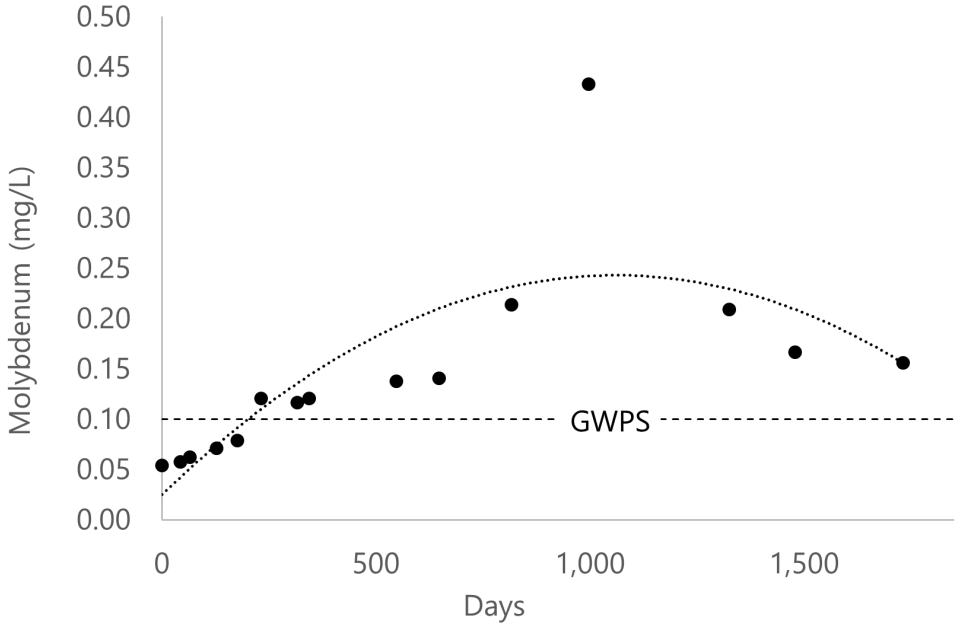


GN-AP-MW-17

Notes:
GWPS: groundwater protection standard
mg/L: milligrams per liter



GN-AP-MW-20



GN-AP-MW-15R

Notes:
GWPS: groundwater protection standard
mg/L: milligrams per liter

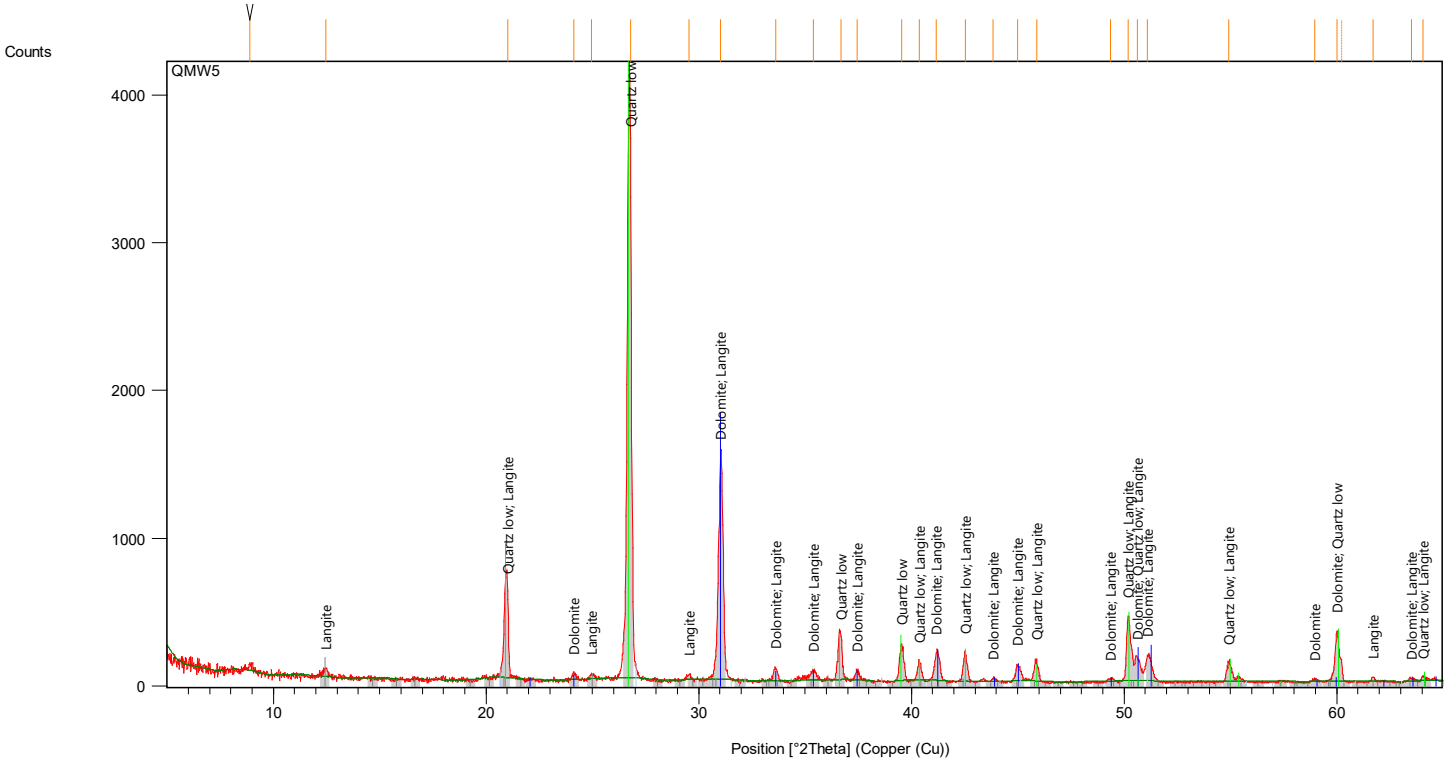
Filepath: \\Athena\Mobile\Projects\Southern Company\Alabama Power ACMs - PRIVILEGED & CONFIDENTIAL\MNA Demonstration Reports\Gaston\Appendices\Appendix A - Concentration vs Time Graphs\Appendix A-1e - Concentration vs Time.docx

ANCHOR QEA

Figure A-1e
Concentration Versus Time Graphs
Monitored Natural Attenuation Demonstration: Appendix A
Plant Gaston

Appendix B
Analytical Data

Sample Identification QMW5
Comment GN-AP-MW-5

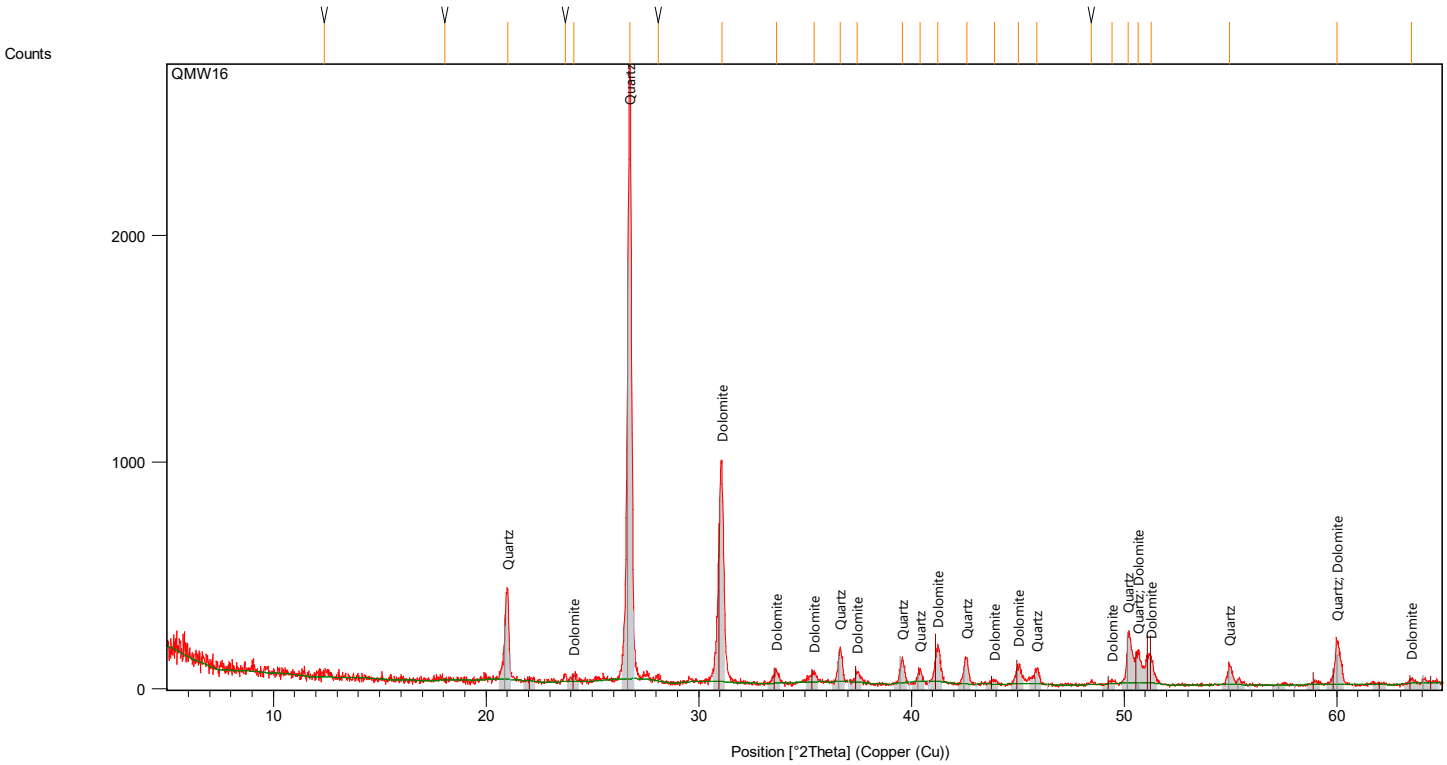


Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
8.885925	36.565380	0.472320	9.95186	1.01
12.455540	57.324380	0.314880	7.10664	1.58
21.013030	581.013000	0.196800	4.22785	15.97
24.143930	44.025580	0.236160	3.68622	1.21
24.976180	34.165020	0.236160	3.56525	0.94
26.791360	3637.027000	0.216480	3.32767	100.00
29.547160	39.892330	0.157440	3.02328	1.10
31.032210	1497.694000	0.255840	2.88191	41.18
33.608690	91.082140	0.196800	2.66664	2.50
35.405820	68.840060	0.236160	2.53530	1.89
36.702570	285.489800	0.177120	2.44865	7.85
37.459260	70.563000	0.157440	2.40090	1.94
39.525510	252.265900	0.137760	2.28003	6.94
40.380000	129.531500	0.118080	2.23373	3.56
41.169480	190.551000	0.177120	2.19270	5.24
42.536880	204.662000	0.157440	2.12533	5.63
45.880880	156.945300	0.157440	1.97791	4.32
50.191240	442.292100	0.157440	1.81769	12.16
50.608460	162.597300	0.196800	1.80368	4.47
51.110300	177.277600	0.177120	1.78714	4.87
60.018360	345.186100	0.192000	1.54017	9.49
60.210800	151.931000	0.072000	1.53952	4.18

Mineral Name	Chemical Formula
Dolomite	Ca Mg (C O3)2
Quartz low	Si O2
Langite	Cu4 (S O4 (O H)6 H2 O) H2 O

Langite almost imperceptible

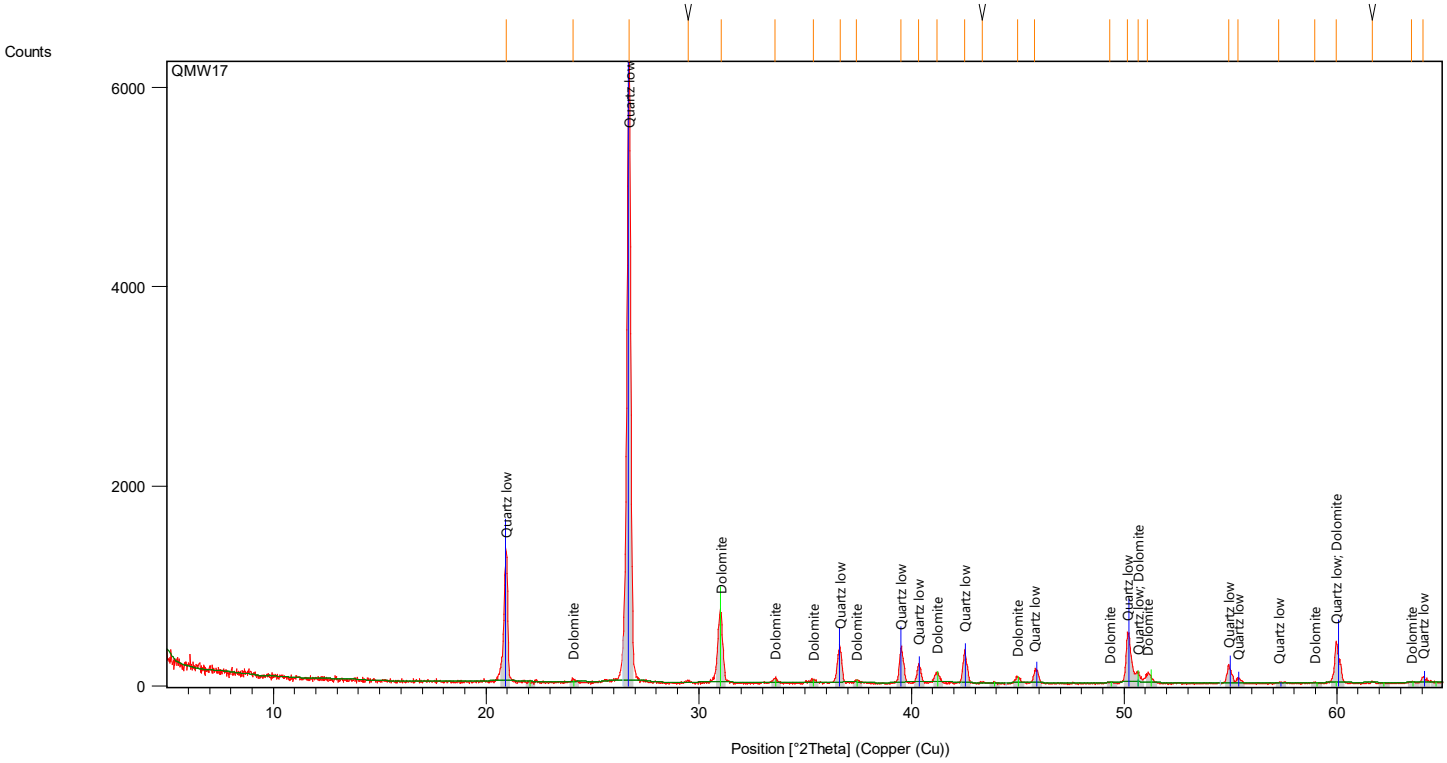
Sample Identification QMW16
Comment GN-AP-MW-16



Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
12.399770	17.823040	0.472320	7.13848	0.66
18.074630	5.124229	0.944640	4.90800	0.19
21.029610	399.714100	0.157440	4.22455	14.73
23.721440	33.784300	0.118080	3.75091	1.25
24.144500	25.350900	0.236160	3.68614	0.93
26.774350	2712.854000	0.196800	3.32975	100.00
28.092910	19.379690	0.236160	3.17639	0.71
31.091200	973.428800	0.196800	2.87657	35.88
33.648770	58.578010	0.157440	2.66355	2.16
35.417810	41.546840	0.314880	2.53447	1.53
36.659650	147.913800	0.196800	2.45141	5.45
37.454220	42.670660	0.236160	2.40122	1.57
39.582910	106.570600	0.236160	2.27685	3.93
40.398900	49.653310	0.236160	2.23273	1.83
41.244740	152.396400	0.275520	2.18887	5.62
42.610870	117.920400	0.196800	2.12181	4.35
43.903090	17.577890	0.236160	2.06231	0.65
45.046110	76.437320	0.275520	2.01260	2.82
45.897160	62.858430	0.196800	1.97724	2.32
48.466960	15.381580	0.236160	1.87825	0.57
49.438700	12.543400	0.314880	1.84358	0.46
50.205280	227.680400	0.118080	1.81721	8.39
50.662110	134.818800	0.157440	1.80190	4.97
51.281210	110.375100	0.314880	1.78159	4.07
54.969670	86.760240	0.236160	1.67045	3.20
60.014530	199.010800	0.196800	1.54154	7.34
63.517190	19.490840	0.236160	1.46471	0.72

Mineral Name	Chemical Formula
Quartz	Si O2
Dolomite	Ca Mg (C O3)2

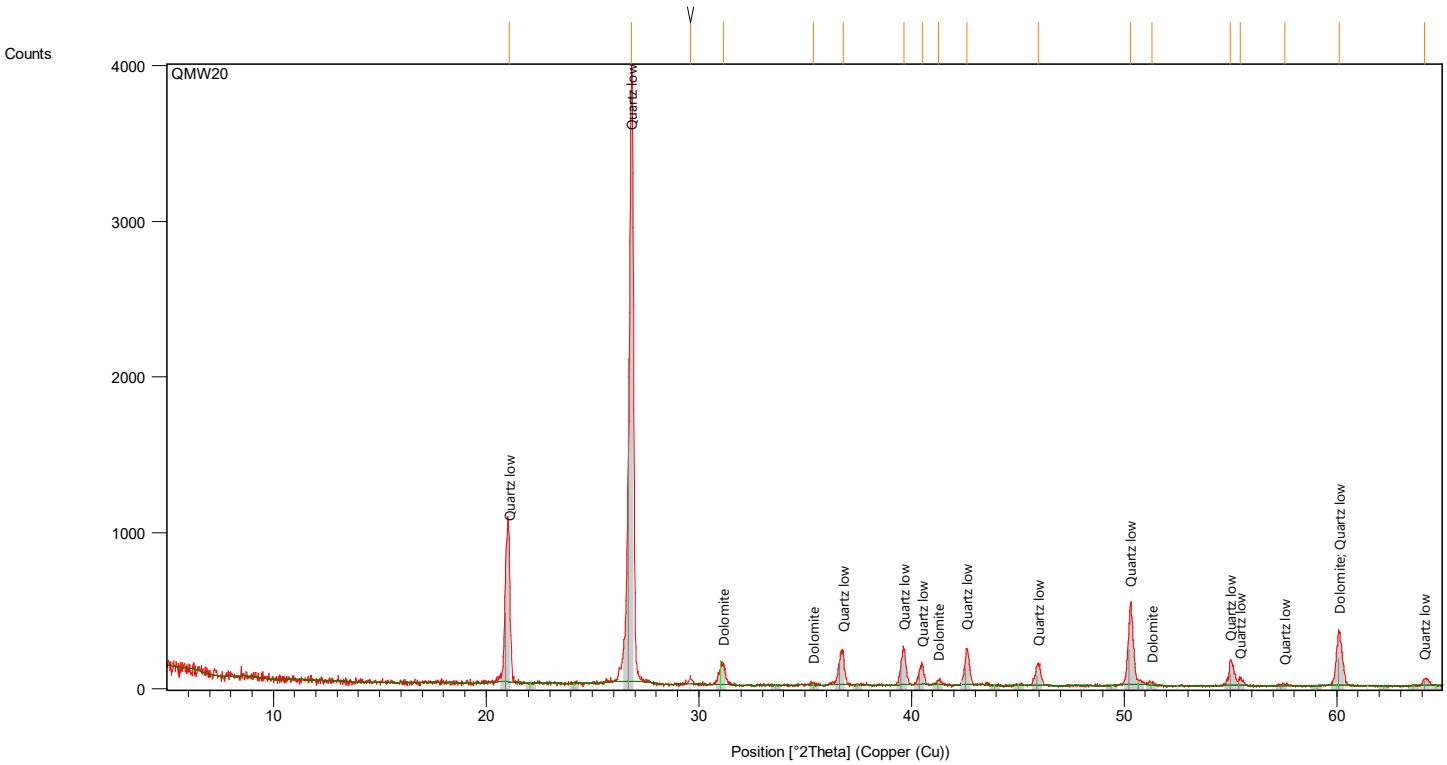
Sample Identification MW17
Comment GN-AP-MW-17



Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
20.969280	1248.401000	0.157440	4.23657	20.03
24.092790	31.872120	0.236160	3.69393	0.51
26.728990	6232.209000	0.177120	3.33529	100.00
29.495630	24.270620	0.314880	3.02845	0.39
31.056790	699.495700	0.216480	2.87968	11.22
33.596610	43.117220	0.196800	2.66757	0.69
35.376120	34.578580	0.314880	2.53736	0.55
36.646830	358.331000	0.157440	2.45224	5.75
37.403820	26.366760	0.196800	2.40434	0.42
39.510910	344.850400	0.157440	2.28084	5.53
40.347870	188.796200	0.157440	2.23543	3.03
41.203630	92.688960	0.275520	2.19096	1.49
42.510880	335.078400	0.177120	2.12657	5.38
43.337480	12.180370	0.236160	2.08790	0.20
44.976470	67.515800	0.236160	2.01555	1.08
45.795350	127.714200	0.118080	1.98140	2.05
49.336850	7.015553	0.314880	1.84715	0.11
50.138510	434.827500	0.177120	1.81948	6.98
54.907040	177.494400	0.157440	1.67221	2.85
59.982580	408.942400	0.157440	1.54228	6.56

Mineral Name	Chemical Formula
Quartz low	Si O2
Dolomite	Ca Mg (C O3)2

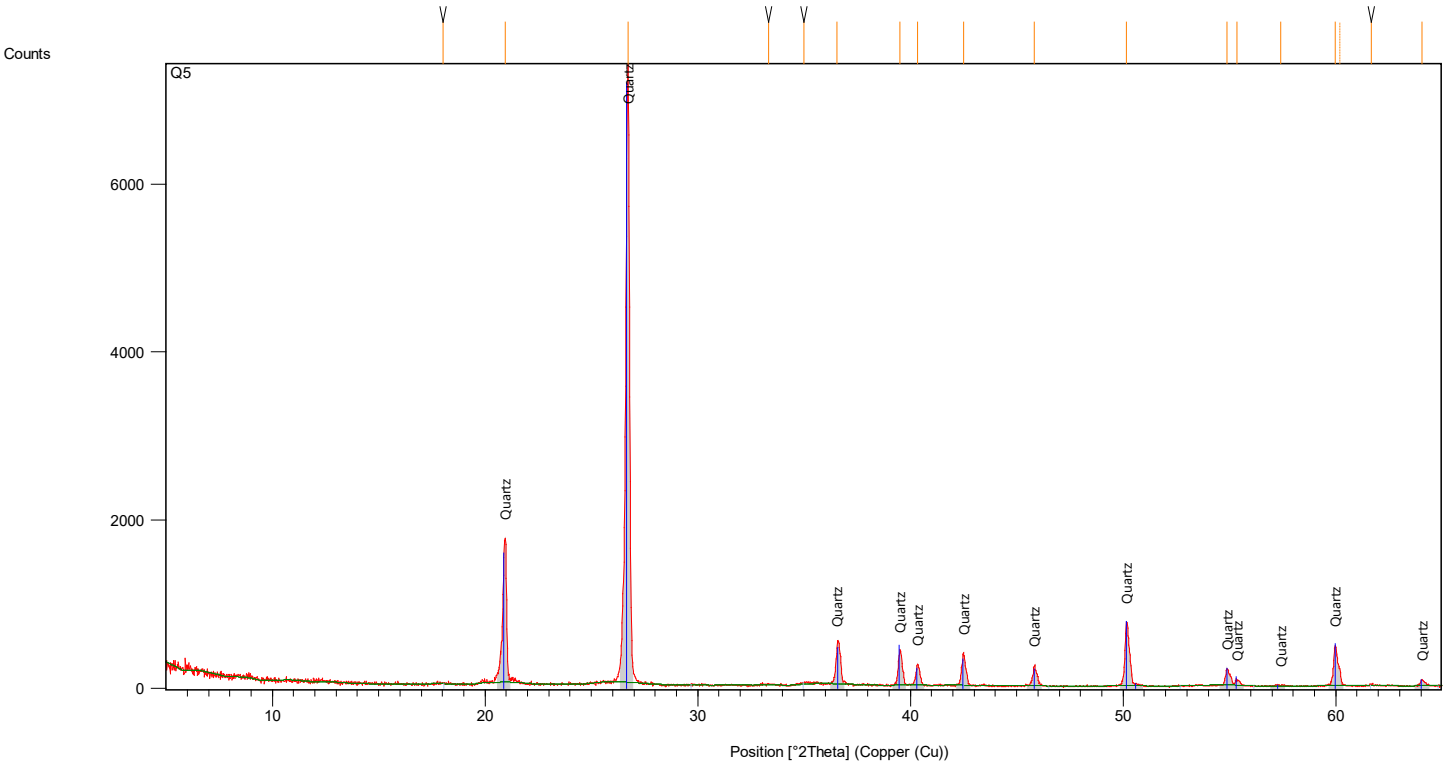
Sample Identification QMW20
Comment GN-AP-MW-20



Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
21.092750	909.937900	0.236160	4.21205	22.90
26.848620	3973.488000	0.177120	3.32071	100.00
29.616190	42.110410	0.157440	3.01639	1.06
31.162040	125.327400	0.275520	2.87020	3.15
35.374550	13.366380	0.472320	2.53747	0.34
36.791560	216.790700	0.078720	2.44293	5.46
39.653680	227.369700	0.118080	2.27295	5.72
40.521190	123.127800	0.118080	2.22627	3.10
41.291020	28.957190	0.236160	2.18653	0.73
42.606850	235.389400	0.098400	2.12200	5.92
45.975060	132.642900	0.275520	1.97407	3.34
50.310470	507.675000	0.177120	1.81366	12.78
51.306650	18.424360	0.236160	1.78076	0.46
54.992830	165.082100	0.098400	1.66980	4.15
55.460930	50.534710	0.157440	1.65681	1.27
57.560820	12.011940	0.472320	1.60127	0.30
60.100000	341.012600	0.137760	1.53955	8.58
64.110120	38.904950	0.275520	1.45259	0.98

Mineral Name	Chemical Formula
Dolomite	Ca Mg (C O3)2
Quartz low	Si O2

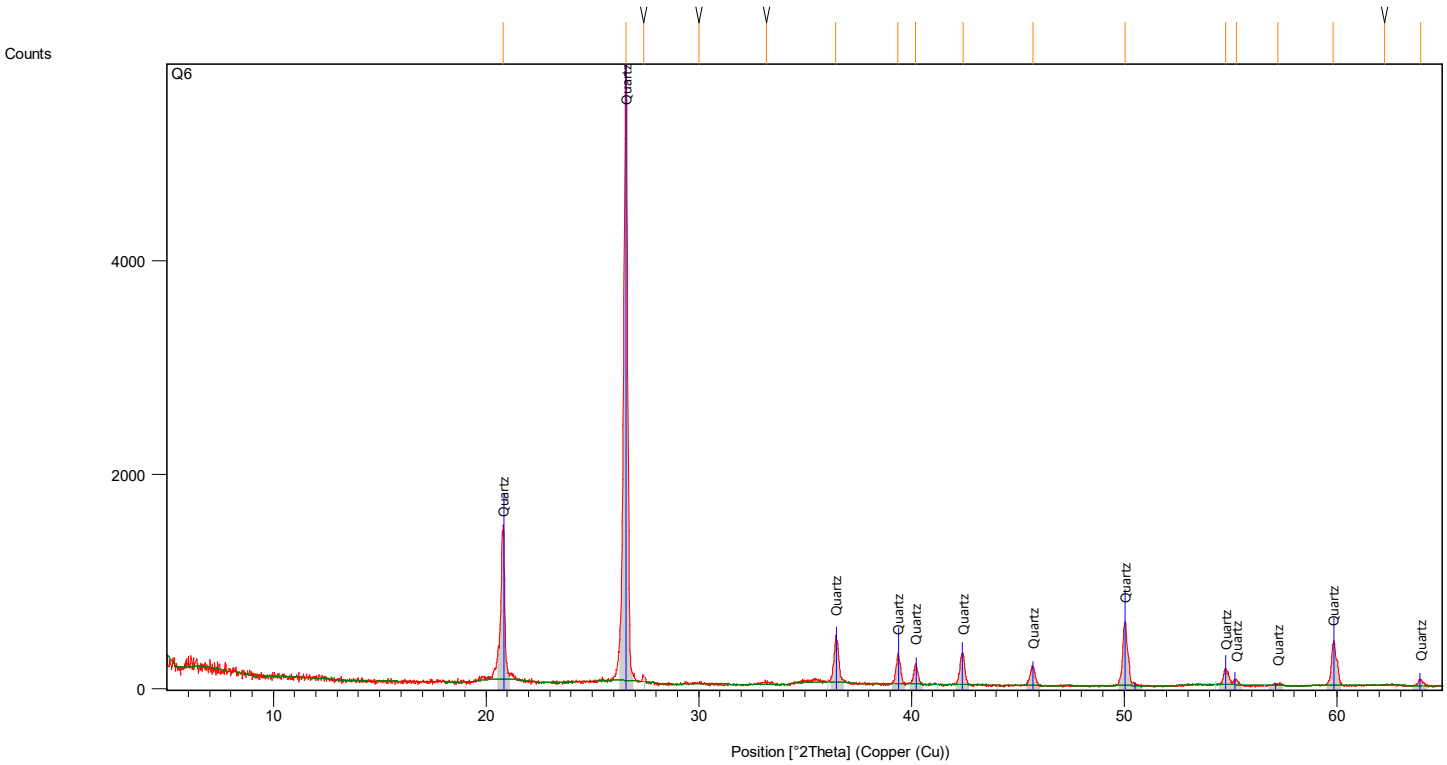
Sample Identification Q5



Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
18.026580	8.702719	0.944640	4.92097	0.12
20.960850	1718.203000	0.157440	4.23826	23.59
26.723830	7282.438000	0.177120	3.33593	100.00
33.346030	14.169700	0.629760	2.68704	0.19
35.003540	19.080020	0.787200	2.56351	0.26
36.556290	454.482300	0.216480	2.45811	6.24
39.494290	400.982900	0.177120	2.28176	5.51
40.331340	246.018700	0.157440	2.23631	3.38
42.492470	384.103100	0.137760	2.12745	5.27
45.818530	235.518500	0.078720	1.98045	3.23
50.161370	763.118800	0.137760	1.81870	10.48
54.872650	198.635300	0.137760	1.67318	2.73
55.343830	67.399690	0.236160	1.66004	0.93
57.422510	11.896900	0.472320	1.60480	0.16
59.963050	474.211200	0.168000	1.54146	6.51
60.185970	203.661800	0.096000	1.54010	2.80
61.676960	19.724000	0.144000	1.50267	0.27
64.043240	76.516310	0.168000	1.45274	1.05

Mineral Name	Chemical Formula
Quartz	Si O2

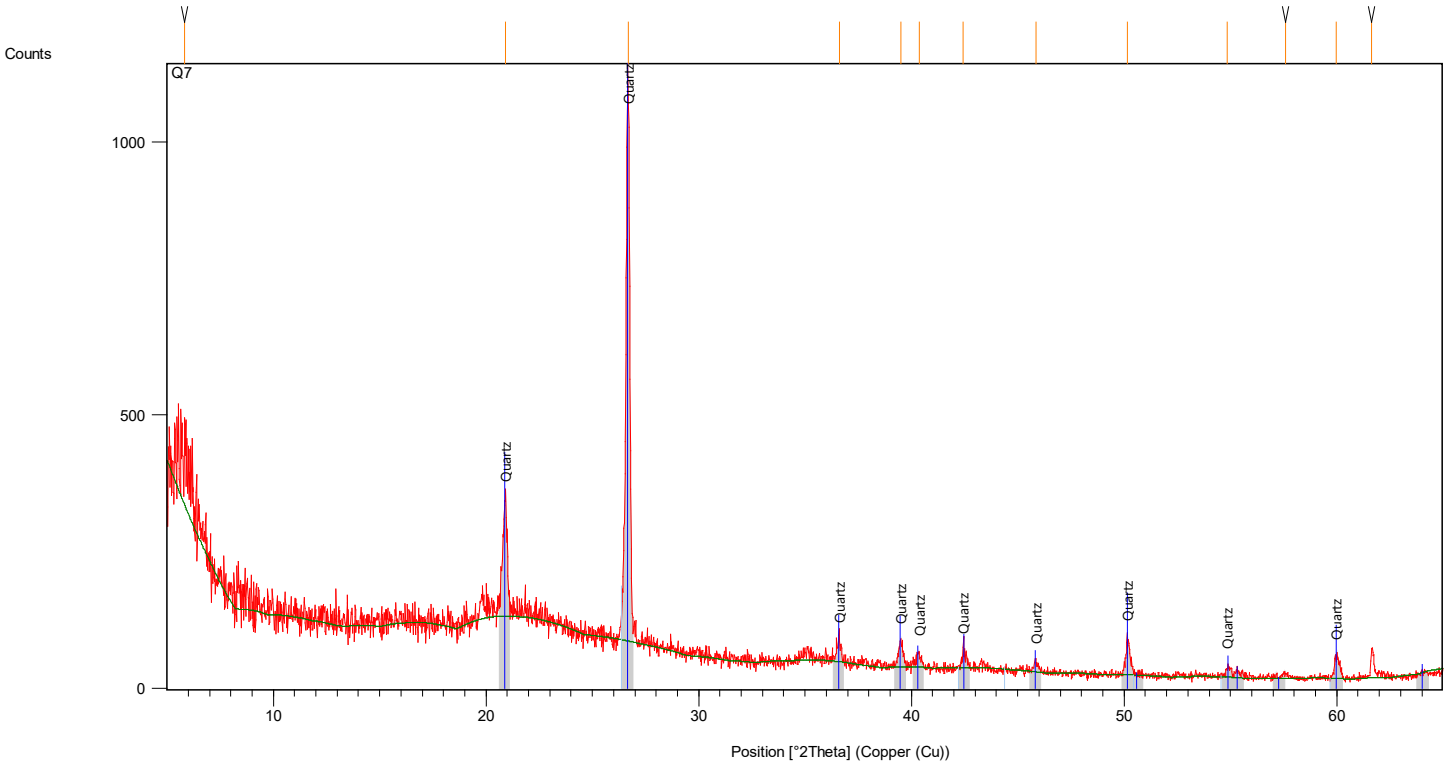
Sample Identification Q6



Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
20.793850	1343.603000	0.157440	4.27192	23.22
26.575620	5786.784000	0.196800	3.35419	100.00
27.421520	56.626380	0.157440	3.25262	0.98
30.019530	8.426099	0.787200	2.97678	0.15
33.202700	22.644650	0.629760	2.69831	0.39
36.452400	441.049800	0.216480	2.46487	7.62
39.369630	288.433800	0.098400	2.28869	4.98
40.204410	194.179700	0.137760	2.24308	3.36
42.425380	295.353500	0.098400	2.13065	5.10
45.712220	173.239500	0.196800	1.98481	2.99
50.050390	597.517700	0.157440	1.82247	10.33
54.759070	151.662900	0.157440	1.67638	2.62
55.271530	45.312340	0.196800	1.66204	0.78
57.239550	13.771110	0.472320	1.60949	0.24
59.821290	383.336500	0.157440	1.54605	6.62
62.258790	4.647379	0.944640	1.49125	0.08
63.955000	64.678090	0.137760	1.45573	1.12

Mineral Name	Chemical Formula
Quartz	Si O2

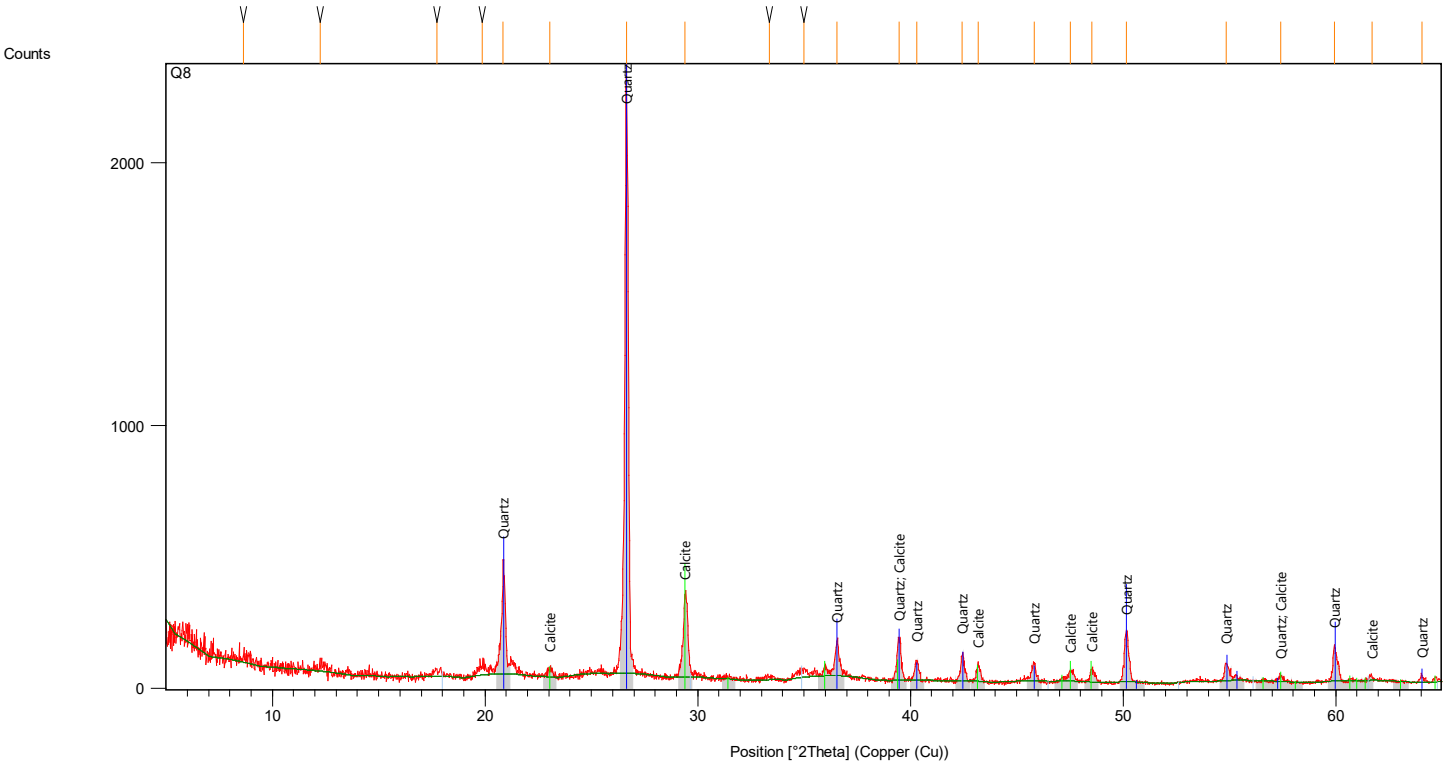
Sample Identification Q7



Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
5.834393	111.201100	0.629760	15.14829	10.52
20.914600	211.388200	0.196800	4.24752	19.99
26.673650	1057.321000	0.177120	3.34209	100.00
36.631850	38.475550	0.157440	2.45321	3.64
39.515250	45.414280	0.196800	2.28060	4.30
40.364810	24.235770	0.236160	2.23454	2.29
42.425600	29.274730	0.196800	2.13064	2.77
45.869130	19.231910	0.236160	1.97839	1.82
50.172170	65.171420	0.157440	1.81834	6.16
54.863300	19.271160	0.236160	1.67344	1.82
57.603040	7.771762	0.472320	1.60020	0.74
59.964790	38.313140	0.157440	1.54270	3.62
61.635000	50.995440	0.118080	1.50484	4.82

Mineral Name	Chemical Formula
Quartz	Si O2

Sample Identification Q8



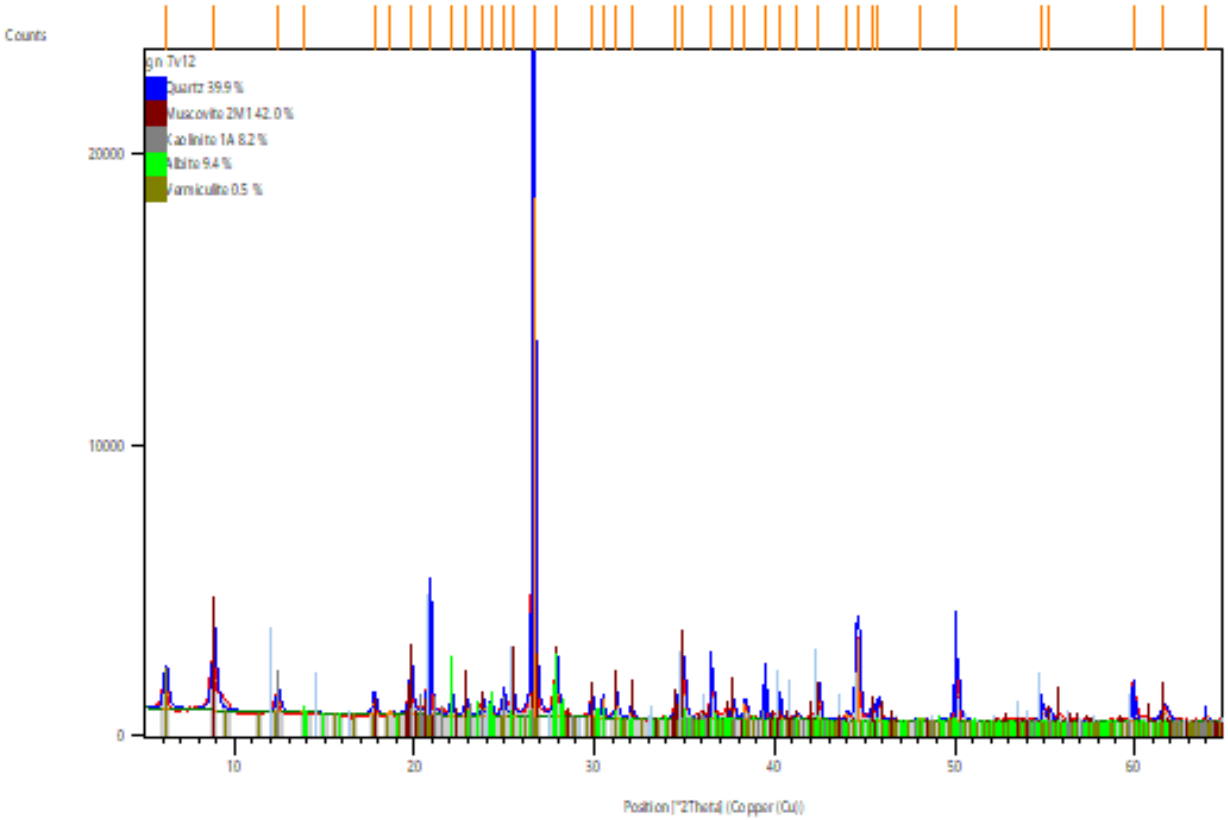
Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
8.626696	20.570230	0.944640	10.25032	0.89
12.261480	20.387920	0.472320	7.21868	0.88
17.726890	22.674440	0.472320	5.00349	0.98
19.864380	38.417870	0.393600	4.46965	1.67
20.855440	445.423500	0.118080	4.25944	19.32
23.048260	28.170740	0.236160	3.85892	1.22
26.638510	2305.283000	0.177120	3.34642	100.00
29.412160	299.198200	0.177120	3.03685	12.98
33.352310	12.158270	0.472320	2.68655	0.53
34.988350	27.433800	0.551040	2.56459	1.19
36.556770	132.112500	0.118080	2.45808	5.73
39.465160	157.299600	0.196800	2.28337	6.82
40.287730	74.230710	0.196800	2.23863	3.22
42.443790	107.788700	0.098400	2.12977	4.68
43.177620	61.186550	0.236160	2.09526	2.65
45.807470	71.948740	0.157440	1.98091	3.12
47.534500	40.545560	0.236160	1.91289	1.76
48.522640	49.724270	0.196800	1.87622	2.16
50.136860	185.644900	0.236160	1.81953	8.05
54.847290	69.992540	0.196800	1.67389	3.04
57.412830	21.545630	0.314880	1.60504	0.93
59.929810	131.139700	0.196800	1.54351	5.69
61.718090	12.181050	0.472320	1.50301	0.53
64.059670	22.835140	0.314880	1.45361	0.99

Mineral Name	Chemical Formula	SemiQuant [%]
Quartz	Si O2	88
Calcite	Ca (C O3)	12

Pattern List

Ref.Code	Score	Compound Name	Chem. Formula
96-900-9667	69	Quartz	Si3.00 O6.00
98-018-0081	56	Muscovite 2M1	H1.828 Al2.472 F0...
98-008-0082	28	Kaolinite 1A	H4 Al2 O9 Si2
98-009-0142	37	Albite	Al1.02 Ca0.02 Na0...
98-016-6064	21	Vermiculite	H10.8 Al2.94 Ca0.0..

Graphics

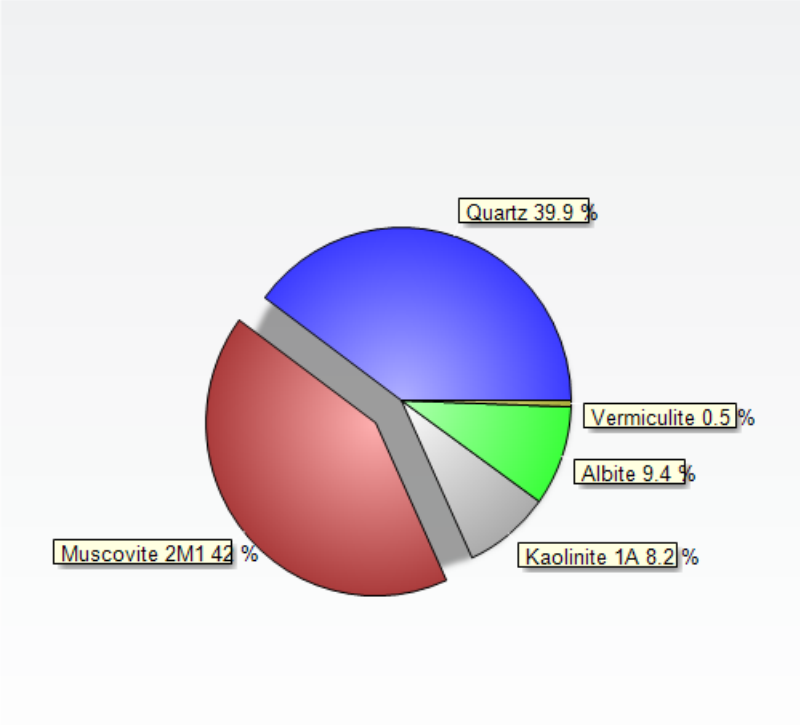


Peak List

Pos.[°2Th.]	d-spacing [Å]	Rel. Int. [%]	Matched by
6.2197	14.21075	5.58	98-016-6064
8.8993	9.93697	10.84	98-018-0081
12.4525	7.10835	3.09	98-008-0082;98..
13.8761	6.38212	0.11	98-009-0142
17.7896	4.98600	3.09	98-018-0081;98..
18.6902	4.74772	0.46	98-016-6064
19.8172	4.48020	7.19	98-018-0081;98..
20.8582	4.25888	19.24	96-900-9667;98..
22.0663	4.02837	3.87	98-009-0142

22.8727	3.88814	2.49	98-018-0081;98..
23.8103	3.73711	2.67	98-018-0081;98..
24.2609	3.66872	2.56	98-009-0142
24.9536	3.56842	3.89	98-018-0081;98..
25.4611	3.49844	5.01	98-018-0081;98..
26.6330	3.34709	100.00	96-900-9667;98..
27.8962	3.19834	8.61	98-018-0081;98..
29.8547	2.99284	4.14	98-018-0081;98..
30.4707	2.93372	3.91	98-009-0142
31.2281	2.86428	3.82	98-018-0081;98..
32.0475	2.79289	1.97	98-018-0081;98..
34.5298	2.59758	3.50	98-018-0081;98..
34.9360	2.56831	8.95	98-018-0081;98..
36.5159	2.46074	8.36	96-900-9667;98..
37.7060	2.38576	3.10	98-018-0081;98..
38.3747	2.34571	3.25	98-008-0082;98..
39.4559	2.28389	5.81	96-900-9667;98..
40.2965	2.23817	3.80	96-900-9667;98..
41.2456	2.18883	0.84	98-018-0081;98..
42.4365	2.13012	6.08	96-900-9667;98..
44.0102	2.05754	1.58	98-018-0081;98..
44.6126	2.03114	15.91	98-018-0081;98..
45.4461	1.99581	3.18	98-018-0081;98..
45.7706	1.98242	4.04	96-900-9667;98..
48.1149	1.89116	0.37	98-018-0081;98..
50.1051	1.82061	9.94	96-900-9667;98..
54.8393	1.67412	3.24	96-900-9667;98..
55.2939	1.66142	2.25	96-900-9667;98..
59.9175	1.54380	7.38	96-900-9667;98..
61.6396	1.50474	2.61	98-018-0081;98..
63.9941	1.45494	1.29	96-900-9667;98..

Quantitative Results



Phase Quartz:	Weight fraction/ %:	40
Phase Muscovite 2M1:	Weight fraction/ %:	42
Phase Kaolinite 1A:	Weight fraction/ %:	8
Phase Albite:	Weight fraction/ %:	9
Phase Vermiculite:	Weight fraction/ %:	0.5

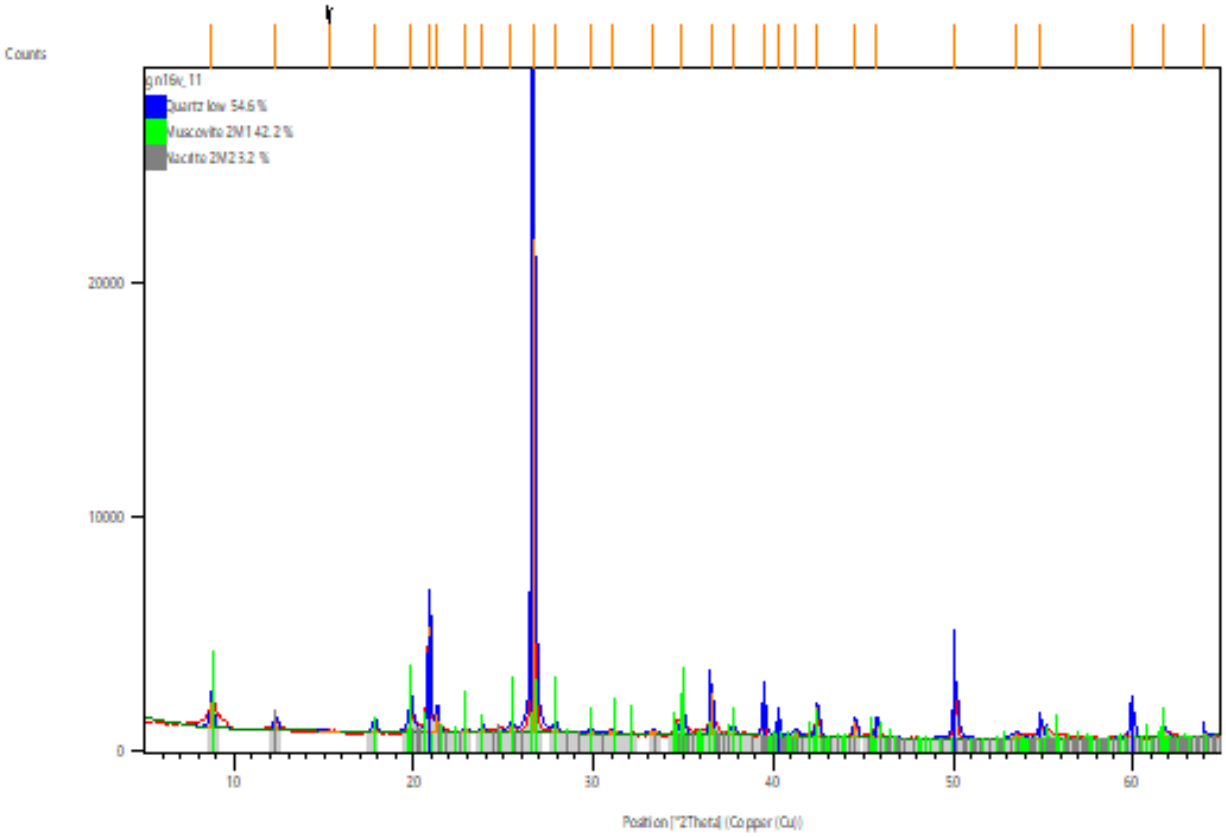
Anchor Scan Parameters

Dataset Name:	gn-7v12
File name:	C:\Users\Rick\Documents\RCIA_Win10\AnchorQEA\2021July26-XRD\gn-7v12.rd
Sample Identification:	GN-AP-MW-7V_12-15_B
Comment:	Exported by X'Pert SW Generated by hugo in project AnchorQEA-2
Measurement Date / Time:	8/27/2021 1:29:00 PM
Raw Data Origin:	PHILIPS-binary (scan) (.RD)
Scan Axis:	Gonio
Start Position [°2Th.]:	5.0200
End Position [°2Th.]:	64.9400
Step Size [°2Th.]:	0.0400
Scan Step Time [s]:	4.5000
Scan Type:	Continuous
Offset [°2Th.]:	0.0000
Divergence Slit Type:	Fixed
Divergence Slit Size [°]:	0.5000
Specimen Length [mm]:	10.00
Receiving Slit Size [mm]:	0.1000
Measurement Temperature [°C]:	0.00
Anode Material:	Cu
K-Alpha1 [Å]:	1.54060
K-Alpha2 [Å]:	1.54443
K-Beta [Å]:	1.39225
K-A2 / K-A1 Ratio:	0.50000
Generator Settings:	30 mA, 40 kV
Diffractometer Type:	XPert MPD
Diffractometer Number:	1
Goniometer Radius [mm]:	200.00
Dist. Focus-Diverg. Slit [mm]:	91.00
Incident Beam Monochromator:	No
Spinning:	No

Pattern List

Ref.Code	Score	Compound Name	Chem. Formula
98-009-0145	73	Quartz low	O2 Si1
98-016-1221	44	Muscovite 2M1	H1.77 Al2.9 Ba0.01..
98-003-4346	23	Nacrite 2M2	H4 Al2 O9 Si2

Graphics

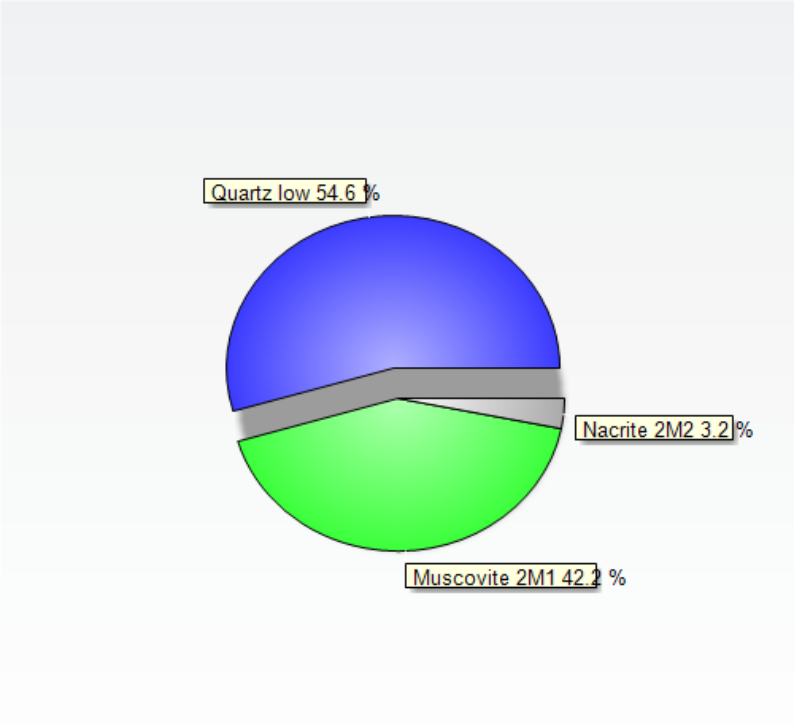


Peak List

Pos.[°2Th.]	d-spacing [Å]	Rel. Int. [%]	Matched by
8.7702	10.08286	5.29	98-016-1221
12.3428	7.17128	1.79	98-003-4346
15.2738	5.80111	0.02	
17.8234	4.97661	2.02	98-016-1221
19.8497	4.47293	5.20	98-016-1221;98..
20.8678	4.25695	21.44	98-009-0145;98..
21.3024	4.17106	3.65	98-003-4346
22.8732	3.88806	0.64	98-016-1221
23.8365	3.73306	1.01	98-016-1221
25.4082	3.50559	1.40	98-016-1221;98..
26.6429	3.34588	100.00	98-009-0145;98..
27.8741	3.20082	1.45	98-016-1221

29.8718	2.99116	0.84	98-016-1221
31.0922	2.87648	0.59	98-016-1221
33.3193	2.68913	0.66	98-016-1221;98..
34.9390	2.56809	4.83	98-016-1221;98..
36.5440	2.45891	8.82	98-009-0145;98..
37.7482	2.38319	1.44	98-016-1221;98..
39.4681	2.28321	6.06	98-009-0145;98..
40.2847	2.23880	3.63	98-009-0145;98..
41.2204	2.19011	1.06	98-016-1221;98..
42.4553	2.12922	6.01	98-009-0145;98..
44.5436	2.03413	3.28	98-016-1221;98..
45.7740	1.98228	3.61	98-009-0145;98..
50.1189	1.82014	9.21	98-009-0145;98..
53.4803	1.71340	0.87	98-016-1221;98..
54.8552	1.67367	3.49	98-009-0145;98..
59.9310	1.54348	7.39	98-009-0145;98..
61.6876	1.50368	1.68	98-016-1221;98..
64.0129	1.45456	0.93	98-009-0145;98..

Quantitative Results



Phase Quartz low:	Weight fraction/ %:	55
Phase Muscovite 2M1:	Weight fraction/ %:	42
Phase Nacrite 2M2:	Weight fraction/ %:	3.2

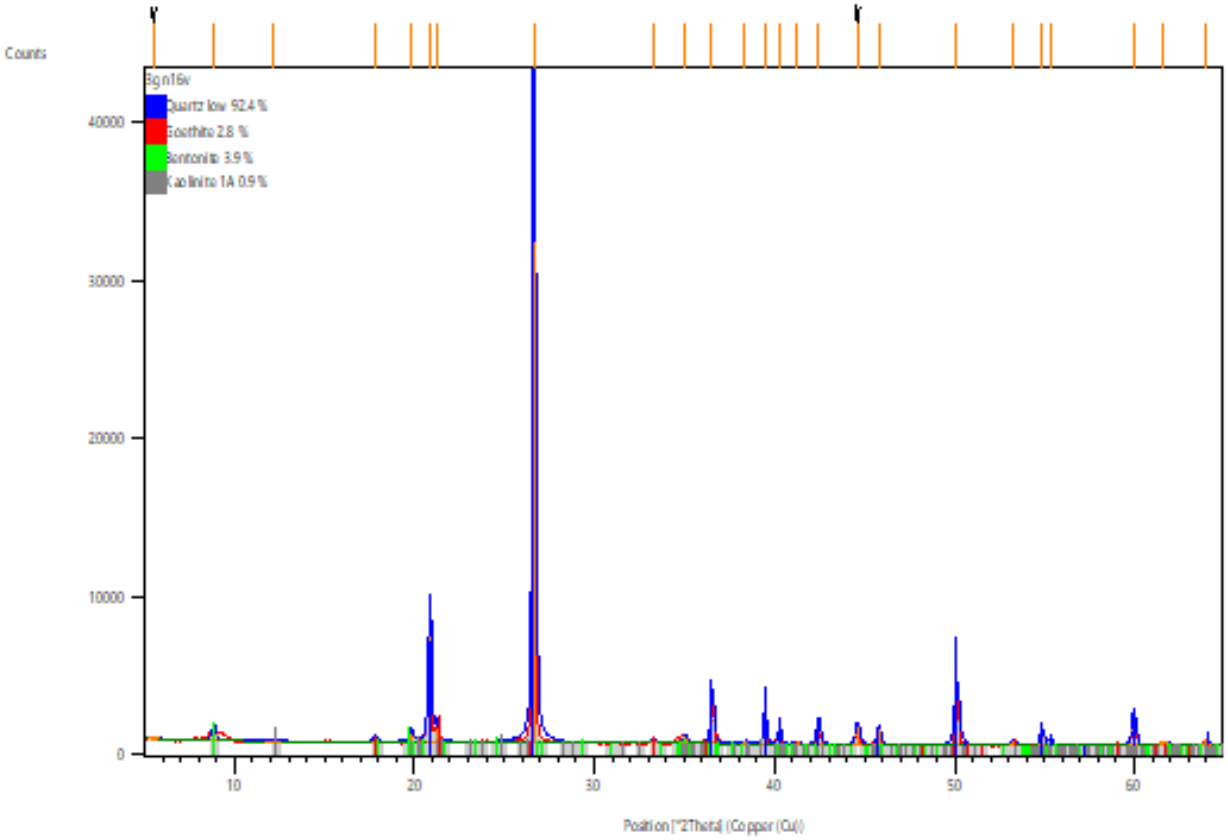
Anchor Scan Parameters

Dataset Name:	gn16v_11
File name:	C:\Users\Rick\Documents\RCIA_Win10\AnchorQEA\2021July26-XRD\gn16v_11.rd
Sample Identification:	GN-AP-MW-16V_11.5-12
Comment:	Exported by X'Pert SW Generated by hugo in project AnchorQEA-2
Measurement Date / Time:	8/30/2021 2:01:00 PM
Raw Data Origin:	PHILIPS-binary (scan) (.RD)
Scan Axis:	Gonio
Start Position [°2Th.]:	5.0200
End Position [°2Th.]:	64.9400
Step Size [°2Th.]:	0.0400
Scan Step Time [s]:	4.5000
Scan Type:	Continuous
Offset [°2Th.]:	0.0000
Divergence Slit Type:	Fixed
Divergence Slit Size [°]:	0.5000
Specimen Length [mm]:	10.00
Receiving Slit Size [mm]:	0.1000
Measurement Temperature [°C]:	0.00
Anode Material:	Cu
K-Alpha1 [Å]:	1.54060
K-Alpha2 [Å]:	1.54443
K-Beta [Å]:	1.39225
K-A2 / K-A1 Ratio:	0.50000
Generator Settings:	30 mA, 40 kV
Diffractometer Type:	XPert MPD
Diffractometer Number:	1
Goniometer Radius [mm]:	200.00
Dist. Focus-Diverg. Slit [mm]:	91.00
Incident Beam Monochromator:	No
Spinning:	No

Pattern List

Ref.Code	Score	Compound Name	Chem. Formula
98-008-3849	69	Quartz low	O2 Si1
98-015-9960	33	Goethite	H1 Fe1 O2
98-016-0437	26	Bentonite	H2 Al1.93 Ca0.06 F..
98-003-1135	16	Kaolinite 1A	H4 Al2 O9 Si2

Graphics

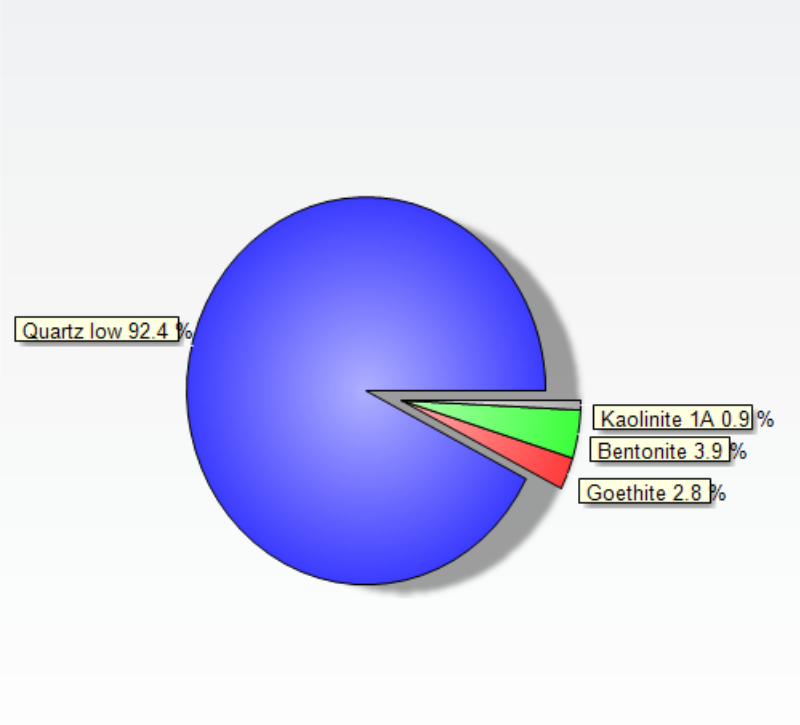


Peak List

Pos.[°2Th.]	d-spacing [Å]	Rel. Int. [%]	Matched by
5.5021	16.06224	0.21	
8.8523	9.98962	2.41	98-016-0437
12.1719	7.27159	0.09	98-003-1135
17.8154	4.97883	0.78	98-015-9960;98..
19.8255	4.47832	1.74	98-016-0437;98..
20.8587	4.25878	21.18	98-008-3849
21.2389	4.18339	2.79	98-015-9960;98..
26.6392	3.34633	100.00	98-008-3849;98..
33.2663	2.69330	0.73	98-015-9960
35.0235	2.56209	1.30	98-016-0437;98..

36.5378	2.45931	8.50	98-008-3849;98..
38.3622	2.34645	0.41	98-016-0437;98..
39.4591	2.28371	5.81	98-008-3849;98..
40.2830	2.23888	3.10	98-008-3849;98..
41.2190	2.19018	0.40	98-015-9960;98..
42.4338	2.13025	4.43	98-008-3849;98..
44.5960	2.03186	3.49	
45.7825	1.98193	3.13	98-008-3849;98..
50.1086	1.82049	9.96	98-008-3849;98..
53.2355	1.72070	0.85	98-015-9960;98..
54.8316	1.67433	3.09	98-008-3849;98..
55.3078	1.66104	1.48	98-008-3849;98..
59.9219	1.54370	6.34	98-008-3849;98..
61.6133	1.50532	0.55	98-015-9960;98..
64.0090	1.45464	1.19	98-008-3849;98..

Quantitative Results



Phase Quartz low:	Weight fraction/ %:	92
Phase Goethite:	Weight fraction/ %:	3
Phase Bentonite:	Weight fraction/ %:	4
Phase Kaolinite 1A:	Weight fraction/ %:	1

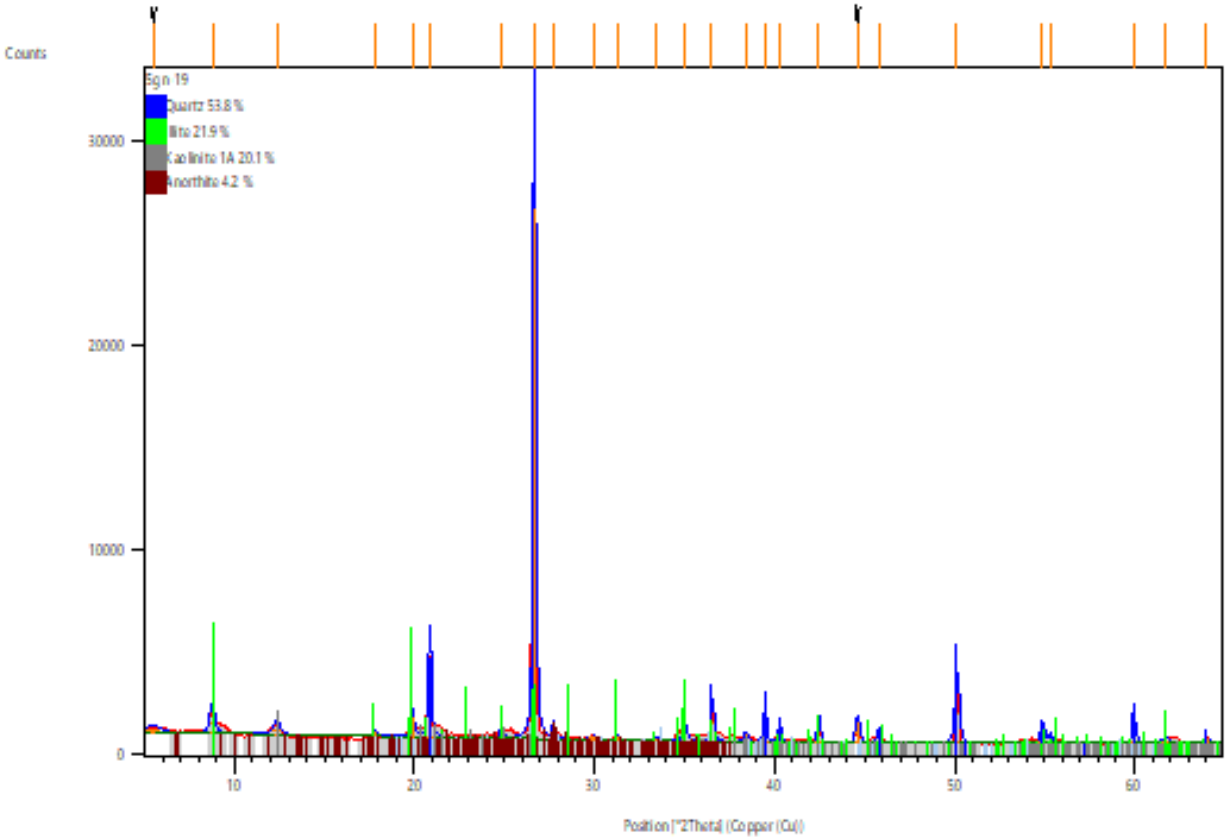
Anchor Scan Parameters

Dataset Name:	3gn16v
File name:	C:\Users\Rick\Documents\RCIA_Win10\AnchorQEA\2021July26-XRD\3gn16v.rd
Sample Identification:	3-GN-AP-MW-16V_19.5-
Comment:	Exported by X'Pert SW Generated by hugo in project AnchorQEA-2
Measurement Date / Time:	8/31/2021 10:55:00 AM
Raw Data Origin:	PHILIPS-binary (scan) (.RD)
Scan Axis:	Gonio
Start Position [°2Th.]:	5.0200
End Position [°2Th.]:	64.9400
Step Size [°2Th.]:	0.0400
Scan Step Time [s]:	4.5000
Scan Type:	Continuous
Offset [°2Th.]:	0.0000
Divergence Slit Type:	Fixed
Divergence Slit Size [°]:	0.5000
Specimen Length [mm]:	10.00
Receiving Slit Size [mm]:	0.1000
Measurement Temperature [°C]:	0.00
Anode Material:	Cu
K-Alpha1 [Å]:	1.54060
K-Alpha2 [Å]:	1.54443
K-Beta [Å]:	1.39225
K-A2 / K-A1 Ratio:	0.50000
Generator Settings:	30 mA, 40 kV
Diffractometer Type:	XPert MPD
Diffractometer Number:	1
Goniometer Radius [mm]:	200.00
Dist. Focus-Diverg. Slit [mm]:	91.00
Incident Beam Monochromator:	No
Spinning:	No

Pattern List

Ref.Code	Score	Compound Name	Chem. Formula
98-015-4289	63	Quartz	O2 Si1
98-016-6963	32	Illite	H2 Al2.59 Ca0.01 F..
98-008-0082	32	Kaolinite 1A	H4 Al2 O9 Si2
98-000-0654	15	Anorthite	Al2 Ca1 O8 Si2

Graphics

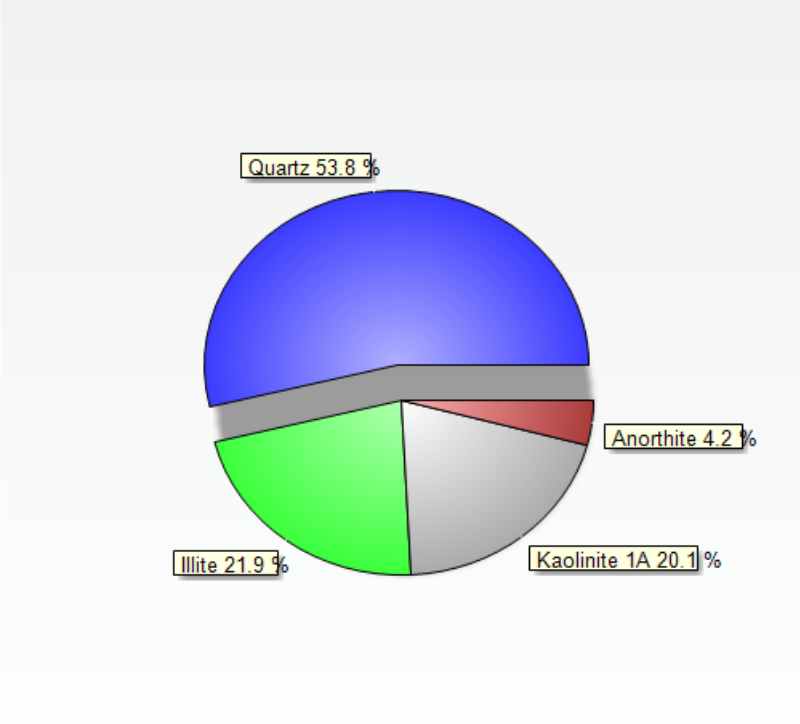


Peak List

Pos.[°2Th.]	d-spacing [Å]	Rel. Int. [%]	Matched by
5.5252	15.99537	0.82	
8.7772	10.07485	4.02	98-016-6963
12.3474	7.16864	1.72	98-008-0082
17.7836	4.98767	0.96	98-016-6963;98..
19.8853	4.46499	3.62	98-016-6963;98..
20.8513	4.26027	15.27	98-015-4289;98..
24.8596	3.58170	1.77	98-016-6963;98..
26.6596	3.34382	100.00	98-015-4289;98..
27.7115	3.21924	2.60	98-000-0654
29.9509	2.98344	0.43	98-000-0654

31.2913	2.85863	0.55	98-016-6963;98..
33.4522	2.67875	0.41	98-016-6963;98..
35.0028	2.56356	2.65	98-016-6963;98..
36.5413	2.45908	6.60	98-015-4289;98..
38.3869	2.34499	1.34	98-008-0082
39.4585	2.28374	5.23	98-015-4289;98..
40.2744	2.23934	2.81	98-015-4289;98..
42.4411	2.12990	4.33	98-015-4289;98..
44.5988	2.03174	3.87	
45.7782	1.98211	2.76	98-015-4289;98..
50.1209	1.82007	10.97	98-015-4289;98..
54.8595	1.67355	3.53	98-015-4289;98..
55.2969	1.66134	1.87	98-015-4289;98..
59.9292	1.54353	5.78	98-015-4289;98..
61.6784	1.50388	0.94	98-016-6963;98..
63.9987	1.45485	1.19	98-015-4289;98..

Quantitative Results



Phase Quartz:	Weight fraction/ %:	54
Phase Illite:	Weight fraction/ %:	22
Phase Kaolinite 1A:	Weight fraction/ %:	20
Phase Anorthite:	Weight fraction/ %:	4

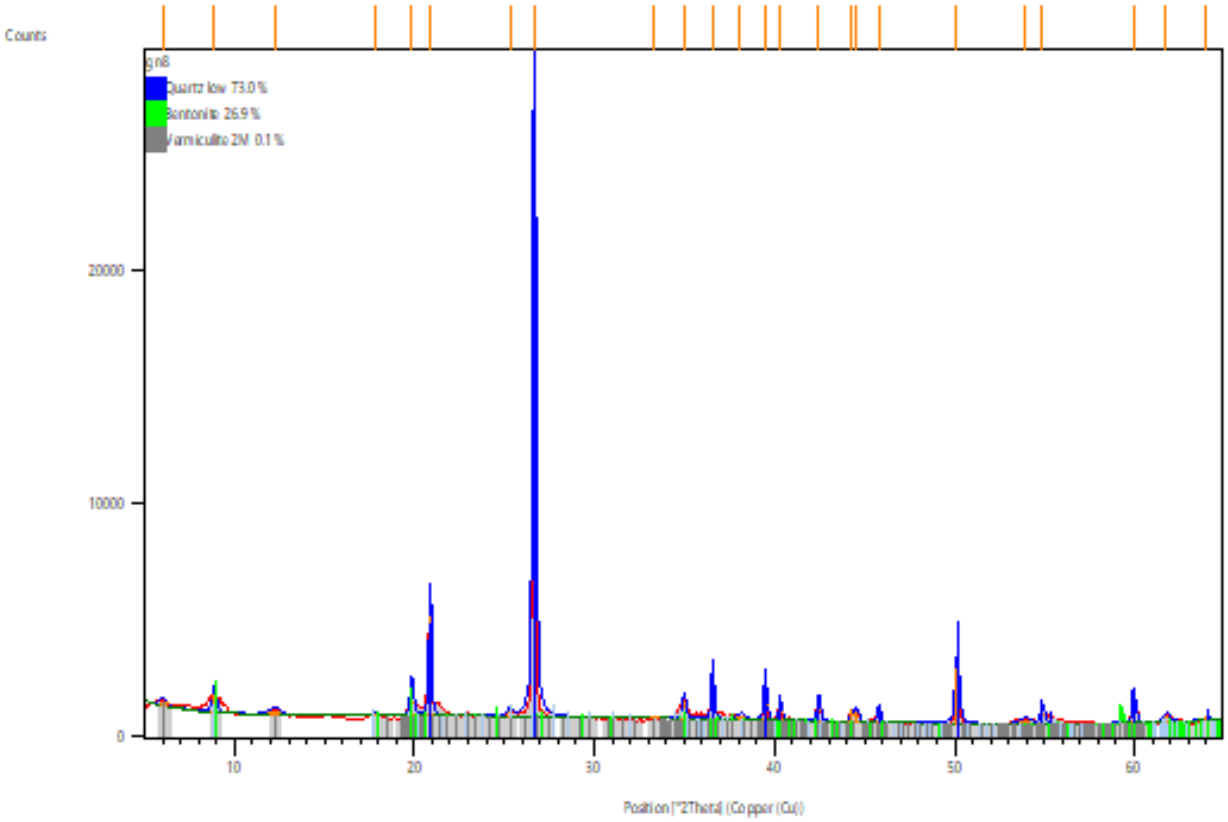
Anchor Scan Parameters

Dataset Name:	5gn-19
File name:	C:\Users\Rick\Documents\RCIA_Win10\AnchorQEA\2021July26-XRD\5gn-19.rd
Sample Identification:	5-GN-AP-MW-17V_19-20
Comment:	Exported by X'Pert SW Generated by hugo in project AnchorQEA-2
Measurement Date / Time:	8/30/2021 12:04:00 PM
Raw Data Origin:	PHILIPS-binary (scan) (.RD)
Scan Axis:	Gonio
Start Position [°2Th.]:	5.0200
End Position [°2Th.]:	64.9400
Step Size [°2Th.]:	0.0400
Scan Step Time [s]:	4.5000
Scan Type:	Continuous
Offset [°2Th.]:	0.0000
Divergence Slit Type:	Fixed
Divergence Slit Size [°]:	0.5000
Specimen Length [mm]:	10.00
Receiving Slit Size [mm]:	0.1000
Measurement Temperature [°C]:	0.00
Anode Material:	Cu
K-Alpha1 [Å]:	1.54060
K-Alpha2 [Å]:	1.54443
K-Beta [Å]:	1.39225
K-A2 / K-A1 Ratio:	0.50000
Generator Settings:	30 mA, 40 kV
Diffractometer Type:	XPert MPD
Diffractometer Number:	1
Goniometer Radius [mm]:	200.00
Dist. Focus-Diverg. Slit [mm]:	91.00
Incident Beam Monochromator:	No
Spinning:	No

Pattern List

Ref.Code	Score	Compound Name	Chem. Formula
98-008-3849	76	Quartz low	O2 Si1
98-016-0437	35	Bentonite	H2 Al1.93 Ca0.06 F..
98-002-7644	15	Vermiculite 2M	H2 Mg3 O12 Si4

Graphics

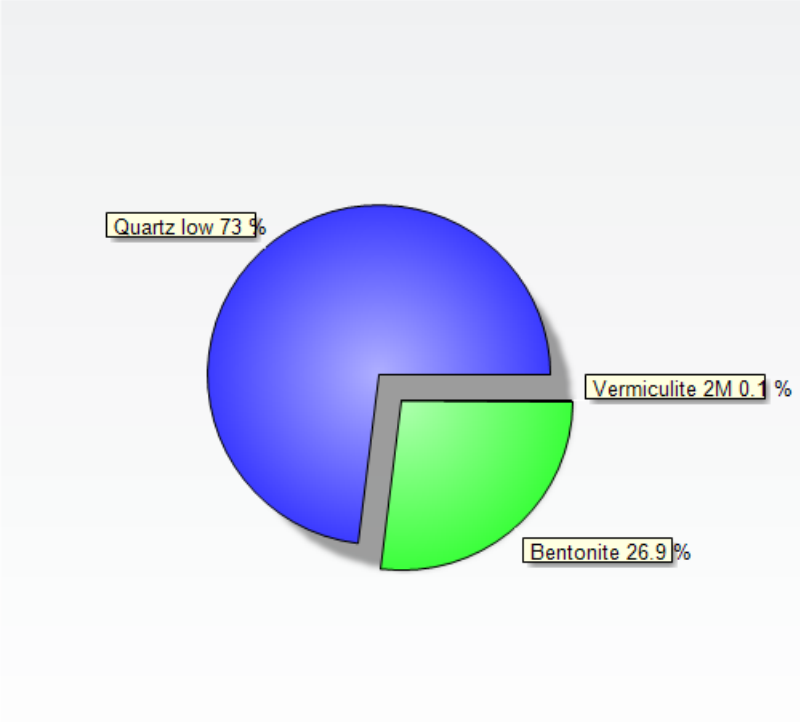


Peak List

Pos.[°2Th.]	d-spacing [Å]	Rel. Int. [%]	Matched by
6.0417	14.62899	0.97	98-002-7644
8.9027	9.93315	3.73	98-016-0437
12.2285	7.23808	0.88	98-002-7644
17.8196	4.97766	0.47	98-016-0437
19.8525	4.47230	5.38	98-016-0437;98..
20.8681	4.25687	20.19	98-008-3849;98..
25.3049	3.51967	1.25	98-002-7644
26.6473	3.34533	100.00	98-008-3849;98..
33.3394	2.68756	0.07	98-002-7644
34.9627	2.56641	3.78	98-016-0437;98..
36.5481	2.45864	8.14	98-008-3849;98..

38.1019	2.36188	0.88	98-016-0437;98..
39.4697	2.28312	6.13	98-008-3849;98..
40.3201	2.23691	3.47	98-008-3849;98..
42.4462	2.12966	4.74	98-008-3849;98..
44.2822	2.04553	2.60	98-016-0437;98..
44.5627	2.03330	2.54	98-016-0437;98..
45.7832	1.98190	3.16	98-008-3849;98..
50.1217	1.82005	10.95	98-008-3849;98..
53.9216	1.70042	0.85	98-016-0437;98..
54.8543	1.67369	3.31	98-008-3849;98..
59.9319	1.54346	6.92	98-008-3849;98..
61.7600	1.50209	1.29	98-016-0437
64.0207	1.45440	0.86	98-008-3849;98..

Quantitative Results



Phase Quartz low:	Weight fraction/ %:	73
Phase Bentonite:	Weight fraction/ %:	27
Phase Vermiculite 2M:	Weight fraction/ %:	0.1

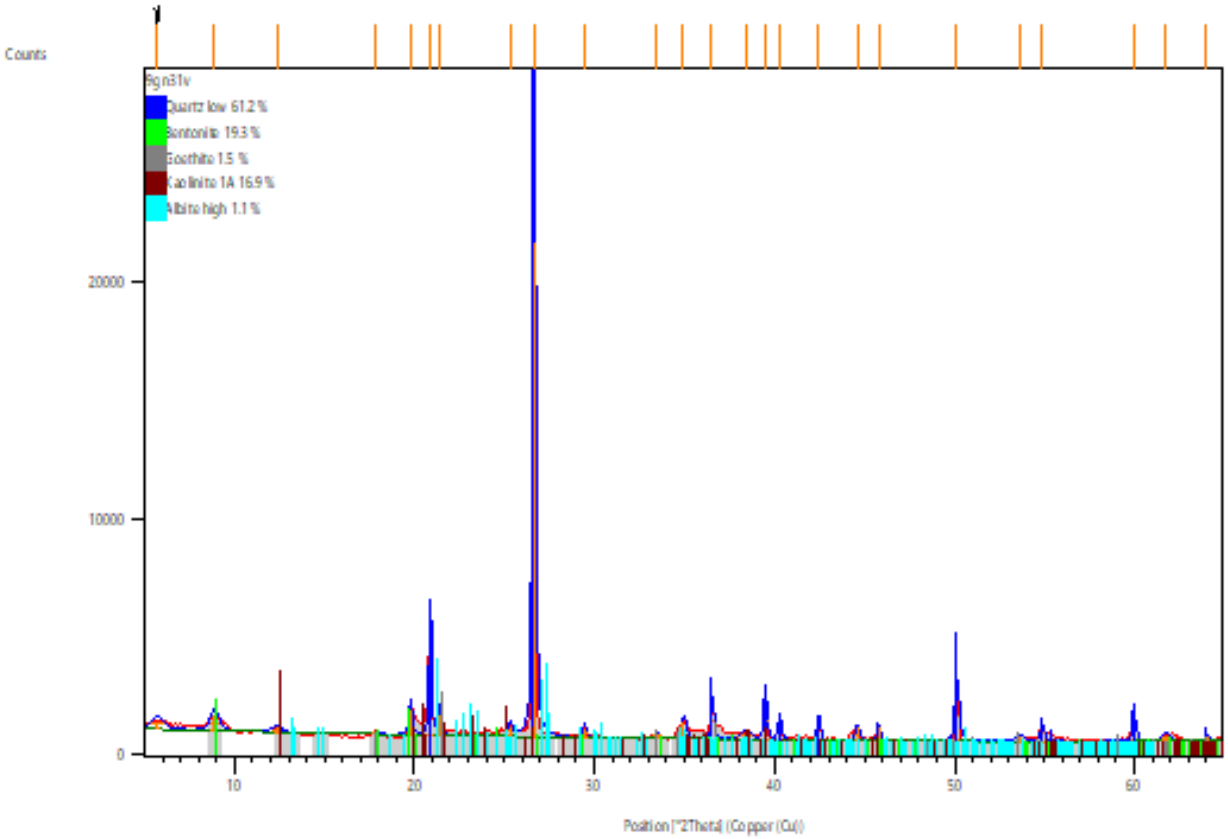
Anchor Scan Parameters

Dataset Name:	gn8
File name:	C:\Users\Rick\Documents\RCIA_Win10\AnchorQEA\2021July26-XRD\gn8.rd
Sample Identification:	8-GN-AP-MW-30H_20.4-
Comment:	Exported by X'Pert SW Generated by hugo in project AnchorQEA-2
Measurement Date / Time:	8/27/2021 11:34:00 AM
Raw Data Origin:	PHILIPS-binary (scan) (.RD)
Scan Axis:	Gonio
Start Position [°2Th.]:	5.0200
End Position [°2Th.]:	64.9400
Step Size [°2Th.]:	0.0400
Scan Step Time [s]:	4.5000
Scan Type:	Continuous
Offset [°2Th.]:	0.0000
Divergence Slit Type:	Fixed
Divergence Slit Size [°]:	0.5000
Specimen Length [mm]:	10.00
Receiving Slit Size [mm]:	0.1000
Measurement Temperature [°C]:	0.00
Anode Material:	Cu
K-Alpha1 [Å]:	1.54060
K-Alpha2 [Å]:	1.54443
K-Beta [Å]:	1.39225
K-A2 / K-A1 Ratio:	0.50000
Generator Settings:	30 mA, 40 kV
Diffractometer Type:	XPert MPD
Diffractometer Number:	1
Goniometer Radius [mm]:	200.00
Dist. Focus-Diverg. Slit [mm]:	91.00
Incident Beam Monochromator:	No
Spinning:	No

Pattern List

Ref.Code	Score	Compound Name	Chem. Formula
98-008-3849	62	Quartz low	O2 Si1
98-016-0437	38	Bentonite	H2 Al1.93 Ca0.06 F..
98-015-9972	32	Goethite	H1 Fe1 O2
98-008-0082	28	Kaolinite 1A	H4 Al2 O9 Si2
98-010-0501	7	Albite high	Al1 Na1 O8 Si3

Graphics

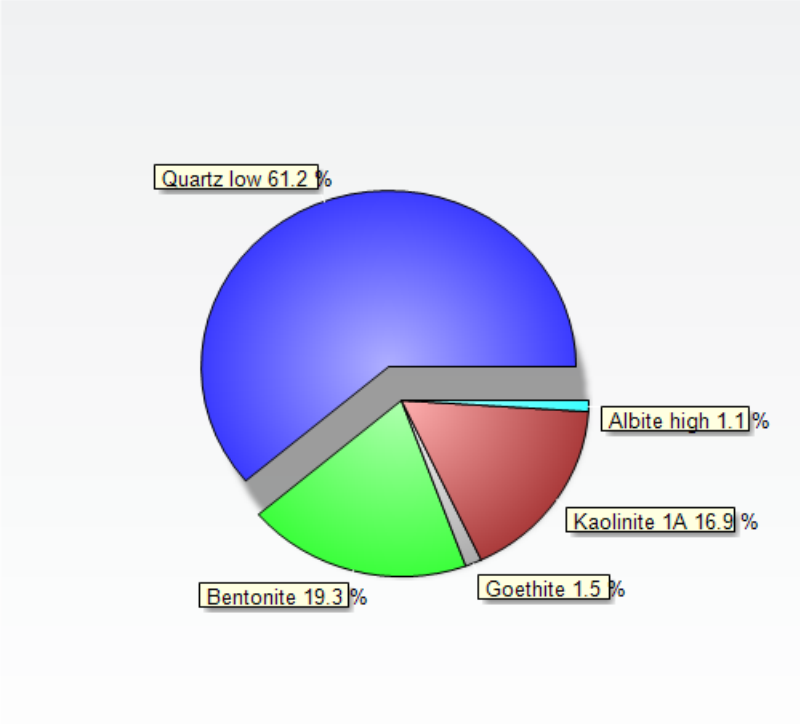


Peak List

Pos.[°2Th.]	d-spacing [Å]	Rel. Int. [%]	Matched by
5.7157	15.46255	1.61	
8.9136	9.92100	2.93	98-016-0437
12.3615	7.16050	0.84	98-008-0082
17.7854	4.98716	0.33	98-016-0437;98..
19.7760	4.48943	5.14	98-016-0437;98..
20.8740	4.25568	20.09	98-008-3849
21.4038	4.15153	4.13	98-015-9972;98..
25.3204	3.51755	2.02	98-008-0082;98..
26.6364	3.34668	100.00	98-008-3849;98..

29.4413	3.03391	2.04	98-016-0437;98..
33.4506	2.67888	0.74	98-016-0437;98..
34.9509	2.56724	3.44	98-016-0437;98..
36.5356	2.45945	7.42	98-008-3849;98..
38.3896	2.34484	1.30	98-016-0437;98..
39.4719	2.28300	7.37	98-008-3849;98..
40.2733	2.23940	3.68	98-008-3849;98..
42.4439	2.12977	4.50	98-008-3849;98..
44.5857	2.03231	2.55	98-010-0501
45.7751	1.98223	2.84	98-008-3849;98..
50.1091	1.82047	10.05	98-008-3849;98..
53.5694	1.71076	0.96	98-016-0437;98..
54.8428	1.67402	3.56	98-008-3849;98..
59.9334	1.54343	6.37	98-008-3849;98..
61.6929	1.50357	1.17	98-016-0437;98..
64.0032	1.45475	1.24	98-008-3849;98..

Quantitative Results



Phase Quartz low:	Weight fraction/ %:	61
Phase Bentonite:	Weight fraction/ %:	19
Phase Goethite:	Weight fraction/ %:	1.5
Phase Kaolinite 1A:	Weight fraction/ %:	17
Phase Albite high:	Weight fraction/ %:	1

Anchor Scan Parameters

Dataset Name:	9gn31v
File name:	C:\Users\Rick\Documents\RCIA_Win10\AnchorQEA\2021July26-XRD\9gn31v.rd
Sample Identification:	9-GN-AP-MW-31V_30.5-
Comment:	Exported by X'Pert SW Generated by hugo in project AnchorQEA-2
Measurement Date / Time:	8/31/2021 8:45:00 AM
Raw Data Origin:	PHILIPS-binary (scan) (.RD)
Scan Axis:	Gonio
Start Position [°2Th.]:	5.0200
End Position [°2Th.]:	64.9400
Step Size [°2Th.]:	0.0400
Scan Step Time [s]:	4.5000
Scan Type:	Continuous
Offset [°2Th.]:	0.0000
Divergence Slit Type:	Fixed
Divergence Slit Size [°]:	0.5000
Specimen Length [mm]:	10.00
Receiving Slit Size [mm]:	0.1000
Measurement Temperature [°C]:	0.00
Anode Material:	Cu
K-Alpha1 [Å]:	1.54060
K-Alpha2 [Å]:	1.54443
K-Beta [Å]:	1.39225
K-A2 / K-A1 Ratio:	0.50000
Generator Settings:	30 mA, 40 kV
Diffractometer Type:	XPert MPD
Diffractometer Number:	1
Goniometer Radius [mm]:	200.00
Dist. Focus-Diverg. Slit [mm]:	91.00
Incident Beam Monochromator:	No
Spinning:	No

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Wednesday, November 10, 2021

Anthony Dalton-Atha
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A1H0071 - Alabama Power-Gaston - 201114-01.04

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0071, which was received by the laboratory on 8/3/2021 at 12:35:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	2.4 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GN-AP-CEC-1-20210731	A1H0071-01	Water	07/31/21 10:00	08/03/21 12:35
GN-AP-CEC-2-20210731	A1H0071-02	Water	07/31/21 10:05	08/03/21 12:35
GN-AP-CEC-3-20210731	A1H0071-03	Water	07/31/21 10:10	08/03/21 12:35
GN-AP-CEC-4-20210731	A1H0071-04	Water	07/31/21 10:15	08/03/21 12:35
GN-AP-CEC-5-20210731	A1H0071-05	Water	07/31/21 10:20	08/03/21 12:35
GN-AP-CEC-6-20210731	A1H0071-06	Water	07/31/21 10:25	08/03/21 12:35
GN-AP-CEC-7-20210731	A1H0071-07	Water	07/31/21 10:30	08/03/21 12:35
GN-AP-CEC-MB-20210731	A1H0071-08	Water	07/31/21 10:35	08/03/21 12:35

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

ANALYTICAL CASE NARRATIVE

Work Order: A1H0071

Amended Report Revision 1: This report supersedes all previous reports.

EPA 6020B - Reanalysis of Results:

Per client request the following samples were reanalyzed due results being over the range of calibration:

Client Sample ID	Apex ID	Analyte
"GN-AP-CEC-1-20210731"	A1H0071-01	Calcium
"GN-AP-CEC-2-20210731"	A1H0071-02	Calcium
"GN-AP-CEC-3-20210731"	A1H0071-03	Calcium
"GN-AP-CEC-4-20210731"	A1H0071-04	Magnesium
"GN-AP-CEC-5-20210731"	A1H0071-05	Calcium
"GN-AP-CEC-6-20210731"	A1H0071-06	Calcium
"GN-AP-CEC-7-20210731"	A1H0071-07	Calcium

David Jack
Apex Laboratories
November 3, 2021

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-CEC-1-20210731 (A1H0071-01)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 01:43	EPA 6020B	R-04
Arsenic	**2.78**	2.50	5.00	ug/L	5	08/07/21 01:43	EPA 6020B	**J, A-01, Q-41, R-04**
Calcium	**362000**	1500	3000	ug/L	5	08/07/21 01:43	EPA 6020B	**A-01, E**
Iron	ND	125	250	ug/L	5	08/07/21 01:43	EPA 6020B	R-04
Magnesium	**78300**	375	750	ug/L	5	08/07/21 01:43	EPA 6020B	**A-01, Q-41**
Manganese	**43.0**	2.50	5.00	ug/L	5	08/07/21 01:43	EPA 6020B	**A-01, Q-41**
Molybdenum	ND	2.50	5.00	ug/L	5	08/07/21 01:43	EPA 6020B	A-01, R-04
Potassium	**23000**	250	500	ug/L	5	08/07/21 01:43	EPA 6020B	**A-01, Q-41**
Sodium	**2900**	250	500	ug/L	5	08/07/21 01:43	EPA 6020B	**A-01, Q-41**
Lithium	ND	12.5	25.0	ug/L	5	08/07/21 01:43	EPA 6020B	R-04
GN-AP-CEC-1-20210731 (A1H0071-01RE1)				**Matrix: Water**				
Batch: 1080089								
Calcium	**324000**	30000	60000	ug/L	100	10/18/21 15:12	EPA 6020B	**AMEND**
GN-AP-CEC-2-20210731 (A1H0071-02)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 01:48	EPA 6020B	R-04
Arsenic	**3.35**	2.50	5.00	ug/L	5	08/07/21 01:48	EPA 6020B	**J, A-01, Q-41, R-04**
Calcium	**341000**	1500	3000	ug/L	5	08/07/21 01:48	EPA 6020B	**A-01, E**
Iron	ND	125	250	ug/L	5	08/07/21 01:48	EPA 6020B	R-04
Magnesium	**69700**	375	750	ug/L	5	08/07/21 01:48	EPA 6020B	**A-01, Q-41**
Manganese	**40.3**	2.50	5.00	ug/L	5	08/07/21 01:48	EPA 6020B	**A-01, Q-41**
Molybdenum	ND	2.50	5.00	ug/L	5	08/07/21 01:48	EPA 6020B	A-01, R-04
Potassium	**27600**	250	500	ug/L	5	08/07/21 01:48	EPA 6020B	**A-01, Q-41**
Sodium	**3060**	250	500	ug/L	5	08/07/21 01:48	EPA 6020B	**A-01, Q-41**
Lithium	**13.4**	12.5	25.0	ug/L	5	08/07/21 01:48	EPA 6020B	**J, R-04**
GN-AP-CEC-2-20210731 (A1H0071-02RE1)				**Matrix: Water**				
Batch: 1080089								
Calcium	**261000**	30000	60000	ug/L	100	10/18/21 15:17	EPA 6020B	**AMEND**

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-CEC-3-20210731 (A1H0071-03)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 01:53	EPA 6020B	R-04
Arsenic	**3.38**	2.50	5.00	ug/L	5	08/07/21 01:53	EPA 6020B	**J, A-01, Q-41, R-04**
Calcium	**235000**	1500	3000	ug/L	5	08/07/21 01:53	EPA 6020B	**A-01, E**
Iron	ND	125	250	ug/L	5	08/07/21 01:53	EPA 6020B	R-04
Magnesium	**11700**	375	750	ug/L	5	08/07/21 01:53	EPA 6020B	**A-01, Q-41**
Manganese	**2090**	2.50	5.00	ug/L	5	08/07/21 01:53	EPA 6020B	**A-01, Q-41**
Molybdenum	**9.60**	2.50	5.00	ug/L	5	08/07/21 01:53	EPA 6020B	**A-01**
Potassium	**11300**	250	500	ug/L	5	08/07/21 01:53	EPA 6020B	**A-01, Q-41**
Sodium	**2510**	250	500	ug/L	5	08/07/21 01:53	EPA 6020B	**A-01, Q-41**
Lithium	ND	12.5	25.0	ug/L	5	08/07/21 01:53	EPA 6020B	R-04
GN-AP-CEC-3-20210731 (A1H0071-03RE1)				**Matrix: Water**				
Batch: 1080089								
Calcium	**174000**	30000	60000	ug/L	100	10/18/21 15:22	EPA 6020B	**AMEND**
GN-AP-CEC-4-20210731 (A1H0071-04)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 01:58	EPA 6020B	R-04
Arsenic	**6.00**	2.50	5.00	ug/L	5	08/07/21 01:58	EPA 6020B	**A-01, Q-41**
Calcium	**75000**	1500	3000	ug/L	5	08/07/21 01:58	EPA 6020B	
Iron	ND	125	250	ug/L	5	08/07/21 01:58	EPA 6020B	R-04
Magnesium	**204000**	375	750	ug/L	5	08/07/21 01:58	EPA 6020B	**A-01, E, Q-41**
Manganese	**3210**	2.50	5.00	ug/L	5	08/07/21 01:58	EPA 6020B	**A-01, Q-41**
Molybdenum	ND	2.50	5.00	ug/L	5	08/07/21 01:58	EPA 6020B	A-01, R-04
Potassium	**22900**	250	500	ug/L	5	08/07/21 01:58	EPA 6020B	**A-01, Q-41**
Sodium	**5470**	250	500	ug/L	5	08/07/21 01:58	EPA 6020B	**A-01, Q-41**
Lithium	**21.7**	12.5	25.0	ug/L	5	08/07/21 01:58	EPA 6020B	**J, R-04**
GN-AP-CEC-4-20210731 (A1H0071-04RE1)				**Matrix: Water**				
Batch: 1080089								
Magnesium	**197000**	7500	15000	ug/L	100	10/18/21 15:38	EPA 6020B	**AMEND**

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

Project: **Alabama Power-Gaston**
Project Number: **201114-01.04**
Project Manager: **Anthony Dalton-Atha**

Report ID:
A1H0071 - 11 10 21 0930

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-CEC-5-20210731 (A1H0071-05)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 02:03	EPA 6020B	R-04
Arsenic	**2.70**	2.50	5.00	ug/L	5	08/07/21 02:03	EPA 6020B	**J, A-01, Q-41, R-04**
Calcium	**456000**	1500	3000	ug/L	5	08/07/21 02:03	EPA 6020B	**A-01, E**
Iron	ND	125	250	ug/L	5	08/07/21 02:03	EPA 6020B	R-04
Magnesium	**37400**	375	750	ug/L	5	08/07/21 02:03	EPA 6020B	**A-01, Q-41**
Manganese	**387**	2.50	5.00	ug/L	5	08/07/21 02:03	EPA 6020B	**A-01, Q-41**
Molybdenum	**40.4**	2.50	5.00	ug/L	5	08/07/21 02:03	EPA 6020B	**A-01**
Potassium	**45300**	250	500	ug/L	5	08/07/21 02:03	EPA 6020B	**A-01, Q-41**
Sodium	**8030**	250	500	ug/L	5	08/07/21 02:03	EPA 6020B	**A-01, Q-41**
Lithium	**634**	12.5	25.0	ug/L	5	08/07/21 02:03	EPA 6020B	
GN-AP-CEC-5-20210731 (A1H0071-05RE1)				**Matrix: Water**				
Batch: 1080089								
Calcium	**375000**	30000	60000	ug/L	100	10/18/21 15:43	EPA 6020B	**AMEND**
GN-AP-CEC-6-20210731 (A1H0071-06)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 02:07	EPA 6020B	R-04
Arsenic	**7.20**	2.50	5.00	ug/L	5	08/07/21 02:07	EPA 6020B	**A-01, Q-41**
Calcium	**819000**	1500	3000	ug/L	5	08/07/21 02:07	EPA 6020B	**A-01, E**
Iron	ND	125	250	ug/L	5	08/07/21 02:07	EPA 6020B	R-04
Magnesium	**35200**	375	750	ug/L	5	08/07/21 02:07	EPA 6020B	**A-01, Q-41**
Manganese	**1300**	2.50	5.00	ug/L	5	08/07/21 02:07	EPA 6020B	**A-01, Q-41**
Molybdenum	**4.37**	2.50	5.00	ug/L	5	08/07/21 02:07	EPA 6020B	**J, A-01, R-04**
Potassium	**27900**	250	500	ug/L	5	08/07/21 02:07	EPA 6020B	**A-01, Q-41**
Sodium	**6230**	250	500	ug/L	5	08/07/21 02:07	EPA 6020B	**A-01, Q-41**
Lithium	ND	12.5	25.0	ug/L	5	08/07/21 02:07	EPA 6020B	R-04
GN-AP-CEC-6-20210731 (A1H0071-06RE1)				**Matrix: Water**				
Batch: 1080089								
Calcium	**512000**	30000	60000	ug/L	100	10/18/21 15:48	EPA 6020B	**AMEND**
GN-AP-CEC-7-20210731 (A1H0071-07)				**Matrix: Water**				

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-CEC-7-20210731 (A1H0071-07)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 02:12	EPA 6020B	R-04
Arsenic	**2.54**	2.50	5.00	ug/L	5	08/07/21 02:12	EPA 6020B	**J, A-01, Q-41, R-04**
Calcium	**724000**	1500	3000	ug/L	5	08/07/21 02:12	EPA 6020B	**A-01, E**
Iron	ND	125	250	ug/L	5	08/07/21 02:12	EPA 6020B	R-04
Magnesium	**53700**	375	750	ug/L	5	08/07/21 02:12	EPA 6020B	**A-01, Q-41**
Manganese	**282**	2.50	5.00	ug/L	5	08/07/21 02:12	EPA 6020B	**A-01, Q-41**
Molybdenum	**2.90**	2.50	5.00	ug/L	5	08/07/21 02:12	EPA 6020B	**J, A-01, R-04**
Potassium	**17600**	250	500	ug/L	5	08/07/21 02:12	EPA 6020B	**A-01, Q-41**
Sodium	**7500**	250	500	ug/L	5	08/07/21 02:12	EPA 6020B	**A-01, Q-41**
Lithium	ND	12.5	25.0	ug/L	5	08/07/21 02:12	EPA 6020B	R-04
GN-AP-CEC-7-20210731 (A1H0071-07RE1)				**Matrix: Water**				
Batch: 1080089								
Calcium	**578000**	30000	60000	ug/L	100	10/18/21 15:53	EPA 6020B	**AMEND**
GN-AP-CEC-MB-20210731 (A1H0071-08)				**Matrix: Water**				
Batch: 1080089								
Aluminum	ND	125	250	ug/L	5	08/07/21 02:17	EPA 6020B	R-04
Arsenic	ND	2.50	5.00	ug/L	5	08/07/21 02:17	EPA 6020B	A-01, Q-41, R-04
Calcium	ND	1500	3000	ug/L	5	08/07/21 02:17	EPA 6020B	
Iron	ND	125	250	ug/L	5	08/07/21 02:17	EPA 6020B	R-04
Magnesium	ND	375	750	ug/L	5	08/07/21 02:17	EPA 6020B	A-01, Q-41
Manganese	ND	2.50	5.00	ug/L	5	08/07/21 02:17	EPA 6020B	A-01, Q-41, R-04
Molybdenum	ND	2.50	5.00	ug/L	5	08/07/21 02:17	EPA 6020B	A-01, R-04
Potassium	ND	250	500	ug/L	5	08/07/21 02:17	EPA 6020B	A-01, Q-41
Sodium	**293**	250	500	ug/L	5	08/07/21 02:17	EPA 6020B	**J, A-01, Q-41, R-04**
Lithium	ND	12.5	25.0	ug/L	5	08/07/21 02:17	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080089 - EPA 3015A							**Water**					
Blank (1080089-BLK1)			Prepared: 08/04/21 08:49		Analyzed: 08/06/21 23:50							
EPA 6020B												
Aluminum	**25.7**	25.0	50.0	ug/L	1	---	---	---	---	---	---	J
Calcium	ND	300	600	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Magnesium	ND	75.0	150	ug/L	1	---	---	---	---	---	---	
Molybdenum	**0.595**	0.500	1.00	ug/L	1	---	---	---	---	---	---	J
Potassium	ND	50.0	100	ug/L	1	---	---	---	---	---	---	
Sodium	ND	50.0	100	ug/L	1	---	---	---	---	---	---	
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
Blank (1080089-BLK2)			Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:10							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	Q-16
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	Q-16
LCS (1080089-BS1)			Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:15							
EPA 6020B												
Aluminum	2870	25.0	50.0	ug/L	1	2780	---	103	80-120%	---	---	
Arsenic	56.0	0.500	1.00	ug/L	1	55.6	---	101	80-120%	---	---	
Calcium	2900	300	600	ug/L	1	2780	---	104	80-120%	---	---	
Iron	2910	25.0	50.0	ug/L	1	2780	---	105	80-120%	---	---	
Magnesium	2800	75.0	150	ug/L	1	2780	---	101	80-120%	---	---	
Manganese	57.8	0.500	1.00	ug/L	1	55.6	---	104	80-120%	---	---	
Molybdenum	26.8	0.500	1.00	ug/L	1	27.8	---	96	80-120%	---	---	
Potassium	2870	50.0	100	ug/L	1	2780	---	103	80-120%	---	---	
Sodium	3070	50.0	100	ug/L	1	2780	---	110	80-120%	---	---	
LCS (1080089-BS2)			Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:25							
EPA 6020B												
Lithium	45.7	2.50	5.00	ug/L	1	44.4	---	103	80-120%	---	---	
LCS Dup (1080089-BSD1)			Prepared: 08/04/21 08:49		Analyzed: 08/06/21 23:55							
EPA 6020B												
Aluminum	2750	25.0	50.0	ug/L	1	2780	---	99	80-120%	4	20%	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080089 - EPA 3015A							**Water**					
LCS Dup (1080089-BSD1)			Prepared: 08/04/21 08:49		Analyzed: 08/06/21 23:55							
Arsenic	55.2	0.500	1.00	ug/L	1	55.6	---	99	80-120%	1	20%	
Calcium	3090	300	600	ug/L	1	2780	---	111	80-120%	6	20%	
Iron	2860	25.0	50.0	ug/L	1	2780	---	103	80-120%	2	20%	
Magnesium	2740	75.0	150	ug/L	1	2780	---	99	80-120%	2	20%	
Manganese	55.6	0.500	1.00	ug/L	1	55.6	---	100	80-120%	4	20%	
Molybdenum	26.4	0.500	1.00	ug/L	1	27.8	---	95	80-120%	1	20%	
Potassium	2780	50.0	100	ug/L	1	2780	---	100	80-120%	3	20%	
Sodium	2980	50.0	100	ug/L	1	2780	---	107	80-120%	3	20%	
LCS Dup (1080089-BSD2)			Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:20							
EPA 6020B												
Lithium	45.8	2.50	5.00	ug/L	1	44.4	---	103	80-120%	0.1	20%	
Duplicate (1080089-DUP1)			Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:44							
QC Source Sample: Non-SDG (A1H0027-01)												
Aluminum	**35100**	25.0	50.0	ug/L	1	---	26600	---	---	**28**	**20%**	Q-04
Arsenic	**10.1**	0.500	1.00	ug/L	1	---	8.37	---	---	19	20%	Q-41
Calcium	**30100**	300	600	ug/L	1	---	32700	---	---	8	20%	
Iron	**34800**	25.0	50.0	ug/L	1	---	28600	---	---	20	20%	Q-42
Magnesium	**9050**	75.0	150	ug/L	1	---	8370	---	---	8	20%	A-01, Q-41
Manganese	**789**	0.500	1.00	ug/L	1	---	738	---	---	7	20%	A-01, Q-41
Molybdenum	**8.20**	0.500	1.00	ug/L	1	---	7.27	---	---	12	20%	A-01
Potassium	**7020**	50.0	100	ug/L	1	---	7070	---	---	0.7	20%	A-01, Q-41
Sodium	**8390**	50.0	100	ug/L	1	---	8460	---	---	0.8	20%	A-01, Q-41
Lithium	**15.7**	2.50	5.00	ug/L	1	---	10.9	---	---	**36**	**20%**	Q-05
Matrix Spike (1080089-MS1)			Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:49							
QC Source Sample: Non-SDG (A1H0027-01)												
EPA 6020B												
Aluminum	40400	25.0	50.0	ug/L	1	2780	26600	**497**	**75-125%**	---	---	Q-04
Arsenic	60.0	0.500	1.00	ug/L	1	55.6	8.37	93	75-125%	---	---	Q-41
Calcium	33000	300	600	ug/L	1	2780	32700	**10**	**75-125%**	---	---	Q-03
Iron	38900	25.0	50.0	ug/L	1	2780	28600	**371**	**75-125%**	---	---	Q-03

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080089 - EPA 3015A												**Water**
Matrix Spike (1080089-MS1)				Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:49						
QC Source Sample: Non-SDG (A1H0027-01)												
Magnesium	11200	75.0	150	ug/L	1	2780	8370	100	75-125%	---	---	A-01, Q-41
Manganese	807	0.500	1.00	ug/L	1	55.6	738	125	75-125%	---	---	A-01, Q-41
Molybdenum	30.2	0.500	1.00	ug/L	1	27.8	7.27	83	75-125%	---	---	A-01
Potassium	9400	50.0	100	ug/L	1	2780	7070	84	75-125%	---	---	A-01, Q-41
Sodium	10600	50.0	100	ug/L	1	2780	8460	79	75-125%	---	---	A-01, Q-41
Matrix Spike (1080089-MS2)				Prepared: 08/04/21 08:49		Analyzed: 08/07/21 00:54						
QC Source Sample: Non-SDG (A1H0027-01)												
EPA 6020B												
Lithium	66.1	2.50	5.00	ug/L	1	44.4	10.9	124	75-125%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

Project: **Alabama Power-Gaston**
Project Number: **201114-01.04**
Project Manager: **Anthony Dalton-Atha**

Report ID:
A1H0071 - 11 10 21 0930

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080089							
A1H0071-01	Water	EPA 6020B	07/31/21 10:00	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-01RE1	Water	EPA 6020B	07/31/21 10:00	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-02	Water	EPA 6020B	07/31/21 10:05	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-02RE1	Water	EPA 6020B	07/31/21 10:05	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-03	Water	EPA 6020B	07/31/21 10:10	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-03RE1	Water	EPA 6020B	07/31/21 10:10	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-04	Water	EPA 6020B	07/31/21 10:15	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-04RE1	Water	EPA 6020B	07/31/21 10:15	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-05	Water	EPA 6020B	07/31/21 10:20	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-05RE1	Water	EPA 6020B	07/31/21 10:20	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-06	Water	EPA 6020B	07/31/21 10:25	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-06RE1	Water	EPA 6020B	07/31/21 10:25	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-07	Water	EPA 6020B	07/31/21 10:30	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-07RE1	Water	EPA 6020B	07/31/21 10:30	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00
A1H0071-08	Water	EPA 6020B	07/31/21 10:35	08/04/21 08:49	45mL/50mL	45mL/50mL	1.00

Apex Laboratories

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

A-01	Results do not meet EPA 6020B and/or Apex SOP criteria. Results reported for research per client request.
AMEND	Result for this sample or analyte has been amended from the original report. See Case Narrative for details.
E	Estimated Value. The result is above the calibration range of the instrument.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-16	Reanalysis of an original Batch QC sample.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) -
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

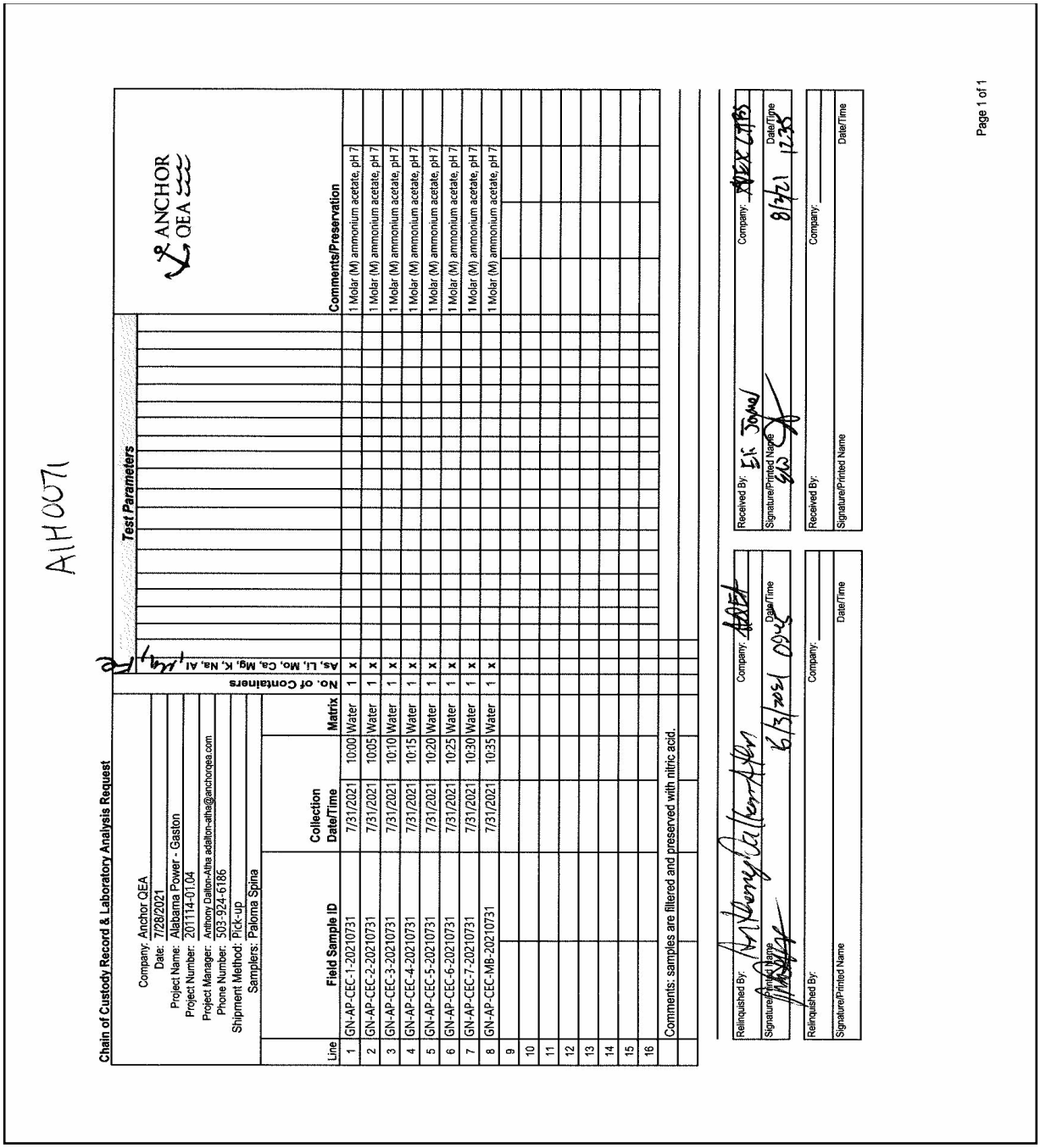
Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**



A1H0071

Chain of Custody Record & Laboratory Analysis Request

Company: Anchor QEA
Date: 7/29/2021
Project Name: Alabama Power - Gaston
Project Number: 201114-01.04
Project Manager: Anthony Dalton-Atha adalton-atha@anchorqea.com
Phone Number: 503-924-6186
Shipment Method: Pick-up
Samplers: Paloma Spina

Test Parameters

ANCHOR QEA

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	As, Li, Mo, Ca, Mg, K, Na, Al	Comments/Preservation
1	GN-AP-CEC-1-20210731	7/31/2021 10:00	Water	1	x	1 Molar (M) ammonium acetate, pH 7
2	GN-AP-CEC-2-20210731	7/31/2021 10:05	Water	1	x	1 Molar (M) ammonium acetate, pH 7
3	GN-AP-CEC-3-20210731	7/31/2021 10:10	Water	1	x	1 Molar (M) ammonium acetate, pH 7
4	GN-AP-CEC-4-20210731	7/31/2021 10:15	Water	1	x	1 Molar (M) ammonium acetate, pH 7
5	GN-AP-CEC-5-20210731	7/31/2021 10:20	Water	1	x	1 Molar (M) ammonium acetate, pH 7
6	GN-AP-CEC-6-20210731	7/31/2021 10:25	Water	1	x	1 Molar (M) ammonium acetate, pH 7
7	GN-AP-CEC-7-20210731	7/31/2021 10:30	Water	1	x	1 Molar (M) ammonium acetate, pH 7
8	GN-AP-CEC-MB-20210731	7/31/2021 10:35	Water	1	x	1 Molar (M) ammonium acetate, pH 7
9						
10						
11						
12						
13						
14						
15						
16						

Comments: samples are filtered and preserved with nitric acid.

Relinquished By: Company: Date/Time 6/3/2021 0945
Signature/Printed Name

Received By: Company: APEX LABS Date/Time 8/12/21 1238
Signature/Printed Name

Relinquished By: Company: Date/Time
Signature/Printed Name

Received By: Company: Date/Time
Signature/Printed Name

Page 1 of 1

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0071 - 11 10 21 0930**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A1 H0071

Project/Project #: Alabama Power - Gaston 201114-01.04

Delivery Info:

Date/time received: 8/3/21 @ 1235 By: EJ

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 8/3/21 @ 1403 By: EJ

Chain of Custody included? Yes X No ___ Custody seals? Yes X No ___

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.4						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Gel						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why: ___

Green dots applied to out of temperature samples? Yes No

Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 8/3/21 @ 2002 By: MAS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes X No ___ NA X pH appropriate? Yes X No ___ NA X

Comments: MAS 8/3/21 MAS 8/3/21

Additional information: ___

Labeled by: MAS Witness: HM Cooler Inspected by: TAG

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Friday, October 22, 2021

Anthony Dalton-Atha
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A1H0233 - Alabama Power-Gadsden - 201114-03.02

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0233, which was received by the laboratory on 8/6/2021 at 3:30:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	3.0 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GSD-AP-AAO-1-20210804	A1H0233-01	Water	08/04/21 10:00	08/06/21 15:30
GSD-AP-AAO-2-20210804	A1H0233-02	Water	08/04/21 10:05	08/06/21 15:30
GSD-AP-AAO-3-20210804	A1H0233-03	Water	08/04/21 10:10	08/06/21 15:30
GSD-AP-AAO-4-20210804	A1H0233-04	Water	08/04/21 10:15	08/06/21 15:30
GSD-AP-AAO-5-20210804	A1H0233-05	Water	08/04/21 10:20	08/06/21 15:30
GSD-AP-AAO-6-20210804	A1H0233-06	Water	08/04/21 10:25	08/06/21 15:30
GSD-AP-AAO-7-20210804	A1H0233-07	Water	08/04/21 10:30	08/06/21 15:30
GSD-AP-AAO-8-20210804	A1H0233-08	Water	08/04/21 10:35	08/06/21 15:30
GSD-AP-AAO-9-20210804	A1H0233-09	Water	08/04/21 10:40	08/06/21 15:30
GSD-AP-AAO-10-20210804	A1H0233-10	Water	08/04/21 10:45	08/06/21 15:30
GSD-AP-AAO-11-20210804	A1H0233-11	Water	08/04/21 10:50	08/06/21 15:30
GSD-AP-AAO-12-20210804	A1H0233-12	Water	08/04/21 10:55	08/06/21 15:30
GSD-AP-AAO-13-20210804	A1H0233-13	Water	08/04/21 11:00	08/06/21 15:30
GSD-AP-AAO-14-20210804	A1H0233-14	Water	08/04/21 11:05	08/06/21 15:30
GSD-AP-AAO-MB-20210804	A1H0233-15	Water	08/04/21 11:10	08/06/21 15:30

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

ANALYTICAL CASE NARRATIVE

Work Order: A1H0233

Amended Report Revision 1:

This report supersedes all previous reports.

Per client request we reanalyzed samples 01, 02, 05, 06, 12, 13 & 14 (Fe, Mn) with “E” flags.

Darwin Thomas
Business Development Director
10-22-21

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GSD-AP-AAO-1-20210804 (A1H0233-01)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**11400**	150	300	ug/L	5	08/11/21 03:43	EPA 6020B	
Arsenic	**41600**	3.00	6.00	ug/L	5	08/11/21 03:43	EPA 6020B	**E**
Iron	**309000**	150	300	ug/L	5	08/11/21 03:43	EPA 6020B	
Manganese	**8550**	3.00	6.00	ug/L	5	08/11/21 03:43	EPA 6020B	**E**
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 03:43	EPA 6020B	R-04
GSD-AP-AAO-1-20210804 (A1H0233-01RE1)				**Matrix: Water**				
Batch: 1080275								
Iron	**317000**	750	1500	ug/L	25	10/17/21 19:20	EPA 6020B	
Manganese	**9140**	15.0	30.0	ug/L	25	10/17/21 19:20	EPA 6020B	
GSD-AP-AAO-1-20210804 (A1H0233-01RE2)				**Matrix: Water**				
Batch: 1080275								
Iron	**328000**	7500	15000	ug/L	250	10/18/21 15:01	EPA 6020B	
Manganese	**8700**	150	300	ug/L	250	10/18/21 15:01	EPA 6020B	
GSD-AP-AAO-2-20210804 (A1H0233-02)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**7790**	150	300	ug/L	5	08/11/21 03:58	EPA 6020B	
Arsenic	**56.0**	3.00	6.00	ug/L	5	08/11/21 03:58	EPA 6020B	
Iron	**161000**	150	300	ug/L	5	08/11/21 03:58	EPA 6020B	
Manganese	**8220**	3.00	6.00	ug/L	5	08/11/21 03:58	EPA 6020B	**E**
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 03:58	EPA 6020B	R-04
GSD-AP-AAO-2-20210804 (A1H0233-02RE1)				**Matrix: Water**				
Batch: 1080275								
Iron	**181000**	750	1500	ug/L	25	10/17/21 19:38	EPA 6020B	
Manganese	**9090**	15.0	30.0	ug/L	25	10/17/21 19:38	EPA 6020B	
GSD-AP-AAO-3-20210804 (A1H0233-03)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**4050**	150	300	ug/L	5	08/11/21 04:02	EPA 6020B	
Arsenic	**11.2**	3.00	6.00	ug/L	5	08/11/21 04:02	EPA 6020B	**B-02**
Iron	**34300**	150	300	ug/L	5	08/11/21 04:02	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GSD-AP-AAO-3-20210804 (A1H0233-03)				**Matrix: Water**				
Manganese	**1450**	3.00	6.00	ug/L	5	08/11/21 04:02	EPA 6020B	
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 04:02	EPA 6020B	R-04
GSD-AP-AAO-4-20210804 (A1H0233-04)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**4930**	150	300	ug/L	5	08/11/21 04:07	EPA 6020B	
Arsenic	**287**	3.00	6.00	ug/L	5	08/11/21 04:07	EPA 6020B	
Iron	**297000**	150	300	ug/L	5	08/11/21 04:07	EPA 6020B	
Manganese	**2520**	3.00	6.00	ug/L	5	08/11/21 04:07	EPA 6020B	
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 04:07	EPA 6020B	R-04
GSD-AP-AAO-5-20210804 (A1H0233-05)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**8750**	150	300	ug/L	5	08/11/21 04:12	EPA 6020B	
Arsenic	**185**	3.00	6.00	ug/L	5	08/11/21 04:12	EPA 6020B	
Iron	**540000**	150	300	ug/L	5	08/11/21 04:12	EPA 6020B	**E**
Manganese	**6020**	3.00	6.00	ug/L	5	08/11/21 04:12	EPA 6020B	
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 04:12	EPA 6020B	R-04
GSD-AP-AAO-5-20210804 (A1H0233-05RE1)				**Matrix: Water**				
Batch: 1080275								
Iron	**619000**	750	1500	ug/L	25	10/17/21 19:43	EPA 6020B	
Manganese	**7070**	15.0	30.0	ug/L	25	10/17/21 19:43	EPA 6020B	
GSD-AP-AAO-6-20210804 (A1H0233-06)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**6470**	150	300	ug/L	5	08/11/21 04:17	EPA 6020B	
Arsenic	**140**	3.00	6.00	ug/L	5	08/11/21 04:17	EPA 6020B	
Iron	**343000**	150	300	ug/L	5	08/11/21 04:17	EPA 6020B	**E**
Manganese	**2540**	3.00	6.00	ug/L	5	08/11/21 04:17	EPA 6020B	
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 04:17	EPA 6020B	R-04
GSD-AP-AAO-6-20210804 (A1H0233-06RE1)				**Matrix: Water**				
Batch: 1080275								
Iron	**356000**	750	1500	ug/L	25	10/17/21 19:47	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GSD-AP-AAO-6-20210804 (A1H0233-06RE1)				**Matrix: Water**				
Manganese	**2840**	15.0	30.0	ug/L	25	10/17/21 19:47	EPA 6020B	
GSD-AP-AAO-7-20210804 (A1H0233-07)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**17600**	150	300	ug/L	5	08/11/21 04:22	EPA 6020B	
Arsenic	**34.6**	3.00	6.00	ug/L	5	08/11/21 04:22	EPA 6020B	
Iron	**14900**	150	300	ug/L	5	08/11/21 04:22	EPA 6020B	
Manganese	**1580**	3.00	6.00	ug/L	5	08/11/21 04:22	EPA 6020B	
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 04:22	EPA 6020B	R-04
GSD-AP-AAO-8-20210804 (A1H0233-08)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**15000**	150	300	ug/L	5	08/11/21 04:27	EPA 6020B	
Arsenic	**32.1**	3.00	6.00	ug/L	5	08/11/21 04:27	EPA 6020B	
Iron	**12700**	150	300	ug/L	5	08/11/21 04:27	EPA 6020B	
Manganese	**1390**	3.00	6.00	ug/L	5	08/11/21 04:27	EPA 6020B	
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 04:27	EPA 6020B	R-04
GSD-AP-AAO-9-20210804 (A1H0233-09)				**Matrix: Water**				
Batch: 1080275								
Aluminum	**15200**	150	300	ug/L	5	08/11/21 04:32	EPA 6020B	
Arsenic	**18.5**	3.00	6.00	ug/L	5	08/11/21 04:32	EPA 6020B	**B-02**
Iron	**12100**	150	300	ug/L	5	08/11/21 04:32	EPA 6020B	
Manganese	**1050**	3.00	6.00	ug/L	5	08/11/21 04:32	EPA 6020B	
Lithium	ND	15.0	30.0	ug/L	5	08/11/21 04:32	EPA 6020B	R-04
GSD-AP-AAO-10-20210804 (A1H0233-10)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**7350**	161	321	ug/L	5	08/11/21 05:11	EPA 6020B	
Arsenic	**14.2**	3.21	6.43	ug/L	5	08/11/21 05:11	EPA 6020B	
Iron	**6220**	161	321	ug/L	5	08/11/21 05:11	EPA 6020B	
Manganese	**488**	3.21	6.43	ug/L	5	08/11/21 05:11	EPA 6020B	
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 05:11	EPA 6020B	R-04
GSD-AP-AAO-11-20210804 (A1H0233-11)				**Matrix: Water**				

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: Alabama Power-Gadsden	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-03.02	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0233 - 10 22 21 0625

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GSD-AP-AAO-11-20210804 (A1H0233-11)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**7970**	161	321	ug/L	5	08/11/21 05:16	EPA 6020B	
Arsenic	**6.09**	3.21	6.43	ug/L	5	08/11/21 05:16	EPA 6020B	**J, R-04**
Iron	**12400**	161	321	ug/L	5	08/11/21 05:16	EPA 6020B	
Manganese	**394**	3.21	6.43	ug/L	5	08/11/21 05:16	EPA 6020B	
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 05:16	EPA 6020B	R-04
GSD-AP-AAO-12-20210804 (A1H0233-12)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**10800**	161	321	ug/L	5	08/11/21 05:21	EPA 6020B	
Arsenic	**17.5**	3.21	6.43	ug/L	5	08/11/21 05:21	EPA 6020B	
Iron	**29200**	161	321	ug/L	5	08/11/21 05:21	EPA 6020B	
Manganese	**7320**	3.21	6.43	ug/L	5	08/11/21 05:21	EPA 6020B	**E**
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 05:21	EPA 6020B	R-04
GSD-AP-AAO-12-20210804 (A1H0233-12RE1)				**Matrix: Water**				
Batch: 1080276								
Iron	**32200**	804	1610	ug/L	25	10/17/21 19:52	EPA 6020B	
Manganese	**8070**	16.1	32.1	ug/L	25	10/17/21 19:52	EPA 6020B	
GSD-AP-AAO-13-20210804 (A1H0233-13)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**14700**	161	321	ug/L	5	08/11/21 05:26	EPA 6020B	
Arsenic	**28.2**	3.21	6.43	ug/L	5	08/11/21 05:26	EPA 6020B	
Iron	**31600**	161	321	ug/L	5	08/11/21 05:26	EPA 6020B	
Manganese	**19200**	3.21	6.43	ug/L	5	08/11/21 05:26	EPA 6020B	**E**
Lithium	**19.2**	16.1	32.1	ug/L	5	08/11/21 05:26	EPA 6020B	**J, R-04**
GSD-AP-AAO-13-20210804 (A1H0233-13RE1)				**Matrix: Water**				
Batch: 1080276								
Iron	**35000**	804	1610	ug/L	25	10/17/21 19:56	EPA 6020B	
Manganese	**20700**	16.1	32.1	ug/L	25	10/17/21 19:56	EPA 6020B	
GSD-AP-AAO-14-20210804 (A1H0233-14)				**Matrix: Water**				
Batch: 1080276								

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GSD-AP-AAO-14-20210804 (A1H0233-14)				**Matrix: Water**				
Aluminum	**15900**	161	321	ug/L	5	08/11/21 05:31	EPA 6020B	
Arsenic	**23.4**	3.21	6.43	ug/L	5	08/11/21 05:31	EPA 6020B	
Iron	**38900**	161	321	ug/L	5	08/11/21 05:31	EPA 6020B	
Manganese	**23400**	3.21	6.43	ug/L	5	08/11/21 05:31	EPA 6020B	**E**
Lithium	**18.5**	16.1	32.1	ug/L	5	08/11/21 05:31	EPA 6020B	**J, R-04**
GSD-AP-AAO-14-20210804 (A1H0233-14RE1)				**Matrix: Water**				
Batch: 1080276								
Iron	**39700**	804	1610	ug/L	25	10/17/21 20:01	EPA 6020B	
Manganese	**26200**	16.1	32.1	ug/L	25	10/17/21 20:01	EPA 6020B	
GSD-AP-AAO-MB-20210804 (A1H0233-15)				**Matrix: Water**				
Batch: 1080276								
Aluminum	ND	161	321	ug/L	5	08/11/21 05:36	EPA 6020B	R-04
Arsenic	ND	3.21	6.43	ug/L	5	08/11/21 05:36	EPA 6020B	R-04
Iron	ND	161	321	ug/L	5	08/11/21 05:36	EPA 6020B	R-04
Manganese	**4.42**	3.21	6.43	ug/L	5	08/11/21 05:36	EPA 6020B	**J, R-04**
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 05:36	EPA 6020B	R-04

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

Project: **Alabama Power-Gadsden**
Project Number: **201114-03.02**
Project Manager: **Anthony Dalton-Atha**

Report ID:
A1H0233 - 10 22 21 0625

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080275 - EPA 3015A								**Water**				
Blank (1080275-BLK1)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 03:26							
EPA 6020B												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080275-BLK2)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 02:29							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080275-BS1)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 03:31							
EPA 6020B												
Aluminum	2770	25.0	50.0	ug/L	1	2780	---	100	80-120%	---	---	
Arsenic	56.7	0.500	1.00	ug/L	1	55.6	---	102	80-120%	---	---	
Iron	2780	25.0	50.0	ug/L	1	2780	---	100	80-120%	---	---	
Manganese	56.2	0.500	1.00	ug/L	1	55.6	---	101	80-120%	---	---	
LCS (1080275-BS2)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 02:34							
EPA 6020B												
Lithium	44.0	2.50	5.00	ug/L	1	44.4	---	99	80-120%	---	---	
Duplicate (1080275-DUP1)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 03:41							
QC Source Sample: Non-SDG (A1H0231-01)												
Aluminum	ND	25.0	50.0	ug/L	1	---	ND	---	---	---	20%	
Arsenic	**1.32**	0.500	1.00	ug/L	1	---	1.32	---	---	0.08	20%	
Iron	**126**	25.0	50.0	ug/L	1	---	121	---	---	4	20%	
Manganese	**9.23**	0.500	1.00	ug/L	1	---	9.07	---	---	2	20%	
Duplicate (1080275-DUP2)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 03:33							
QC Source Sample: Non-SDG (A1H0231-01)												
Lithium	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	20%	R-04
Matrix Spike (1080275-MS1)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 03:46							

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080275 - EPA 3015A							**Water**					
Matrix Spike (1080275-MS1)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 03:46							
QC Source Sample: Non-SDG (A1H0231-01)												
EPA 6020B												
Aluminum	2810	25.0	50.0	ug/L	1	2780	ND	101	75-125%	---	---	
Arsenic	59.7	0.500	1.00	ug/L	1	55.6	1.32	105	75-125%	---	---	
Iron	2950	25.0	50.0	ug/L	1	2780	121	102	75-125%	---	---	
Manganese	64.9	0.500	1.00	ug/L	1	55.6	9.07	100	75-125%	---	---	
Matrix Spike (1080275-MS2)			Prepared: 08/10/21 08:50		Analyzed: 08/11/21 03:38							
QC Source Sample: Non-SDG (A1H0231-01)												
EPA 6020B												
Lithium	44.0	25.0	50.0	ug/L	10	44.4	ND	99	75-125%	---	---	R-04, J

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: Alabama Power-Gadsden	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-03.02	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0233 - 10 22 21 0625

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A								**Water**				
Blank (1080276-BLK1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 02:47							
EPA 6020B												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080276-BLK2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:42							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080276-BS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:02							
EPA 6020B												
Aluminum	2760	25.0	50.0	ug/L	1	2780	---	99	80-120%	---	---	
Arsenic	55.8	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Iron	2800	25.0	50.0	ug/L	1	2780	---	101	80-120%	---	---	
Manganese	55.5	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
LCS (1080276-BS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:57							
EPA 6020B												
Lithium	43.8	2.50	5.00	ug/L	1	44.4	---	99	80-120%	---	---	
Duplicate (1080276-DUP1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:12							
QC Source Sample: Non-SDG (A1H0131-01)												
Aluminum	**32.1**	25.0	50.0	ug/L	1	---	ND	---	---		**20%**	J, Q-05
Arsenic	**0.591**	0.500	1.00	ug/L	1	---	0.570	---	---	4	20%	J
Iron	**73.8**	25.0	50.0	ug/L	1	---	67.4	---	---	9	20%	
Manganese	**16.7**	0.500	1.00	ug/L	1	---	17.0	---	---	1	20%	
Duplicate (1080276-DUP2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 05:06							
QC Source Sample: Non-SDG (A1H0131-01)												
Lithium	ND	12.5	25.0	ug/L	5	---	ND	---	---	---	20%	R-04
Matrix Spike (1080276-MS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:17							

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A							**Water**					
Matrix Spike (1080276-MS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:17							
QC Source Sample: Non-SDG (A1H0131-01)												
EPA 6020B												
Aluminum	2730	25.0	50.0	ug/L	1	2780	ND	98	75-125%	---	---	
Arsenic	56.7	0.500	1.00	ug/L	1	55.6	0.570	101	75-125%	---	---	
Iron	2800	25.0	50.0	ug/L	1	2780	67.4	98	75-125%	---	---	
Manganese	70.2	0.500	1.00	ug/L	1	55.6	17.0	96	75-125%	---	---	
Matrix Spike (1080276-MS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 06:35							
QC Source Sample: Non-SDG (A1H0239-01)												
EPA 6020B												
Lithium	ND	125	250	ug/L	50	44.4	ND		**75-125%**	---	---	Q-11, R-04

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

Project: **Alabama Power-Gadsden**
Project Number: **201114-03.02**
Project Manager: **Anthony Dalton-Atha**

Report ID:
A1H0233 - 10 22 21 0625

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080275							
A1H0233-01	Water	EPA 6020B	08/04/21 10:00	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-01RE1	Water	EPA 6020B	08/04/21 10:00	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-01RE2	Water	EPA 6020B	08/04/21 10:00	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-02	Water	EPA 6020B	08/04/21 10:05	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-02RE1	Water	EPA 6020B	08/04/21 10:05	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-03	Water	EPA 6020B	08/04/21 10:10	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-04	Water	EPA 6020B	08/04/21 10:15	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-05	Water	EPA 6020B	08/04/21 10:20	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-05RE1	Water	EPA 6020B	08/04/21 10:20	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-06	Water	EPA 6020B	08/04/21 10:25	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-06RE1	Water	EPA 6020B	08/04/21 10:25	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-07	Water	EPA 6020B	08/04/21 10:30	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-08	Water	EPA 6020B	08/04/21 10:35	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
A1H0233-09	Water	EPA 6020B	08/04/21 10:40	08/10/21 08:50	37.5mL/50mL	45mL/50mL	1.20
Batch: 1080276							
A1H0233-10	Water	EPA 6020B	08/04/21 10:45	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-11	Water	EPA 6020B	08/04/21 10:50	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-12	Water	EPA 6020B	08/04/21 10:55	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-12RE1	Water	EPA 6020B	08/04/21 10:55	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-13	Water	EPA 6020B	08/04/21 11:00	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-13RE1	Water	EPA 6020B	08/04/21 11:00	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-14	Water	EPA 6020B	08/04/21 11:05	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-14RE1	Water	EPA 6020B	08/04/21 11:05	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0233-15	Water	EPA 6020B	08/04/21 11:10	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

B-02	Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
E	Estimated Value. The result is above the calibration range of the instrument.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-11	Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

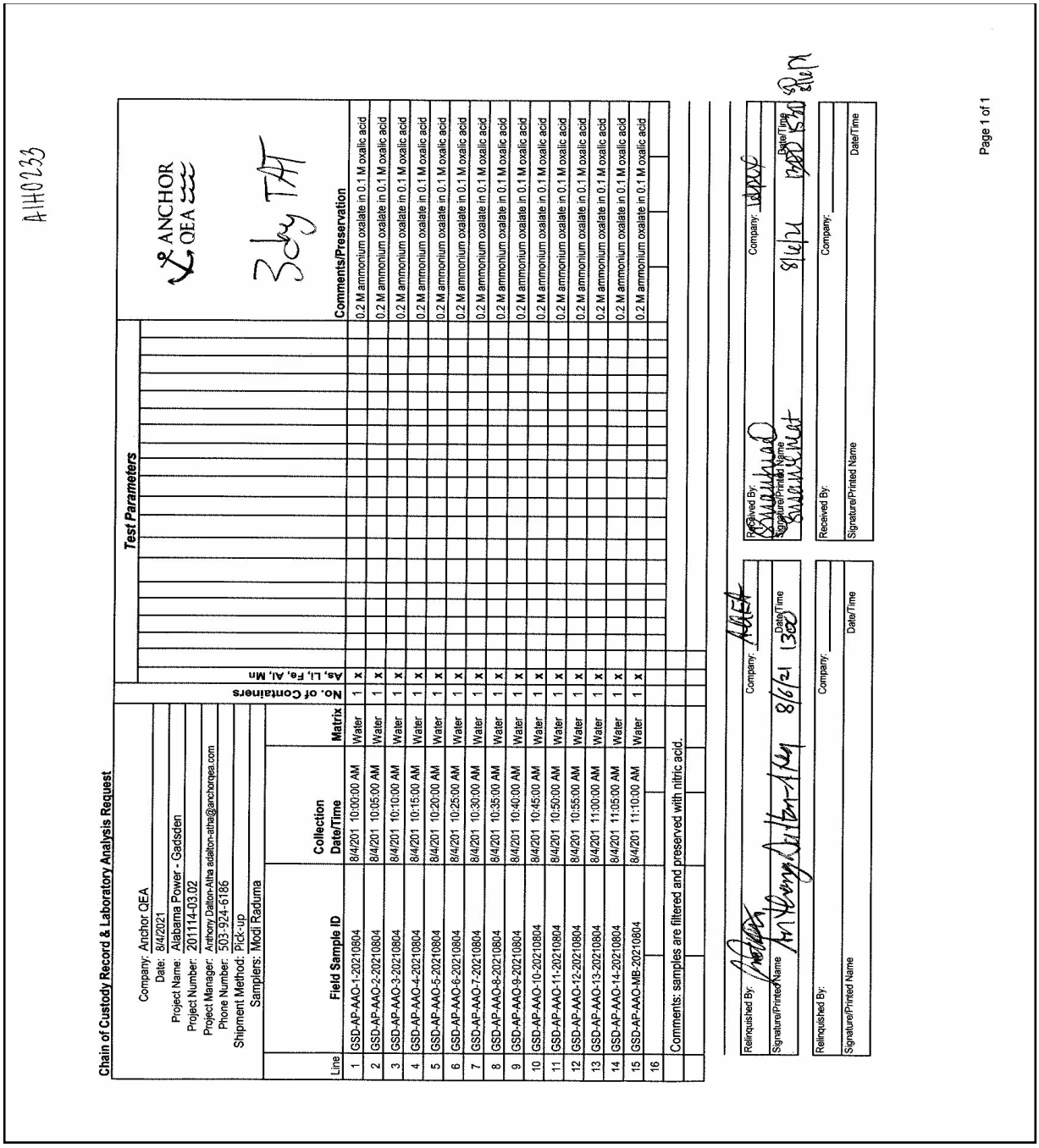
Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**



A1H0233

Chain of Custody Record & Laboratory Analysis Request

Company: Anchor QEA
Date: 8/4/2021
Project Name: Alabama Power - Gadsden
Project Number: 201114-03.02
Project Manager: Anthony Dalton-Atha adalton-atha@anchorqea.com
Phone Number: 503-924-6186
Shipment Method: Pick-up
Samplers: Modi Raduma

ANCHOR QEA

3 day TAT

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	As, Li, Fe, Al, Mn	Test Parameters	Comments/Preservation
1	GSD-AP-AAO-1-20210804	8/4/201 10:00:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
2	GSD-AP-AAO-2-20210804	8/4/201 10:05:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
3	GSD-AP-AAO-3-20210804	8/4/201 10:10:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
4	GSD-AP-AAO-4-20210804	8/4/201 10:15:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
5	GSD-AP-AAO-5-20210804	8/4/201 10:20:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
6	GSD-AP-AAO-6-20210804	8/4/201 10:25:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
7	GSD-AP-AAO-7-20210804	8/4/201 10:30:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
8	GSD-AP-AAO-8-20210804	8/4/201 10:35:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
9	GSD-AP-AAO-9-20210804	8/4/201 10:40:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
10	GSD-AP-AAO-10-20210804	8/4/201 10:45:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
11	GSD-AP-AAO-11-20210804	8/4/201 10:50:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
12	GSD-AP-AAO-12-20210804	8/4/201 10:55:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
13	GSD-AP-AAO-13-20210804	8/4/201 11:00:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
14	GSD-AP-AAO-14-20210804	8/4/201 11:05:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
15	GSD-AP-AAO-MB-20210804	8/4/201 11:10:00 AM	Water	1	x		0.2 M ammonium oxalate in 0.1 M oxalic acid
16							

Comments: samples are filtered and preserved with nitric acid.

Relinquished By: Company: ANCHOR QEA
Signature/Printed Name: Anthony Dalton-Atha 8/6/21 1300 Date/Time

Received By: Company: ARI
Signature/Printed Name: Date/Time

Relinquished By: Company:
Signature/Printed Name: Date/Time

Received By: Company:
Signature/Printed Name: Date/Time

Page 1 of 1

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gadsden**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-03.02**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0233 - 10 22 21 0625**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A1H0233

Project/Project #: Alabama Power - Gadsden / 201114-03.02

Delivery Info:

Date/time received: 8/6/21 @ 1530 By: SC

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy____SDS____Other____

Cooler Inspection Date/time inspected: 8/6/21 @ 1535 By: SC

Chain of Custody included? Yes X No _____ Custody seals? Yes_____ No X

Signed/dated by client? Yes X No _____

Signed/dated by Apex? Yes X No _____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	3.0						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

Cooler out of temp? (Y/(N)) Possible reason why: _____

Green dots applied to out of temperature samples? Yes (No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 8/6/21 @ 1307 By: SC

All samples intact? Yes X No ___ Comments: _____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments _____

Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X

Comments: _____

Additional information: _____

Labeled by: SC Witness: JS Cooler Inspected by: SC

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sunday, September 12, 2021

Anthony Dalton-Atha
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A1H0236 - Alabama Power-Gaston - 201114-01.04

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0236, which was received by the laboratory on 8/6/2021 at 3:30:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	3.0 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GN-AP-AAO-1-20210804	A1H0236-01	Water	08/04/21 11:55	08/06/21 15:30
GN-AP-AAO-2-20210804	A1H0236-02	Water	08/04/21 12:00	08/06/21 15:30
GN-AP-AAO-3-20210804	A1H0236-03	Water	08/04/21 12:05	08/06/21 15:30
GN-AP-AAO-4-20210804	A1H0236-04	Water	08/04/21 12:10	08/06/21 15:30
GN-AP-AAO-5-20210804	A1H0236-05	Water	08/04/21 12:15	08/06/21 15:30
GN-AP-AAO-6-20210804	A1H0236-06	Water	08/04/21 12:20	08/06/21 15:30
GN-AP-AAO-7-20210804	A1H0236-07	Water	08/04/21 12:25	08/06/21 15:30
GN-AP-AAO-MB-20210804	A1H0236-08	Water	08/04/21 12:30	08/06/21 15:30

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-AAO-1-20210804 (A1H0236-01)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**10300**	161	321	ug/L	5	08/11/21 05:41	EPA 6020B	
Arsenic	**42.2**	3.21	6.43	ug/L	5	08/11/21 05:41	EPA 6020B	
Iron	**16900**	161	321	ug/L	5	08/11/21 05:41	EPA 6020B	
Manganese	**13600**	3.21	6.43	ug/L	5	08/11/21 05:41	EPA 6020B	**E**
Molybdenum	**6.44**	3.21	6.43	ug/L	5	08/11/21 05:41	EPA 6020B	
Lithium	**25.7**	16.1	32.1	ug/L	5	08/11/21 05:41	EPA 6020B	**J, R-04**
GN-AP-AAO-2-20210804 (A1H0236-02)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**10500**	161	321	ug/L	5	08/11/21 05:56	EPA 6020B	
Arsenic	**42.8**	3.21	6.43	ug/L	5	08/11/21 05:56	EPA 6020B	
Iron	**17700**	161	321	ug/L	5	08/11/21 05:56	EPA 6020B	
Manganese	**13400**	3.21	6.43	ug/L	5	08/11/21 05:56	EPA 6020B	**E**
Molybdenum	**6.91**	3.21	6.43	ug/L	5	08/11/21 05:56	EPA 6020B	
Lithium	**19.5**	16.1	32.1	ug/L	5	08/11/21 05:56	EPA 6020B	**J, R-04**
GN-AP-AAO-3-20210804 (A1H0236-03)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**8430**	161	321	ug/L	5	08/11/21 06:00	EPA 6020B	
Arsenic	**61.9**	3.21	6.43	ug/L	5	08/11/21 06:00	EPA 6020B	
Iron	**23300**	161	321	ug/L	5	08/11/21 06:00	EPA 6020B	
Manganese	**1960**	3.21	6.43	ug/L	5	08/11/21 06:00	EPA 6020B	
Molybdenum	**10.9**	3.21	6.43	ug/L	5	08/11/21 06:00	EPA 6020B	
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 06:00	EPA 6020B	R-04
GN-AP-AAO-4-20210804 (A1H0236-04)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**10200**	161	321	ug/L	5	08/11/21 06:05	EPA 6020B	
Arsenic	**17.4**	3.21	6.43	ug/L	5	08/11/21 06:05	EPA 6020B	
Iron	**29400**	161	321	ug/L	5	08/11/21 06:05	EPA 6020B	
Manganese	**4640**	3.21	6.43	ug/L	5	08/11/21 06:05	EPA 6020B	
Molybdenum	**3.83**	3.21	6.43	ug/L	5	08/11/21 06:05	EPA 6020B	**J, R-04**
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 06:05	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-AAO-5-20210804 (A1H0236-05)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**15700**	161	321	ug/L	5	08/11/21 06:10	EPA 6020B	
Arsenic	**74.3**	3.21	6.43	ug/L	5	08/11/21 06:10	EPA 6020B	
Iron	**20100**	161	321	ug/L	5	08/11/21 06:10	EPA 6020B	
Manganese	**3470**	3.21	6.43	ug/L	5	08/11/21 06:10	EPA 6020B	
Molybdenum	**74.3**	3.21	6.43	ug/L	5	08/11/21 06:10	EPA 6020B	
Lithium	**91.1**	16.1	32.1	ug/L	5	08/11/21 06:10	EPA 6020B	
GN-AP-AAO-6-20210804 (A1H0236-06)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**19200**	161	321	ug/L	5	08/11/21 06:15	EPA 6020B	
Arsenic	**125**	3.21	6.43	ug/L	5	08/11/21 06:15	EPA 6020B	
Iron	**134000**	161	321	ug/L	5	08/11/21 06:15	EPA 6020B	
Manganese	**6670**	3.21	6.43	ug/L	5	08/11/21 06:15	EPA 6020B	
Molybdenum	**20.3**	3.21	6.43	ug/L	5	08/11/21 06:15	EPA 6020B	
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 06:15	EPA 6020B	R-04
GN-AP-AAO-7-20210804 (A1H0236-07)				**Matrix: Water**				
Batch: 1080276								
Aluminum	**19400**	161	321	ug/L	5	08/11/21 06:20	EPA 6020B	
Arsenic	**72.1**	3.21	6.43	ug/L	5	08/11/21 06:20	EPA 6020B	
Iron	**10700**	161	321	ug/L	5	08/11/21 06:20	EPA 6020B	
Manganese	**715**	3.21	6.43	ug/L	5	08/11/21 06:20	EPA 6020B	
Molybdenum	**9.16**	3.21	6.43	ug/L	5	08/11/21 06:20	EPA 6020B	
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 06:20	EPA 6020B	R-04
GN-AP-AAO-MB-20210804 (A1H0236-08)				**Matrix: Water**				
Batch: 1080276								
Aluminum	ND	161	321	ug/L	5	08/11/21 06:25	EPA 6020B	R-04
Arsenic	ND	3.21	6.43	ug/L	5	08/11/21 06:25	EPA 6020B	R-04
Iron	ND	161	321	ug/L	5	08/11/21 06:25	EPA 6020B	R-04
Manganese	ND	3.21	6.43	ug/L	5	08/11/21 06:25	EPA 6020B	R-04
Molybdenum	ND	3.21	6.43	ug/L	5	08/11/21 06:25	EPA 6020B	R-04
Lithium	ND	16.1	32.1	ug/L	5	08/11/21 06:25	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A							**Water**					
Blank (1080276-BLK1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 02:47							
EPA 6020B												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080276-BLK2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:42							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080276-BS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:02							
EPA 6020B												
Aluminum	2760	25.0	50.0	ug/L	1	2780	---	99	80-120%	---	---	
Arsenic	55.8	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Iron	2800	25.0	50.0	ug/L	1	2780	---	101	80-120%	---	---	
Manganese	55.5	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Molybdenum	28.2	0.500	1.00	ug/L	1	27.8	---	101	80-120%	---	---	
LCS (1080276-BS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:57							
EPA 6020B												
Lithium	43.8	2.50	5.00	ug/L	1	44.4	---	99	80-120%	---	---	
Duplicate (1080276-DUP1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:12							
QC Source Sample: Non-SDG (A1H0131-01)												
Aluminum	**32.1**	25.0	50.0	ug/L	1	---	ND	---	---		**20%**	J, Q-05
Arsenic	**0.591**	0.500	1.00	ug/L	1	---	0.570	---	---	4	20%	J
Iron	**73.8**	25.0	50.0	ug/L	1	---	67.4	---	---	9	20%	
Manganese	**16.7**	0.500	1.00	ug/L	1	---	17.0	---	---	1	20%	
Molybdenum	**3.47**	0.500	1.00	ug/L	1	---	3.49	---	---	0.4	20%	
Duplicate (1080276-DUP2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 05:06							
QC Source Sample: Non-SDG (A1H0131-01)												

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Alabama Power-Gaston	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0236 - 09 12 21 0604

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A							**Water**					
Duplicate (1080276-DUP2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 05:06							
QC Source Sample: Non-SDG (A1H0131-01)												
Lithium	ND	12.5	25.0	ug/L	5	---	ND	---	---	---	20%	R-04
Matrix Spike (1080276-MS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:17							
QC Source Sample: Non-SDG (A1H0131-01)												
EPA 6020B												
Aluminum	2730	25.0	50.0	ug/L	1	2780	ND	98	75-125%	---	---	
Arsenic	56.7	0.500	1.00	ug/L	1	55.6	0.570	101	75-125%	---	---	
Iron	2800	25.0	50.0	ug/L	1	2780	67.4	98	75-125%	---	---	
Manganese	70.2	0.500	1.00	ug/L	1	55.6	17.0	96	75-125%	---	---	
Molybdenum	32.3	0.500	1.00	ug/L	1	27.8	3.49	104	75-125%	---	---	
Matrix Spike (1080276-MS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 06:35							
QC Source Sample: Non-SDG (A1H0239-01)												
EPA 6020B												
Lithium	ND	125	250	ug/L	50	44.4	ND		**75-125%**	---	---	Q-11, R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080276							
A1H0236-01	Water	EPA 6020B	08/04/21 11:55	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0236-02	Water	EPA 6020B	08/04/21 12:00	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0236-03	Water	EPA 6020B	08/04/21 12:05	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0236-04	Water	EPA 6020B	08/04/21 12:10	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0236-05	Water	EPA 6020B	08/04/21 12:15	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0236-06	Water	EPA 6020B	08/04/21 12:20	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0236-07	Water	EPA 6020B	08/04/21 12:25	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29
A1H0236-08	Water	EPA 6020B	08/04/21 12:30	08/10/21 09:02	35mL/50mL	45mL/50mL	1.29

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

E	Estimated Value. The result is above the calibration range of the instrument.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-11	Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

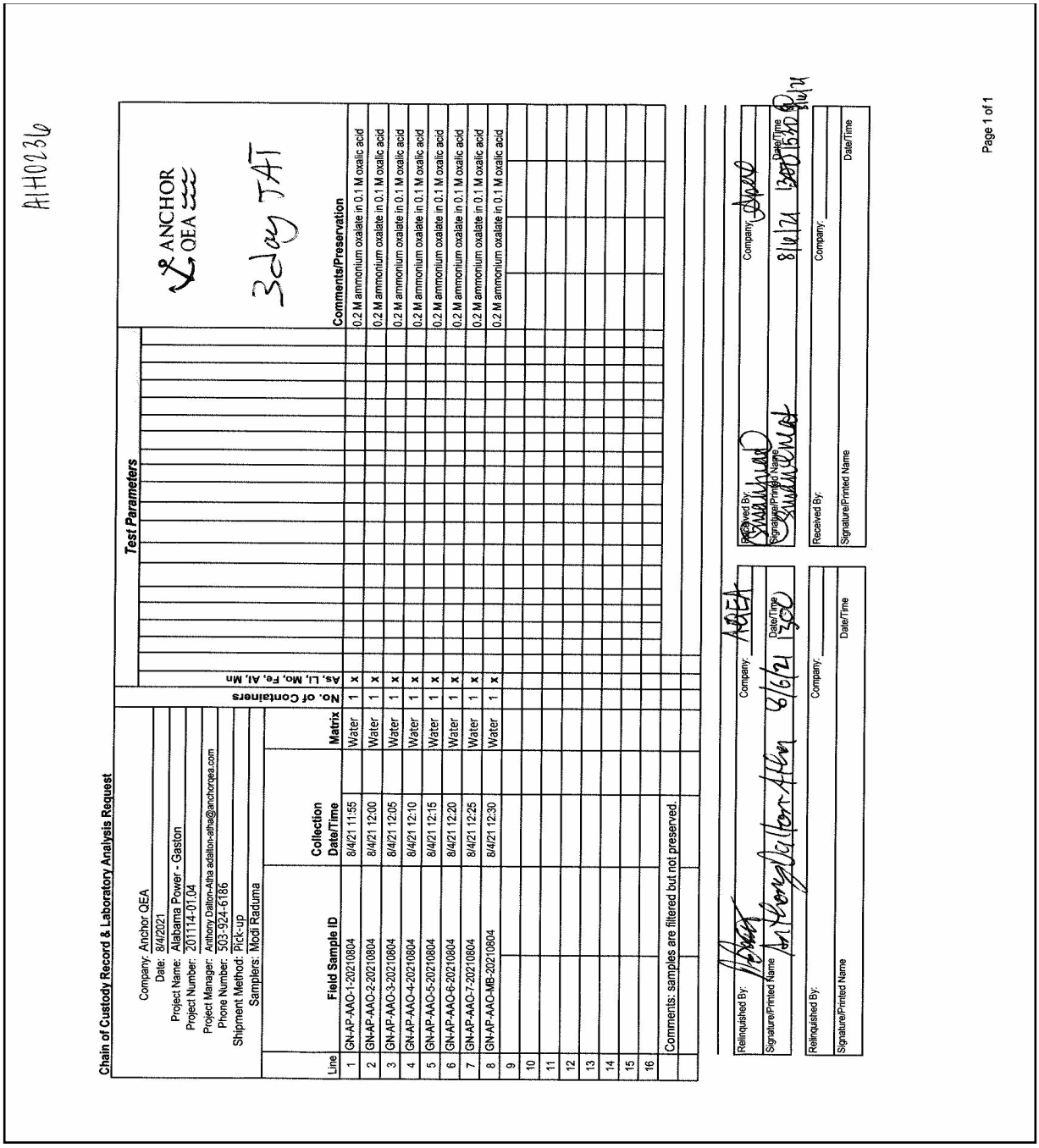
Apex Laboratories

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**



A1H0236

Chain of Custody Record & Laboratory Analysis Request

Company: Anchor QEA
Date: 8/4/2021
Project Name: Alabama Power - Gaston
Project Number: 201114-01.04
Project Manager: Anthony Dalton-Atha adalton-atha@anchorqea.com
Phone Number: 503-924-6186
Shipment Method: Pick-up
Samplers: Modi Raduma

ANCHOR QEA

3 day TAT

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	As, Li, Mo, Fe, Al, Mn	Comments/Preservation
1	GN-AP-AAO-1-20210804	8/4/21 11:55	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
2	GN-AP-AAO-2-20210804	8/4/21 12:00	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
3	GN-AP-AAO-3-20210804	8/4/21 12:05	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
4	GN-AP-AAO-4-20210804	8/4/21 12:10	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
5	GN-AP-AAO-5-20210804	8/4/21 12:15	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
6	GN-AP-AAO-6-20210804	8/4/21 12:20	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
7	GN-AP-AAO-7-20210804	8/4/21 12:25	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
8	GN-AP-AAO-MB-20210804	8/4/21 12:30	Water	1	x	0.2 M ammonium oxalate in 0.1 M oxalic acid
9						
10						
11						
12						
13						
14						
15						
16						

Comments: samples are filtered but not preserved.

Relinquished By: Company: AQEA Date/Time 6/6/21 1200
Signature/Printed Name: Morgan Walton-Allen

Received By: Company: Date/Time
Signature/Printed Name

Relinquished By: Company: Date/Time
Signature/Printed Name

Received By: Company: Date/Time
Signature/Printed Name

Page 1 of 1

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0236 - 09 12 21 0604**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A1H0236

Project/Project #: Alabama Power - Gaston / 201114-01.04

Delivery Info:

Date/time received: 8/6/21 @ 1530 By: 80

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 8/6/21 @ 1535 By: 80

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	3.0						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: ___

Green dots applied to out of temperature samples? Yes No

Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 8/9/21 @ 1340 By: 80

All samples intact? Yes Y No ___ Comments: ___

Bottle labels/COCs agree? Yes Y No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No Y

Containers/volumes received appropriate for analysis? Yes Y No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA Y

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: 80 Witness: [illegible] Cooler Inspected by: 80

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sunday, September 12, 2021

Anthony Dalton-Atha
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A1H0239 - Alabama Power-Gaston - 201114-01.04

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0239, which was received by the laboratory on 8/6/2021 at 3:30:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	0.5 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GAS-SSE-F1-6	A1H0239-01	Water	08/03/21 08:40	08/06/21 15:30
GAS-SSE-F1-7	A1H0239-02	Water	08/03/21 08:45	08/06/21 15:30
GAS-SSE-F1-8	A1H0239-03	Water	08/03/21 08:50	08/06/21 15:30
GAS-SSE-F1-9	A1H0239-04	Water	08/03/21 08:55	08/06/21 15:30
GAS-SSE-F1-10	A1H0239-05	Water	08/03/21 09:00	08/06/21 15:30
GAS-SSE-F1-11	A1H0239-06	Water	08/03/21 09:05	08/06/21 15:30
GAS-SSE-F2-6	A1H0239-07	Water	08/04/21 16:55	08/06/21 15:30
GAS-SSE-F2-7	A1H0239-08	Water	08/04/21 17:00	08/06/21 15:30
GAS-SSE-F2-8	A1H0239-09	Water	08/04/21 17:05	08/06/21 15:30
GAS-SSE-F2-9	A1H0239-10	Water	08/04/21 17:10	08/06/21 15:30
GAS-SSE-F2-10	A1H0239-11	Water	08/04/21 17:15	08/06/21 15:30
GAS-SSE-F2-11	A1H0239-12	Water	08/04/21 17:20	08/06/21 15:30
GAS-SSE-F3-6	A1H0239-13	Water	08/05/21 16:40	08/06/21 15:30
GAS-SSE-F3-7	A1H0239-14	Water	08/05/21 16:45	08/06/21 15:30
GAS-SSE-F3-8	A1H0239-15	Water	08/05/21 16:50	08/06/21 15:30
GAS-SSE-F3-9	A1H0239-16	Water	08/05/21 16:55	08/06/21 15:30
GAS-SSE-F3-10	A1H0239-17	Water	08/05/21 17:00	08/06/21 15:30
GAS-SSE-F3-11	A1H0239-18	Water	08/05/21 17:05	08/06/21 15:30
GAS-SSE-F4-6	A1H0239-19	Water	08/06/21 10:40	08/06/21 15:30
GAS-SSE-F4-7	A1H0239-20	Water	08/06/21 10:45	08/06/21 15:30
GAS-SSE-F4-8	A1H0239-21	Water	08/06/21 10:50	08/06/21 15:30
GAS-SSE-F4-9	A1H0239-22	Water	08/06/21 10:55	08/06/21 15:30
GAS-SSE-F4-10	A1H0239-23	Water	08/06/21 11:00	08/06/21 15:30
GAS-SSE-F4-11	A1H0239-24	Water	08/06/21 11:05	08/06/21 15:30
GAS-SSE-F5-6	A1H0239-25	Solid	08/05/21 18:00	08/06/21 15:30
GAS-SSE-F5-7	A1H0239-26	Solid	08/05/21 18:05	08/06/21 15:30
GAS-SSE-F5-8	A1H0239-27	Solid	08/05/21 18:10	08/06/21 15:30
GAS-SSE-F5-9	A1H0239-28	Solid	08/05/21 18:15	08/06/21 15:30
GAS-SSE-F5-10	A1H0239-29	Solid	08/05/21 18:20	08/06/21 15:30

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Alabama Power-Gaston	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0239 - 09 12 21 0619

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F1-6 (A1H0239-01)				**Matrix: Water**				
Batch: 1080276								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 06:30	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 06:30	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 06:30	EPA 6020B	Q-42, R-04
GAS-SSE-F1-7 (A1H0239-02)				**Matrix: Water**				
Batch: 1080276								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 06:40	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 06:40	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 06:40	EPA 6020B	R-04
GAS-SSE-F1-8 (A1H0239-03)				**Matrix: Water**				
Batch: 1080276								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 06:55	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 06:55	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 06:55	EPA 6020B	Q-06, R-04
GAS-SSE-F1-9 (A1H0239-04)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:09	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:09	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:09	EPA 6020B	A-01, Q-06, Q-42, R-04
GAS-SSE-F1-10 (A1H0239-05)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:19	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:19	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:19	EPA 6020B	A-01, Q-06, R-04
GAS-SSE-F1-11 (A1H0239-06)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:24	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:24	EPA 6020B	R-04

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Alabama Power-Gaston	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0239 - 09 12 21 0619

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F1-11 (A1H0239-06)				**Matrix: Water**				
Lithium	ND	125	250	ug/L	50	08/11/21 21:24	EPA 6020B	A-01, Q-06, R-04
GAS-SSE-F2-6 (A1H0239-07)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
Manganese	**153**	25.0	50.0	ug/L	50	08/11/21 21:29	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
GAS-SSE-F2-7 (A1H0239-08)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	37.5	75.0	ug/L	50	08/11/21 21:34	EPA 6020B	Q-42, R-04
Iron	ND	1880	3750	ug/L	50	08/11/21 21:34	EPA 6020B	R-04
Manganese	**170**	37.5	75.0	ug/L	50	08/11/21 21:34	EPA 6020B	
Molybdenum	ND	37.5	75.0	ug/L	50	08/11/21 21:34	EPA 6020B	R-04
Lithium	ND	188	375	ug/L	50	08/11/21 21:34	EPA 6020B	R-04
GAS-SSE-F2-8 (A1H0239-09)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
Manganese	**317**	25.0	50.0	ug/L	50	08/11/21 21:48	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
GAS-SSE-F2-9 (A1H0239-10)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 22:03	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 22:03	EPA 6020B	R-04
Manganese	**127**	25.0	50.0	ug/L	50	08/11/21 22:03	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 22:03	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 22:03	EPA 6020B	R-04

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F2-10 (A1H0239-11)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
Manganese	**136**	25.0	50.0	ug/L	50	08/11/21 22:08	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
GAS-SSE-F2-11 (A1H0239-12)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Manganese	ND	25.0	50.0	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
GAS-SSE-F3-6 (A1H0239-13)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.81	5.62	ug/L	5	08/11/21 19:55	EPA 6020B	R-04
Iron	**1480**	141	281	ug/L	5	08/11/21 19:55	EPA 6020B	
Manganese	**2280**	2.81	5.62	ug/L	5	08/11/21 19:55	EPA 6020B	**E**
Molybdenum	ND	2.81	5.62	ug/L	5	08/11/21 19:55	EPA 6020B	R-04
Lithium	ND	14.1	28.1	ug/L	5	08/11/21 19:55	EPA 6020B	R-04
GAS-SSE-F3-7 (A1H0239-14)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 20:00	EPA 6020B	R-04
Iron	**1300**	125	250	ug/L	5	08/11/21 20:00	EPA 6020B	
Manganese	**212**	2.50	5.00	ug/L	5	08/11/21 20:00	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:00	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:00	EPA 6020B	R-04
GAS-SSE-F3-8 (A1H0239-15)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**4.34**	2.50	5.00	ug/L	5	08/11/21 20:11	EPA 6020B	**J, R-04**
Iron	**9130**	125	250	ug/L	5	08/11/21 20:11	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F3-8 (A1H0239-15)				**Matrix: Water**				
Manganese	**755**	2.50	5.00	ug/L	5	08/11/21 20:11	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:11	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:11	EPA 6020B	R-04
GAS-SSE-F3-9 (A1H0239-16)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 20:33	EPA 6020B	R-04
Iron	**702**	125	250	ug/L	5	08/11/21 20:33	EPA 6020B	
Manganese	**150**	2.50	5.00	ug/L	5	08/11/21 20:33	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:33	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:33	EPA 6020B	R-04
GAS-SSE-F3-10 (A1H0239-17)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**2.50**	2.50	5.00	ug/L	5	08/11/21 20:40	EPA 6020B	**J, R-04**
Iron	**1270**	125	250	ug/L	5	08/11/21 20:40	EPA 6020B	
Manganese	**152**	2.50	5.00	ug/L	5	08/11/21 20:40	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:40	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:40	EPA 6020B	R-04
GAS-SSE-F3-11 (A1H0239-18)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
Iron	ND	125	250	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
Manganese	**6.73**	2.50	5.00	ug/L	5	08/11/21 20:45	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
GAS-SSE-F4-6 (A1H0239-19)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**4.72**	2.50	5.00	ug/L	5	08/11/21 20:50	EPA 6020B	**J, R-04**
Iron	**5100**	125	250	ug/L	5	08/11/21 20:50	EPA 6020B	
Manganese	**389**	2.50	5.00	ug/L	5	08/11/21 20:50	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:50	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:50	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F4-7 (A1H0239-20)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**3.38**	2.50	5.00	ug/L	5	08/11/21 21:04	EPA 6020B	**J, R-04**
Iron	**4640**	125	250	ug/L	5	08/11/21 21:04	EPA 6020B	
Manganese	**60.7**	2.50	5.00	ug/L	5	08/11/21 21:04	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 21:04	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 21:04	EPA 6020B	R-04
GAS-SSE-F4-8 (A1H0239-21)				**Matrix: Water**				
Batch: 1080307								
Arsenic	**11.3**	2.50	5.00	ug/L	5	08/11/21 23:26	EPA 6020B	
Iron	**31700**	125	250	ug/L	5	08/11/21 23:26	EPA 6020B	
Manganese	**500**	2.50	5.00	ug/L	5	08/11/21 23:26	EPA 6020B	
Molybdenum	**4.14**	2.50	5.00	ug/L	5	08/11/21 23:26	EPA 6020B	**J, R-04**
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:26	EPA 6020B	R-04
GAS-SSE-F4-9 (A1H0239-22)				**Matrix: Water**				
Batch: 1080307								
Arsenic	**5.86**	2.50	5.00	ug/L	5	08/11/21 23:31	EPA 6020B	
Iron	**3960**	125	250	ug/L	5	08/11/21 23:31	EPA 6020B	
Manganese	**37.7**	2.50	5.00	ug/L	5	08/11/21 23:31	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 23:31	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:31	EPA 6020B	R-04
GAS-SSE-F4-10 (A1H0239-23)				**Matrix: Water**				
Batch: 1080307								
Arsenic	**8.52**	2.50	5.00	ug/L	5	08/11/21 23:36	EPA 6020B	
Iron	**5790**	125	250	ug/L	5	08/11/21 23:36	EPA 6020B	
Manganese	**59.4**	2.50	5.00	ug/L	5	08/11/21 23:36	EPA 6020B	
Molybdenum	**3.17**	2.50	5.00	ug/L	5	08/11/21 23:36	EPA 6020B	**J, R-04**
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:36	EPA 6020B	R-04
GAS-SSE-F4-11 (A1H0239-24)				**Matrix: Water**				
Batch: 1080307								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 23:41	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F4-11 (A1H0239-24)				**Matrix: Water**				
Iron	ND	125	250	ug/L	5	08/11/21 23:41	EPA 6020B	R-04
Manganese	**8.07**	2.50	5.00	ug/L	5	08/11/21 23:41	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 23:41	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:41	EPA 6020B	R-04
GAS-SSE-F5-6 (A1H0239-25)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**5.88**	0.522	1.04	mg/kg	10	08/12/21 00:15	EPA 6020B	
Iron	**15700**	26.1	52.2	mg/kg	10	08/12/21 00:15	EPA 6020B	
Manganese	**128**	0.522	1.04	mg/kg	10	08/12/21 00:15	EPA 6020B	
Molybdenum	**0.942**	0.522	1.04	mg/kg	10	08/12/21 00:15	EPA 6020B	**J**
Lithium	**6.02**	2.61	5.22	mg/kg	10	08/12/21 00:15	EPA 6020B	
GAS-SSE-F5-7 (A1H0239-26)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**3.63**	0.486	0.973	mg/kg	10	08/12/21 00:20	EPA 6020B	
Iron	**10500**	24.3	48.6	mg/kg	10	08/12/21 00:20	EPA 6020B	
Manganese	**26.7**	0.486	0.973	mg/kg	10	08/12/21 00:20	EPA 6020B	
Molybdenum	ND	0.486	0.973	mg/kg	10	08/12/21 00:20	EPA 6020B	
Lithium	ND	2.43	4.86	mg/kg	10	08/12/21 00:20	EPA 6020B	
GAS-SSE-F5-8 (A1H0239-27)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**6.08**	0.490	0.980	mg/kg	10	08/12/21 00:25	EPA 6020B	
Iron	**18200**	24.5	49.0	mg/kg	10	08/12/21 00:25	EPA 6020B	
Manganese	**35.8**	0.490	0.980	mg/kg	10	08/12/21 00:25	EPA 6020B	
Molybdenum	**1.37**	0.490	0.980	mg/kg	10	08/12/21 00:25	EPA 6020B	
Lithium	**4.34**	2.45	4.90	mg/kg	10	08/12/21 00:25	EPA 6020B	**J**
GAS-SSE-F5-9 (A1H0239-28)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**8.33**	0.496	0.992	mg/kg	10	08/12/21 00:30	EPA 6020B	
Iron	**18900**	24.8	49.6	mg/kg	10	08/12/21 00:30	EPA 6020B	
Manganese	**40.7**	0.496	0.992	mg/kg	10	08/12/21 00:30	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F5-9 (A1H0239-28)				**Matrix: Solid**				
Molybdenum	**1.85**	0.496	0.992	mg/kg	10	08/12/21 00:30	EPA 6020B	
Lithium	**2.92**	2.48	4.96	mg/kg	10	08/12/21 00:30	EPA 6020B	**J**
GAS-SSE-F5-10 (A1H0239-29)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**7.76**	0.485	0.971	mg/kg	10	08/12/21 00:35	EPA 6020B	
Iron	**15200**	24.3	48.5	mg/kg	10	08/12/21 00:35	EPA 6020B	
Manganese	**33.8**	0.485	0.971	mg/kg	10	08/12/21 00:35	EPA 6020B	
Molybdenum	**1.22**	0.485	0.971	mg/kg	10	08/12/21 00:35	EPA 6020B	
Lithium	ND	2.43	4.85	mg/kg	10	08/12/21 00:35	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A							**Water**					
Blank (1080276-BLK1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 02:47							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080276-BLK2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:42							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080276-BS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:02							
EPA 6020B												
Arsenic	55.8	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Molybdenum	28.2	0.500	1.00	ug/L	1	27.8	---	101	80-120%	---	---	
LCS (1080276-BS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:57							
EPA 6020B												
Lithium	43.8	2.50	5.00	ug/L	1	44.4	---	99	80-120%	---	---	
Duplicate (1080276-DUP1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:12							
QC Source Sample: Non-SDG (A1H0131-01)												
Arsenic	**0.591**	0.500	1.00	ug/L	1	---	0.570	---	---	4	20%	J
Molybdenum	**3.47**	0.500	1.00	ug/L	1	---	3.49	---	---	0.4	20%	
Duplicate (1080276-DUP2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 05:06							
QC Source Sample: Non-SDG (A1H0131-01)												
Lithium	ND	12.5	25.0	ug/L	5	---	ND	---	---	---	20%	R-04
Matrix Spike (1080276-MS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:17							
QC Source Sample: Non-SDG (A1H0131-01)												
EPA 6020B												
Arsenic	56.7	0.500	1.00	ug/L	1	55.6	0.570	101	75-125%	---	---	
Molybdenum	32.3	0.500	1.00	ug/L	1	27.8	3.49	104	75-125%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A									**Water**			
Matrix Spike (1080276-MS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 06:35							
QC Source Sample: GAS-SSE-F1-6 (A1H0239-01)												
EPA 6020B												
Lithium	ND	125	250	ug/L	50	44.4	ND		**75-125%**	---	---	Q-11, R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080287 - EPA 3015A							**Water**					
Blank (1080287-BLK1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 19:40							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080287-BS1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 19:45							
EPA 6020B												
Arsenic	54.7	0.500	1.00	ug/L	1	55.6	---	99	80-120%	---	---	
Iron	2780	25.0	50.0	ug/L	1	2780	---	100	80-120%	---	---	
Manganese	54.0	0.500	1.00	ug/L	1	55.6	---	97	80-120%	---	---	
Molybdenum	26.6	0.500	1.00	ug/L	1	27.8	---	96	80-120%	---	---	
LCS (1080287-BS2)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 19:50							
EPA 6020B												
Lithium	42.0	2.50	5.00	ug/L	1	44.4	---	95	80-120%	---	---	
Duplicate (1080287-DUP1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:39							
QC Source Sample: GAS-SSE-F2-7 (A1H0239-08)												
EPA 6020B												
Arsenic	ND	37.5	75.0	ug/L	50	---	ND	---	---	---	20%	R-04
Iron	ND	1880	3750	ug/L	50	---	ND	---	---	---	20%	R-04
Manganese	**177**	37.5	75.0	ug/L	50	---	170	---	---	5	20%	
Molybdenum	ND	37.5	75.0	ug/L	50	---	ND	---	---	---	20%	R-04
Lithium	ND	188	375	ug/L	50	---	ND	---	---	---	20%	R-04
Matrix Spike (1080287-MS1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:44							
QC Source Sample: GAS-SSE-F2-7 (A1H0239-08)												
EPA 6020B												
Arsenic	105	37.5	75.0	ug/L	50	83.3	ND	**126**	**75-125%**	---	---	Q-11, Q-11, R-04
Iron	4950	1880	3750	ug/L	50	4170	ND	119	75-125%	---	---	R-04
Manganese	243	37.5	75.0	ug/L	50	83.3	170	88	75-125%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080287 - EPA 3015A							**Water**					
Matrix Spike (1080287-MS1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:44							
QC Source Sample: GAS-SSE-F2-7 (A1H0239-08)												
Molybdenum	42.0	37.5	75.0	ug/L	50	41.7	ND	101	75-125%	---	---	J, R-04
Matrix Spike (1080287-MS2)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:14							
QC Source Sample: GAS-SSE-F1-9 (A1H0239-04)												
EPA 6020B												
Lithium	ND	125	250	ug/L	50	44.4	ND		**75-125%**	---	---	A-01, Q-06, Q-11, Q-11, R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080307 - EPA 3015A								**Water**				
Blank (1080307-BLK1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:03							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080307-BLK2)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:07							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080307-BS1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:08							
EPA 6020B												
Arsenic	55.6	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Iron	2700	25.0	50.0	ug/L	1	2780	---	97	80-120%	---	---	
Manganese	54.6	0.500	1.00	ug/L	1	55.6	---	98	80-120%	---	---	
Molybdenum	28.1	0.500	1.00	ug/L	1	27.8	---	101	80-120%	---	---	
LCS (1080307-BS2)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:12							
EPA 6020B												
Lithium	43.8	2.50	5.00	ug/L	1	44.4	---	99	80-120%	---	---	
Duplicate (1080307-DUP1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:33							
QC Source Sample: Non-SDG (A1H0238-05)												
Arsenic	**19.7**	0.500	1.00	ug/L	1	---	18.7	---	---	5	20%	
Molybdenum	**5.72**	0.500	1.00	ug/L	1	---	4.91	---	---	15	20%	
Duplicate (1080307-DUP2)			Prepared: 08/10/21 13:34		Analyzed: 08/13/21 04:42							
QC Source Sample: Non-SDG (A1H0238-05RE1)												
Iron	**326000**	1250	2500	ug/L	50	---	361000	---	---	10	20%	Q-16
Manganese	**9530**	25.0	50.0	ug/L	50	---	9730	---	---	2	20%	Q-16
Duplicate (1080307-DUP3)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:21							
QC Source Sample: Non-SDG (A1H0238-05)												

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Alabama Power-Gaston	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0239 - 09 12 21 0619

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080307 - EPA 3015A									Water			
Duplicate (1080307-DUP3)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:21							
QC Source Sample: Non-SDG (A1H0238-05)												
Lithium	**32.1**	12.5	25.0	ug/L	5	---	35.3	---	---	10	20%	
Matrix Spike (1080307-MS1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:38							
QC Source Sample: Non-SDG (A1H0238-05)												
EPA 6020B												
Arsenic	59.6	0.500	1.00	ug/L	1	55.6	18.7	**74**	**75-125%**	---	---	Q-04
Molybdenum	20.0	0.500	1.00	ug/L	1	27.8	4.91	**54**	**75-125%**	---	---	Q-04
Matrix Spike (1080307-MS2)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:46							
QC Source Sample: GAS-SSE-F4-11 (A1H0239-24)												
EPA 6020B												
Lithium	46.8	12.5	25.0	ug/L	5	44.4	ND	105	75-125%	---	---	
Matrix Spike (1080307-MS3)			Prepared: 08/10/21 13:34		Analyzed: 08/13/21 04:47							
QC Source Sample: Non-SDG (A1H0238-05RE1)												
EPA 6020B												
Iron	338000	1250	2500	ug/L	50	2780	361000	**-820**	**75-125%**	---	---	Q-03, Q-16
Manganese	9810	25.0	50.0	ug/L	50	55.6	9730	**137**	**75-125%**	---	---	Q-03, Q-16

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080310 - EPA 3051A							**Solid**					
Blank (1080310-BLK1)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 11:34									
EPA 6020B												
Arsenic	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Iron	ND	24.0	48.1	mg/kg	10	---	---	---	---	---	---	
Manganese	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Molybdenum	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Blank (1080310-BLK2)			Prepared: 08/10/21 15:08 Analyzed: 08/12/21 00:06									
EPA 6020B												
Lithium	ND	2.40	4.81	mg/kg	10	---	---	---	---	---	---	
LCS (1080310-BS1)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 11:39									
EPA 6020B												
Arsenic	49.6	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Iron	2460	25.0	50.0	mg/kg	10	2500	---	98	80-120%	---	---	
Manganese	49.3	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Molybdenum	24.8	0.500	1.00	mg/kg	10	25.0	---	99	80-120%	---	---	
LCS (1080310-BS2)			Prepared: 08/10/21 15:08 Analyzed: 08/12/21 00:11									
EPA 6020B												
Lithium	39.8	2.50	5.00	mg/kg	10	40.0	---	99	80-120%	---	---	
Duplicate (1080310-DUP1)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 11:50									
QC Source Sample: Non-SDG (A1H0260-01)												
Arsenic	**353**	1.08	2.15	mg/kg	20	---	306	---	---	14	20%	
Manganese	**154**	1.08	2.15	mg/kg	20	---	213	---	---	**32**	**20%**	Q-04
Duplicate (1080310-DUP2)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 17:53									
QC Source Sample: Non-SDG (A1H0260-01RE1)												
Iron	**177000**	538	1080	mg/kg	200	---	196000	---	---	10	20%	Q-16
Molybdenum	**988**	10.8	21.5	mg/kg	200	---	813	---	---	19	20%	Q-16
Duplicate (1080310-DUP3)			Prepared: 08/10/21 15:08 Analyzed: 08/12/21 00:45									
QC Source Sample: Non-SDG (A1H0260-01)												

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080310 - EPA 3051A							**Solid**					
Duplicate (1080310-DUP3)			Prepared: 08/10/21 15:08		Analyzed: 08/12/21 00:45							
QC Source Sample: Non-SDG (A1H0260-01)												
Lithium	ND	13.4	26.9	mg/kg	50	---	ND	---	---	---	20%	
Matrix Spike (1080310-MS1)			Prepared: 08/10/21 15:08		Analyzed: 08/11/21 11:55							
QC Source Sample: Non-SDG (A1H0260-01)												
EPA 6020B												
Arsenic	315	1.06	2.13	mg/kg	20	53.2	306	**17**	**75-125%**	---	---	Q-03, Q-04
Manganese	256	1.06	2.13	mg/kg	20	53.2	213	81	75-125%	---	---	
Matrix Spike (1080310-MS2)			Prepared: 08/10/21 15:08		Analyzed: 08/12/21 01:00							
QC Source Sample: Non-SDG (A1H0260-01)												
EPA 6020B												
Lithium	46.0	12.6	25.2	mg/kg	50	40.3	ND	114	75-125%	---	---	
Matrix Spike (1080310-MS3)			Prepared: 08/10/21 15:08		Analyzed: 08/11/21 17:58							
QC Source Sample: Non-SDG (A1H0260-01RE1)												
EPA 6020B												
Iron	165000	532	1060	mg/kg	200	2660	196000	**-1160**	**75-125%**	---	---	Q-03, Q-16
Molybdenum	701	10.6	21.3	mg/kg	200	26.6	813	**-424**	**75-125%**	---	---	Q-03, Q-16

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080276							
A1H0239-01	Water	EPA 6020B	08/03/21 08:40	08/10/21 09:02	45mL/50mL	45mL/50mL	1.00
A1H0239-02	Water	EPA 6020B	08/03/21 08:45	08/10/21 09:02	45mL/50mL	45mL/50mL	1.00
A1H0239-03	Water	EPA 6020B	08/03/21 08:50	08/10/21 09:02	45mL/50mL	45mL/50mL	1.00
Batch: 1080287							
A1H0239-04	Water	EPA 6020B	08/03/21 08:55	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-05	Water	EPA 6020B	08/03/21 09:00	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-06	Water	EPA 6020B	08/03/21 09:05	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-07	Water	EPA 6020B	08/04/21 16:55	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-08	Water	EPA 6020B	08/04/21 17:00	08/10/21 15:51	30mL/50mL	45mL/50mL	1.50
A1H0239-09	Water	EPA 6020B	08/04/21 17:05	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-10	Water	EPA 6020B	08/04/21 17:10	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-11	Water	EPA 6020B	08/04/21 17:15	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-12	Water	EPA 6020B	08/04/21 17:20	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-13	Water	EPA 6020B	08/05/21 16:40	08/10/21 15:51	40mL/50mL	45mL/50mL	1.13
A1H0239-14	Water	EPA 6020B	08/05/21 16:45	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-15	Water	EPA 6020B	08/05/21 16:50	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-16	Water	EPA 6020B	08/05/21 16:55	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-17	Water	EPA 6020B	08/05/21 17:00	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-18	Water	EPA 6020B	08/05/21 17:05	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-19	Water	EPA 6020B	08/06/21 10:40	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-20	Water	EPA 6020B	08/06/21 10:45	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
Batch: 1080307							
A1H0239-21	Water	EPA 6020B	08/06/21 10:50	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00
A1H0239-22	Water	EPA 6020B	08/06/21 10:55	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00
A1H0239-23	Water	EPA 6020B	08/06/21 11:00	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00
A1H0239-24	Water	EPA 6020B	08/06/21 11:05	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080310							
A1H0239-25	Solid	EPA 6020B	08/05/21 18:00	08/10/21 15:08	0.479g/50mL	0.5g/50mL	1.04
A1H0239-26	Solid	EPA 6020B	08/05/21 18:05	08/10/21 15:08	0.514g/50mL	0.5g/50mL	0.97
A1H0239-27	Solid	EPA 6020B	08/05/21 18:10	08/10/21 15:08	0.51g/50mL	0.5g/50mL	0.98
A1H0239-28	Solid	EPA 6020B	08/05/21 18:15	08/10/21 15:08	0.504g/50mL	0.5g/50mL	0.99
A1H0239-29	Solid	EPA 6020B	08/05/21 18:20	08/10/21 15:08	0.515g/50mL	0.5g/50mL	0.97

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

A-01	Results do not meet EPA 6020B and/or Apex SOP criteria. Results reported for research per client request.
E	Estimated Value. The result is above the calibration range of the instrument.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-06	Internal Standard area outside of method specified limits. Data is Not Reported. See previous or subsequent runs for reportable sample data.
Q-11	Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
Q-16	Reanalysis of an original Batch QC sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

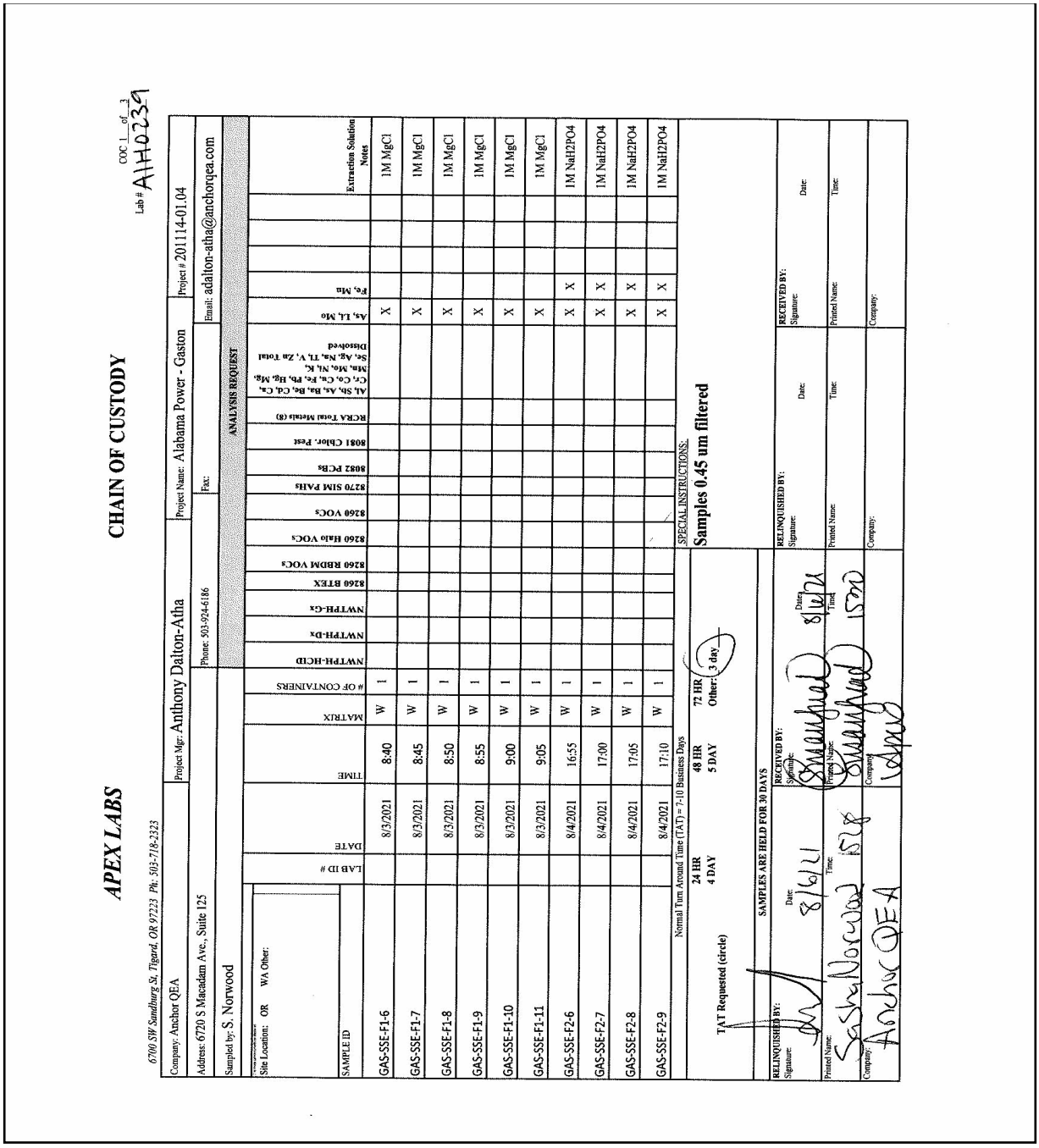
Apex Laboratories

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**



APEX LABS
6700 SW Sandburg St. Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

COC 1 of 3
Lab # A1H0239

Company: Anchor QEA | Project Mgr: Anthony Dalton-Atha | Project Name: Alabama Power - Gaston | Project # 201114-01.04
Address: 6720 S Macadam Ave., Suite 125 | Phone: 503-924-6186 | Fax: | Email: adalton-atha@anchorqea.com
Sampled by: S. Norwood

Site Location: OR WA Other:

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Total Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn Total	Dissolved As, Li, Mo	Fe, Mn	Extraction Solution Notes
GAS-SSE-F1-6		8/3/2021	8:40	W	1													X		1M MgCl
GAS-SSE-F1-7		8/3/2021	8:45	W	1													X		1M MgCl
GAS-SSE-F1-8		8/3/2021	8:50	W	1													X		1M MgCl
GAS-SSE-F1-9		8/3/2021	8:55	W	1													X		1M MgCl
GAS-SSE-F1-10		8/3/2021	9:00	W	1													X		1M MgCl
GAS-SSE-F1-11		8/3/2021	9:05	W	1													X		1M MgCl
GAS-SSE-F2-6		8/4/2021	16:55	W	1													X	X	1M NaH2PO4
GAS-SSE-F2-7		8/4/2021	17:00	W	1													X	X	1M NaH2PO4
GAS-SSE-F2-8		8/4/2021	17:05	W	1													X	X	1M NaH2PO4
GAS-SSE-F2-9		8/4/2021	17:10	W	1													X	X	1M NaH2PO4

Normal Turn Around Time (TAT) = 7-10 Business Days
24 HR 48 HR 72 HR
4 DAY 5 DAY Other: (3 day)
TAT Requested (circle)

SPECIAL INSTRUCTIONS:
Samples 0.45 um filtered

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 8/6/21 Time: 1520 Printed Name: Company: Anchor QEA
RECEIVED BY: Signature: Date: 8/6/21 Time: 1520 Printed Name: Company:
RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:
RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

APEX LABS — CHAIN OF CUSTODY

COC 2 of 3
Lab # A1H0239

6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323

Company: Anchor QEA | Project Mgr: Anthony Dalton-Atha | Project Name: Alabama Power - Gaston | Project # 201114-01.04

Address: 6720 S Macadam Ave., Suite 125 | Phone: 503-924-6186 | Fax: | Email: adalton-atha@anchorqea.com

Sampled by: S. Norwood

Site Location: OR WA Other:

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Total Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn Total Dissolved	As, Li, Mo	Fe, Mn					Extraction Solution Notes
GAS-SSE-F2-10		8/4/2021	17:15	W	1													X	X					1M NaH2PO4
GAS-SSE-F2-11		8/4/2021	17:20	W	1													X	X					1M NaH2PO4
GAS-SSE-F3-6		8/5/2021	16:40	W	1													X	X					0.1M H3NO
GAS-SSE-F3-7		8/5/2021	16:45	W	1													X	X					0.1M H3NO
GAS-SSE-F3-8		8/5/2021	16:50	W	1													X	X					0.1M H3NO
GAS-SSE-F3-9		8/5/2021	16:55	W	1													X	X					0.1M H3NO
GAS-SSE-F3-10		8/5/2021	17:00	W	1													X	X					0.1M H3NO
GAS-SSE-F3-11		8/5/2021	17:05	W	1													X	X					0.1M H3NO
GAS-SSE-F4-6		8/6/2021	10:40	W	1													X	X					16N nitric acid
GAS-SSE-F4-7		8/6/2021	10:45	W	1													X	X					16N nitric acid

Normal Turn Around Time (TAT) = 7-10 Business Days

TAT Requested (circle): 24 HR | 48 HR | 72 HR | 4 DAY | 5 DAY | Other: 3 day (circled)

SPECIAL INSTRUCTIONS:
Samples 0.45 um filtered

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 8/6/21	Signature: [signature] Date: 8/6/21	Signature: Date:	Signature: Date:
Printed Name: Sasha Norwood Time: 1518	Printed Name: Swarleneat Time: 1530	Printed Name: Time:	Printed Name: Time:
Company: Anchor QEA	Company: Apex	Company:	Company:

APEX LABORATORIES

ANALYTICAL REPORT

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project:	**Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number:	**201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager:	**Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

APEX LABS

CHAIN OF CUSTODY

COC 3 of 3

Lab # A1H0239

6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323

Company: Anchor QEA | Project Mgr: Anthony Dalton-Atha | Project Name: Alabama Power - Gaston | Project # 201114-01.04

Address: 6720 S Macadam Ave., Suite 125 | Phone: 503-924-6186 | Fax: | Email: adalton-atha@anchorqea.com

Sampled by: S. Norwood

Site Location: OR WA Other:

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Total Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn Total Dissolved	As, Li, Mo	Fe, Mn					Extraction Solution Notes
GAS-SSE-F4-8		8/6/2021	10:50	W	1													X	X					16N nitric acid
GAS-SSE-F4-9		8/6/2021	10:55	W	1													X	X					16N nitric acid
GAS-SSE-F4-10		8/6/2021	11:00	W	1													X	X					16N nitric acid
GAS-SSE-F4-11		8/6/2021	11:05	W	1													X	X					16N nitric acid
GAS-SSE-F5-6		8/5/2021	18:00	Soil	1													X	X					
GAS-SSE-F5-7		8/5/2021	18:05	Soil	1													X	X					
GAS-SSE-F5-8		8/5/2021	18:10	Soil	1													X	X					
GAS-SSE-F5-9		8/5/2021	18:15	Soil	1													X	X					
GAS-SSE-F5-10		8/5/2021	18:20	Soil	1													X	X					
GAS-SSE-F5-11		8/5/2021	18:25	Soil	1													X	X					

Normal Turn Around Time (TAT) = 7-10 Business Days

TAT Requested (circle): 24 HR / 4 DAY / 48 HR / 5 DAY / 72 HR / Other: 3 day

SPECIAL INSTRUCTIONS:
F4 samples 0.45 um filtered

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 8/6/21	Signature: [signature] Date: 8/6/21	Signature: Date:	Signature: Date:
Printed Name: Sasha Norwood Time: 1518	Printed Name: Susan Lenet Time: 1530	Printed Name: Time:	Printed Name: Time:
Company: Anchor QEA	Company: Apex	Company:	Company:

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

WO# A1H0239

COC/Container Discrepancies

COC Reads			Container Reads/Comments
GAS-SSE-F5-6	-	18:00	17:55
GAS-SSE-F5-7	-	18:05	18:00
GAS-SSE-F5-8	-	18:10	18:05
GAS-SSE-F5-9	-	18:15	HAS 9/9/21 ~~18:15~~ 18:10
GAS-SSE-F5-10	-	18:20	18:15

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A1 H0239

Project/Project #: Alabama Power - Gaston / 201114-01.04

Delivery Info:

Date/time received: 8/6/21 @ 1530 By: SO

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 8/6/21 @ 1535 By: SO

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.5						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

Cooler out of temp? (Y/(N)) Possible reason why: ___

Green dots applied to out of temperature samples? Yes/(No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 8/9/21 @ 1358 By: HAS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: see container discrepancies form.

COC/container discrepancies form initiated? Yes X No ___

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: HAS Witness: AB Cooler Inspected by: HAS

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sunday, September 12, 2021

Anthony Dalton-Atha
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A1H0483 - Alabama Power-Gaston - 201114-01.04

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0483, which was received by the laboratory on 8/16/2021 at 12:36:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	2.1 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GN-AP-SSE-F1-1-20210809	A1H0483-01	Water	08/09/21 09:00	08/16/21 12:36
GN-AP-SSE-F1-2-20210809	A1H0483-02	Water	08/09/21 09:05	08/16/21 12:36
GN-AP-SSE-F1-3-20210809	A1H0483-03	Water	08/09/21 09:10	08/16/21 12:36
GN-AP-SSE-F1-4-20210809	A1H0483-04	Water	08/09/21 09:15	08/16/21 12:36
GN-AP-SSE-F2-1-20210810	A1H0483-05	Water	08/10/21 09:00	08/16/21 12:36
GN-AP-SSE-F2-2-20210810	A1H0483-06	Water	08/10/21 09:05	08/16/21 12:36
GN-AP-SSE-F2-3-20210810	A1H0483-07	Water	08/10/21 09:10	08/16/21 12:36
GN-AP-SSE-F2-4-20210810	A1H0483-08	Water	08/10/21 09:15	08/16/21 12:36
GN-AP-SSE-F3-1-20210812	A1H0483-09	Water	08/12/21 09:00	08/16/21 12:36
GN-AP-SSE-F3-2-20210812	A1H0483-10	Water	08/12/21 09:05	08/16/21 12:36
GN-AP-SSE-F3-3-20210812	A1H0483-11	Water	08/12/21 09:10	08/16/21 12:36
GN-AP-SSE-F3-4-20210812	A1H0483-12	Water	08/12/21 09:15	08/16/21 12:36
GN-AP-SSE-F4-1-20210813	A1H0483-13	Water	08/13/21 09:00	08/16/21 12:36
GN-AP-SSE-F4-2-20210813	A1H0483-14	Water	08/13/21 09:05	08/16/21 12:36
GN-AP-SSE-F4-3-20210813	A1H0483-15	Water	08/13/21 09:10	08/16/21 12:36
GN-AP-SSE-F4-4-20210813	A1H0483-16	Water	08/13/21 09:15	08/16/21 12:36
GN-AP-SSE-F5-2-20210816	A1H0483-17	Solid	08/09/21 09:05	08/16/21 12:36
GN-AP-SSE-F5-3-20210816	A1H0483-18	Solid	08/09/21 09:10	08/16/21 12:36
GN-AP-SSE-F5-4-20210816	A1H0483-19	Solid	08/09/21 09:15	08/16/21 12:36

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F1-1-20210809 (A1H0483-01)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 01:47	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 01:47	EPA 6020B	A-01a, Q-06, R-04
Lithium	ND	125	250	ug/L	50	08/19/21 01:47	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F1-2-20210809 (A1H0483-02)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 01:52	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	**56.1**	25.0	50.0	ug/L	50	08/19/21 01:52	EPA 6020B	**A-01a, Q-06**
Lithium	ND	125	250	ug/L	50	08/19/21 01:52	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F1-3-20210809 (A1H0483-03)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 01:57	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 01:57	EPA 6020B	A-01a, Q-06, R-04
Lithium	ND	125	250	ug/L	50	08/19/21 01:57	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F1-4-20210809 (A1H0483-04)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 02:02	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:02	EPA 6020B	A-01a, Q-06, R-04
Lithium	ND	125	250	ug/L	50	08/19/21 02:02	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F2-1-20210810 (A1H0483-05)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 02:07	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/19/21 02:07	EPA 6020B	R-04
Manganese	ND	25.0	50.0	ug/L	50	08/19/21 02:07	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:07	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F2-1-20210810 (A1H0483-05)				**Matrix: Water**				
Lithium	ND	125	250	ug/L	50	08/19/21 02:07	EPA 6020B	A-01a, R-04
GN-AP-SSE-F2-2-20210810 (A1H0483-06)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**34.7**	25.0	50.0	ug/L	50	08/19/21 02:22	EPA 6020B	**J, R-04**
Iron	ND	1250	2500	ug/L	50	08/19/21 02:22	EPA 6020B	R-04
Manganese	**65.5**	25.0	50.0	ug/L	50	08/19/21 02:22	EPA 6020B	
Molybdenum	**27.4**	25.0	50.0	ug/L	50	08/19/21 02:22	EPA 6020B	**J, R-04**
Lithium	ND	125	250	ug/L	50	08/19/21 02:22	EPA 6020B	R-04
GN-AP-SSE-F2-3-20210810 (A1H0483-07)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**99.8**	25.0	50.0	ug/L	50	08/19/21 02:26	EPA 6020B	
Iron	ND	1250	2500	ug/L	50	08/19/21 02:26	EPA 6020B	R-04
Manganese	**268**	25.0	50.0	ug/L	50	08/19/21 02:26	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:26	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/19/21 02:26	EPA 6020B	R-04
GN-AP-SSE-F2-4-20210810 (A1H0483-08)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**124**	25.0	50.0	ug/L	50	08/19/21 02:31	EPA 6020B	
Iron	ND	1250	2500	ug/L	50	08/19/21 02:31	EPA 6020B	R-04
Manganese	**271**	25.0	50.0	ug/L	50	08/19/21 02:31	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:31	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/19/21 02:31	EPA 6020B	R-04
GN-AP-SSE-F3-1-20210812 (A1H0483-09)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	2.50	5.00	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Iron	ND	125	250	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Manganese	ND	2.50	5.00	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:38	EPA 6020B	A-01a, R-04
GN-AP-SSE-F3-2-20210812 (A1H0483-10)				**Matrix: Water**				

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F3-2-20210812 (A1H0483-10)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	2.50	5.00	ug/L	5	08/19/21 00:43	EPA 6020B	R-04
Iron	**1440**	125	250	ug/L	5	08/19/21 00:43	EPA 6020B	
Manganese	**1020**	2.50	5.00	ug/L	5	08/19/21 00:43	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:43	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:43	EPA 6020B	A-01a, R-04
GN-AP-SSE-F3-3-20210812 (A1H0483-11)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**3.91**	2.50	5.00	ug/L	5	08/19/21 00:48	EPA 6020B	**J, R-04**
Iron	**1800**	125	250	ug/L	5	08/19/21 00:48	EPA 6020B	
Manganese	**783**	2.50	5.00	ug/L	5	08/19/21 00:48	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:48	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:48	EPA 6020B	A-01a, R-04
GN-AP-SSE-F3-4-20210812 (A1H0483-12)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**4.22**	2.50	5.00	ug/L	5	08/19/21 00:53	EPA 6020B	**J, R-04**
Iron	**1870**	125	250	ug/L	5	08/19/21 00:53	EPA 6020B	
Manganese	**778**	2.50	5.00	ug/L	5	08/19/21 00:53	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:53	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:53	EPA 6020B	A-01a, R-04
GN-AP-SSE-F4-1-20210813 (A1H0483-13)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	2.50	5.00	ug/L	5	08/19/21 00:58	EPA 6020B	R-04
Iron	**173**	125	250	ug/L	5	08/19/21 00:58	EPA 6020B	**J, R-04**
Manganese	**11.8**	2.50	5.00	ug/L	5	08/19/21 00:58	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:58	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:58	EPA 6020B	A-01a, R-04
GN-AP-SSE-F4-2-20210813 (A1H0483-14)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**4.53**	2.50	5.00	ug/L	5	08/19/21 01:03	EPA 6020B	**J, R-04**
Iron	**18500**	125	250	ug/L	5	08/19/21 01:03	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F4-2-20210813 (A1H0483-14)				**Matrix: Water**				
Manganese	**638**	2.50	5.00	ug/L	5	08/19/21 01:03	EPA 6020B	
Molybdenum	**5.62**	2.50	5.00	ug/L	5	08/19/21 01:03	EPA 6020B	
Lithium	**21.9**	12.5	25.0	ug/L	5	08/19/21 01:03	EPA 6020B	**J, A-01a, R-04**
GN-AP-SSE-F4-3-20210813 (A1H0483-15)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**8.26**	2.50	5.00	ug/L	5	08/19/21 01:08	EPA 6020B	
Iron	**9390**	125	250	ug/L	5	08/19/21 01:08	EPA 6020B	
Manganese	**180**	2.50	5.00	ug/L	5	08/19/21 01:08	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 01:08	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 01:08	EPA 6020B	A-01a, R-04
GN-AP-SSE-F4-4-20210813 (A1H0483-16)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**10.0**	2.50	5.00	ug/L	5	08/19/21 01:22	EPA 6020B	
Iron	**11000**	125	250	ug/L	5	08/19/21 01:22	EPA 6020B	
Manganese	**229**	2.50	5.00	ug/L	5	08/19/21 01:22	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 01:22	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 01:22	EPA 6020B	A-01a, Q-42, R-04
GN-AP-SSE-F5-2-20210816 (A1H0483-17)				**Matrix: Solid**				
Batch: 1080542								
Arsenic	**0.915**	0.498	0.996	mg/kg	10	08/18/21 20:58	EPA 6020B	**J**
Iron	**8030**	24.9	49.8	mg/kg	10	08/18/21 20:58	EPA 6020B	
Manganese	**33.9**	0.498	0.996	mg/kg	10	08/18/21 20:58	EPA 6020B	
Molybdenum	**0.927**	0.498	0.996	mg/kg	10	08/18/21 20:58	EPA 6020B	**J**
Lithium	**4.14**	2.49	4.98	mg/kg	10	08/18/21 20:58	EPA 6020B	**J**
GN-AP-SSE-F5-3-20210816 (A1H0483-18)				**Matrix: Solid**				
Batch: 1080542								
Arsenic	**1.80**	0.493	0.986	mg/kg	10	08/18/21 21:05	EPA 6020B	
Iron	**3940**	24.7	49.3	mg/kg	10	08/18/21 21:05	EPA 6020B	
Manganese	**15.3**	0.493	0.986	mg/kg	10	08/18/21 21:05	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F5-3-20210816 (A1H0483-18)				**Matrix: Solid**				
Molybdenum	ND	0.493	0.986	mg/kg	10	08/18/21 21:05	EPA 6020B	
Lithium	**4.44**	2.47	4.93	mg/kg	10	08/18/21 21:05	EPA 6020B	**J**
GN-AP-SSE-F5-4-20210816 (A1H0483-19)				**Matrix: Solid**				
Batch: 1080542								
Arsenic	**1.66**	0.483	0.965	mg/kg	10	08/18/21 21:11	EPA 6020B	
Iron	**3970**	24.1	48.3	mg/kg	10	08/18/21 21:11	EPA 6020B	
Manganese	**15.1**	0.483	0.965	mg/kg	10	08/18/21 21:11	EPA 6020B	
Molybdenum	ND	0.483	0.965	mg/kg	10	08/18/21 21:11	EPA 6020B	
Lithium	**4.75**	2.41	4.83	mg/kg	10	08/18/21 21:11	EPA 6020B	**J**

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080542 - EPA 3051A							**Solid**					
Blank (1080542-BLK1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 18:39									
EPA 6020B												
Arsenic	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Iron	ND	24.0	48.1	mg/kg	10	---	---	---	---	---	---	
Manganese	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Molybdenum	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Blank (1080542-BLK2)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 20:33									
EPA 6020B												
Lithium	ND	2.40	4.81	mg/kg	10	---	---	---	---	---	---	
LCS (1080542-BS1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 18:44									
EPA 6020B												
Arsenic	49.3	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Iron	2540	25.0	50.0	mg/kg	10	2500	---	102	80-120%	---	---	
Manganese	49.5	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Molybdenum	24.8	0.500	1.00	mg/kg	10	25.0	---	99	80-120%	---	---	
LCS (1080542-BS2)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 20:38									
EPA 6020B												
Lithium	39.3	2.50	5.00	mg/kg	10	40.0	---	98	80-120%	---	---	
Duplicate (1080542-DUP1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 19:04									
QC Source Sample: Non-SDG (A1H0342-04)												
Arsenic	ND	0.531	1.06	mg/kg	10	---	ND	---	---	---	20%	
Iron	**1820**	26.5	53.1	mg/kg	10	---	1770	---	---	3	20%	
Manganese	**35.8**	0.531	1.06	mg/kg	10	---	35.7	---	---	0.2	20%	
Molybdenum	**0.662**	0.531	1.06	mg/kg	10	---	0.694	---	---	5	20%	J
Duplicate (1080542-DUP2)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 20:48									
QC Source Sample: Non-SDG (A1H0342-04)												
Lithium	ND	2.65	5.31	mg/kg	10	---	ND	---	---	---	20%	
Matrix Spike (1080542-MS1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 19:09									

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080542 - EPA 3051A							**Solid**					
Matrix Spike (1080542-MS1)			Prepared: 08/17/21 08:47		Analyzed: 08/18/21 19:09							
QC Source Sample: Non-SDG (A1H0342-04)												
EPA 6020B												
Arsenic	49.0	0.490	0.980	mg/kg	10	49.0	ND	100	75-125%	---	---	
Iron	4320	24.5	49.0	mg/kg	10	2450	1770	104	75-125%	---	---	
Manganese	84.5	0.490	0.980	mg/kg	10	49.0	35.7	100	75-125%	---	---	
Molybdenum	25.2	0.490	0.980	mg/kg	10	24.5	0.694	100	75-125%	---	---	
Matrix Spike (1080542-MS2)			Prepared: 08/17/21 08:47		Analyzed: 08/18/21 20:53							
QC Source Sample: Non-SDG (A1H0342-04)												
EPA 6020B												
Lithium	41.6	2.68	5.35	mg/kg	10	42.8	ND	97	75-125%	---	---	
Matrix Spike Dup (1080542-MSD1)			Prepared: 08/17/21 08:47		Analyzed: 08/18/21 19:14							
QC Source Sample: Non-SDG (A1H0342-04)												
Arsenic	49.4	2.45	4.90	mg/kg	50	49.0	ND	101	75-125%	0.9	20%	
Iron	4390	123	245	mg/kg	50	2450	1770	107	75-125%	2	20%	
Manganese	84.3	2.45	4.90	mg/kg	50	49.0	35.7	99	75-125%	0.2	20%	
Molybdenum	25.1	2.45	4.90	mg/kg	50	24.5	ND	103	75-125%	0.1	20%	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080544 - EPA 3015A								**Water**				
Blank (1080544-BLK1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:19							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080544-BLK2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 00:09							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080544-BS1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:24							
EPA 6020B												
Arsenic	55.6	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Iron	2840	25.0	50.0	ug/L	1	2780	---	102	80-120%	---	---	
Manganese	55.3	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Molybdenum	27.6	0.500	1.00	ug/L	1	27.8	---	99	80-120%	---	---	
LCS (1080544-BS2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 00:23							
EPA 6020B												
Lithium	42.5	2.50	5.00	ug/L	1	44.4	---	96	80-120%	---	---	A-01a
Duplicate (1080544-DUP1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:34							
QC Source Sample: Non-SDG (A1H0387-01)												
Arsenic	**5.89**	0.500	1.00	ug/L	1	---	5.91	---	---	0.4	20%	
Iron	**21600**	25.0	50.0	ug/L	1	---	21900	---	---	1	20%	
Manganese	**1720**	0.500	1.00	ug/L	1	---	1740	---	---	1	20%	
Molybdenum	**1.01**	0.500	1.00	ug/L	1	---	1.07	---	---	6	20%	
Duplicate (1080544-DUP2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 00:33							
QC Source Sample: Non-SDG (A1H0387-01)												
Lithium	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	20%	A-01a, R-04
Matrix Spike (1080544-MS1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:39							

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080544 - EPA 3015A								**Water**				
Matrix Spike (1080544-MS1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:39							
QC Source Sample: Non-SDG (A1H0387-01)												
EPA 6020B												
Arsenic	62.1	0.500	1.00	ug/L	1	55.6	5.91	101	75-125%	---	---	
Iron	24400	25.0	50.0	ug/L	1	2780	21900	91	75-125%	---	---	
Manganese	1760	0.500	1.00	ug/L	1	55.6	1740	**30**	**75-125%**	---	---	Q-03
Molybdenum	30.1	0.500	1.00	ug/L	1	27.8	1.07	104	75-125%	---	---	
Matrix Spike (1080544-MS2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 01:27							
QC Source Sample: GN-AP-SSE-F4-4-20210813 (A1H0483-16)												
EPA 6020B												
Lithium	55.8	12.5	25.0	ug/L	5	44.4	ND	**126**	**75-125%**	---	---	A-01, Q-11

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080544							
A1H0483-01	Water	EPA 6020B	08/09/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-02	Water	EPA 6020B	08/09/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-03	Water	EPA 6020B	08/09/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-04	Water	EPA 6020B	08/09/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-05	Water	EPA 6020B	08/10/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-06	Water	EPA 6020B	08/10/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-07	Water	EPA 6020B	08/10/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-08	Water	EPA 6020B	08/10/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-09	Water	EPA 6020B	08/12/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-10	Water	EPA 6020B	08/12/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-11	Water	EPA 6020B	08/12/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-12	Water	EPA 6020B	08/12/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-13	Water	EPA 6020B	08/13/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-14	Water	EPA 6020B	08/13/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-15	Water	EPA 6020B	08/13/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-16	Water	EPA 6020B	08/13/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080542							
A1H0483-17	Solid	EPA 6020B	08/09/21 09:05	08/17/21 08:47	0.502g/50mL	0.5g/50mL	1.00
A1H0483-18	Solid	EPA 6020B	08/09/21 09:10	08/17/21 08:47	0.507g/50mL	0.5g/50mL	0.99
A1H0483-19	Solid	EPA 6020B	08/09/21 09:15	08/17/21 08:47	0.518g/50mL	0.5g/50mL	0.97

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

A-01	MS2 is failing for lithium becase source sample is calculating as non detect <MRL and its value is not being calculated..
A-01a	Results do not meet EPA 6020B and/or Apex SOP criteria. Results reported for research per client request.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-06	Internal Standard area outside of method specified limits. Data is Not Reported. See previous or subsequent runs for reportable sample data.
Q-11	Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Darwin Thomas, Business Development Director

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

A1H0483

Chain of Custody Record & Laboratory Analysis Request

ANCHOR QEA

Company: Anchor QEA
Date: 7/28/2021
Project Name: Alabama Power - Gaston
Project Number: 201114-01.04
Project Manager: Anthony Dalton-Atha adalton-atha@anchorqea.com
Phone Number: 503-924-6186
Shipment Method: Pick-up
Samplers: Paloma Spina

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Arsenic	Lithium	Molybdenum	Iron	Manganese	Comments/Preservation
1	GN-AP-SSE-F1-1-20210809	8/9/2021	9:00	Water	1	x	x	x			1 M magnesium chloride
2	GN-AP-SSE-F1-2-20210809	8/9/2021	9:05	Water	1	x	x	x			1 M magnesium chloride
3	GN-AP-SSE-F1-3-20210809	8/9/2021	9:10	Water	1	x	x	x			1 M magnesium chloride
4	GN-AP-SSE-F1-4-20210809	8/9/2021	9:15	Water	1	x	x	x			1 M magnesium chloride
5	GN-AP-SSE-F2-1-20210810	8/10/2021	9:00	Water	1	x	x	x	x	x	1 M monosodium phosphate
6	GN-AP-SSE-F2-2-20210810	8/10/2021	9:05	Water	1	x	x	x	x	x	1 M monosodium phosphate
7	GN-AP-SSE-F2-3-20210810	8/10/2021	9:10	Water	1	x	x	x	x	x	1 M monosodium phosphate
8	GN-AP-SSE-F2-4-20210810	8/10/2021	9:15	Water	1	x	x	x	x	x	1 M monosodium phosphate
9	GN-AP-SSE-F3-1-20210812	8/12/2021	9:00	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
10	GN-AP-SSE-F3-2-20210812	8/12/2021	9:05	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
11	GN-AP-SSE-F3-3-20210812	8/12/2021	9:10	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
12	GN-AP-SSE-F3-4-20210812	8/12/2021	9:15	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
13	GN-AP-SSE-F4-1-20210813	8/13/2021	9:00	Water	1	x	x	x	x	x	16 M nitric acid
14	GN-AP-SSE-F4-2-20210813	8/13/2021	9:05	Water	1	x	x	x	x	x	16 M nitric acid
15	GN-AP-SSE-F4-3-20210813	8/13/2021	9:10	Water	1	x	x	x	x	x	16 M nitric acid
16	GN-AP-SSE-F4-4-20210813	8/13/2021	9:15	Water	1	x	x	x	x	x	16 M nitric acid

Comments: samples are filtered and preserved with nitric acid.

3-day TAT

Relinquished By: Paloma Spina	Company: AQ	Received By:	Company: Apex Labs
Signature/Printed Name	Date/Time 9/16/21 11AM	Signature/Printed Name Michael Kachnik	Date/Time 8-16-21/1236
Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name	Date/Time	Signature/Printed Name	Date/Time

9

Page 1 of 1

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

A1H0483

Chain of Custody Record & Laboratory Analysis Request

ANCHOR QEA

Company: Anchor QEA
Date: 7/28/2021
Project Name: Alabama Power - Gaston
Project Number: 201114-01.04
Project Manager: Anthony Dalton-Atha adalton-atha@anchorqea.com
Phone Number: 503-924-6186
Shipment Method: Pick-up
Samplers: Paloma Spina

Test Parameters

Line	Field Sample ID	Collection Date/Time		Matrix	No. of Containers	Arsenic	Lithium	Molybdenum	Iron	Manganese	Comments/Preservation
1	GN-AP-SSE-F5-2-20210816	8/9/2021	9:05	Solid	1	x	x	x	x	x	none
2	GN-AP-SSE-F5-3-20210816	8/9/2021	9:10	Solid	1	x	x	x	x	x	none
3	GN-AP-SSE-F5-4-20210816	8/9/2021	9:15	Solid	1	x	x	x	x	x	none
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

Comments: no preservation of soil samples.
3-day TAT

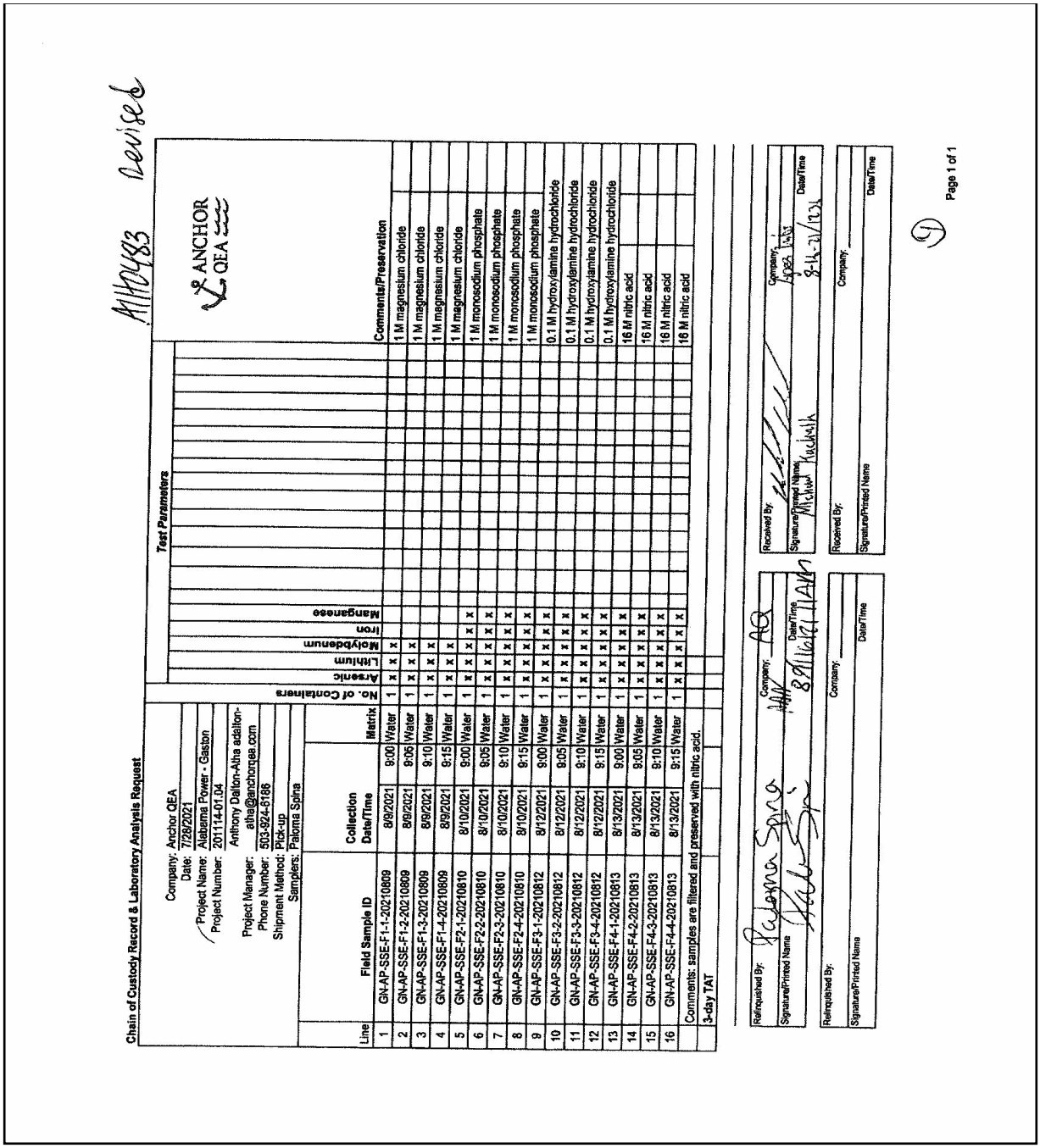
Relinquished By: Paloma Spina	Company: AQ	Received By:	Company: Apex Labs
Signature/Printed Name	Date/Time 9/16/21 11AM	Signature/Printed Name Michael Kuchnik	Date/Time 8-16-21/1236
Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name	Date/Time	Signature/Printed Name	Date/Time

Page 1 of 1

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**



Apex Laboratories

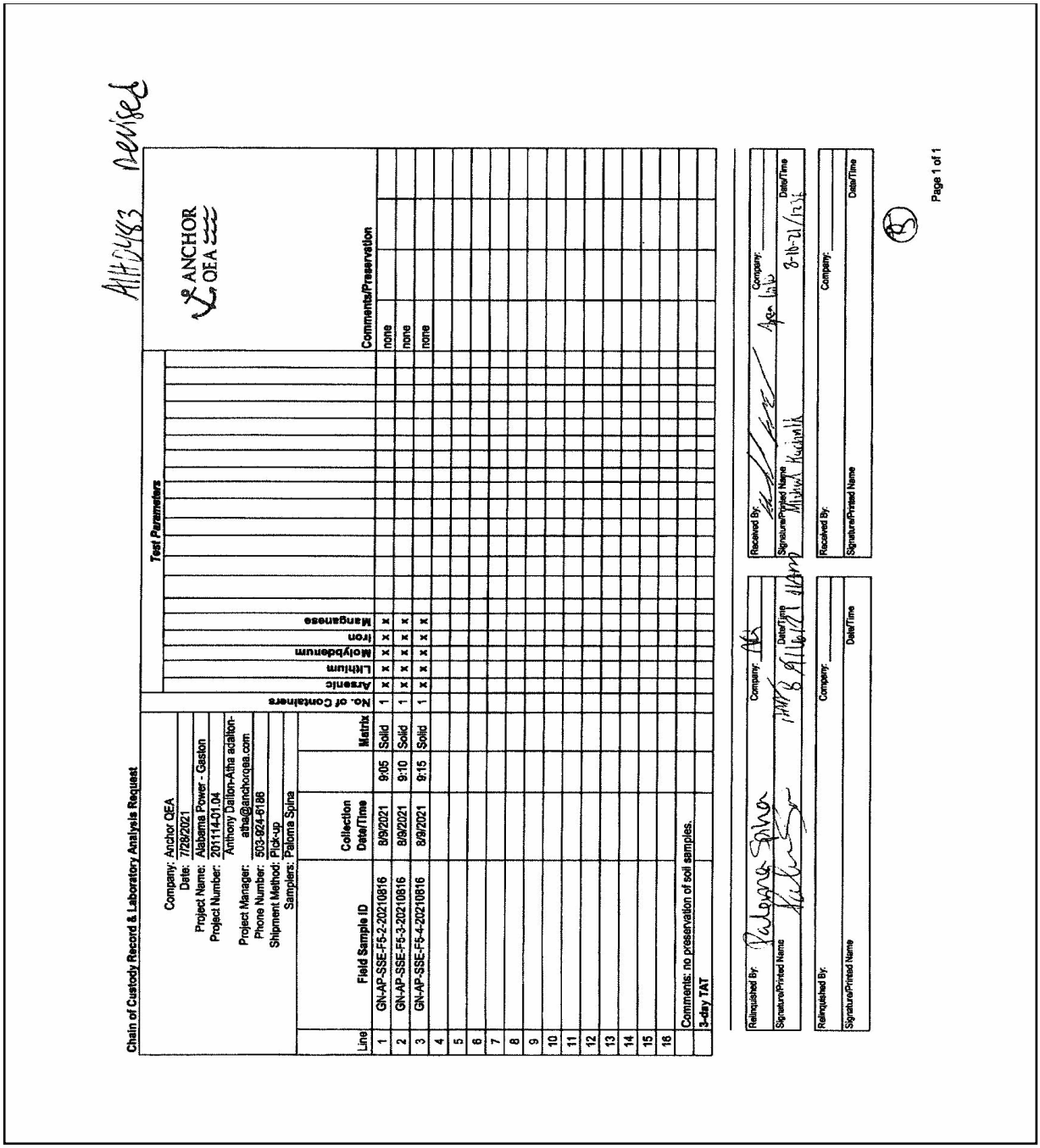
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A1 H0483

Project/Project #: Alabama Power-Gaston / 201114-01.04

Delivery Info:

Date/time received: 8-16-21 @ 1236 By: MK

Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 8-16-21 @ 1310 By: MK

Chain of Custody included? Yes X No Custody seals? Yes X No

Signed/dated by client? Yes X No

Signed/dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.1						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 8/16/21 @ 15:22 By: MS

All samples intact? Yes X No Comments:

Bottle labels/COCs agree? Yes No X Comments: Date on GN-AP-SSE-FS-2-20210816, FS-3, FS-4 conts read 8/16/21, COC reads 8/9/21.

COC/container discrepancies form initiated? Yes No X

Containers/volumes received appropriate for analysis? Yes X No Comments:

Do VOA vials have visible headspace? Yes No NA X

Comments

Water samples: pH checked: Yes No NA X pH appropriate? Yes No NA X

Comments: PH checked @ Bench.

Additional information:

Labeled by: MS Witness: JS Cooler Inspected by: ST

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sunday, September 12, 2021

Anthony Dalton-Atha
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A1H0239 - Alabama Power-Gaston - 201114-01.04

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0239, which was received by the laboratory on 8/6/2021 at 3:30:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	0.5 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GAS-SSE-F1-6	A1H0239-01	Water	08/03/21 08:40	08/06/21 15:30
GAS-SSE-F1-7	A1H0239-02	Water	08/03/21 08:45	08/06/21 15:30
GAS-SSE-F1-8	A1H0239-03	Water	08/03/21 08:50	08/06/21 15:30
GAS-SSE-F1-9	A1H0239-04	Water	08/03/21 08:55	08/06/21 15:30
GAS-SSE-F1-10	A1H0239-05	Water	08/03/21 09:00	08/06/21 15:30
GAS-SSE-F1-11	A1H0239-06	Water	08/03/21 09:05	08/06/21 15:30
GAS-SSE-F2-6	A1H0239-07	Water	08/04/21 16:55	08/06/21 15:30
GAS-SSE-F2-7	A1H0239-08	Water	08/04/21 17:00	08/06/21 15:30
GAS-SSE-F2-8	A1H0239-09	Water	08/04/21 17:05	08/06/21 15:30
GAS-SSE-F2-9	A1H0239-10	Water	08/04/21 17:10	08/06/21 15:30
GAS-SSE-F2-10	A1H0239-11	Water	08/04/21 17:15	08/06/21 15:30
GAS-SSE-F2-11	A1H0239-12	Water	08/04/21 17:20	08/06/21 15:30
GAS-SSE-F3-6	A1H0239-13	Water	08/05/21 16:40	08/06/21 15:30
GAS-SSE-F3-7	A1H0239-14	Water	08/05/21 16:45	08/06/21 15:30
GAS-SSE-F3-8	A1H0239-15	Water	08/05/21 16:50	08/06/21 15:30
GAS-SSE-F3-9	A1H0239-16	Water	08/05/21 16:55	08/06/21 15:30
GAS-SSE-F3-10	A1H0239-17	Water	08/05/21 17:00	08/06/21 15:30
GAS-SSE-F3-11	A1H0239-18	Water	08/05/21 17:05	08/06/21 15:30
GAS-SSE-F4-6	A1H0239-19	Water	08/06/21 10:40	08/06/21 15:30
GAS-SSE-F4-7	A1H0239-20	Water	08/06/21 10:45	08/06/21 15:30
GAS-SSE-F4-8	A1H0239-21	Water	08/06/21 10:50	08/06/21 15:30
GAS-SSE-F4-9	A1H0239-22	Water	08/06/21 10:55	08/06/21 15:30
GAS-SSE-F4-10	A1H0239-23	Water	08/06/21 11:00	08/06/21 15:30
GAS-SSE-F4-11	A1H0239-24	Water	08/06/21 11:05	08/06/21 15:30
GAS-SSE-F5-6	A1H0239-25	Solid	08/05/21 18:00	08/06/21 15:30
GAS-SSE-F5-7	A1H0239-26	Solid	08/05/21 18:05	08/06/21 15:30
GAS-SSE-F5-8	A1H0239-27	Solid	08/05/21 18:10	08/06/21 15:30
GAS-SSE-F5-9	A1H0239-28	Solid	08/05/21 18:15	08/06/21 15:30
GAS-SSE-F5-10	A1H0239-29	Solid	08/05/21 18:20	08/06/21 15:30

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Alabama Power-Gaston	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0239 - 09 12 21 0619

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F1-6 (A1H0239-01)				**Matrix: Water**				
Batch: 1080276								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 06:30	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 06:30	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 06:30	EPA 6020B	Q-42, R-04
GAS-SSE-F1-7 (A1H0239-02)				**Matrix: Water**				
Batch: 1080276								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 06:40	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 06:40	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 06:40	EPA 6020B	R-04
GAS-SSE-F1-8 (A1H0239-03)				**Matrix: Water**				
Batch: 1080276								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 06:55	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 06:55	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 06:55	EPA 6020B	Q-06, R-04
GAS-SSE-F1-9 (A1H0239-04)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:09	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:09	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:09	EPA 6020B	A-01, Q-06, Q-42, R-04
GAS-SSE-F1-10 (A1H0239-05)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:19	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:19	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:19	EPA 6020B	A-01, Q-06, R-04
GAS-SSE-F1-11 (A1H0239-06)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:24	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:24	EPA 6020B	R-04

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Alabama Power-Gaston	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0239 - 09 12 21 0619

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F1-11 (A1H0239-06)				**Matrix: Water**				
Lithium	ND	125	250	ug/L	50	08/11/21 21:24	EPA 6020B	A-01, Q-06, R-04
GAS-SSE-F2-6 (A1H0239-07)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
Manganese	**153**	25.0	50.0	ug/L	50	08/11/21 21:29	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:29	EPA 6020B	R-04
GAS-SSE-F2-7 (A1H0239-08)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	37.5	75.0	ug/L	50	08/11/21 21:34	EPA 6020B	Q-42, R-04
Iron	ND	1880	3750	ug/L	50	08/11/21 21:34	EPA 6020B	R-04
Manganese	**170**	37.5	75.0	ug/L	50	08/11/21 21:34	EPA 6020B	
Molybdenum	ND	37.5	75.0	ug/L	50	08/11/21 21:34	EPA 6020B	R-04
Lithium	ND	188	375	ug/L	50	08/11/21 21:34	EPA 6020B	R-04
GAS-SSE-F2-8 (A1H0239-09)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
Manganese	**317**	25.0	50.0	ug/L	50	08/11/21 21:48	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 21:48	EPA 6020B	R-04
GAS-SSE-F2-9 (A1H0239-10)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 22:03	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 22:03	EPA 6020B	R-04
Manganese	**127**	25.0	50.0	ug/L	50	08/11/21 22:03	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 22:03	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 22:03	EPA 6020B	R-04

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F2-10 (A1H0239-11)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
Manganese	**136**	25.0	50.0	ug/L	50	08/11/21 22:08	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 22:08	EPA 6020B	R-04
GAS-SSE-F2-11 (A1H0239-12)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	25.0	50.0	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Manganese	ND	25.0	50.0	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/11/21 22:13	EPA 6020B	R-04
GAS-SSE-F3-6 (A1H0239-13)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.81	5.62	ug/L	5	08/11/21 19:55	EPA 6020B	R-04
Iron	**1480**	141	281	ug/L	5	08/11/21 19:55	EPA 6020B	
Manganese	**2280**	2.81	5.62	ug/L	5	08/11/21 19:55	EPA 6020B	**E**
Molybdenum	ND	2.81	5.62	ug/L	5	08/11/21 19:55	EPA 6020B	R-04
Lithium	ND	14.1	28.1	ug/L	5	08/11/21 19:55	EPA 6020B	R-04
GAS-SSE-F3-7 (A1H0239-14)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 20:00	EPA 6020B	R-04
Iron	**1300**	125	250	ug/L	5	08/11/21 20:00	EPA 6020B	
Manganese	**212**	2.50	5.00	ug/L	5	08/11/21 20:00	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:00	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:00	EPA 6020B	R-04
GAS-SSE-F3-8 (A1H0239-15)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**4.34**	2.50	5.00	ug/L	5	08/11/21 20:11	EPA 6020B	**J, R-04**
Iron	**9130**	125	250	ug/L	5	08/11/21 20:11	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F3-8 (A1H0239-15)				**Matrix: Water**				
Manganese	**755**	2.50	5.00	ug/L	5	08/11/21 20:11	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:11	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:11	EPA 6020B	R-04
GAS-SSE-F3-9 (A1H0239-16)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 20:33	EPA 6020B	R-04
Iron	**702**	125	250	ug/L	5	08/11/21 20:33	EPA 6020B	
Manganese	**150**	2.50	5.00	ug/L	5	08/11/21 20:33	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:33	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:33	EPA 6020B	R-04
GAS-SSE-F3-10 (A1H0239-17)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**2.50**	2.50	5.00	ug/L	5	08/11/21 20:40	EPA 6020B	**J, R-04**
Iron	**1270**	125	250	ug/L	5	08/11/21 20:40	EPA 6020B	
Manganese	**152**	2.50	5.00	ug/L	5	08/11/21 20:40	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:40	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:40	EPA 6020B	R-04
GAS-SSE-F3-11 (A1H0239-18)				**Matrix: Water**				
Batch: 1080287								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
Iron	ND	125	250	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
Manganese	**6.73**	2.50	5.00	ug/L	5	08/11/21 20:45	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:45	EPA 6020B	R-04
GAS-SSE-F4-6 (A1H0239-19)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**4.72**	2.50	5.00	ug/L	5	08/11/21 20:50	EPA 6020B	**J, R-04**
Iron	**5100**	125	250	ug/L	5	08/11/21 20:50	EPA 6020B	
Manganese	**389**	2.50	5.00	ug/L	5	08/11/21 20:50	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 20:50	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 20:50	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F4-7 (A1H0239-20)				**Matrix: Water**				
Batch: 1080287								
Arsenic	**3.38**	2.50	5.00	ug/L	5	08/11/21 21:04	EPA 6020B	**J, R-04**
Iron	**4640**	125	250	ug/L	5	08/11/21 21:04	EPA 6020B	
Manganese	**60.7**	2.50	5.00	ug/L	5	08/11/21 21:04	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 21:04	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 21:04	EPA 6020B	R-04
GAS-SSE-F4-8 (A1H0239-21)				**Matrix: Water**				
Batch: 1080307								
Arsenic	**11.3**	2.50	5.00	ug/L	5	08/11/21 23:26	EPA 6020B	
Iron	**31700**	125	250	ug/L	5	08/11/21 23:26	EPA 6020B	
Manganese	**500**	2.50	5.00	ug/L	5	08/11/21 23:26	EPA 6020B	
Molybdenum	**4.14**	2.50	5.00	ug/L	5	08/11/21 23:26	EPA 6020B	**J, R-04**
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:26	EPA 6020B	R-04
GAS-SSE-F4-9 (A1H0239-22)				**Matrix: Water**				
Batch: 1080307								
Arsenic	**5.86**	2.50	5.00	ug/L	5	08/11/21 23:31	EPA 6020B	
Iron	**3960**	125	250	ug/L	5	08/11/21 23:31	EPA 6020B	
Manganese	**37.7**	2.50	5.00	ug/L	5	08/11/21 23:31	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 23:31	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:31	EPA 6020B	R-04
GAS-SSE-F4-10 (A1H0239-23)				**Matrix: Water**				
Batch: 1080307								
Arsenic	**8.52**	2.50	5.00	ug/L	5	08/11/21 23:36	EPA 6020B	
Iron	**5790**	125	250	ug/L	5	08/11/21 23:36	EPA 6020B	
Manganese	**59.4**	2.50	5.00	ug/L	5	08/11/21 23:36	EPA 6020B	
Molybdenum	**3.17**	2.50	5.00	ug/L	5	08/11/21 23:36	EPA 6020B	**J, R-04**
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:36	EPA 6020B	R-04
GAS-SSE-F4-11 (A1H0239-24)				**Matrix: Water**				
Batch: 1080307								
Arsenic	ND	2.50	5.00	ug/L	5	08/11/21 23:41	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F4-11 (A1H0239-24)				**Matrix: Water**				
Iron	ND	125	250	ug/L	5	08/11/21 23:41	EPA 6020B	R-04
Manganese	**8.07**	2.50	5.00	ug/L	5	08/11/21 23:41	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/11/21 23:41	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/11/21 23:41	EPA 6020B	R-04
GAS-SSE-F5-6 (A1H0239-25)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**5.88**	0.522	1.04	mg/kg	10	08/12/21 00:15	EPA 6020B	
Iron	**15700**	26.1	52.2	mg/kg	10	08/12/21 00:15	EPA 6020B	
Manganese	**128**	0.522	1.04	mg/kg	10	08/12/21 00:15	EPA 6020B	
Molybdenum	**0.942**	0.522	1.04	mg/kg	10	08/12/21 00:15	EPA 6020B	**J**
Lithium	**6.02**	2.61	5.22	mg/kg	10	08/12/21 00:15	EPA 6020B	
GAS-SSE-F5-7 (A1H0239-26)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**3.63**	0.486	0.973	mg/kg	10	08/12/21 00:20	EPA 6020B	
Iron	**10500**	24.3	48.6	mg/kg	10	08/12/21 00:20	EPA 6020B	
Manganese	**26.7**	0.486	0.973	mg/kg	10	08/12/21 00:20	EPA 6020B	
Molybdenum	ND	0.486	0.973	mg/kg	10	08/12/21 00:20	EPA 6020B	
Lithium	ND	2.43	4.86	mg/kg	10	08/12/21 00:20	EPA 6020B	
GAS-SSE-F5-8 (A1H0239-27)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**6.08**	0.490	0.980	mg/kg	10	08/12/21 00:25	EPA 6020B	
Iron	**18200**	24.5	49.0	mg/kg	10	08/12/21 00:25	EPA 6020B	
Manganese	**35.8**	0.490	0.980	mg/kg	10	08/12/21 00:25	EPA 6020B	
Molybdenum	**1.37**	0.490	0.980	mg/kg	10	08/12/21 00:25	EPA 6020B	
Lithium	**4.34**	2.45	4.90	mg/kg	10	08/12/21 00:25	EPA 6020B	**J**
GAS-SSE-F5-9 (A1H0239-28)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**8.33**	0.496	0.992	mg/kg	10	08/12/21 00:30	EPA 6020B	
Iron	**18900**	24.8	49.6	mg/kg	10	08/12/21 00:30	EPA 6020B	
Manganese	**40.7**	0.496	0.992	mg/kg	10	08/12/21 00:30	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GAS-SSE-F5-9 (A1H0239-28)				**Matrix: Solid**				
Molybdenum	**1.85**	0.496	0.992	mg/kg	10	08/12/21 00:30	EPA 6020B	
Lithium	**2.92**	2.48	4.96	mg/kg	10	08/12/21 00:30	EPA 6020B	**J**
GAS-SSE-F5-10 (A1H0239-29)				**Matrix: Solid**				
Batch: 1080310								
Arsenic	**7.76**	0.485	0.971	mg/kg	10	08/12/21 00:35	EPA 6020B	
Iron	**15200**	24.3	48.5	mg/kg	10	08/12/21 00:35	EPA 6020B	
Manganese	**33.8**	0.485	0.971	mg/kg	10	08/12/21 00:35	EPA 6020B	
Molybdenum	**1.22**	0.485	0.971	mg/kg	10	08/12/21 00:35	EPA 6020B	
Lithium	ND	2.43	4.85	mg/kg	10	08/12/21 00:35	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A							**Water**					
Blank (1080276-BLK1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 02:47							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080276-BLK2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:42							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080276-BS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:02							
EPA 6020B												
Arsenic	55.8	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Molybdenum	28.2	0.500	1.00	ug/L	1	27.8	---	101	80-120%	---	---	
LCS (1080276-BS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 04:57							
EPA 6020B												
Lithium	43.8	2.50	5.00	ug/L	1	44.4	---	99	80-120%	---	---	
Duplicate (1080276-DUP1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:12							
QC Source Sample: Non-SDG (A1H0131-01)												
Arsenic	**0.591**	0.500	1.00	ug/L	1	---	0.570	---	---	4	20%	J
Molybdenum	**3.47**	0.500	1.00	ug/L	1	---	3.49	---	---	0.4	20%	
Duplicate (1080276-DUP2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 05:06							
QC Source Sample: Non-SDG (A1H0131-01)												
Lithium	ND	12.5	25.0	ug/L	5	---	ND	---	---	---	20%	R-04
Matrix Spike (1080276-MS1)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 03:17							
QC Source Sample: Non-SDG (A1H0131-01)												
EPA 6020B												
Arsenic	56.7	0.500	1.00	ug/L	1	55.6	0.570	101	75-125%	---	---	
Molybdenum	32.3	0.500	1.00	ug/L	1	27.8	3.49	104	75-125%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080276 - EPA 3015A									**Water**			
Matrix Spike (1080276-MS2)			Prepared: 08/10/21 09:02		Analyzed: 08/11/21 06:35							
QC Source Sample: GAS-SSE-F1-6 (A1H0239-01)												
EPA 6020B												
Lithium	ND	125	250	ug/L	50	44.4	ND		**75-125%**	---	---	Q-11, R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080287 - EPA 3015A							**Water**					
Blank (1080287-BLK1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 19:40							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080287-BS1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 19:45							
EPA 6020B												
Arsenic	54.7	0.500	1.00	ug/L	1	55.6	---	99	80-120%	---	---	
Iron	2780	25.0	50.0	ug/L	1	2780	---	100	80-120%	---	---	
Manganese	54.0	0.500	1.00	ug/L	1	55.6	---	97	80-120%	---	---	
Molybdenum	26.6	0.500	1.00	ug/L	1	27.8	---	96	80-120%	---	---	
LCS (1080287-BS2)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 19:50							
EPA 6020B												
Lithium	42.0	2.50	5.00	ug/L	1	44.4	---	95	80-120%	---	---	
Duplicate (1080287-DUP1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:39							
QC Source Sample: GAS-SSE-F2-7 (A1H0239-08)												
EPA 6020B												
Arsenic	ND	37.5	75.0	ug/L	50	---	ND	---	---	---	20%	R-04
Iron	ND	1880	3750	ug/L	50	---	ND	---	---	---	20%	R-04
Manganese	**177**	37.5	75.0	ug/L	50	---	170	---	---	5	20%	
Molybdenum	ND	37.5	75.0	ug/L	50	---	ND	---	---	---	20%	R-04
Lithium	ND	188	375	ug/L	50	---	ND	---	---	---	20%	R-04
Matrix Spike (1080287-MS1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:44							
QC Source Sample: GAS-SSE-F2-7 (A1H0239-08)												
EPA 6020B												
Arsenic	105	37.5	75.0	ug/L	50	83.3	ND	**126**	**75-125%**	---	---	Q-11, Q-11, R-04
Iron	4950	1880	3750	ug/L	50	4170	ND	119	75-125%	---	---	R-04
Manganese	243	37.5	75.0	ug/L	50	83.3	170	88	75-125%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080287 - EPA 3015A							**Water**					
Matrix Spike (1080287-MS1)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:44							
QC Source Sample: GAS-SSE-F2-7 (A1H0239-08)												
Molybdenum	42.0	37.5	75.0	ug/L	50	41.7	ND	101	75-125%	---	---	J, R-04
Matrix Spike (1080287-MS2)			Prepared: 08/10/21 15:52		Analyzed: 08/11/21 21:14							
QC Source Sample: GAS-SSE-F1-9 (A1H0239-04)												
EPA 6020B												
Lithium	ND	125	250	ug/L	50	44.4	ND		**75-125%**	---	---	A-01, Q-06, Q-11, Q-11, R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080307 - EPA 3015A								**Water**				
Blank (1080307-BLK1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:03							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080307-BLK2)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:07							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080307-BS1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:08							
EPA 6020B												
Arsenic	55.6	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Iron	2700	25.0	50.0	ug/L	1	2780	---	97	80-120%	---	---	
Manganese	54.6	0.500	1.00	ug/L	1	55.6	---	98	80-120%	---	---	
Molybdenum	28.1	0.500	1.00	ug/L	1	27.8	---	101	80-120%	---	---	
LCS (1080307-BS2)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:12							
EPA 6020B												
Lithium	43.8	2.50	5.00	ug/L	1	44.4	---	99	80-120%	---	---	
Duplicate (1080307-DUP1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:33							
QC Source Sample: Non-SDG (A1H0238-05)												
Arsenic	**19.7**	0.500	1.00	ug/L	1	---	18.7	---	---	5	20%	
Molybdenum	**5.72**	0.500	1.00	ug/L	1	---	4.91	---	---	15	20%	
Duplicate (1080307-DUP2)			Prepared: 08/10/21 13:34		Analyzed: 08/13/21 04:42							
QC Source Sample: Non-SDG (A1H0238-05RE1)												
Iron	**326000**	1250	2500	ug/L	50	---	361000	---	---	10	20%	Q-16
Manganese	**9530**	25.0	50.0	ug/L	50	---	9730	---	---	2	20%	Q-16
Duplicate (1080307-DUP3)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:21							
QC Source Sample: Non-SDG (A1H0238-05)												

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: Alabama Power-Gaston	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	Report ID:
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0239 - 09 12 21 0619

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080307 - EPA 3015A									Water			
Duplicate (1080307-DUP3)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:21							
QC Source Sample: Non-SDG (A1H0238-05)												
Lithium	**32.1**	12.5	25.0	ug/L	5	---	35.3	---	---	10	20%	
Matrix Spike (1080307-MS1)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 20:38							
QC Source Sample: Non-SDG (A1H0238-05)												
EPA 6020B												
Arsenic	59.6	0.500	1.00	ug/L	1	55.6	18.7	**74**	**75-125%**	---	---	Q-04
Molybdenum	20.0	0.500	1.00	ug/L	1	27.8	4.91	**54**	**75-125%**	---	---	Q-04
Matrix Spike (1080307-MS2)			Prepared: 08/10/21 13:34		Analyzed: 08/11/21 23:46							
QC Source Sample: GAS-SSE-F4-11 (A1H0239-24)												
EPA 6020B												
Lithium	46.8	12.5	25.0	ug/L	5	44.4	ND	105	75-125%	---	---	
Matrix Spike (1080307-MS3)			Prepared: 08/10/21 13:34		Analyzed: 08/13/21 04:47							
QC Source Sample: Non-SDG (A1H0238-05RE1)												
EPA 6020B												
Iron	338000	1250	2500	ug/L	50	2780	361000	**-820**	**75-125%**	---	---	Q-03, Q-16
Manganese	9810	25.0	50.0	ug/L	50	55.6	9730	**137**	**75-125%**	---	---	Q-03, Q-16

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080310 - EPA 3051A							**Solid**					
Blank (1080310-BLK1)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 11:34									
EPA 6020B												
Arsenic	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Iron	ND	24.0	48.1	mg/kg	10	---	---	---	---	---	---	
Manganese	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Molybdenum	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Blank (1080310-BLK2)			Prepared: 08/10/21 15:08 Analyzed: 08/12/21 00:06									
EPA 6020B												
Lithium	ND	2.40	4.81	mg/kg	10	---	---	---	---	---	---	
LCS (1080310-BS1)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 11:39									
EPA 6020B												
Arsenic	49.6	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Iron	2460	25.0	50.0	mg/kg	10	2500	---	98	80-120%	---	---	
Manganese	49.3	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Molybdenum	24.8	0.500	1.00	mg/kg	10	25.0	---	99	80-120%	---	---	
LCS (1080310-BS2)			Prepared: 08/10/21 15:08 Analyzed: 08/12/21 00:11									
EPA 6020B												
Lithium	39.8	2.50	5.00	mg/kg	10	40.0	---	99	80-120%	---	---	
Duplicate (1080310-DUP1)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 11:50									
QC Source Sample: Non-SDG (A1H0260-01)												
Arsenic	**353**	1.08	2.15	mg/kg	20	---	306	---	---	14	20%	
Manganese	**154**	1.08	2.15	mg/kg	20	---	213	---	---	**32**	**20%**	Q-04
Duplicate (1080310-DUP2)			Prepared: 08/10/21 15:08 Analyzed: 08/11/21 17:53									
QC Source Sample: Non-SDG (A1H0260-01RE1)												
Iron	**177000**	538	1080	mg/kg	200	---	196000	---	---	10	20%	Q-16
Molybdenum	**988**	10.8	21.5	mg/kg	200	---	813	---	---	19	20%	Q-16
Duplicate (1080310-DUP3)			Prepared: 08/10/21 15:08 Analyzed: 08/12/21 00:45									
QC Source Sample: Non-SDG (A1H0260-01)												

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080310 - EPA 3051A							**Solid**					
Duplicate (1080310-DUP3)			Prepared: 08/10/21 15:08		Analyzed: 08/12/21 00:45							
QC Source Sample: Non-SDG (A1H0260-01)												
Lithium	ND	13.4	26.9	mg/kg	50	---	ND	---	---	---	20%	
Matrix Spike (1080310-MS1)			Prepared: 08/10/21 15:08		Analyzed: 08/11/21 11:55							
QC Source Sample: Non-SDG (A1H0260-01)												
EPA 6020B												
Arsenic	315	1.06	2.13	mg/kg	20	53.2	306	**17**	**75-125%**	---	---	Q-03, Q-04
Manganese	256	1.06	2.13	mg/kg	20	53.2	213	81	75-125%	---	---	
Matrix Spike (1080310-MS2)			Prepared: 08/10/21 15:08		Analyzed: 08/12/21 01:00							
QC Source Sample: Non-SDG (A1H0260-01)												
EPA 6020B												
Lithium	46.0	12.6	25.2	mg/kg	50	40.3	ND	114	75-125%	---	---	
Matrix Spike (1080310-MS3)			Prepared: 08/10/21 15:08		Analyzed: 08/11/21 17:58							
QC Source Sample: Non-SDG (A1H0260-01RE1)												
EPA 6020B												
Iron	165000	532	1060	mg/kg	200	2660	196000	**-1160**	**75-125%**	---	---	Q-03, Q-16
Molybdenum	701	10.6	21.3	mg/kg	200	26.6	813	**-424**	**75-125%**	---	---	Q-03, Q-16

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080276							
A1H0239-01	Water	EPA 6020B	08/03/21 08:40	08/10/21 09:02	45mL/50mL	45mL/50mL	1.00
A1H0239-02	Water	EPA 6020B	08/03/21 08:45	08/10/21 09:02	45mL/50mL	45mL/50mL	1.00
A1H0239-03	Water	EPA 6020B	08/03/21 08:50	08/10/21 09:02	45mL/50mL	45mL/50mL	1.00
Batch: 1080287							
A1H0239-04	Water	EPA 6020B	08/03/21 08:55	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-05	Water	EPA 6020B	08/03/21 09:00	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-06	Water	EPA 6020B	08/03/21 09:05	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-07	Water	EPA 6020B	08/04/21 16:55	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-08	Water	EPA 6020B	08/04/21 17:00	08/10/21 15:51	30mL/50mL	45mL/50mL	1.50
A1H0239-09	Water	EPA 6020B	08/04/21 17:05	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-10	Water	EPA 6020B	08/04/21 17:10	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-11	Water	EPA 6020B	08/04/21 17:15	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-12	Water	EPA 6020B	08/04/21 17:20	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-13	Water	EPA 6020B	08/05/21 16:40	08/10/21 15:51	40mL/50mL	45mL/50mL	1.13
A1H0239-14	Water	EPA 6020B	08/05/21 16:45	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-15	Water	EPA 6020B	08/05/21 16:50	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-16	Water	EPA 6020B	08/05/21 16:55	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-17	Water	EPA 6020B	08/05/21 17:00	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-18	Water	EPA 6020B	08/05/21 17:05	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-19	Water	EPA 6020B	08/06/21 10:40	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
A1H0239-20	Water	EPA 6020B	08/06/21 10:45	08/10/21 15:51	45mL/50mL	45mL/50mL	1.00
Batch: 1080307							
A1H0239-21	Water	EPA 6020B	08/06/21 10:50	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00
A1H0239-22	Water	EPA 6020B	08/06/21 10:55	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00
A1H0239-23	Water	EPA 6020B	08/06/21 11:00	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00
A1H0239-24	Water	EPA 6020B	08/06/21 11:05	08/10/21 13:34	45mL/50mL	45mL/50mL	1.00

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080310							
A1H0239-25	Solid	EPA 6020B	08/05/21 18:00	08/10/21 15:08	0.479g/50mL	0.5g/50mL	1.04
A1H0239-26	Solid	EPA 6020B	08/05/21 18:05	08/10/21 15:08	0.514g/50mL	0.5g/50mL	0.97
A1H0239-27	Solid	EPA 6020B	08/05/21 18:10	08/10/21 15:08	0.51g/50mL	0.5g/50mL	0.98
A1H0239-28	Solid	EPA 6020B	08/05/21 18:15	08/10/21 15:08	0.504g/50mL	0.5g/50mL	0.99
A1H0239-29	Solid	EPA 6020B	08/05/21 18:20	08/10/21 15:08	0.515g/50mL	0.5g/50mL	0.97

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

A-01	Results do not meet EPA 6020B and/or Apex SOP criteria. Results reported for research per client request.
E	Estimated Value. The result is above the calibration range of the instrument.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-06	Internal Standard area outside of method specified limits. Data is Not Reported. See previous or subsequent runs for reportable sample data.
Q-11	Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
Q-16	Reanalysis of an original Batch QC sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

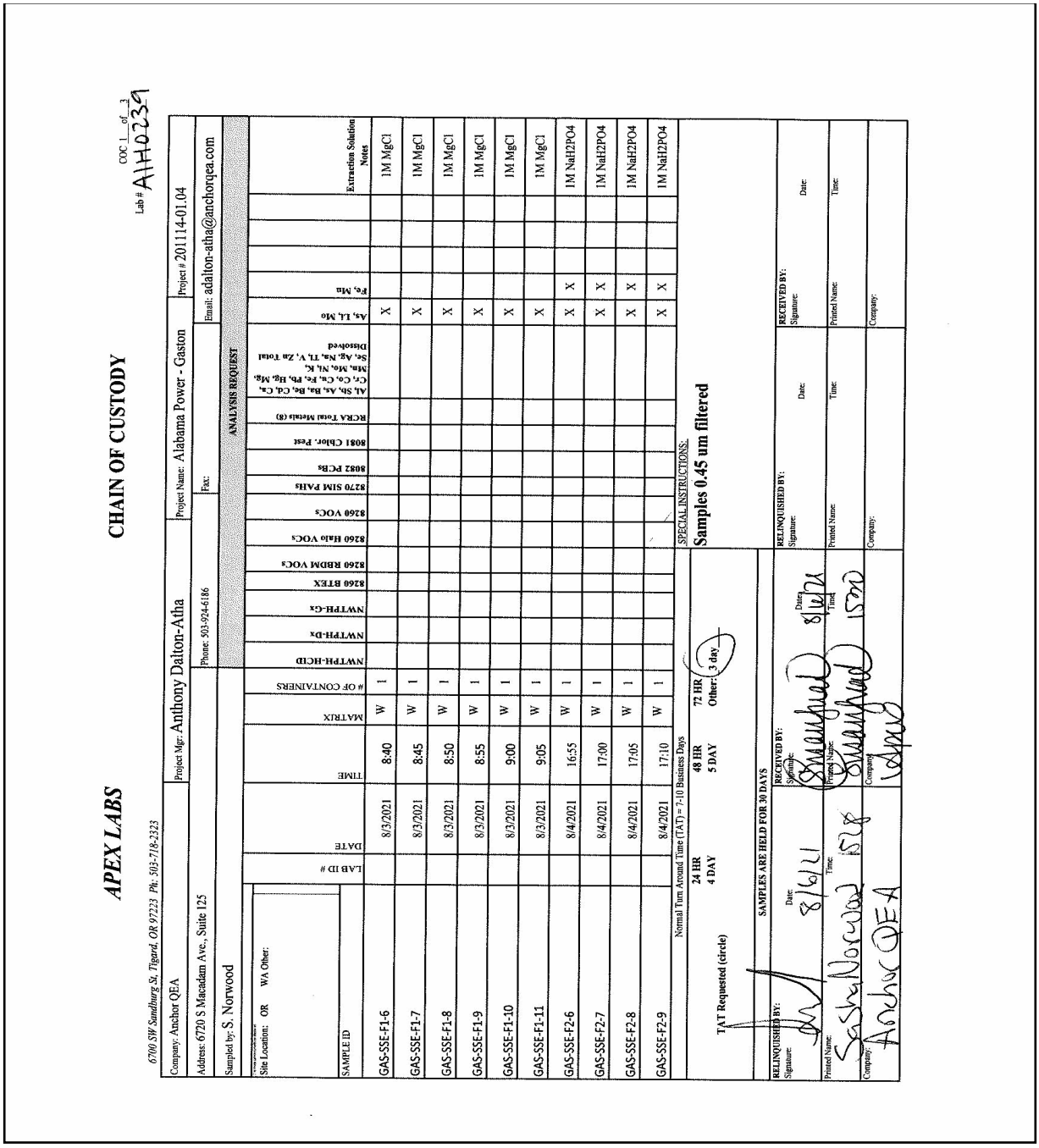
Apex Laboratories

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**



APEX LABS
6700 SW Sandburg St. Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

COC 1 of 3
Lab # A1H0239

Company: Anchor QEA | Project Mgr: Anthony Dalton-Atha | Project Name: Alabama Power - Gaston | Project # 201114-01.04
Address: 6720 S Macadam Ave., Suite 125 | Phone: 503-924-6186 | Fax: | Email: adalton-atha@anchorqea.com
Sampled by: S. Norwood

Site Location: OR WA Other:

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Total Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn Total	Dissolved As, Li, Mo	Fe, Mn	Extraction Solution Notes
GAS-SSE-F1-6		8/3/2021	8:40	W	1													X		1M MgCl
GAS-SSE-F1-7		8/3/2021	8:45	W	1													X		1M MgCl
GAS-SSE-F1-8		8/3/2021	8:50	W	1													X		1M MgCl
GAS-SSE-F1-9		8/3/2021	8:55	W	1													X		1M MgCl
GAS-SSE-F1-10		8/3/2021	9:00	W	1													X		1M MgCl
GAS-SSE-F1-11		8/3/2021	9:05	W	1													X		1M MgCl
GAS-SSE-F2-6		8/4/2021	16:55	W	1													X	X	1M NaH2PO4
GAS-SSE-F2-7		8/4/2021	17:00	W	1													X	X	1M NaH2PO4
GAS-SSE-F2-8		8/4/2021	17:05	W	1													X	X	1M NaH2PO4
GAS-SSE-F2-9		8/4/2021	17:10	W	1													X	X	1M NaH2PO4

Normal Turn Around Time (TAT) = 7-10 Business Days
24 HR 48 HR 72 HR
4 DAY 5 DAY Other: (3 day)
TAT Requested (circle)

SPECIAL INSTRUCTIONS:
Samples 0.45 um filtered

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 8/6/21 Time: 1520 Printed Name: Company: Anchor QEA
RECEIVED BY: Signature: Date: 8/6/21 Time: 1520 Printed Name: Company:
RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:
RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

Project: **Alabama Power-Gaston**
Project Number: **201114-01.04**
Project Manager: **Anthony Dalton-Atha**

Report ID:
A1H0239 - 09 12 21 0619

APEX LABS — CHAIN OF CUSTODY

COC 2 of 3
Lab # A1H0239

6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323

Company: Anchor QEA | Project Mgr: Anthony Dalton-Atha | Project Name: Alabama Power - Gaston | Project # 201114-01.04

Address: 6720 S Macadam Ave., Suite 125 | Phone: 503-924-6186 | Fax: | Email: adalton-atha@anchorqea.com

Sampled by: S. Norwood

Site Location: OR WA Other:

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Total Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn Total Dissolved	As, Li, Mo	Fe, Mn				Extraction Solution Notes
GAS-SSE-F2-10		8/4/2021	17:15	W	1													X	X				1M NaH2PO4
GAS-SSE-F2-11		8/4/2021	17:20	W	1													X	X				1M NaH2PO4
GAS-SSE-F3-6		8/5/2021	16:40	W	1													X	X				0.1M H3NO
GAS-SSE-F3-7		8/5/2021	16:45	W	1													X	X				0.1M H3NO
GAS-SSE-F3-8		8/5/2021	16:50	W	1													X	X				0.1M H3NO
GAS-SSE-F3-9		8/5/2021	16:55	W	1													X	X				0.1M H3NO
GAS-SSE-F3-10		8/5/2021	17:00	W	1													X	X				0.1M H3NO
GAS-SSE-F3-11		8/5/2021	17:05	W	1													X	X				0.1M H3NO
GAS-SSE-F4-6		8/6/2021	10:40	W	1													X	X				16N nitric acid
GAS-SSE-F4-7		8/6/2021	10:45	W	1													X	X				16N nitric acid

Normal Turn Around Time (TAT) = 7-10 Business Days

TAT Requested (circle): 24 HR / 4 DAY — 48 HR / 5 DAY — 72 HR / Other: 3 day (circled)

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:
Samples 0.45 um filtered

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 8/6/21	Signature: [signature] Date: 8/6/21	Signature: Date:	Signature: Date:
Printed Name: Sasha Norwood Time: 1518	Printed Name: Swanewat Time: 1530	Printed Name: Time:	Printed Name: Time:
Company: Anchor QEA	Company: Apex	Company:	Company:

ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

APEX LABS

CHAIN OF CUSTODY

COC 3 of 3
Lab # A1H0239

6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323

Company: Anchor QEA | Project Mgr: Anthony Dalton-Atha | Project Name: Alabama Power - Gaston | Project # 201114-01.04

Address: 6720 S Macadam Ave., Suite 125 | Phone: 503-924-6186 | Fax: | Email: adalton-atha@anchorqea.com

Sampled by: S. Norwood

Site Location: OR WA Other:

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Total Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn Total Dissolved	As, Li, Mo	Fe, Mn				Extraction Solution Notes
GAS-SSE-F4-8		8/6/2021	10:50	W	1													X	X				16N nitric acid
GAS-SSE-F4-9		8/6/2021	10:55	W	1													X	X				16N nitric acid
GAS-SSE-F4-10		8/6/2021	11:00	W	1													X	X				16N nitric acid
GAS-SSE-F4-11		8/6/2021	11:05	W	1													X	X				16N nitric acid
GAS-SSE-F5-6		8/5/2021	18:00	Soil	1													X	X				
GAS-SSE-F5-7		8/5/2021	18:05	Soil	1													X	X				
GAS-SSE-F5-8		8/5/2021	18:10	Soil	1													X	X				
GAS-SSE-F5-9		8/5/2021	18:15	Soil	1													X	X				
GAS-SSE-F5-10		8/5/2021	18:20	Soil	1													X	X				
~~GAS-SSE-F5-11~~		~~8/5/2021~~	~~18:25~~	~~Soil~~	~~1~~													~~X~~	~~X~~				

Normal Turn Around Time (TAT) = 7-10 Business Days

TAT Requested (circle): 24 HR | 48 HR | 72 HR | 4 DAY | 5 DAY | Other: 3 day (circled)

SPECIAL INSTRUCTIONS:
F4 samples 0.45 um filtered

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 8/6/21	Signature: [signature] Date: 8/6/21	Signature: Date:	Signature: Date:
Printed Name: Sasha Norwood Time: 1518	Printed Name: Susan Lenet Time: 1530	Printed Name: Time:	Printed Name: Time:
Company: Anchor QEA	Company: Apex	Company:	Company:

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

WO# A1H0239

COC/Container Discrepancies

COC Reads			Container Reads/Comments
GAS-SSE-F5-6	-	18:00	17:55
GAS-SSE-F5-7	-	18:05	18:00
GAS-SSE-F5-8	-	18:10	18:05
GAS-SSE-F5-9	-	18:15	HAS 9/9/21 ~~18:15~~ 18:10
GAS-SSE-F5-10	-	18:20	18:15

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0239 - 09 12 21 0619**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A1 H0239

Project/Project #: Alabama Power - Gaston / 201114-01.04

Delivery Info:

Date/time received: 8/6/21 @ 1530 By: SO

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 8/6/21 @ 1535 By: SO

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.5						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	real						
Condition:	good						

Cooler out of temp? (Y/(N)) Possible reason why: ___

Green dots applied to out of temperature samples? Yes/(No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 8/9/21 @ 1358 By: HAS

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: see container discrepancies form.

COC/container discrepancies form initiated? Yes X No ___

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments ___

Water samples: pH checked: Yes ___ No ___ NA X pH appropriate? Yes ___ No ___ NA X

Comments: ___

Additional information: ___

Labeled by: HAS Witness: AB Cooler Inspected by: HAS

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Sunday, September 12, 2021

Anthony Dalton-Atha
Anchor QEA, LLC
6720 SW Macadam Ave. Suite 125
Portland, OR 97219

RE: A1H0483 - Alabama Power-Gaston - 201114-01.04

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A1H0483, which was received by the laboratory on 8/16/2021 at 12:36:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	2.1 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GN-AP-SSE-F1-1-20210809	A1H0483-01	Water	08/09/21 09:00	08/16/21 12:36
GN-AP-SSE-F1-2-20210809	A1H0483-02	Water	08/09/21 09:05	08/16/21 12:36
GN-AP-SSE-F1-3-20210809	A1H0483-03	Water	08/09/21 09:10	08/16/21 12:36
GN-AP-SSE-F1-4-20210809	A1H0483-04	Water	08/09/21 09:15	08/16/21 12:36
GN-AP-SSE-F2-1-20210810	A1H0483-05	Water	08/10/21 09:00	08/16/21 12:36
GN-AP-SSE-F2-2-20210810	A1H0483-06	Water	08/10/21 09:05	08/16/21 12:36
GN-AP-SSE-F2-3-20210810	A1H0483-07	Water	08/10/21 09:10	08/16/21 12:36
GN-AP-SSE-F2-4-20210810	A1H0483-08	Water	08/10/21 09:15	08/16/21 12:36
GN-AP-SSE-F3-1-20210812	A1H0483-09	Water	08/12/21 09:00	08/16/21 12:36
GN-AP-SSE-F3-2-20210812	A1H0483-10	Water	08/12/21 09:05	08/16/21 12:36
GN-AP-SSE-F3-3-20210812	A1H0483-11	Water	08/12/21 09:10	08/16/21 12:36
GN-AP-SSE-F3-4-20210812	A1H0483-12	Water	08/12/21 09:15	08/16/21 12:36
GN-AP-SSE-F4-1-20210813	A1H0483-13	Water	08/13/21 09:00	08/16/21 12:36
GN-AP-SSE-F4-2-20210813	A1H0483-14	Water	08/13/21 09:05	08/16/21 12:36
GN-AP-SSE-F4-3-20210813	A1H0483-15	Water	08/13/21 09:10	08/16/21 12:36
GN-AP-SSE-F4-4-20210813	A1H0483-16	Water	08/13/21 09:15	08/16/21 12:36
GN-AP-SSE-F5-2-20210816	A1H0483-17	Solid	08/09/21 09:05	08/16/21 12:36
GN-AP-SSE-F5-3-20210816	A1H0483-18	Solid	08/09/21 09:10	08/16/21 12:36
GN-AP-SSE-F5-4-20210816	A1H0483-19	Solid	08/09/21 09:15	08/16/21 12:36

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F1-1-20210809 (A1H0483-01)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 01:47	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 01:47	EPA 6020B	A-01a, Q-06, R-04
Lithium	ND	125	250	ug/L	50	08/19/21 01:47	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F1-2-20210809 (A1H0483-02)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 01:52	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	**56.1**	25.0	50.0	ug/L	50	08/19/21 01:52	EPA 6020B	**A-01a, Q-06**
Lithium	ND	125	250	ug/L	50	08/19/21 01:52	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F1-3-20210809 (A1H0483-03)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 01:57	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 01:57	EPA 6020B	A-01a, Q-06, R-04
Lithium	ND	125	250	ug/L	50	08/19/21 01:57	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F1-4-20210809 (A1H0483-04)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 02:02	EPA 6020B	A-01a, Q-06, R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:02	EPA 6020B	A-01a, Q-06, R-04
Lithium	ND	125	250	ug/L	50	08/19/21 02:02	EPA 6020B	A-01a, Q-06, R-04
GN-AP-SSE-F2-1-20210810 (A1H0483-05)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	25.0	50.0	ug/L	50	08/19/21 02:07	EPA 6020B	R-04
Iron	ND	1250	2500	ug/L	50	08/19/21 02:07	EPA 6020B	R-04
Manganese	ND	25.0	50.0	ug/L	50	08/19/21 02:07	EPA 6020B	R-04
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:07	EPA 6020B	R-04

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F2-1-20210810 (A1H0483-05)				**Matrix: Water**				
Lithium	ND	125	250	ug/L	50	08/19/21 02:07	EPA 6020B	A-01a, R-04
GN-AP-SSE-F2-2-20210810 (A1H0483-06)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**34.7**	25.0	50.0	ug/L	50	08/19/21 02:22	EPA 6020B	**J, R-04**
Iron	ND	1250	2500	ug/L	50	08/19/21 02:22	EPA 6020B	R-04
Manganese	**65.5**	25.0	50.0	ug/L	50	08/19/21 02:22	EPA 6020B	
Molybdenum	**27.4**	25.0	50.0	ug/L	50	08/19/21 02:22	EPA 6020B	**J, R-04**
Lithium	ND	125	250	ug/L	50	08/19/21 02:22	EPA 6020B	R-04
GN-AP-SSE-F2-3-20210810 (A1H0483-07)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**99.8**	25.0	50.0	ug/L	50	08/19/21 02:26	EPA 6020B	
Iron	ND	1250	2500	ug/L	50	08/19/21 02:26	EPA 6020B	R-04
Manganese	**268**	25.0	50.0	ug/L	50	08/19/21 02:26	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:26	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/19/21 02:26	EPA 6020B	R-04
GN-AP-SSE-F2-4-20210810 (A1H0483-08)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**124**	25.0	50.0	ug/L	50	08/19/21 02:31	EPA 6020B	
Iron	ND	1250	2500	ug/L	50	08/19/21 02:31	EPA 6020B	R-04
Manganese	**271**	25.0	50.0	ug/L	50	08/19/21 02:31	EPA 6020B	
Molybdenum	ND	25.0	50.0	ug/L	50	08/19/21 02:31	EPA 6020B	R-04
Lithium	ND	125	250	ug/L	50	08/19/21 02:31	EPA 6020B	R-04
GN-AP-SSE-F3-1-20210812 (A1H0483-09)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	2.50	5.00	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Iron	ND	125	250	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Manganese	ND	2.50	5.00	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:38	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:38	EPA 6020B	A-01a, R-04
GN-AP-SSE-F3-2-20210812 (A1H0483-10)				**Matrix: Water**				

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F3-2-20210812 (A1H0483-10)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	2.50	5.00	ug/L	5	08/19/21 00:43	EPA 6020B	R-04
Iron	**1440**	125	250	ug/L	5	08/19/21 00:43	EPA 6020B	
Manganese	**1020**	2.50	5.00	ug/L	5	08/19/21 00:43	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:43	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:43	EPA 6020B	A-01a, R-04
GN-AP-SSE-F3-3-20210812 (A1H0483-11)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**3.91**	2.50	5.00	ug/L	5	08/19/21 00:48	EPA 6020B	**J, R-04**
Iron	**1800**	125	250	ug/L	5	08/19/21 00:48	EPA 6020B	
Manganese	**783**	2.50	5.00	ug/L	5	08/19/21 00:48	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:48	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:48	EPA 6020B	A-01a, R-04
GN-AP-SSE-F3-4-20210812 (A1H0483-12)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**4.22**	2.50	5.00	ug/L	5	08/19/21 00:53	EPA 6020B	**J, R-04**
Iron	**1870**	125	250	ug/L	5	08/19/21 00:53	EPA 6020B	
Manganese	**778**	2.50	5.00	ug/L	5	08/19/21 00:53	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:53	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:53	EPA 6020B	A-01a, R-04
GN-AP-SSE-F4-1-20210813 (A1H0483-13)				**Matrix: Water**				
Batch: 1080544								
Arsenic	ND	2.50	5.00	ug/L	5	08/19/21 00:58	EPA 6020B	R-04
Iron	**173**	125	250	ug/L	5	08/19/21 00:58	EPA 6020B	**J, R-04**
Manganese	**11.8**	2.50	5.00	ug/L	5	08/19/21 00:58	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 00:58	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 00:58	EPA 6020B	A-01a, R-04
GN-AP-SSE-F4-2-20210813 (A1H0483-14)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**4.53**	2.50	5.00	ug/L	5	08/19/21 01:03	EPA 6020B	**J, R-04**
Iron	**18500**	125	250	ug/L	5	08/19/21 01:03	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F4-2-20210813 (A1H0483-14)				**Matrix: Water**				
Manganese	**638**	2.50	5.00	ug/L	5	08/19/21 01:03	EPA 6020B	
Molybdenum	**5.62**	2.50	5.00	ug/L	5	08/19/21 01:03	EPA 6020B	
Lithium	**21.9**	12.5	25.0	ug/L	5	08/19/21 01:03	EPA 6020B	**J, A-01a, R-04**
GN-AP-SSE-F4-3-20210813 (A1H0483-15)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**8.26**	2.50	5.00	ug/L	5	08/19/21 01:08	EPA 6020B	
Iron	**9390**	125	250	ug/L	5	08/19/21 01:08	EPA 6020B	
Manganese	**180**	2.50	5.00	ug/L	5	08/19/21 01:08	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 01:08	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 01:08	EPA 6020B	A-01a, R-04
GN-AP-SSE-F4-4-20210813 (A1H0483-16)				**Matrix: Water**				
Batch: 1080544								
Arsenic	**10.0**	2.50	5.00	ug/L	5	08/19/21 01:22	EPA 6020B	
Iron	**11000**	125	250	ug/L	5	08/19/21 01:22	EPA 6020B	
Manganese	**229**	2.50	5.00	ug/L	5	08/19/21 01:22	EPA 6020B	
Molybdenum	ND	2.50	5.00	ug/L	5	08/19/21 01:22	EPA 6020B	R-04
Lithium	ND	12.5	25.0	ug/L	5	08/19/21 01:22	EPA 6020B	A-01a, Q-42, R-04
GN-AP-SSE-F5-2-20210816 (A1H0483-17)				**Matrix: Solid**				
Batch: 1080542								
Arsenic	**0.915**	0.498	0.996	mg/kg	10	08/18/21 20:58	EPA 6020B	**J**
Iron	**8030**	24.9	49.8	mg/kg	10	08/18/21 20:58	EPA 6020B	
Manganese	**33.9**	0.498	0.996	mg/kg	10	08/18/21 20:58	EPA 6020B	
Molybdenum	**0.927**	0.498	0.996	mg/kg	10	08/18/21 20:58	EPA 6020B	**J**
Lithium	**4.14**	2.49	4.98	mg/kg	10	08/18/21 20:58	EPA 6020B	**J**
GN-AP-SSE-F5-3-20210816 (A1H0483-18)				**Matrix: Solid**				
Batch: 1080542								
Arsenic	**1.80**	0.493	0.986	mg/kg	10	08/18/21 21:05	EPA 6020B	
Iron	**3940**	24.7	49.3	mg/kg	10	08/18/21 21:05	EPA 6020B	
Manganese	**15.3**	0.493	0.986	mg/kg	10	08/18/21 21:05	EPA 6020B	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GN-AP-SSE-F5-3-20210816 (A1H0483-18)				**Matrix: Solid**				
Molybdenum	ND	0.493	0.986	mg/kg	10	08/18/21 21:05	EPA 6020B	
Lithium	**4.44**	2.47	4.93	mg/kg	10	08/18/21 21:05	EPA 6020B	**J**
GN-AP-SSE-F5-4-20210816 (A1H0483-19)				**Matrix: Solid**				
Batch: 1080542								
Arsenic	**1.66**	0.483	0.965	mg/kg	10	08/18/21 21:11	EPA 6020B	
Iron	**3970**	24.1	48.3	mg/kg	10	08/18/21 21:11	EPA 6020B	
Manganese	**15.1**	0.483	0.965	mg/kg	10	08/18/21 21:11	EPA 6020B	
Molybdenum	ND	0.483	0.965	mg/kg	10	08/18/21 21:11	EPA 6020B	
Lithium	**4.75**	2.41	4.83	mg/kg	10	08/18/21 21:11	EPA 6020B	**J**

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080542 - EPA 3051A							**Solid**					
Blank (1080542-BLK1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 18:39									
EPA 6020B												
Arsenic	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Iron	ND	24.0	48.1	mg/kg	10	---	---	---	---	---	---	
Manganese	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Molybdenum	ND	0.481	0.962	mg/kg	10	---	---	---	---	---	---	
Blank (1080542-BLK2)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 20:33									
EPA 6020B												
Lithium	ND	2.40	4.81	mg/kg	10	---	---	---	---	---	---	
LCS (1080542-BS1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 18:44									
EPA 6020B												
Arsenic	49.3	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Iron	2540	25.0	50.0	mg/kg	10	2500	---	102	80-120%	---	---	
Manganese	49.5	0.500	1.00	mg/kg	10	50.0	---	99	80-120%	---	---	
Molybdenum	24.8	0.500	1.00	mg/kg	10	25.0	---	99	80-120%	---	---	
LCS (1080542-BS2)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 20:38									
EPA 6020B												
Lithium	39.3	2.50	5.00	mg/kg	10	40.0	---	98	80-120%	---	---	
Duplicate (1080542-DUP1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 19:04									
QC Source Sample: Non-SDG (A1H0342-04)												
Arsenic	ND	0.531	1.06	mg/kg	10	---	ND	---	---	---	20%	
Iron	**1820**	26.5	53.1	mg/kg	10	---	1770	---	---	3	20%	
Manganese	**35.8**	0.531	1.06	mg/kg	10	---	35.7	---	---	0.2	20%	
Molybdenum	**0.662**	0.531	1.06	mg/kg	10	---	0.694	---	---	5	20%	J
Duplicate (1080542-DUP2)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 20:48									
QC Source Sample: Non-SDG (A1H0342-04)												
Lithium	ND	2.65	5.31	mg/kg	10	---	ND	---	---	---	20%	
Matrix Spike (1080542-MS1)			Prepared: 08/17/21 08:47 Analyzed: 08/18/21 19:09									

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080542 - EPA 3051A							**Solid**					
Matrix Spike (1080542-MS1)			Prepared: 08/17/21 08:47		Analyzed: 08/18/21 19:09							
QC Source Sample: Non-SDG (A1H0342-04)												
EPA 6020B												
Arsenic	49.0	0.490	0.980	mg/kg	10	49.0	ND	100	75-125%	---	---	
Iron	4320	24.5	49.0	mg/kg	10	2450	1770	104	75-125%	---	---	
Manganese	84.5	0.490	0.980	mg/kg	10	49.0	35.7	100	75-125%	---	---	
Molybdenum	25.2	0.490	0.980	mg/kg	10	24.5	0.694	100	75-125%	---	---	
Matrix Spike (1080542-MS2)			Prepared: 08/17/21 08:47		Analyzed: 08/18/21 20:53							
QC Source Sample: Non-SDG (A1H0342-04)												
EPA 6020B												
Lithium	41.6	2.68	5.35	mg/kg	10	42.8	ND	97	75-125%	---	---	
Matrix Spike Dup (1080542-MSD1)			Prepared: 08/17/21 08:47		Analyzed: 08/18/21 19:14							
QC Source Sample: Non-SDG (A1H0342-04)												
Arsenic	49.4	2.45	4.90	mg/kg	50	49.0	ND	101	75-125%	0.9	20%	
Iron	4390	123	245	mg/kg	50	2450	1770	107	75-125%	2	20%	
Manganese	84.3	2.45	4.90	mg/kg	50	49.0	35.7	99	75-125%	0.2	20%	
Molybdenum	25.1	2.45	4.90	mg/kg	50	24.5	ND	103	75-125%	0.1	20%	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080544 - EPA 3015A								**Water**				
Blank (1080544-BLK1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:19							
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Iron	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Blank (1080544-BLK2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 00:09							
EPA 6020B												
Lithium	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
LCS (1080544-BS1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:24							
EPA 6020B												
Arsenic	55.6	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Iron	2840	25.0	50.0	ug/L	1	2780	---	102	80-120%	---	---	
Manganese	55.3	0.500	1.00	ug/L	1	55.6	---	100	80-120%	---	---	
Molybdenum	27.6	0.500	1.00	ug/L	1	27.8	---	99	80-120%	---	---	
LCS (1080544-BS2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 00:23							
EPA 6020B												
Lithium	42.5	2.50	5.00	ug/L	1	44.4	---	96	80-120%	---	---	A-01a
Duplicate (1080544-DUP1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:34							
QC Source Sample: Non-SDG (A1H0387-01)												
Arsenic	**5.89**	0.500	1.00	ug/L	1	---	5.91	---	---	0.4	20%	
Iron	**21600**	25.0	50.0	ug/L	1	---	21900	---	---	1	20%	
Manganese	**1720**	0.500	1.00	ug/L	1	---	1740	---	---	1	20%	
Molybdenum	**1.01**	0.500	1.00	ug/L	1	---	1.07	---	---	6	20%	
Duplicate (1080544-DUP2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 00:33							
QC Source Sample: Non-SDG (A1H0387-01)												
Lithium	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	20%	A-01a, R-04
Matrix Spike (1080544-MS1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:39							

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1080544 - EPA 3015A								**Water**				
Matrix Spike (1080544-MS1)			Prepared: 08/17/21 09:10		Analyzed: 08/18/21 19:39							
QC Source Sample: Non-SDG (A1H0387-01)												
EPA 6020B												
Arsenic	62.1	0.500	1.00	ug/L	1	55.6	5.91	101	75-125%	---	---	
Iron	24400	25.0	50.0	ug/L	1	2780	21900	91	75-125%	---	---	
Manganese	1760	0.500	1.00	ug/L	1	55.6	1740	**30**	**75-125%**	---	---	Q-03
Molybdenum	30.1	0.500	1.00	ug/L	1	27.8	1.07	104	75-125%	---	---	
Matrix Spike (1080544-MS2)			Prepared: 08/17/21 09:10		Analyzed: 08/19/21 01:27							
QC Source Sample: GN-AP-SSE-F4-4-20210813 (A1H0483-16)												
EPA 6020B												
Lithium	55.8	12.5	25.0	ug/L	5	44.4	ND	**126**	**75-125%**	---	---	A-01, Q-11

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080544							
A1H0483-01	Water	EPA 6020B	08/09/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-02	Water	EPA 6020B	08/09/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-03	Water	EPA 6020B	08/09/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-04	Water	EPA 6020B	08/09/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-05	Water	EPA 6020B	08/10/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-06	Water	EPA 6020B	08/10/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-07	Water	EPA 6020B	08/10/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-08	Water	EPA 6020B	08/10/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-09	Water	EPA 6020B	08/12/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-10	Water	EPA 6020B	08/12/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-11	Water	EPA 6020B	08/12/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-12	Water	EPA 6020B	08/12/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-13	Water	EPA 6020B	08/13/21 09:00	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-14	Water	EPA 6020B	08/13/21 09:05	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-15	Water	EPA 6020B	08/13/21 09:10	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00
A1H0483-16	Water	EPA 6020B	08/13/21 09:15	08/17/21 09:10	45mL/50mL	45mL/50mL	1.00

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1080542							
A1H0483-17	Solid	EPA 6020B	08/09/21 09:05	08/17/21 08:47	0.502g/50mL	0.5g/50mL	1.00
A1H0483-18	Solid	EPA 6020B	08/09/21 09:10	08/17/21 08:47	0.507g/50mL	0.5g/50mL	0.99
A1H0483-19	Solid	EPA 6020B	08/09/21 09:15	08/17/21 08:47	0.518g/50mL	0.5g/50mL	0.97

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

A-01	MS2 is failing for lithium becase source sample is calculating as non detect <MRL and its value is not being calculated..
A-01a	Results do not meet EPA 6020B and/or Apex SOP criteria. Results reported for research per client request.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-06	Internal Standard area outside of method specified limits. Data is Not Reported. See previous or subsequent runs for reportable sample data.
Q-11	Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Darwin Thomas, Business Development Director

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: 201114-01.04	**Report ID:**
Portland, OR 97219	Project Manager: Anthony Dalton-Atha	A1H0483 - 09 12 21 0629

A1H0483

Chain of Custody Record & Laboratory Analysis Request

ANCHOR QEA

Company: Anchor QEA
Date: 7/28/2021
Project Name: Alabama Power - Gaston
Project Number: 201114-01.04
Project Manager: Anthony Dalton-Atha adalton-atha@anchorqea.com
Phone Number: 503-924-6186
Shipment Method: Pick-up
Samplers: Paloma Spina

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Arsenic	Lithium	Molybdenum	Iron	Manganese	Comments/Preservation
1	GN-AP-SSE-F1-1-20210809	8/9/2021	9:00	Water	1	x	x	x			1 M magnesium chloride
2	GN-AP-SSE-F1-2-20210809	8/9/2021	9:05	Water	1	x	x	x			1 M magnesium chloride
3	GN-AP-SSE-F1-3-20210809	8/9/2021	9:10	Water	1	x	x	x			1 M magnesium chloride
4	GN-AP-SSE-F1-4-20210809	8/9/2021	9:15	Water	1	x	x	x			1 M magnesium chloride
5	GN-AP-SSE-F2-1-20210810	8/10/2021	9:00	Water	1	x	x	x	x	x	1 M monosodium phosphate
6	GN-AP-SSE-F2-2-20210810	8/10/2021	9:05	Water	1	x	x	x	x	x	1 M monosodium phosphate
7	GN-AP-SSE-F2-3-20210810	8/10/2021	9:10	Water	1	x	x	x	x	x	1 M monosodium phosphate
8	GN-AP-SSE-F2-4-20210810	8/10/2021	9:15	Water	1	x	x	x	x	x	1 M monosodium phosphate
9	GN-AP-SSE-F3-1-20210812	8/12/2021	9:00	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
10	GN-AP-SSE-F3-2-20210812	8/12/2021	9:05	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
11	GN-AP-SSE-F3-3-20210812	8/12/2021	9:10	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
12	GN-AP-SSE-F3-4-20210812	8/12/2021	9:15	Water	1	x	x	x	x	x	0.1 M hydroxylamine hydrochloride
13	GN-AP-SSE-F4-1-20210813	8/13/2021	9:00	Water	1	x	x	x	x	x	16 M nitric acid
14	GN-AP-SSE-F4-2-20210813	8/13/2021	9:05	Water	1	x	x	x	x	x	16 M nitric acid
15	GN-AP-SSE-F4-3-20210813	8/13/2021	9:10	Water	1	x	x	x	x	x	16 M nitric acid
16	GN-AP-SSE-F4-4-20210813	8/13/2021	9:15	Water	1	x	x	x	x	x	16 M nitric acid

Comments: samples are filtered and preserved with nitric acid.
3-day TAT

Relinquished By: Paloma Spina	Company: AQ	Received By: [signature]	Company: Apex Labs
Signature/Printed Name: [signature]	Date/Time: 9/16/21 11AM	Signature/Printed Name: Michael Kuchuk	Date/Time: 8-16-21/1231
Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name:	Date/Time:	Signature/Printed Name:	Date/Time:

9

Page 1 of 1

APEX LABORATORIES

ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

A1H0483

ANCHOR QEA

Chain of Custody Record & Laboratory Analysis Request

Company: Anchor QEA
Date: 7/28/2021
Project Name: Alabama Power - Gaston
Project Number: 201114-01.04
Project Manager: Anthony Dalton-Atha adalton-atha@anchorqea.com
Phone Number: 503-924-6186
Shipment Method: Pick-up
Samplers: Paloma Spina

Test Parameters

Line	Field Sample ID	Collection Date/Time		Matrix	No. of Containers	Arsenic	Lithium	Molybdenum	Iron	Manganese	Comments/Preservation
1	GN-AP-SSE-F5-2-20210816	8/9/2021	9:05	Solid	1	x	x	x	x	x	none
2	GN-AP-SSE-F5-3-20210816	8/9/2021	9:10	Solid	1	x	x	x	x	x	none
3	GN-AP-SSE-F5-4-20210816	8/9/2021	9:15	Solid	1	x	x	x	x	x	none
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

Comments: no preservation of soil samples.
3-day TAT

Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name: Paloma Spina	Date/Time: 9/16/21 11AM	Signature/Printed Name: Mikhail Kuchnik	Date/Time: 8-16-21/1236

Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name:	Date/Time:	Signature/Printed Name:	Date/Time:

Page 1 of 1

Apex Laboratories

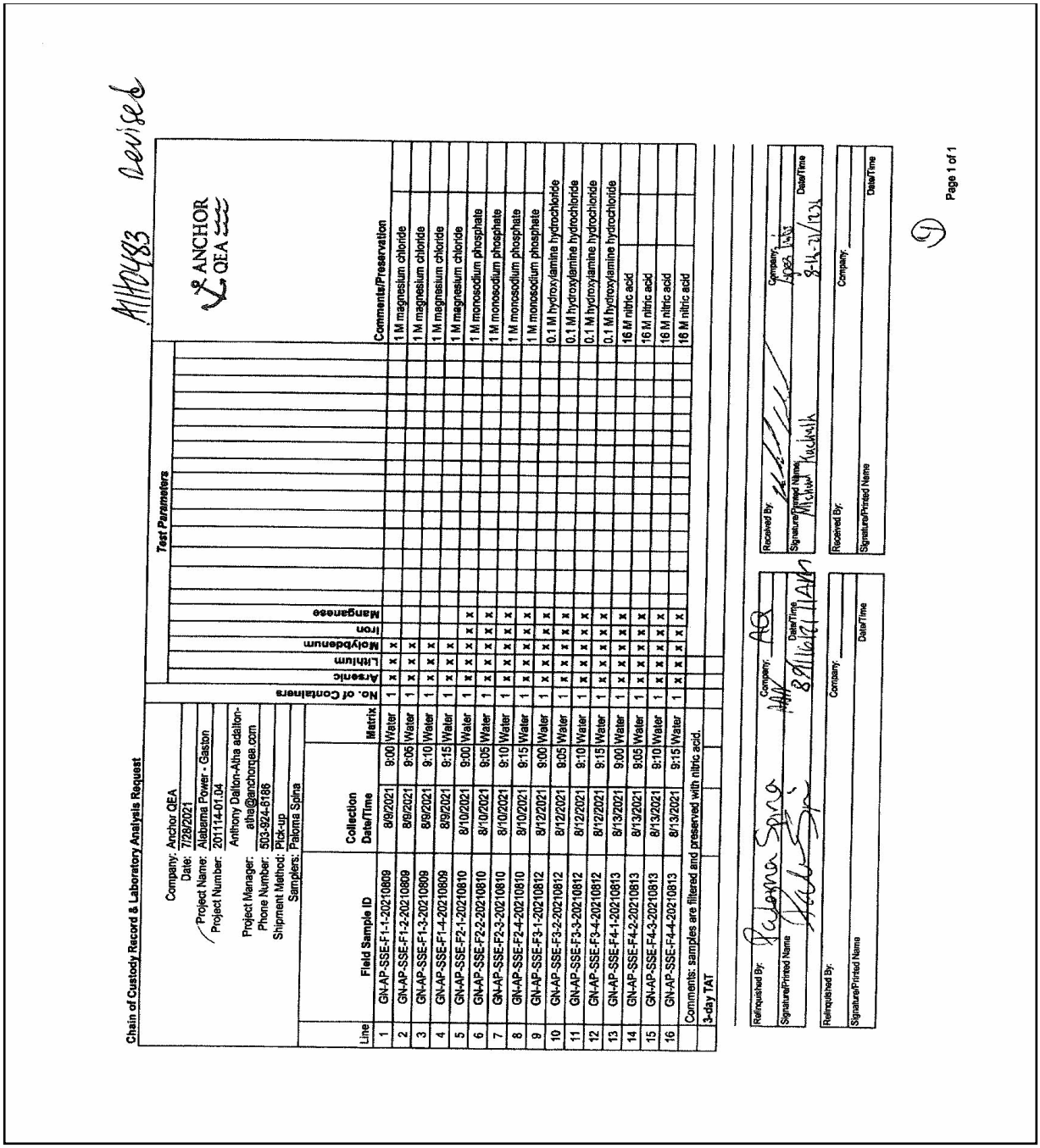
Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**



Apex Laboratories

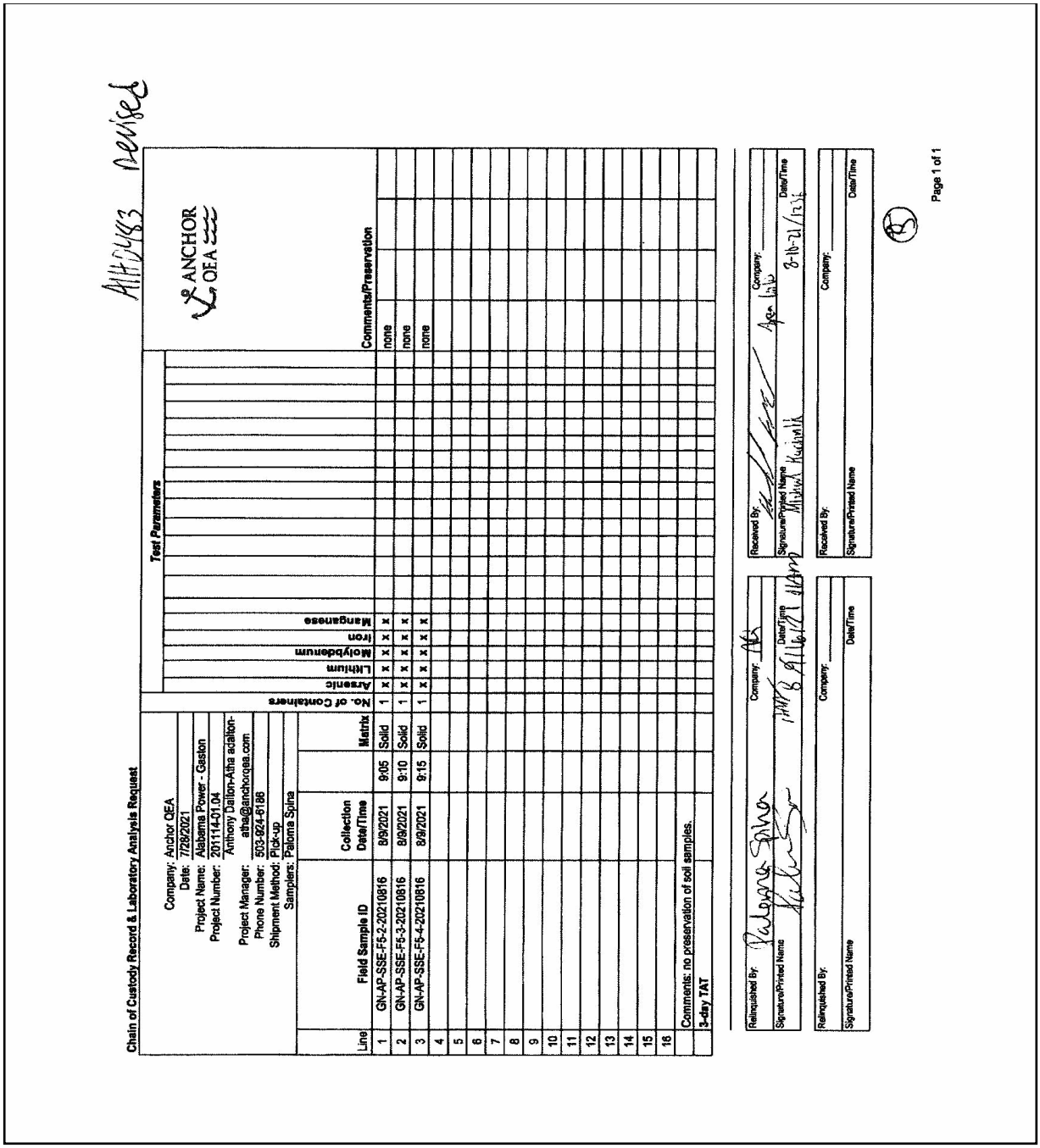
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Anchor QEA, LLC	Project: **Alabama Power-Gaston**	
6720 SW Macadam Ave. Suite 125	Project Number: **201114-01.04**	**Report ID:**
Portland, OR 97219	Project Manager: **Anthony Dalton-Atha**	**A1H0483 - 09 12 21 0629**

APEX LABS COOLER RECEIPT FORM

Client: Anchor QEA Element WO#: A1 H0483

Project/Project #: Alabama Power-Gaston / 201114-01.04

Delivery Info:

Date/time received: 8-16-21 @ 1236 By: MK

Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 8-16-21 @ 1310 By: MK

Chain of Custody included? Yes X No Custody seals? Yes X No

Signed/dated by client? Yes X No

Signed/dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.1						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

Green dots applied to out of temperature samples? Yes/No

Out of temperature samples form initiated? Yes/No

Sample Inspection: Date/time inspected: 8/16/21 @ 15:22 By: MS

All samples intact? Yes X No Comments:

Bottle labels/COCs agree? Yes No X Comments: Date on GN-AP-SSE-FS-2-20210816, FS-3, FS-4 conts read 8/16/21, COC reads 8/9/21.

COC/container discrepancies form initiated? Yes No X

Containers/volumes received appropriate for analysis? Yes X No Comments:

Do VOA vials have visible headspace? Yes No NA X

Comments

Water samples: pH checked: Yes No NA X pH appropriate? Yes No NA X

Comments: PH checked @ Bench.

Additional information:

Labeled by: MS Witness: JS Cooler Inspected by: ST

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Darwin Thomas, Business Development Director

August 27, 2021 Service Request No:K2108282

Masa Kanematsu
Anchor QEA, LLC
6720 SW Macadam Avenue
Suite 125
Portland, OR 97219

Laboratory Results for: Gaston

Dear Masa,

Enclosed are the results of the sample(s) submitted to our laboratory July 16, 2021
For your reference, these analyses have been assigned our service request number **K2108282.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC
Project: Gaston
Sample Matrix: Water

Service Request: K2108282
Date Received: 07/16/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Five water samples were received for analysis at ALS Environmental on 07/16/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method 300.0, 07/16/2021: All samples in this delivery group were received with insufficient holding time remaining. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Method SM 4500-P E, 07/16/2021: All samples in this delivery group were received with insufficient holding time remaining. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Approved by _____ Date 08/27/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-MW-10-20210714			Lab ID: K2108282-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity as CaCO3, Total	178		0.6	15	mg/L	SM 2320 B
Bicarbonate as CaCO3	178			15	mg/L	SM 2320 B
Chloride	3.15		0.02	0.20	mg/L	300.0
Nitrate as Nitrogen	0.12		0.02	0.10	mg/L	300.0
Sulfate	6.62		0.04	0.40	mg/L	300.0
Aluminum, Dissolved	5	J	3	20	ug/L	200.8
Barium, Dissolved	13.8		0.10	0.25	ug/L	200.8
Boron, Dissolved	135		10	40	ug/L	200.8
Calcium, Dissolved	38000		3	21	ug/L	6010C
Chromium, Dissolved	0.2	J	0.2	1.0	ug/L	200.8
Magnesium, Dissolved	22200		0.4	5.3	ug/L	6010C
Manganese, Dissolved	1.1		0.2	1.0	ug/L	200.8
Molybdenum, Dissolved	0.64		0.15	0.50	ug/L	200.8
Nickel, Dissolved	0.7	J	0.2	1.0	ug/L	200.8
Potassium, Dissolved	260		60	210	ug/L	6010C
Silicon, Dissolved	4630		30	210	ug/L	6010C
Sodium, Dissolved	2830		30	210	ug/L	6010C
Aluminum	5	J	3	20	ug/L	200.8
Iron	3	J	2	10	ug/L	200.8
Manganese	1.7		0.2	1.0	ug/L	200.8

CLIENT ID: GST-MW-15R-20210714			Lab ID: K2108282-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity as CaCO3, Total	87		0.6	15	mg/L	SM 2320 B
Ammonia as Nitrogen	0.500		0.020	0.050	mg/L	350.1
Bicarbonate as CaCO3	87			15	mg/L	SM 2320 B
Chloride	79.7		0.3	4.0	mg/L	300.0
Nitrate as Nitrogen	0.03	J	0.02	0.10	mg/L	300.0
Sulfate	228		0.8	8.0	mg/L	300.0
Aluminum, Dissolved	5	J	3	20	ug/L	200.8
Arsenic, Dissolved	1.6	J	0.5	2.5	ug/L	200.8
Barium, Dissolved	62.0		0.10	0.25	ug/L	200.8
Boron, Dissolved	2190		10	40	ug/L	200.8
Calcium, Dissolved	89700		3	21	ug/L	6010C
Chromium, Dissolved	0.2	J	0.2	1.0	ug/L	200.8
Cobalt, Dissolved	0.67		0.05	0.10	ug/L	200.8
Iron, Dissolved	2	J	2	10	ug/L	200.8
Lithium, Dissolved	35.7		0.50	0.50	ug/L	200.8
Magnesium, Dissolved	28100		0.4	5.3	ug/L	6010C
Manganese, Dissolved	834		0.2	1.0	ug/L	200.8
Molybdenum, Dissolved	122		0.15	0.50	ug/L	200.8
Nickel, Dissolved	1.0		0.2	1.0	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-MW-15R-20210714			Lab ID: K2108282-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Potassium, Dissolved	6940		60	210	ug/L	6010C
Silicon, Dissolved	3590		30	210	ug/L	6010C
Sodium, Dissolved	52100		30	210	ug/L	6010C
Aluminum	6	J	3	20	ug/L	200.8
Iron	122		2	10	ug/L	200.8
Manganese	828		0.2	1.0	ug/L	200.8

CLIENT ID: GST-MW-16-20210714			Lab ID: K2108282-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity as CaCO3, Total	30		0.6	15	mg/L	SM 2320 B
Ammonia as Nitrogen	0.578		0.020	0.050	mg/L	350.1
Bicarbonate as CaCO3	30			15	mg/L	SM 2320 B
Carbon, Total Organic	0.16	J	0.07	0.50	mg/L	SM 5310 C
Chloride	23.9		0.04	0.50	mg/L	300.0
Sulfate	187		0.8	8.0	mg/L	300.0
Aluminum, Dissolved	15	J	3	20	ug/L	200.8
Arsenic, Dissolved	5.0		0.5	2.5	ug/L	200.8
Barium, Dissolved	51.3		0.10	0.25	ug/L	200.8
Boron, Dissolved	1520		10	40	ug/L	200.8
Cadmium, Dissolved	0.06	J	0.04	0.10	ug/L	200.8
Calcium, Dissolved	63300		3	21	ug/L	6010C
Cobalt, Dissolved	1.21		0.05	0.10	ug/L	200.8
Iron, Dissolved	5	J	2	10	ug/L	200.8
Lithium, Dissolved	114		0.50	0.50	ug/L	200.8
Magnesium, Dissolved	8640		0.4	5.3	ug/L	6010C
Manganese, Dissolved	579		0.2	1.0	ug/L	200.8
Molybdenum, Dissolved	610		0.15	0.50	ug/L	200.8
Nickel, Dissolved	0.5	J	0.2	1.0	ug/L	200.8
Potassium, Dissolved	14800		60	210	ug/L	6010C
Silicon, Dissolved	2630		30	210	ug/L	6010C
Sodium, Dissolved	21800		30	210	ug/L	6010C
Thallium, Dissolved	0.06	J	0.05	0.10	ug/L	200.8
Aluminum	16	J	3	20	ug/L	200.8
Iron	94		2	10	ug/L	200.8
Manganese	570		0.2	1.0	ug/L	200.8

CLIENT ID: GST-MW-17-20210714			Lab ID: K2108282-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity as CaCO3, Total	23		0.6	15	mg/L	SM 2320 B
Ammonia as Nitrogen	1.06		0.020	0.050	mg/L	350.1
Carbon, Total Organic	0.80		0.07	0.50	mg/L	SM 5310 C
Carbonate as CaCO3	18			15	mg/L	SM 2320 B

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-MW-17-20210714			Lab ID: K2108282-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chloride	66.3		0.2	2.0	mg/L	300.0
Sulfate	453		2	20	mg/L	300.0
Aluminum, Dissolved	93		3	20	ug/L	200.8
Antimony, Dissolved	0.39		0.10	0.25	ug/L	200.8
Arsenic, Dissolved	9.2		0.5	2.5	ug/L	200.8
Barium, Dissolved	126		0.10	0.25	ug/L	200.8
Boron, Dissolved	3380		10	40	ug/L	200.8
Cadmium, Dissolved	0.31		0.04	0.10	ug/L	200.8
Calcium, Dissolved	157000		3	21	ug/L	6010C
Lithium, Dissolved	890		0.50	0.50	ug/L	200.8
Magnesium, Dissolved	8670		0.4	5.3	ug/L	6010C
Manganese, Dissolved	12.2		0.2	1.0	ug/L	200.8
Molybdenum, Dissolved	3580		0.15	0.50	ug/L	200.8
Nickel, Dissolved	1.1		0.2	1.0	ug/L	200.8
Potassium, Dissolved	37800		60	210	ug/L	6010C
Silicon, Dissolved	2820		30	210	ug/L	6010C
Sodium, Dissolved	41200		30	210	ug/L	6010C
Thallium, Dissolved	0.06	J	0.05	0.10	ug/L	200.8
Aluminum	93		3	20	ug/L	200.8
Manganese	11.6		0.2	1.0	ug/L	200.8

CLIENT ID: GST-MW-20-20210714			Lab ID: K2108282-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Alkalinity as CaCO3, Total	52		0.6	15	mg/L	SM 2320 B
Ammonia as Nitrogen	0.585		0.020	0.050	mg/L	350.1
Bicarbonate as CaCO3	52			15	mg/L	SM 2320 B
Carbon, Total Organic	0.25	J	0.07	0.50	mg/L	SM 5310 C
Chloride	25.0		0.04	0.50	mg/L	300.0
Sulfate	610		2	20	mg/L	300.0
Aluminum, Dissolved	5	J	3	20	ug/L	200.8
Arsenic, Dissolved	3.2		0.5	2.5	ug/L	200.8
Barium, Dissolved	59.6		0.10	0.25	ug/L	200.8
Boron, Dissolved	3970		10	40	ug/L	200.8
Cadmium, Dissolved	0.09	J	0.04	0.10	ug/L	200.8
Calcium, Dissolved	160000		3	21	ug/L	6010C
Lithium, Dissolved	111		0.50	0.50	ug/L	200.8
Magnesium, Dissolved	54600		0.4	5.3	ug/L	6010C
Manganese, Dissolved	3.1		0.2	1.0	ug/L	200.8
Molybdenum, Dissolved	791		0.15	0.50	ug/L	200.8
Nickel, Dissolved	0.6	J	0.2	1.0	ug/L	200.8
Potassium, Dissolved	5740		60	210	ug/L	6010C
Silicon, Dissolved	3130		30	210	ug/L	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-MW-20-20210714			Lab ID: K2108282-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Sodium, Dissolved	24700		30	210	ug/L	6010C
Aluminum	5	J	3	20	ug/L	200.8
Iron	11		2	10	ug/L	200.8
Manganese	3.8		0.2	1.0	ug/L	200.8

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC **Service Request:**K2108282

Project: Gaston/201114-01.04 Task 02

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2108282-001	GST-MW-10-20210714	7/14/2021	1530
K2108282-002	GST-MW-15R-20210714	7/14/2021	1600
K2108282-003	GST-MW-16-20210714	7/14/2021	1630
K2108282-004	GST-MW-17-20210714	7/14/2021	1700
K2108282-005	GST-MW-20-20210714	7/14/2021	1730

K2108284

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019

Date:	7/15/2021
Project Name:	Gaston
Project Number:	201114-01.04 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Lithium, Molybdenum (diss.) 5d TAT	Arsenic, Lithium, Molybdenum (diss.) 5d TAT	Dissolved metals	Total Metals (Al, Fe, Mn)	Anions	Ortho-Phosphate	Alkalinity	Total Organic Carbon	Ammonia as N	Comments/Preservation
1	GST-MW-10-20210714	7/14/2021	15:30	Water	6			X	X	X	X	X	X	X	
2	GST-MW-15R-20210714	7/14/2021	16:00	Water	6	X		X	X	X	X	X	X	X	
3	GST-MW-16-20210714	7/14/2021	16:30	Water	6	X		X	X	X	X	X	X	X	
4	GST-MW-17-20210714	7/14/2021	17:00	Water	6		X	X	X	X	X	X	X	X	
5	GST-MW-20-20210714	7/14/2021	17:30	Water	6	X		X	X	X	X	X	X	X	
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Notes: **Please analyze all analytes with Standard TAT on this page otherwise noted.** For specific dissolved metals (As, Li, and Mo), please analyze by EPA 200.8 with 5 day TAT if possible.
Dissolved metals: Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Fe, Pb, Li, Mg, Mn, Mo, Ni, K, Se, Si, Ag, Na, Tl, Zn), Anions (Cl, F, nitrate, nitrite, Sulfate), Alkalinity with carbonate/bicarbonate speciation

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	Cody Graves	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	7/16/2020 9:00		7/16/21 1530

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 1 of 1

PM MH

Cooler Receipt and Preservation Form

Client Anchor Service Request K21 05282

Received: 7/16/21 Opened: 7/16/21 By: CG Unloaded: 7/16/21 By: CG

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / (NA)	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number (NA)	Filed
~	5.2	IR01		~	~		

6. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* (*Gel Packs*) (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Anchor QEA, LLC **Service Request:** K2108282
Project: Gaston/201114-01.04 Task 02

Sample Name: GST-MW-10-20210714 **Date Collected:** 07/14/21
Lab Code: K2108282-001 **Date Received:** 07/16/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER
300.0		KABROWN
350.1	ESCHLOSS	ESCHLOSS
6010C	ABOYER	AMCKORNEY
SM 2320 B		GOLSON
SM 4500-P E		BNETLING
SM 5310 C		MSPECHT

Sample Name: GST-MW-15R-20210714 **Date Collected:** 07/14/21
Lab Code: K2108282-002 **Date Received:** 07/16/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER
300.0		KABROWN
350.1	ESCHLOSS	ESCHLOSS
6010C	ABOYER	AMCKORNEY
SM 2320 B		GOLSON
SM 4500-P E		BNETLING
SM 5310 C		MSPECHT

Sample Name: GST-MW-15R-20210714 **Date Collected:** 07/14/21
Lab Code: K2108282-002.R01 **Date Received:** 07/16/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
300.0		KABROWN

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02		

Sample Name:	GST-MW-16-20210714	**Date Collected:**	07/14/21
Lab Code:	K2108282-003	**Date Received:**	07/16/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER
300.0		KABROWN
350.1	ESCHLOSS	ESCHLOSS
6010C	ABOYER	AMCKORNEY
SM 2320 B		GOLSON
SM 4500-P E		BNETLING
SM 5310 C		MSPECHT

Sample Name:	GST-MW-16-20210714	**Date Collected:**	07/14/21
Lab Code:	K2108282-003.R01	**Date Received:**	07/16/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
300.0		KABROWN

Sample Name:	GST-MW-17-20210714	**Date Collected:**	07/14/21
Lab Code:	K2108282-004	**Date Received:**	07/16/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER
300.0		KABROWN
350.1	ESCHLOSS	ESCHLOSS
6010C	ABOYER	AMCKORNEY
SM 2320 B		GOLSON
SM 4500-P E		BNETLING
SM 5310 C		MSPECHT

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02		

Sample Name:	GST-MW-17-20210714	**Date Collected:**	07/14/21
Lab Code:	K2108282-004.R01	**Date Received:**	07/16/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
300.0		KABROWN

Sample Name:	GST-MW-20-20210714	**Date Collected:**	07/14/21
Lab Code:	K2108282-005	**Date Received:**	07/16/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER
300.0		KABROWN
350.1	ESCHLOSS	ESCHLOSS
6010C	ABOYER	AMCKORNEY
SM 2320 B		GOLSON
SM 4500-P E		BNETLING
SM 5310 C		MSPECHT

Sample Name:	GST-MW-20-20210714	**Date Collected:**	07/14/21
Lab Code:	K2108282-005.R01	**Date Received:**	07/16/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
300.0		KABROWN

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 15:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-10-20210714	**Basis:**	NA
Lab Code:	K2108282-001		

Dissolved Metals

Analyte Name	Analysis Method	Result	Q	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**5**	**J**	ug/L	20	3	5	08/06/21 17:37	07/30/21	
Antimony	200.8	ND	U	ug/L	0.25	0.10	5	08/06/21 17:37	07/30/21	
Arsenic	200.8	ND	U	ug/L	2.5	0.5	5	08/06/21 17:37	07/30/21	
Barium	200.8	**13.8**		ug/L	0.25	0.10	5	08/06/21 17:37	07/30/21	
Beryllium	200.8	ND	U	ug/L	0.10	0.03	5	08/06/21 17:37	07/30/21	
Boron	200.8	**135**		ug/L	40	10	20	08/06/21 14:38	07/30/21	
Cadmium	200.8	ND	U	ug/L	0.10	0.04	5	08/06/21 17:37	07/30/21	
Calcium	6010C	**38000**		ug/L	21	3	1	08/26/21 09:26	07/30/21	
Chromium	200.8	**0.2**	**J**	ug/L	1.0	0.2	5	08/06/21 17:37	07/30/21	
Cobalt	200.8	ND	U	ug/L	0.10	0.05	5	08/06/21 17:37	07/30/21	
Iron	200.8	ND	U	ug/L	10	2	5	08/06/21 17:37	07/30/21	
Lead	200.8	ND	U	ug/L	0.10	0.03	5	08/06/21 17:37	07/30/21	
Lithium	200.8	ND	U	ug/L	0.50	0.50	5	08/06/21 17:37	07/30/21	
Magnesium	6010C	**22200**		ug/L	5.3	0.4	1	08/26/21 09:26	07/30/21	
Manganese	200.8	**1.1**		ug/L	1.0	0.2	5	08/06/21 17:37	07/30/21	
Molybdenum	200.8	**0.64**		ug/L	0.50	0.15	5	08/06/21 17:37	07/30/21	
Nickel	200.8	**0.7**	**J**	ug/L	1.0	0.2	5	08/06/21 17:37	07/30/21	
Potassium	6010C	**260**		ug/L	210	60	1	08/26/21 09:26	07/30/21	
Selenium	200.8	ND	U	ug/L	5.0	1.0	5	08/06/21 17:37	07/30/21	
Silicon	6010C	**4630**		ug/L	210	30	1	08/26/21 09:26	07/30/21	
Silver	200.8	ND	U	ug/L	0.10	0.05	5	08/06/21 17:37	07/30/21	
Sodium	6010C	**2830**		ug/L	210	30	1	08/26/21 09:26	07/30/21	
Thallium	200.8	ND	U	ug/L	0.10	0.05	5	08/06/21 17:37	07/30/21	
Zinc	200.8	ND	U	ug/L	10	3	5	08/06/21 17:37	07/30/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 15:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-10-20210714	**Basis:**	NA
Lab Code:	K2108282-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**5 J**	ug/L	20	3	5	08/06/21 17:12	07/30/21	
Iron	200.8	**3 J**	ug/L	10	2	5	08/06/21 17:12	07/30/21	
Manganese	200.8	**1.7**	ug/L	1.0	0.2	5	08/06/21 17:12	07/30/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-15R-20210714	**Basis:**	NA
Lab Code:	K2108282-002		

Dissolved Metals

Analyte Name	Analysis Method	Result	Q	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**5**	**J**	ug/L	20	3	5	08/06/21 17:39	07/30/21	
Antimony	200.8	ND	U	ug/L	0.25	0.10	5	08/06/21 17:39	07/30/21	
Arsenic	200.8	**1.6**	**J**	ug/L	2.5	0.5	5	08/06/21 17:39	07/30/21	
Barium	200.8	**62.0**		ug/L	0.25	0.10	5	08/06/21 17:39	07/30/21	
Beryllium	200.8	ND	U	ug/L	0.10	0.03	5	08/06/21 17:39	07/30/21	
Boron	200.8	**2190**		ug/L	40	10	20	08/06/21 14:40	07/30/21	
Cadmium	200.8	ND	U	ug/L	0.10	0.04	5	08/06/21 17:39	07/30/21	
Calcium	6010C	**89700**		ug/L	21	3	1	08/26/21 09:50	07/30/21	
Chromium	200.8	**0.2**	**J**	ug/L	1.0	0.2	5	08/06/21 17:39	07/30/21	
Cobalt	200.8	**0.67**		ug/L	0.10	0.05	5	08/06/21 17:39	07/30/21	
Iron	200.8	**2**	**J**	ug/L	10	2	5	08/06/21 17:39	07/30/21	
Lead	200.8	ND	U	ug/L	0.10	0.03	5	08/06/21 17:39	07/30/21	
Lithium	200.8	**35.7**		ug/L	0.50	0.50	5	08/06/21 17:39	07/30/21	
Magnesium	6010C	**28100**		ug/L	5.3	0.4	1	08/26/21 09:50	07/30/21	
Manganese	200.8	**834**		ug/L	1.0	0.2	5	08/06/21 17:39	07/30/21	
Molybdenum	200.8	**122**		ug/L	0.50	0.15	5	08/06/21 17:39	07/30/21	
Nickel	200.8	**1.0**		ug/L	1.0	0.2	5	08/06/21 17:39	07/30/21	
Potassium	6010C	**6940**		ug/L	210	60	1	08/26/21 09:50	07/30/21	
Selenium	200.8	ND	U	ug/L	5.0	1.0	5	08/06/21 17:39	07/30/21	
Silicon	6010C	**3590**		ug/L	210	30	1	08/26/21 09:50	07/30/21	
Silver	200.8	ND	U	ug/L	0.10	0.05	5	08/06/21 17:39	07/30/21	
Sodium	6010C	**52100**		ug/L	210	30	1	08/26/21 09:50	07/30/21	
Thallium	200.8	ND	U	ug/L	0.10	0.05	5	08/06/21 17:39	07/30/21	
Zinc	200.8	ND	U	ug/L	10	3	5	08/06/21 17:39	07/30/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-15R-20210714	**Basis:**	NA
Lab Code:	K2108282-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**6 J**	ug/L	20	3	5	08/06/21 17:14	07/30/21	
Iron	200.8	**122**	ug/L	10	2	5	08/06/21 17:14	07/30/21	
Manganese	200.8	**828**	ug/L	1.0	0.2	5	08/06/21 17:14	07/30/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-16-20210714	**Basis:**	NA
Lab Code:	K2108282-003		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**15 J**	ug/L	20	3	5	08/06/21 17:41	07/30/21	
Antimony	200.8	ND U	ug/L	0.25	0.10	5	08/06/21 17:41	07/30/21	
Arsenic	200.8	**5.0**	ug/L	2.5	0.5	5	08/06/21 17:41	07/30/21	
Barium	200.8	**51.3**	ug/L	0.25	0.10	5	08/06/21 17:41	07/30/21	
Beryllium	200.8	ND U	ug/L	0.10	0.03	5	08/06/21 17:41	07/30/21	
Boron	200.8	**1520**	ug/L	40	10	20	08/06/21 14:42	07/30/21	
Cadmium	200.8	**0.06 J**	ug/L	0.10	0.04	5	08/06/21 17:41	07/30/21	
Calcium	6010C	**63300**	ug/L	21	3	1	08/26/21 09:52	07/30/21	
Chromium	200.8	ND U	ug/L	1.0	0.2	5	08/06/21 17:41	07/30/21	
Cobalt	200.8	**1.21**	ug/L	0.10	0.05	5	08/06/21 17:41	07/30/21	
Iron	200.8	**5 J**	ug/L	10	2	5	08/06/21 17:41	07/30/21	
Lead	200.8	ND U	ug/L	0.10	0.03	5	08/06/21 17:41	07/30/21	
Lithium	200.8	**114**	ug/L	0.50	0.50	5	08/06/21 17:41	07/30/21	
Magnesium	6010C	**8640**	ug/L	5.3	0.4	1	08/26/21 09:52	07/30/21	
Manganese	200.8	**579**	ug/L	1.0	0.2	5	08/06/21 17:41	07/30/21	
Molybdenum	200.8	**610**	ug/L	0.50	0.15	5	08/06/21 17:41	07/30/21	
Nickel	200.8	**0.5 J**	ug/L	1.0	0.2	5	08/06/21 17:41	07/30/21	
Potassium	6010C	**14800**	ug/L	210	60	1	08/26/21 09:52	07/30/21	
Selenium	200.8	ND U	ug/L	5.0	1.0	5	08/06/21 17:41	07/30/21	
Silicon	6010C	**2630**	ug/L	210	30	1	08/26/21 09:52	07/30/21	
Silver	200.8	ND U	ug/L	0.10	0.05	5	08/06/21 17:41	07/30/21	
Sodium	6010C	**21800**	ug/L	210	30	1	08/26/21 09:52	07/30/21	
Thallium	200.8	**0.06 J**	ug/L	0.10	0.05	5	08/06/21 17:41	07/30/21	
Zinc	200.8	ND U	ug/L	10	3	5	08/06/21 17:41	07/30/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-16-20210714	**Basis:**	NA
Lab Code:	K2108282-003		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**16 J**	ug/L	20	3	5	08/06/21 17:21	07/30/21	
Iron	200.8	**94**	ug/L	10	2	5	08/06/21 17:21	07/30/21	
Manganese	200.8	**570**	ug/L	1.0	0.2	5	08/06/21 17:21	07/30/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-17-20210714	**Basis:**	NA
Lab Code:	K2108282-004		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**93**	ug/L	20	3	5	08/06/21 17:44	07/30/21	
Antimony	200.8	**0.39**	ug/L	0.25	0.10	5	08/06/21 17:44	07/30/21	
Arsenic	200.8	**9.2**	ug/L	2.5	0.5	5	08/06/21 17:44	07/30/21	
Barium	200.8	**126**	ug/L	0.25	0.10	5	08/06/21 17:44	07/30/21	
Beryllium	200.8	ND U	ug/L	0.10	0.03	5	08/06/21 17:44	07/30/21	
Boron	200.8	**3380**	ug/L	40	10	20	08/06/21 14:45	07/30/21	
Cadmium	200.8	**0.31**	ug/L	0.10	0.04	5	08/06/21 17:44	07/30/21	
Calcium	6010C	**157000**	ug/L	21	3	1	08/26/21 09:55	07/30/21	
Chromium	200.8	ND U	ug/L	1.0	0.2	5	08/06/21 17:44	07/30/21	
Cobalt	200.8	ND U	ug/L	0.10	0.05	5	08/06/21 17:44	07/30/21	
Iron	200.8	ND U	ug/L	10	2	5	08/06/21 17:44	07/30/21	
Lead	200.8	ND U	ug/L	0.10	0.03	5	08/06/21 17:44	07/30/21	
Lithium	200.8	**890**	ug/L	0.50	0.50	5	08/06/21 17:44	07/30/21	
Magnesium	6010C	**8670**	ug/L	5.3	0.4	1	08/26/21 09:55	07/30/21	
Manganese	200.8	**12.2**	ug/L	1.0	0.2	5	08/06/21 17:44	07/30/21	
Molybdenum	200.8	**3580**	ug/L	0.50	0.15	5	08/06/21 17:44	07/30/21	
Nickel	200.8	**1.1**	ug/L	1.0	0.2	5	08/06/21 17:44	07/30/21	
Potassium	6010C	**37800**	ug/L	210	60	1	08/26/21 09:55	07/30/21	
Selenium	200.8	ND U	ug/L	5.0	1.0	5	08/06/21 17:44	07/30/21	
Silicon	6010C	**2820**	ug/L	210	30	1	08/26/21 09:55	07/30/21	
Silver	200.8	ND U	ug/L	0.10	0.05	5	08/06/21 17:44	07/30/21	
Sodium	6010C	**41200**	ug/L	210	30	1	08/26/21 09:55	07/30/21	
Thallium	200.8	**0.06 J**	ug/L	0.10	0.05	5	08/06/21 17:44	07/30/21	
Zinc	200.8	ND U	ug/L	10	3	5	08/06/21 17:44	07/30/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-17-20210714	**Basis:**	NA
Lab Code:	K2108282-004		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**93**	ug/L	20	3	5	08/06/21 17:23	07/30/21	
Iron	200.8	ND U	ug/L	10	2	5	08/06/21 17:23	07/30/21	
Manganese	200.8	**11.6**	ug/L	1.0	0.2	5	08/06/21 17:23	07/30/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-20-20210714	**Basis:**	NA
Lab Code:	K2108282-005		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**5 J**	ug/L	20	3	5	08/06/21 17:46	07/30/21	
Antimony	200.8	ND U	ug/L	0.25	0.10	5	08/06/21 17:46	07/30/21	
Arsenic	200.8	**3.2**	ug/L	2.5	0.5	5	08/06/21 17:46	07/30/21	
Barium	200.8	**59.6**	ug/L	0.25	0.10	5	08/06/21 17:46	07/30/21	
Beryllium	200.8	ND U	ug/L	0.10	0.03	5	08/06/21 17:46	07/30/21	
Boron	200.8	**3970**	ug/L	40	10	20	08/06/21 14:47	07/30/21	
Cadmium	200.8	**0.09 J**	ug/L	0.10	0.04	5	08/06/21 17:46	07/30/21	
Calcium	6010C	**160000**	ug/L	21	3	1	08/26/21 09:57	07/30/21	
Chromium	200.8	ND U	ug/L	1.0	0.2	5	08/06/21 17:46	07/30/21	
Cobalt	200.8	ND U	ug/L	0.10	0.05	5	08/06/21 17:46	07/30/21	
Iron	200.8	ND U	ug/L	10	2	5	08/06/21 17:46	07/30/21	
Lead	200.8	ND U	ug/L	0.10	0.03	5	08/06/21 17:46	07/30/21	
Lithium	200.8	**111**	ug/L	0.50	0.50	5	08/06/21 17:46	07/30/21	
Magnesium	6010C	**54600**	ug/L	5.3	0.4	1	08/26/21 09:57	07/30/21	
Manganese	200.8	**3.1**	ug/L	1.0	0.2	5	08/06/21 17:46	07/30/21	
Molybdenum	200.8	**791**	ug/L	0.50	0.15	5	08/06/21 17:46	07/30/21	
Nickel	200.8	**0.6 J**	ug/L	1.0	0.2	5	08/06/21 17:46	07/30/21	
Potassium	6010C	**5740**	ug/L	210	60	1	08/26/21 09:57	07/30/21	
Selenium	200.8	ND U	ug/L	5.0	1.0	5	08/06/21 17:46	07/30/21	
Silicon	6010C	**3130**	ug/L	210	30	1	08/26/21 09:57	07/30/21	
Silver	200.8	ND U	ug/L	0.10	0.05	5	08/06/21 17:46	07/30/21	
Sodium	6010C	**24700**	ug/L	210	30	1	08/26/21 09:57	07/30/21	
Thallium	200.8	ND U	ug/L	0.10	0.05	5	08/06/21 17:46	07/30/21	
Zinc	200.8	ND U	ug/L	10	3	5	08/06/21 17:46	07/30/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-20-20210714	**Basis:**	NA
Lab Code:	K2108282-005		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**5 J**	ug/L	20	3	5	08/06/21 17:34	07/30/21	
Iron	200.8	**11**	ug/L	10	2	5	08/06/21 17:34	07/30/21	
Manganese	200.8	**3.8**	ug/L	1.0	0.2	5	08/06/21 17:34	07/30/21	

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 15:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-10-20210714	**Basis:**	NA
Lab Code:	K2108282-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity as CaCO3, Total	SM 2320 B	**178**		mg/L	15	0.6	1	07/19/21 15:11	NA	
Ammonia as Nitrogen	350.1	ND	U	mg/L	0.050	0.020	1	07/23/21 14:57	07/23/21	
Bicarbonate as CaCO3	SM 2320 B	**178**		mg/L	15	0.6	1	07/19/21 15:11	NA	
Carbon, Total Organic	SM 5310 C	ND	U	mg/L	0.50	0.07	1	07/28/21 18:39	NA	
Carbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 15:11	NA	
Chloride	300.0	**3.15**		mg/L	0.20	0.02	2	07/16/21 18:04	NA	
Fluoride	300.0	ND	U	mg/L	0.20	0.01	2	07/16/21 18:04	NA	
Nitrate as Nitrogen	300.0	**0.12**		mg/L	0.10	0.02	2	07/16/21 18:04	NA	*
Nitrite as Nitrogen	300.0	ND	U	mg/L	0.10	0.006	2	07/16/21 18:04	NA	*
Orthophosphate as Phosphorus	SM 4500-P E	ND	U	mg/L	0.050	0.020	1	07/16/21 17:05	NA	*
Sulfate	300.0	**6.62**		mg/L	0.40	0.04	2	07/16/21 18:04	NA	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-15R-20210714	**Basis:**	NA
Lab Code:	K2108282-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity as CaCO3, Total	SM 2320 B	**87**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Ammonia as Nitrogen	350.1	**0.500**		mg/L	0.050	0.020	1	07/23/21 14:57	07/23/21	
Bicarbonate as CaCO3	SM 2320 B	**87**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Carbon, Total Organic	SM 5310 C	ND	U	mg/L	0.50	0.07	1	07/28/21 18:39	NA	
Carbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 18:11	NA	
Chloride	300.0	**79.7**		mg/L	4.0	0.3	40	07/21/21 19:10	NA	
Fluoride	300.0	ND	U	mg/L	0.20	0.01	2	07/16/21 18:43	NA	
Nitrate as Nitrogen	300.0	**0.03**	**J**	mg/L	0.10	0.02	2	07/16/21 18:43	NA	*
Nitrite as Nitrogen	300.0	ND	U	mg/L	0.10	0.006	2	07/16/21 18:43	NA	*
Orthophosphate as Phosphorus	SM 4500-P E	ND	U	mg/L	0.050	0.020	1	07/16/21 17:05	NA	*
Sulfate	300.0	**228**		mg/L	8.0	0.8	40	07/21/21 19:10	NA	

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-16-20210714	**Basis:**	NA
Lab Code:	K2108282-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity as CaCO3, Total	SM 2320 B	**30**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Ammonia as Nitrogen	350.1	**0.578**		mg/L	0.050	0.020	1	07/23/21 14:57	07/23/21	
Bicarbonate as CaCO3	SM 2320 B	**30**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Carbon, Total Organic	SM 5310 C	**0.16**	**J**	mg/L	0.50	0.07	1	07/28/21 18:39	NA	
Carbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 18:11	NA	
Chloride	300.0	**23.9**		mg/L	0.50	0.04	5	07/21/21 19:19	NA	
Fluoride	300.0	ND	U	mg/L	0.20	0.01	2	07/16/21 18:53	NA	
Nitrate as Nitrogen	300.0	ND	U	mg/L	0.10	0.02	2	07/16/21 18:53	NA	*
Nitrite as Nitrogen	300.0	ND	U	mg/L	0.10	0.006	2	07/16/21 18:53	NA	*
Orthophosphate as Phosphorus	SM 4500-P E	ND	U	mg/L	0.050	0.020	1	07/16/21 17:05	NA	*
Sulfate	300.0	**187**		mg/L	8.0	0.8	40	07/21/21 19:29	NA	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-17-20210714	**Basis:**	NA
Lab Code:	K2108282-004		

General Chemistry Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity as CaCO3, Total	SM 2320 B	**23**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Ammonia as Nitrogen	350.1	**1.06**		mg/L	0.050	0.020	1	07/23/21 14:57	07/23/21	
Bicarbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 18:11	NA	
Carbon, Total Organic	SM 5310 C	**0.80**		mg/L	0.50	0.07	1	07/28/21 18:39	NA	
Carbonate as CaCO3	SM 2320 B	**18**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Chloride	300.0	**66.3**		mg/L	2.0	0.2	20	07/21/21 19:58	NA	
Fluoride	300.0	ND	U	mg/L	0.20	0.01	2	07/16/21 19:03	NA	
Nitrate as Nitrogen	300.0	ND	U	mg/L	0.10	0.02	2	07/16/21 19:03	NA	*
Nitrite as Nitrogen	300.0	ND	U	mg/L	0.10	0.006	2	07/16/21 19:03	NA	*
Orthophosphate as Phosphorus	SM 4500-P E	ND	U	mg/L	0.050	0.020	1	07/16/21 17:05	NA	*
Sulfate	300.0	**453**		mg/L	20	2	100	07/21/21 20:08	NA	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-20-20210714	**Basis:**	NA
Lab Code:	K2108282-005		

General Chemistry Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity as CaCO3, Total	SM 2320 B	**52**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Ammonia as Nitrogen	350.1	**0.585**		mg/L	0.050	0.020	1	07/23/21 14:57	07/23/21	
Bicarbonate as CaCO3	SM 2320 B	**52**		mg/L	15	0.6	1	07/19/21 18:11	NA	
Carbon, Total Organic	SM 5310 C	**0.25**	**J**	mg/L	0.50	0.07	1	07/28/21 18:39	NA	
Carbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 18:11	NA	
Chloride	300.0	**25.0**		mg/L	0.50	0.04	5	07/21/21 20:38	NA	
Fluoride	300.0	ND	U	mg/L	0.20	0.01	2	07/16/21 19:32	NA	
Nitrate as Nitrogen	300.0	ND	U	mg/L	0.10	0.02	2	07/16/21 19:32	NA	*
Nitrite as Nitrogen	300.0	ND	U	mg/L	0.10	0.006	2	07/16/21 19:32	NA	*
Orthophosphate as Phosphorus	SM 4500-P E	ND	U	mg/L	0.050	0.020	1	07/16/21 17:05	NA	
Sulfate	300.0	**610**		mg/L	20	2	100	07/21/21 20:47	NA	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2114003-02		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	6010C	ND U	ug/L	21	3	1	08/26/21 09:19	07/30/21	
Magnesium	6010C	ND U	ug/L	5.3	0.4	1	08/26/21 09:19	07/30/21	
Potassium	6010C	ND U	ug/L	210	60	1	08/26/21 09:19	07/30/21	
Silicon	6010C	**50 J**	ug/L	210	30	1	08/26/21 09:19	07/30/21	
Sodium	6010C	ND U	ug/L	210	30	1	08/26/21 09:19	07/30/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2114004-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	200.8	**1.1 J**	ug/L	4.0	0.5	1	08/06/21 14:26	07/30/21	
Antimony	200.8	ND U	ug/L	0.050	0.020	1	08/06/21 14:26	07/30/21	
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	08/06/21 14:26	07/30/21	
Barium	200.8	ND U	ug/L	0.050	0.020	1	08/06/21 14:26	07/30/21	
Beryllium	200.8	**0.006 J**	ug/L	0.020	0.005	1	08/06/21 14:26	07/30/21	
Boron	200.8	ND U	ug/L	2.0	0.5	1	08/06/21 14:26	07/30/21	
Cadmium	200.8	ND U	ug/L	0.020	0.008	1	08/06/21 14:26	07/30/21	
Chromium	200.8	**0.03 J**	ug/L	0.20	0.03	1	08/06/21 14:26	07/30/21	
Cobalt	200.8	ND U	ug/L	0.020	0.009	1	08/06/21 14:26	07/30/21	
Iron	200.8	ND U	ug/L	2.0	0.3	1	08/06/21 14:26	07/30/21	
Lead	200.8	ND U	ug/L	0.020	0.006	1	08/06/21 14:26	07/30/21	
Lithium	200.8	ND U	ug/L	0.10	0.10	1	08/06/21 14:26	07/30/21	
Manganese	200.8	**0.06 J**	ug/L	0.20	0.04	1	08/06/21 14:26	07/30/21	
Molybdenum	200.8	ND U	ug/L	0.10	0.03	1	08/06/21 14:26	07/30/21	
Nickel	200.8	ND U	ug/L	0.20	0.04	1	08/06/21 14:26	07/30/21	
Selenium	200.8	ND U	ug/L	1.0	0.2	1	08/06/21 14:26	07/30/21	
Silver	200.8	ND U	ug/L	0.020	0.009	1	08/06/21 14:26	07/30/21	
Thallium	200.8	ND U	ug/L	0.020	0.009	1	08/06/21 14:26	07/30/21	
Zinc	200.8	ND U	ug/L	2.0	0.5	1	08/06/21 14:26	07/30/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	08/26/21
		Date Extracted:	07/30/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-MW-10-20210714	**Units:**	ug/L
Lab Code:	K2108282-001	**Basis:**	NA
Analysis Method:	6010C		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2114003-05

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Calcium	38000	47200	10000	93	75-125
Magnesium	22200	32400	10000	102	75-125
Potassium	260	10900	10000	107	75-125
Sodium	2830	12700	10000	99	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	08/26/21
		Date Extracted:	07/30/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-MW-10-20210714	**Units:**	ug/L
Lab Code:	K2108282-001	**Basis:**	NA
Analysis Method:	6010C		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2114003-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Silicon	4630	15500	10000	109	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request:K2108282
Date Collected:07/14/21
Date Received:07/16/21
Date Analyzed:8/6/21

Matrix Spike Summary
Total Metals

Sample Name: GST-MW-15R-20210714
Lab Code: K2108282-002

Units:ug/L
Basis:NA

Matrix Spike
KQ2114004-04

Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	200.8	6 J	100	100	95	70-130
Antimony	200.8	ND U	11.0	10.0	110	70-130
Arsenic	200.8	1.7 J	48.6	50.0	94	70-130
Barium	200.8	61.0	161	100	100	70-130
Beryllium	200.8	ND U	2.62	2.50	105	70-130
Boron	200.8	2210	2280	25	270 #	70-130
Cadmium	200.8	ND U	25.3	25.0	101	70-130
Chromium	200.8	ND U	9.9	10.0	99	70-130
Cobalt	200.8	0.74	23.9	25.0	93	70-130
Iron	200.8	122	166	50	89	70-130
Lead	200.8	ND U	51.4	50.0	103	70-130
Lithium	200.8	34.8	86.0	50.0	102	70-130
Manganese	200.8	828	825	25.0	-12 #	70-130
Molybdenum	200.8	125	150	25.0	101 #	70-130
Nickel	200.8	0.9 J	24.2	25.0	93	70-130
Selenium	200.8	ND U	50.8	50.0	102	70-130
Silver	200.8	ND U	12.1	12.5	96	70-130
Thallium	200.8	ND U	52.1	50.0	104	70-130
Zinc	200.8	ND U	25	25	100	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	08/26/21

Replicate Sample Summary
Dissolved Metals

Sample Name:	GST-MW-10-20210714	**Units:**	ug/L
Lab Code:	K2108282-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2114003-04 Result	Average	RPD	RPD Limit
Calcium	6010C	21	3	38000	37900	38000	<1	20
Magnesium	6010C	5.3	0.4	22200	22200	22200	<1	20
Potassium	6010C	210	60	260	230	250	12	20
Silicon	6010C	210	30	4630	4610	4620	<1	20
Sodium	6010C	210	30	2830	2810	2820	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	08/06/21

Replicate Sample Summary
Total Metals

Sample Name:	GST-MW-15R-20210714	**Units:**	ug/L
Lab Code:	K2108282-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2114004-03 Result	Average	RPD	RPD Limit
Aluminum	200.8	20	3	6 J	5 J	6	18	20
Antimony	200.8	0.25	0.10	ND U	ND U	ND	-	20
Arsenic	200.8	2.5	0.5	1.7 J	1.5 J	1.6	13	20
Barium	200.8	0.25	0.10	61.0	60.3	60.7	1	20
Beryllium	200.8	0.10	0.03	ND U	ND U	ND	-	20
Boron	200.8	40	10	2210	2270	2240	3	20
Cadmium	200.8	0.10	0.04	ND U	ND U	ND	-	20
Chromium	200.8	1.0	0.2	ND U	ND U	ND	-	20
Cobalt	200.8	0.10	0.05	0.74	0.63	0.69	16	20
Iron	200.8	10	2	122	120	121	2	20
Lead	200.8	0.10	0.03	ND U	ND U	ND	-	20
Lithium	200.8	0.50	0.50	34.8	34.6	34.7	<1	20
Manganese	200.8	1.0	0.2	828	825	827	<1	20
Molybdenum	200.8	0.50	0.15	125	124	125	<1	20
Nickel	200.8	1.0	0.2	0.9 J	0.9 J	0.9	<1	20
Selenium	200.8	5.0	1.0	ND U	ND U	ND	-	20
Silver	200.8	0.10	0.05	ND U	ND U	ND	-	20
Thallium	200.8	0.10	0.05	ND U	ND U	ND	-	20
Zinc	200.8	10	3	ND U	ND U	ND	-	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 08/26/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2114003-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Calcium	6010C	12400	12500	99	80-120
Magnesium	6010C	13400	12500	107	80-120
Potassium	6010C	13500	12500	108	80-120
Sodium	6010C	12500	12500	100	80-120

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 08/26/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2114003-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Silicon	6010C	10600	10000	106	80-120

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 08/06/21

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2114004-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	200.8	97.1	100	97	85-115
Iron	200.8	46.8	50.0	94	85-115
Manganese	200.8	23.6	25.0	95	85-115

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 08/06/21

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2114004-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Antimony	200.8	10.6	10.0	106	85-115
Arsenic	200.8	47.4	50.0	95	85-115
Barium	200.8	99.5	100	99	85-115
Beryllium	200.8	2.51	2.50	101	85-115
Boron	200.8	22.3	25.0	89	85-115
Cadmium	200.8	25.5	25.0	102	85-115
Chromium	200.8	9.31	10.0	93	85-115
Cobalt	200.8	23.4	25.0	94	85-115
Lead	200.8	50.8	50.0	102	85-115
Lithium	200.8	51.2	50.0	102	85-115
Molybdenum	200.8	26.4	25.0	106	85-115
Nickel	200.8	23.5	25.0	94	85-115
Selenium	200.8	50.8	50.0	102	85-115
Silver	200.8	12.7	12.5	101	85-115
Thallium	200.8	51.1	50.0	102	85-115
Zinc	200.8	22.0	25.0	88	85-115

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2108282-MB1		

General Chemistry Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Alkalinity as CaCO3, Total	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 15:11	NA	
Ammonia as Nitrogen	350.1	ND	U	mg/L	0.050	0.020	1	07/23/21 14:57	07/23/21	
Bicarbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 15:11	NA	
Carbon, Total Organic	SM 5310 C	ND	U	mg/L	0.50	0.07	1	07/28/21 18:39	NA	
Carbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 15:11	NA	
Chloride	300.0	ND	U	mg/L	0.10	0.007	1	07/16/21 11:29	NA	
Fluoride	300.0	ND	U	mg/L	0.10	0.005	1	07/16/21 11:29	NA	
Nitrate as Nitrogen	300.0	ND	U	mg/L	0.050	0.007	1	07/16/21 11:29	NA	
Nitrite as Nitrogen	300.0	ND	U	mg/L	0.050	0.003	1	07/16/21 11:29	NA	
Orthophosphate as Phosphorus	SM 4500-P E	ND	U	mg/L	0.050	0.020	1	07/16/21 17:05	NA	
Sulfate	300.0	ND	U	mg/L	0.20	0.02	1	07/16/21 11:29	NA	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2108282-MB2		

General Chemistry Parameters

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Q
Alkalinity as CaCO3, Total	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 18:11	
Bicarbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 18:11	
Carbon, Total Organic	SM 5310 C	ND	U	mg/L	0.50	0.07	1	07/28/21 18:39	
Carbonate as CaCO3	SM 2320 B	ND	U	mg/L	15	0.6	1	07/19/21 18:11	
Chloride	300.0	ND	U	mg/L	0.10	0.007	1	07/16/21 19:22	
Fluoride	300.0	ND	U	mg/L	0.10	0.005	1	07/16/21 19:22	
Nitrate as Nitrogen	300.0	ND	U	mg/L	0.050	0.007	1	07/16/21 19:22	
Nitrite as Nitrogen	300.0	ND	U	mg/L	0.050	0.003	1	07/16/21 19:22	
Sulfate	300.0	ND	U	mg/L	0.20	0.02	1	07/16/21 19:22	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2108282-MB3		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.007	1	07/17/21 00:27	
Fluoride	300.0	ND U	mg/L	0.10	0.005	1	07/17/21 00:27	
Nitrate as Nitrogen	300.0	ND U	mg/L	0.050	0.007	1	07/17/21 00:27	
Nitrite as Nitrogen	300.0	ND U	mg/L	0.050	0.003	1	07/17/21 00:27	
Sulfate	300.0	ND U	mg/L	0.20	0.02	1	07/17/21 00:27	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2108282-MB4		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.007	1	07/21/21 12:26	
Sulfate	300.0	ND U	mg/L	0.20	0.02	1	07/21/21 12:26	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2108282-MB5		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.007	1	07/21/21 19:48	
Sulfate	300.0	ND U	mg/L	0.20	0.02	1	07/21/21 19:48	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request:K2108282
Date Collected:07/14/21
Date Received:07/16/21
Date Analyzed:7/16/21

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: GST-MW-10-20210714
Lab Code: K2108282-001

Units:mg/L
Basis:NA

			Matrix Spike			Duplicate Matrix Spike					
			K2108282-001MS			K2108282-001DMS					
Analyte Name	**Method**	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	SM 4500-P E	ND U	0.82	0.80	102	0.82	0.80	102	75-125	<1	20
Fluoride	300.0	ND U	8.66	8.00	108	8.66	8.00	108	90-110	<1	20
Chloride	300.0	3.15	10.8	8.00	95	10.8	8.00	95	90-110	<1	20
Nitrate as Nitrogen	300.0	0.12	8.21	8.00	101	8.10	8.00	100	90-110	1	20
Sulfate	300.0	6.62	14.8	8.00	102	14.5	8.00	98	90-110	2	20
Nitrite as Nitrogen	300.0	ND U	8.06	8.00	101	8.03	8.00	100	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	07/16/21

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	GST-MW-10-20210714	**Units:**	mg/L
Lab Code:	K2108282-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2108282-001DUP Result	Average	RPD	RPD Limit
Chloride	300.0	0.20	0.02	3.15	3.12	3.14	<1	20
Fluoride	300.0	0.20	0.01	ND U	ND U	NC	NC	20
Nitrate as Nitrogen	300.0	0.10	0.02	0.12	0.12	0.120	<1	20
Orthophosphate as Phosphorus	SM 4500-P E	0.050	0.020	ND U	ND U	NC	NC	20
Sulfate	300.0	0.40	0.04	6.62	6.55	6.59	1	20
Nitrite as Nitrogen	300.0	0.10	0.006	ND U	ND U	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	07/19/21

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	GST-MW-15R-20210714	**Units:**	mg/L
Lab Code:	K2108282-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2108282-002DUP Result	Average	RPD	RPD Limit
Bicarbonate as CaCO3	SM 2320 B	15		87	87	87.2	<1	20
Carbonate as CaCO3	SM 2320 B	15		ND U	ND U	NC	NC	20
Alkalinity as CaCO3, Total	SM 2320 B	15	0.6	87	87	87.2	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 07/16/21 - 07/28/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2108282-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity as CaCO3, Total	SM 2320 B	110	109	101	90-110
Ammonia as Nitrogen	350.1	4.47	4.58	98	86-114
Bicarbonate as CaCO3	SM 2320 B	110	109	101	85-115
Carbon, Total Organic	SM 5310 C	23.5	25.0	94	83-117
Carbonate as CaCO3	SM 2320 B	110	109	101	85-115
Chloride	300.0	4.73	5.00	95	90-110
Fluoride	300.0	4.70	5.00	94	90-110
Nitrate as Nitrogen	300.0	2.42	2.50	97	90-110
Nitrite as Nitrogen	300.0	2.41	2.50	97	90-110
Orthophosphate as Phosphorus	SM 4500-P E	1.61	1.57	103	85-115
Sulfate	300.0	4.89	5.00	98	90-110

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 07/16/21 - 07/19/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2108282-LCS3

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity as CaCO3, Total	SM 2320 B	111	109	102	90-110
Bicarbonate as CaCO3	SM 2320 B	111	109	102	85-115
Carbonate as CaCO3	SM 2320 B	111	109	102	85-115
Chloride	300.0	4.86	5.00	97	90-110
Fluoride	300.0	4.94	5.00	99	90-110
Nitrate as Nitrogen	300.0	2.46	2.50	98	90-110
Nitrite as Nitrogen	300.0	2.46	2.50	98	90-110
Sulfate	300.0	5.25	5.00	105	90-110

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 07/17/21 - 07/19/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2108282-LCS4

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity as CaCO3, Total	SM 2320 B	111	109	102	90-110
Bicarbonate as CaCO3	SM 2320 B	111	109	102	85-115
Carbonate as CaCO3	SM 2320 B	111	109	102	85-115
Chloride	300.0	4.83	5.00	97	90-110
Fluoride	300.0	4.95	5.00	99	90-110
Nitrate as Nitrogen	300.0	2.45	2.50	98	90-110
Nitrite as Nitrogen	300.0	2.43	2.50	97	90-110
Sulfate	300.0	4.98	5.00	100	90-110

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 07/19/21 - 07/21/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2108282-LCS5

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Alkalinity as CaCO3, Total	SM 2320 B	110	109	101	90-110
Bicarbonate as CaCO3	SM 2320 B	110	109	101	85-115
Carbonate as CaCO3	SM 2320 B	110	109	101	85-115
Chloride	300.0	4.84	5.00	97	90-110
Sulfate	300.0	4.94	5.00	99	90-110

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108282
Date Analyzed: 07/21/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2108282-LCS6

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.81	5.00	96	90-110
Sulfate	300.0	4.98	5.00	100	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108282
Project:	Gaston/201114-01.04 Task 02	**Date Analyzed:**	07/28/21
Sample Matrix:	Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:	SM 5310 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	732963

	Lab Control Sample K2108282-LCS1			Duplicate Lab Control Sample K2108282-DLCS1					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon, Total Organic	23.5	25.0	94	24.0	25.0	96	83-117	2	10

August 17, 2021 Service Request No:K2108287

Masa Kanematsu
Anchor QEA, LLC
6720 SW Macadam Avenue
Suite 125
Portland, OR 97219

Laboratory Results for: Gatson

Dear Masa,

Enclosed are the results of the sample(s) submitted to our laboratory July 16, 2021
For your reference, these analyses have been assigned our service request number **K2108287.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC
Project: Gatson
Sample Matrix: Water

Service Request: K2108287
Date Received: 07/16/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Four water samples were received for analysis at ALS Environmental on 07/16/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 08/17/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-MW-15R-20210714			Lab ID: K2108287-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	36.8		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	125		0.15	0.50	ug/L	200.8

CLIENT ID: GST-MW-16-20210714			Lab ID: K2108287-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	120		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	622		0.15	0.50	ug/L	200.8

CLIENT ID: GST-MW-17-20210714			Lab ID: K2108287-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	10.7		0.5	2.5	ug/L	200.8
Lithium, Dissolved	862		1.0	1.0	ug/L	200.8
Molybdenum, Dissolved	3620		0.15	0.50	ug/L	200.8

CLIENT ID: GST-MW-20-20210714			Lab ID: K2108287-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	113		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	823		0.15	0.50	ug/L	200.8

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC **Service Request:**K2108287

Project: Gatson/201114-01.04 Task 02

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2108287-001	GST-MW-15R-20210714	7/14/2021	1600
K2108287-002	GST-MW-16-20210714	7/14/2021	1630
K2108287-003	GST-MW-17-20210714	7/14/2021	1700
K2108287-004	GST-MW-20-20210714	7/14/2021	1730

K2108287

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/15/2021
Project Name:	Gaston
Project Number:	201114-01.04 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Lithium, Molybdenum (diss.) 5d TAT	Arsenic, Lithium, Molybdenum (diss.) 5d TAT	Dissolved metals	Total Metals (Al, Fe, Mn)	Anions	Ortho-Phosphate	Alkalinity	Total Organic Carbon	Ammonia as N	Comments/Preservation
1	GST-MW-10-20210714	7/14/2021	15:30	Water	6			X	X	X	X	X	X	X	
2	GST-MW-15R-20210714	7/14/2021	16:00	Water	6	X		X	X	X	X	X	X	X	
3	GST-MW-16-20210714	7/14/2021	16:30	Water	6	X		X	X	X	X	X	X	X	
4	GST-MW-17-20210714	7/14/2021	17:00	Water	6		X	X	X	X	X	X	X	X	
5	GST-MW-20-20210714	7/14/2021	17:30	Water	6	X		X	X	X	X	X	X	X	
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Notes: **Please analyze all analytes with Standard TAT on this page otherwise noted. For specific dissolved metals (As, Li, and Mo), please analyze by EPA 200.8 with 5 day TAT if possible.**

Dissolved metals: Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Fe, Pb, Li, Mg, Mn, Mo, Ni, K, Se, Si, Ag, Na, Tl, Zn), Anions (Cl, F, nitrate, nitrite, Sulfate), Alkalinity with carbonate/bicarbonate speciation

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	Cody Graves	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	7/16/2020 9:00		7/16/21 1530

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 1 of 1

PM MH

Cooler Receipt and Preservation Form

Client Anchor Service Request K21 058287

Received: 7/16/21 Opened: 7/16/21 By: CG Unloaded: 7/16/21 By: CG

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / (NA)	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number (NA)	Filed
	5.2	IR01					

6. Packing material: *Inserts* (*Baggies*) *Bubble Wrap* (*Gel Packs*) (*Wet Ice*) *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Anchor QEA, LLC
Project: Gatson/201114-01.04 Task 02
Service Request: K2108287

Sample Name: GST-MW-15R-20210714
Lab Code: K2108287-001
Sample Matrix: Water
Date Collected: 07/14/21
Date Received: 07/16/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER

Sample Name: GST-MW-16-20210714
Lab Code: K2108287-002
Sample Matrix: Water
Date Collected: 07/14/21
Date Received: 07/16/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER

Sample Name: GST-MW-17-20210714
Lab Code: K2108287-003
Sample Matrix: Water
Date Collected: 07/14/21
Date Received: 07/16/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER

Sample Name: GST-MW-17-20210714
Lab Code: K2108287-003.R01
Sample Matrix: Water
Date Collected: 07/14/21
Date Received: 07/16/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER

Sample Name: GST-MW-20-20210714
Lab Code: K2108287-004
Sample Matrix: Water
Date Collected: 07/14/21
Date Received: 07/16/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	EMCALLISTER

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108287
Project:	Gatson/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-15R-20210714	**Basis:**	NA
Lab Code:	K2108287-001		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**36.8**	ug/L	0.50	0.50	5	08/06/21 19:12	07/21/21	
Molybdenum	200.8	**125**	ug/L	0.50	0.15	5	08/06/21 19:12	07/21/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108287
Project:	Gatson/201114-01.04 Task 02	**Date Collected:**	07/14/21 16:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-16-20210714	**Basis:**	NA
Lab Code:	K2108287-002		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**120**	ug/L	0.50	0.50	5	08/06/21 19:19	07/21/21	
Molybdenum	200.8	**622**	ug/L	0.50	0.15	5	08/06/21 19:19	07/21/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108287
Project:	Gatson/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:00
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-17-20210714	**Basis:**	NA
Lab Code:	K2108287-003		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**10.7**	ug/L	2.5	0.5	5	08/06/21 19:21	07/21/21	
Lithium	200.8	**862**	ug/L	1.0	1.0	10	08/16/21 16:33	07/21/21	
Molybdenum	200.8	**3620**	ug/L	0.50	0.15	5	08/06/21 19:21	07/21/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108287
Project:	Gatson/201114-01.04 Task 02	**Date Collected:**	07/14/21 17:30
Sample Matrix:	Water	**Date Received:**	07/16/21 15:30
Sample Name:	GST-MW-20-20210714	**Basis:**	NA
Lab Code:	K2108287-004		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**113**	ug/L	0.50	0.50	5	08/06/21 19:23	07/21/21	
Molybdenum	200.8	**823**	ug/L	0.50	0.15	5	08/06/21 19:23	07/21/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108287
Project:	Gatson/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2113607-01		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	08/06/21 19:07	07/21/21	
Lithium	200.8	ND U	ug/L	0.10	0.10	1	08/06/21 19:07	07/21/21	
Molybdenum	200.8	ND U	ug/L	0.10	0.03	1	08/06/21 19:07	07/21/21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108287
Project:	Gatson/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	08/6/21
		Date Extracted:	07/21/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-MW-15R-20210714	**Units:**	ug/L
Lab Code:	K2108287-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2113607-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	1.1 J	48.6	50.0	95	70-130
Lithium	36.8	88.4	50.0	103	70-130
Molybdenum	125	154	25.0	115 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108287
Project	Gatson/201114-01.04 Task 02	**Date Collected:**	07/14/21
Sample Matrix:	Water	**Date Received:**	07/16/21
		Date Analyzed:	08/06/21

Replicate Sample Summary

Dissolved Metals

Sample Name:	GST-MW-15R-20210714	**Units:**	ug/L
Lab Code:	K2108287-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2113607-03 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	1.1 J	1.5 J	1.3	31 #	20
Lithium	200.8	0.50	0.50	36.8	35.6	36.2	3	20
Molybdenum	200.8	0.50	0.15	125	126	126	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Anchor QEA, LLC
Project: Gatson/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2108287
Date Analyzed: 08/06/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2113607-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	200.8	49.9	50.0	100	85-115
Lithium	200.8	54.3	50.0	109	85-115
Molybdenum	200.8	26.0	25.0	104	85-115

August 30, 2021 Service Request No:K2108892

Masa Kanematsu
Anchor QEA, LLC
6720 SW Macadam Avenue
Suite 125
Portland, OR 97219

Laboratory Results for: Gaston

Dear Masa,

Enclosed are the results of the sample(s) submitted to our laboratory July 29, 2021
For your reference, these analyses have been assigned our service request number **K2108892.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC
Project: Gaston
Sample Matrix: Water

Service Request: K2108892
Date Received: 07/29/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Twenty water samples were received for analysis at ALS Environmental on 07/29/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by Noe D. Dave Date 08/30/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-INF-MW-16-1			Lab ID: K2108892-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	111		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	626		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-1			Lab ID: K2108892-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	63.7		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	377		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-1			Lab ID: K2108892-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	52.4		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	388		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-2			Lab ID: K2108892-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	52.9		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	359		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-2			Lab ID: K2108892-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	58.7		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	503		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-16-3			Lab ID: K2108892-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	113		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	624		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-3			Lab ID: K2108892-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	76.7		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	504		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-3			Lab ID: K2108892-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	78.8		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	505		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-4			Lab ID: K2108892-009			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	77.3		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	488		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-4			Lab ID: K2108892-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	93.4		0.50	0.50	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-2-4			Lab ID: K2108892-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Molybdenum, Dissolved	622		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-16-5			Lab ID: K2108892-011			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	117		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	648		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-5			Lab ID: K2108892-012			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	92.8		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	576		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-5			Lab ID: K2108892-013			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	99.1		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	632		0.15	0.50	ug/L	200.8

CLIENT ID: GGS-COL-INF-MW-16-6			Lab ID: K2108892-014			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	111		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	629		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-6			Lab ID: K2108892-015			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	3.39		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	37.4		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-6			Lab ID: K2108892-016			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	16.5		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	94.7		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-1			Lab ID: K2108892-017			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	123		0.5	2.5	ug/L	200.8
Lithium, Dissolved	865		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4000		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-3-1			Lab ID: K2108892-018			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	1.9	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	651		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	1860		0.15	0.50	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-4-1			Lab ID: K2108892-019			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	0.8	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	576		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	2310		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-3-2			Lab ID: K2108892-020			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	5.1		0.5	2.5	ug/L	200.8
Lithium, Dissolved	772		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	2490		0.15	0.50	ug/L	200.8

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC **Service Request:**K2108892

Project: Gaston/201114-01.01 Task

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2108892-001	GST-COL-INF-MW-16-1	7/25/2021	1400
K2108892-002	GST-COL-1-1	7/25/2021	1400
K2108892-003	GST-COL-2-1	7/25/2021	1400
K2108892-004	GST-COL-1-2	7/25/2021	2130
K2108892-005	GST-COL-2-2	7/25/2021	2130
K2108892-006	GST-COL-INF-MW-16-3	7/26/2021	1300
K2108892-007	GST-COL-1-3	7/26/2021	1300
K2108892-008	GST-COL-2-3	7/26/2021	1300
K2108892-009	GST-COL-1-4	7/26/2021	1810
K2108892-010	GST-COL-2-4	7/26/2021	1810
K2108892-011	GST-COL-INF-MW-16-5	7/27/2021	1035
K2108892-012	GST-COL-1-5	7/27/2021	1035
K2108892-013	GST-COL-2-5	7/27/2021	1035
K2108892-014	GGS-COL-INF-MW-16-6	7/28/2021	1415
K2108892-015	GST-COL-1-6	7/28/2021	1415
K2108892-016	GST-COL-2-6	7/28/2021	1415
K2108892-017	GST-COL-INF-MW-17-1	7/25/2021	1400
K2108892-018	GST-COL-3-1	7/25/2021	1400
K2108892-019	GST-COL-4-1	7/25/2021	1400
K2108892-020	GST-COL-3-2	7/25/2021	2130

K2108892

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
1	GST-COL-INF-MW-16-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
2	GST-COL-1-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
3	GST-COL-2-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
4	GST-COL-1-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
5	GST-COL-2-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
6	GST-COL-INF-MW-16-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
7	GST-COL-1-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
8	GST-COL-2-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
9	GST-COL-1-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
10	GST-COL-2-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
11	GST-COL-INF-MW-16-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
12	GST-COL-1-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
13	GST-COL-2-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
14	GGS-COL-INF-MW-16-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
15	GST-COL-1-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered

Notes: **Please analyze all analytes with** standard TAT **on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature]	[signature]
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

K2108892

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019

Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
16	GST-COL-2-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
17	GST-COL-INF-MW-17-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
18	GST-COL-3-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
19	GST-COL-4-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
20	GST-COL-3-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
21	GST-COL-4-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
22	GST-COL-INF-MW-17-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
23	GST-COL-3-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
24	GST-COL-4-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
25	GST-COL-3-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
26	GST-COL-4-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
27	GST-COL-INF-MW-17-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
28	GST-COL-3-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
29	GST-COL-4-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
30	GGS-COL-INF-MW-17-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered

ANCHOR QEA
Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Notes: **Please analyze all analytes with** standard TAT **on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature] 7/29/21 1125 AS	
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

K2108892

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
31	GST-COL-3-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
32	GST-COL-2-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
33	GST-COL-INF-MW-15R-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
34	GST-COL-5-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
35	GST-COL-6-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
36	GST-COL-5-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
37	GST-COL-6-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
38	GST-COL-INF-MW-15R-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
39	GST-COL-5-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
40	GST-COL-6-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
41	GST-COL-5-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
42	GST-COL-6-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
43	GST-COL-INF-MW-15R-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
44	GST-COL-5-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
45	GST-COL-6-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered

Notes: **Please analyze all analytes with** standard TAT **on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature] AHS	7/29/21 1125
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 3 of 4

K2108892

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
46	GGS-COL-INF-MW-16-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
47	GST-COL-5-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
48	GST-COL-5-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								

Notes: **Please analyze all analytes with** standard TAT **on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature] AIS	7/29/21 1125
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 4 of 4

PM MH

Cooler Receipt and Preservation Form

Client Anchor Service Request K21 08892

Received: 7/29/21 Opened: 7/29/21 By: MP Unloaded: 7/29/21 By: MP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number / NA	Filed
8.7		IR02					
3.5		IR02					
7.7		IR02					

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:
GST-COL-INF-MW-16-6	GGS-COL-INF-MW-16-6	Date/Time/Process
GST-COL-INF-MW-17-6	GGS-COL-INF-MW-17-6	Date/Time/Process

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: Did not PH Due to Limited Volume
All Samples for Metals analysis, temp not an issue

Cooler Receipt and Preservation Form

Client Anchor Service Request ~~K20~~ K2108892

Notes, Discrepancies & Resolutions:

Received ~~GST-COL-5-5 7/27/21 1035~~ MP
GST-COL-INF-MW-15R-6 7/28/21 1415
GST-COL-6-6 7/28/21 1415
GST-COL-4-6 7/28/21 1415
Not on COC
Did not ~~receive~~ GST-COL-2-6 7/28/21 1415
GGS-COL-INF-16-6 7/28/21 1415

GST-COL-5-6 - Listed on COC twice
GGS-COL-INF-MW-16-6 - listed on COC twice
GST-COL 2-6 — listed on COC twice

Received GST-COL-INF-INF-MW-15R-6 7/28/21 1415
GST-COL-6-6 7/28/21 1415
GST-COL-4-6 7/28/21 1415

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task		

Sample Name:	GST-COL-INF-MW-16-1	**Date Collected:**	07/25/21
Lab Code:	K2108892-001	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-1-1	**Date Collected:**	07/25/21
Lab Code:	K2108892-002	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-2-1	**Date Collected:**	07/25/21
Lab Code:	K2108892-003	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-1-2	**Date Collected:**	07/25/21
Lab Code:	K2108892-004	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-2-2	**Date Collected:**	07/25/21
Lab Code:	K2108892-005	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task		

Sample Name:	GST-COL-INF-MW-16-3	**Date Collected:**	07/26/21
Lab Code:	K2108892-006	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-1-3	**Date Collected:**	07/26/21
Lab Code:	K2108892-007	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-2-3	**Date Collected:**	07/26/21
Lab Code:	K2108892-008	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-1-4	**Date Collected:**	07/26/21
Lab Code:	K2108892-009	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-2-4	**Date Collected:**	07/26/21
Lab Code:	K2108892-010	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Client: Anchor QEA, LLC
Project: Gaston/201114-01.01 Task
Service Request: K2108892

Sample Name: GST-COL-INF-MW-16-5
Lab Code: K2108892-011
Sample Matrix: Water
Date Collected: 07/27/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-1-5
Lab Code: K2108892-012
Sample Matrix: Water
Date Collected: 07/27/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-2-5
Lab Code: K2108892-013
Sample Matrix: Water
Date Collected: 07/27/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GGS-COL-INF-MW-16-6
Lab Code: K2108892-014
Sample Matrix: Water
Date Collected: 07/28/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-1-6
Lab Code: K2108892-015
Sample Matrix: Water
Date Collected: 07/28/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2108892
Project: Gaston/201114-01.01 Task

Sample Name: GST-COL-2-6 **Date Collected:** 07/28/21
Lab Code: K2108892-016 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-INF-MW-17-1 **Date Collected:** 07/25/21
Lab Code: K2108892-017 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-3-1 **Date Collected:** 07/25/21
Lab Code: K2108892-018 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-4-1 **Date Collected:** 07/25/21
Lab Code: K2108892-019 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-3-2 **Date Collected:** 07/25/21
Lab Code: K2108892-020 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-16-1	**Basis:**	NA
Lab Code:	K2108892-001		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**111**	ug/L	0.50	0.50	5	08/27/21 20:54	08/16/21	
Molybdenum	200.8	**626**	ug/L	0.50	0.15	5	08/27/21 20:54	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-1-1	**Basis:**	NA
Lab Code:	K2108892-002		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**63.7**	ug/L	0.50	0.50	5	08/27/21 20:59	08/16/21	
Molybdenum	200.8	**377**	ug/L	0.50	0.15	5	08/27/21 20:59	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-2-1	**Basis:**	NA
Lab Code:	K2108892-003		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**52.4**	ug/L	0.50	0.50	5	08/27/21 21:04	08/16/21	
Molybdenum	200.8	**388**	ug/L	0.50	0.15	5	08/27/21 21:04	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 21:30
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-1-2	**Basis:**	NA
Lab Code:	K2108892-004		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**52.9**	ug/L	0.50	0.50	5	08/27/21 21:08	08/16/21	
Molybdenum	200.8	**359**	ug/L	0.50	0.15	5	08/27/21 21:08	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 21:30
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-2-2	**Basis:**	NA
Lab Code:	K2108892-005		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**58.7**	ug/L	0.50	0.50	5	08/27/21 21:10	08/16/21	
Molybdenum	200.8	**503**	ug/L	0.50	0.15	5	08/27/21 21:10	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-16-3	**Basis:**	NA
Lab Code:	K2108892-006		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**113**	ug/L	0.50	0.50	5	08/27/21 21:12	08/16/21	
Molybdenum	200.8	**624**	ug/L	0.50	0.15	5	08/27/21 21:12	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-1-3	**Basis:**	NA
Lab Code:	K2108892-007		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**76.7**	ug/L	0.50	0.50	5	08/27/21 21:13	08/16/21	
Molybdenum	200.8	**504**	ug/L	0.50	0.15	5	08/27/21 21:13	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-2-3	**Basis:**	NA
Lab Code:	K2108892-008		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**78.8**	ug/L	0.50	0.50	5	08/27/21 21:15	08/16/21	
Molybdenum	200.8	**505**	ug/L	0.50	0.15	5	08/27/21 21:15	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/26/21 18:10
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-1-4	**Basis:**	NA
Lab Code:	K2108892-009		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**77.3**	ug/L	0.50	0.50	5	08/27/21 21:16	08/16/21	
Molybdenum	200.8	**488**	ug/L	0.50	0.15	5	08/27/21 21:16	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/26/21 18:10
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-2-4	**Basis:**	NA
Lab Code:	K2108892-010		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**93.4**	ug/L	0.50	0.50	5	08/27/21 21:18	08/16/21	
Molybdenum	200.8	**622**	ug/L	0.50	0.15	5	08/27/21 21:18	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-16-5	**Basis:**	NA
Lab Code:	K2108892-011		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**117**	ug/L	0.50	0.50	5	08/27/21 21:19	08/16/21	
Molybdenum	200.8	**648**	ug/L	0.50	0.15	5	08/27/21 21:19	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-1-5	**Basis:**	NA
Lab Code:	K2108892-012		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**92.8**	ug/L	0.50	0.50	5	08/27/21 21:21	08/16/21	
Molybdenum	200.8	**576**	ug/L	0.50	0.15	5	08/27/21 21:21	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-2-5	**Basis:**	NA
Lab Code:	K2108892-013		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**99.1**	ug/L	0.50	0.50	5	08/27/21 21:22	08/16/21	
Molybdenum	200.8	**632**	ug/L	0.50	0.15	5	08/27/21 21:22	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GGS-COL-INF-MW-16-6	**Basis:**	NA
Lab Code:	K2108892-014		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**111**	ug/L	0.50	0.50	5	08/27/21 21:27	08/16/21	
Molybdenum	200.8	**629**	ug/L	0.50	0.15	5	08/27/21 21:27	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-1-6	**Basis:**	NA
Lab Code:	K2108892-015		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**3.39**	ug/L	0.50	0.50	5	08/27/21 21:29	08/16/21	
Molybdenum	200.8	**37.4**	ug/L	0.50	0.15	5	08/27/21 21:29	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-2-6	**Basis:**	NA
Lab Code:	K2108892-016		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**16.5**	ug/L	0.50	0.50	5	08/27/21 21:30	08/16/21	
Molybdenum	200.8	**94.7**	ug/L	0.50	0.15	5	08/27/21 21:30	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-17-1	**Basis:**	NA
Lab Code:	K2108892-017		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**123**	ug/L	2.5	0.5	5	08/27/21 21:32	08/16/21	
Lithium	200.8	**865**	ug/L	0.50	0.50	5	08/27/21 21:32	08/16/21	
Molybdenum	200.8	**4000**	ug/L	0.50	0.15	5	08/27/21 21:32	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-3-1	**Basis:**	NA
Lab Code:	K2108892-018		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**1.9 J**	ug/L	2.5	0.5	5	08/27/21 21:33	08/16/21	
Lithium	200.8	**651**	ug/L	0.50	0.50	5	08/27/21 21:33	08/16/21	
Molybdenum	200.8	**1860**	ug/L	0.50	0.15	5	08/27/21 21:33	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-4-1	**Basis:**	NA
Lab Code:	K2108892-019		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**0.8 J**	ug/L	2.5	0.5	5	08/27/21 21:35	08/16/21	
Lithium	200.8	**576**	ug/L	0.50	0.50	5	08/27/21 21:35	08/16/21	
Molybdenum	200.8	**2310**	ug/L	0.50	0.15	5	08/27/21 21:35	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21 21:30
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-3-2	**Basis:**	NA
Lab Code:	K2108892-020		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**5.1**	ug/L	2.5	0.5	5	08/27/21 21:36	08/16/21	
Lithium	200.8	**772**	ug/L	0.50	0.50	5	08/27/21 21:36	08/16/21	
Molybdenum	200.8	**2490**	ug/L	0.50	0.15	5	08/27/21 21:36	08/16/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2115060-01		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	08/27/21 20:51	08/16/21	
Lithium	200.8	ND U	ug/L	0.10	0.10	1	08/27/21 20:51	08/16/21	
Molybdenum	200.8	ND U	ug/L	0.10	0.03	1	08/27/21 20:51	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21
		Date Extracted:	08/16/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-INF-MW-16-1	**Units:**	ug/L
Lab Code:	K2108892-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2115060-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	5.0	52.5	50.0	95	70-130
Lithium	111	162	50.0	101	70-130
Molybdenum	626	665	25.0	157 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project:	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21
		Date Extracted:	08/16/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-1-1	**Units:**	ug/L
Lab Code:	K2108892-002	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2115060-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	1.1 J	49.6	50.0	97	70-130
Lithium	63.7	115	50.0	102	70-130
Molybdenum	377	407	25.0	119 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21

Replicate Sample Summary
Dissolved Metals

Sample Name:	GST-COL-INF-MW-16-1	**Units:**	ug/L
Lab Code:	K2108892-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2115060-03 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	5.0	4.7	4.9	6	20
Lithium	200.8	0.50	0.50	111	114	113	3	20
Molybdenum	200.8	0.50	0.15	626	641	634	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108892
Project	Gaston/201114-01.01 Task	**Date Collected:**	07/25/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21

Replicate Sample Summary
Dissolved Metals

Sample Name:	GST-COL-1-1	**Units:**	ug/L
Lab Code:	K2108892-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2115060-05 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	1.1 J	1.1 J	1.1	<1	20
Lithium	200.8	0.50	0.50	63.7	63.4	63.6	<1	20
Molybdenum	200.8	0.50	0.15	377	379	378	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Anchor QEA, LLC
Project: Gaston/201114-01.01 Task
Sample Matrix: Water

Service Request: K2108892
Date Analyzed: 08/27/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2115060-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	200.8	48.4	50.0	97	85-115
Lithium	200.8	50.6	50.0	101	85-115
Molybdenum	200.8	26.3	25.0	105	85-115

August 30, 2021 Service Request No:K2108894

Masa Kanematsu
Anchor QEA, LLC
6720 SW Macadam Avenue
Suite 125
Portland, OR 97219

Laboratory Results for: Gaston

Dear Masa,

Enclosed are the results of the sample(s) submitted to our laboratory July 29, 2021
For your reference, these analyses have been assigned our service request number **K2108894.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC
Project: Gaston
Sample Matrix: Water

Service Request: K2108894
Date Received: 07/29/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Twenty water samples were received for analysis at ALS Environmental on 07/29/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 08/30/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-4-2			Lab ID: K2108894-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	0.9	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	725		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3450		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-3			Lab ID: K2108894-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	118		0.5	2.5	ug/L	200.8
Lithium, Dissolved	862		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3980		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-3-3			Lab ID: K2108894-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	14.0		0.5	2.5	ug/L	200.8
Lithium, Dissolved	777		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3210		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-4-3			Lab ID: K2108894-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	0.9	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	778		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3950		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-3-4			Lab ID: K2108894-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	8.9		0.5	2.5	ug/L	200.8
Lithium, Dissolved	905		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3070		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-4-4			Lab ID: K2108894-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	1.0	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	789		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3980		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-5			Lab ID: K2108894-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	119		0.5	2.5	ug/L	200.8
Lithium, Dissolved	833		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4000		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-3-5			Lab ID: K2108894-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	22.5		0.5	2.5	ug/L	200.8
Lithium, Dissolved	786		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3750		0.2	1.5	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-3-5	Lab ID: K2108894-008					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**

CLIENT ID: GST-COL-4-5	Lab ID: K2108894-009					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	21.6		0.5	2.5	ug/L	200.8
Lithium, Dissolved	785		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3710		0.2	1.5	ug/L	200.8

CLIENT ID: GGS-COL-INF-MW-17-6	Lab ID: K2108894-010					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	120		0.5	2.5	ug/L	200.8
Lithium, Dissolved	843		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4020		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-3-6	Lab ID: K2108894-011					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	1.1	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	790		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4070		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-15R-1	Lab ID: K2108894-012					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	31.5		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	175		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-5-1	Lab ID: K2108894-013					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	2.85		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	32.2		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-6-1	Lab ID: K2108894-014					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	0.56		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	2.1		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-5-2	Lab ID: K2108894-015					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	7.78		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	57.5		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-6-2	Lab ID: K2108894-016					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	0.79		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3.4		0.2	1.5	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-INF-MW-15R-3			Lab ID: K2108894-017			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	30.2		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	119		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-5-3			Lab ID: K2108894-018			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	14.6		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	82.9		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-6-3			Lab ID: K2108894-019			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	1.18		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	7.1		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-5-4			Lab ID: K2108894-020			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	10.3		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	72.4		0.2	1.5	ug/L	200.8

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC **Service Request:**K2108894

Project: Gaston/201114-01.01 Task 02

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2108894-001	GST-COL-4-2	7/25/2021	2130
K2108894-002	GST-COL-INF-MW-17-3	7/26/2021	1300
K2108894-003	GST-COL-3-3	7/26/2021	1300
K2108894-004	GST-COL-4-3	7/26/2021	1300
K2108894-005	GST-COL-3-4	7/26/2021	1810
K2108894-006	GST-COL-4-4	7/26/2021	1810
K2108894-007	GST-COL-INF-MW-17-5	7/27/2021	1035
K2108894-008	GST-COL-3-5	7/27/2021	1035
K2108894-009	GST-COL-4-5	7/27/2021	1035
K2108894-010	GGS-COL-INF-MW-17-6	7/28/2021	1415
K2108894-011	GST-COL-3-6	7/28/2021	1415
K2108894-012	GST-COL-INF-MW-15R-1	7/25/2021	1400
K2108894-013	GST-COL-5-1	7/25/2021	1400
K2108894-014	GST-COL-6-1	7/25/2021	1400
K2108894-015	GST-COL-5-2	7/25/2021	2130
K2108894-016	GST-COL-6-2	7/25/2021	2130
K2108894-017	GST-COL-INF-MW-15R-3	7/26/2021	1300
K2108894-018	GST-COL-5-3	7/26/2021	1300
K2108894-019	GST-COL-6-3	7/26/2021	1300
K2108894-020	GST-COL-5-4	7/26/2021	1810

K2108898 4

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
16	GST-COL-2-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
17	GST-COL-INF-MW-17-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
18	GST-COL-3-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
19	GST-COL-4-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
20	GST-COL-3-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
21	GST-COL-4-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
22	GST-COL-INF-MW-17-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
23	GST-COL-3-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
24	GST-COL-4-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
25	GST-COL-3-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
26	GST-COL-4-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
27	GST-COL-INF-MW-17-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
28	GST-COL-3-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
29	GST-COL-4-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
30	GGS-COL-INF-MW-17-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**
Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature] 7/29/21 1125 ALS	
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		
Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 2 of 4

K2108892 4

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

	Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
11	31	GST-COL-3-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
	32	GST-COL-2-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
12	33	GST-COL-INF-MW-15R-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
13	34	GST-COL-5-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
14	35	GST-COL-6-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
15	36	GST-COL-5-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
16	37	GST-COL-6-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
17	38	GST-COL-INF-MW-15R-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
18	39	GST-COL-5-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
19	40	GST-COL-6-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
20	41	GST-COL-5-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
	42	GST-COL-6-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
	43	GST-COL-INF-MW-15R-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
	44	GST-COL-5-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
	45	GST-COL-6-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature] AS	7/29/21 1125
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 3 of 4

KZ108897 4

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
46	GGS-COL-INF-MW-16-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
47	GST-COL-5-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
48	GST-COL-5-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature]	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		7/29/21 1125

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 4 of 4

KZ1088924

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019

Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
1	GST-COL-INF-MW-16-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
2	GST-COL-1-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
3	GST-COL-2-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
4	GST-COL-1-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
5	GST-COL-2-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
6	GST-COL-INF-MW-16-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
7	GST-COL-1-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
8	GST-COL-2-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
9	GST-COL-1-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
10	GST-COL-2-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
11	GST-COL-INF-MW-16-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
12	GST-COL-1-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
13	GST-COL-2-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
14	GGS-COL-INF-MW-16-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
15	GST-COL-1-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered

ANCHOR QEA
Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature]	7/29/24 1125
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

PM MH

Cooler Receipt and Preservation Form

Client Anchor Service Request K21 08894

Received: 7/29/21 Opened: 7/29/21 By: AP Unloaded: 7/29/21 By: AP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* (*Courier*) *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA (Y) N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / (NA)	Out of temp indicate with "X"	PM Notified if out of temp	Tracking Number (NA)	Filed
8.7		IR02					
3.5		IR02					
7.7		IR02					

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) (*Gel Packs*) *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA Y (N)
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:
GST-COL-INF-MW-16-6	GGS-COL-INF-MW-16-6	Date/Time/Process
GST-COL-INF-MW-17-6	GGS-COL-INF-MW-17-6	Date/Time/Process

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: Did not PH Due to Limited Volume
All Samples for metals analysis, temp not an issue

ALS

Cooler Receipt and Preservation Form

Client Anchor Service Request ~~K20~~ KC108892

Notes, Discrepancies & Resolutions:

Received ~~GST-COL-5-5 7/27/21 1035~~ MP

GST-COL-INF-MW-15R-6 7/28/21 1415

GST-COL-6-6 7/28/21 1415

GST-COL-4-6 7/28/21 1415

Not on COC

Did not receive GST-COL-2-6 7/28/21 1415

GGS-COL-INF-16-6 7/28/21 1415

GST-COL-5-6 - Listed on COC twice

GGS-COL-INF-MW-16-6 - listed on COC twice

GST-COL 2-6 — listed on COC twice

Received not on COC

GST-COL-INF-INF-MW-15R-6 7/28/21 1415

GST-COL-6-6 7/28/ 1415

GST-COL-4-6 7/28/21 1415

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Anchor QEA, LLC **Service Request:** K2108894
Project: Gaston/201114-01.01 Task 02

Sample Name: GST-COL-4-2 **Date Collected:** 07/25/21
Lab Code: K2108894-001 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-INF-MW-17-3 **Date Collected:** 07/26/21
Lab Code: K2108894-002 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-3-3 **Date Collected:** 07/26/21
Lab Code: K2108894-003 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-4-3 **Date Collected:** 07/26/21
Lab Code: K2108894-004 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-3-4 **Date Collected:** 07/26/21
Lab Code: K2108894-005 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2108894
Project: Gaston/201114-01.01 Task 02

Sample Name: GST-COL-4-4 **Date Collected:** 07/26/21
Lab Code: K2108894-006 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-INF-MW-17-5 **Date Collected:** 07/27/21
Lab Code: K2108894-007 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-3-5 **Date Collected:** 07/27/21
Lab Code: K2108894-008 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-4-5 **Date Collected:** 07/27/21
Lab Code: K2108894-009 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GGS-COL-INF-MW-17-6 **Date Collected:** 07/28/21
Lab Code: K2108894-010 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2108894
Project: Gaston/201114-01.01 Task 02

Sample Name: GST-COL-3-6 **Date Collected:** 07/28/21
Lab Code: K2108894-011 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-INF-MW-15R-1 **Date Collected:** 07/25/21
Lab Code: K2108894-012 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-5-1 **Date Collected:** 07/25/21
Lab Code: K2108894-013 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-6-1 **Date Collected:** 07/25/21
Lab Code: K2108894-014 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-5-2 **Date Collected:** 07/25/21
Lab Code: K2108894-015 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2108894
Project: Gaston/201114-01.01 Task 02

Sample Name: GST-COL-6-2 **Date Collected:** 07/25/21
Lab Code: K2108894-016 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-INF-MW-15R-3 **Date Collected:** 07/26/21
Lab Code: K2108894-017 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-5-3 **Date Collected:** 07/26/21
Lab Code: K2108894-018 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-6-3 **Date Collected:** 07/26/21
Lab Code: K2108894-019 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-5-4 **Date Collected:** 07/26/21
Lab Code: K2108894-020 **Date Received:** 07/29/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21 21:30
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-4-2	**Basis:**	NA
Lab Code:	K2108894-001		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**0.9 J**	ug/L	2.5	0.5	5	08/27/21 21:47	08/16/21	
Lithium	200.8	**725**	ug/L	0.50	0.50	5	08/27/21 21:47	08/16/21	
Molybdenum	200.8	**3450**	ug/L	1.5	0.2	5	08/27/21 21:47	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-17-3	**Basis:**	NA
Lab Code:	K2108894-002		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**118**	ug/L	2.5	0.5	5	08/27/21 21:52	08/16/21	
Lithium	200.8	**862**	ug/L	0.50	0.50	5	08/27/21 21:52	08/16/21	
Molybdenum	200.8	**3980**	ug/L	1.5	0.2	5	08/27/21 21:52	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-3-3	**Basis:**	NA
Lab Code:	K2108894-003		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**14.0**	ug/L	2.5	0.5	5	08/27/21 21:56	08/16/21	
Lithium	200.8	**777**	ug/L	0.50	0.50	5	08/27/21 21:56	08/16/21	
Molybdenum	200.8	**3210**	ug/L	1.5	0.2	5	08/27/21 21:56	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-4-3	**Basis:**	NA
Lab Code:	K2108894-004		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**0.9 J**	ug/L	2.5	0.5	5	08/27/21 21:58	08/16/21	
Lithium	200.8	**778**	ug/L	0.50	0.50	5	08/27/21 21:58	08/16/21	
Molybdenum	200.8	**3950**	ug/L	1.5	0.2	5	08/27/21 21:58	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 18:10
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-3-4	**Basis:**	NA
Lab Code:	K2108894-005		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**8.9**	ug/L	2.5	0.5	5	08/27/21 22:05	08/16/21	
Lithium	200.8	**905**	ug/L	0.50	0.50	5	08/27/21 22:05	08/16/21	
Molybdenum	200.8	**3070**	ug/L	1.5	0.2	5	08/27/21 22:05	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 18:10
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-4-4	**Basis:**	NA
Lab Code:	K2108894-006		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**1.0 J**	ug/L	2.5	0.5	5	08/27/21 22:06	08/16/21	
Lithium	200.8	**789**	ug/L	0.50	0.50	5	08/27/21 22:06	08/16/21	
Molybdenum	200.8	**3980**	ug/L	1.5	0.2	5	08/27/21 22:06	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-17-5	**Basis:**	NA
Lab Code:	K2108894-007		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**119**	ug/L	2.5	0.5	5	08/27/21 22:08	08/16/21	
Lithium	200.8	**833**	ug/L	0.50	0.50	5	08/27/21 22:08	08/16/21	
Molybdenum	200.8	**4000**	ug/L	1.5	0.2	5	08/27/21 22:08	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-3-5	**Basis:**	NA
Lab Code:	K2108894-008		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**22.5**	ug/L	2.5	0.5	5	08/27/21 22:09	08/16/21	
Lithium	200.8	**786**	ug/L	0.50	0.50	5	08/27/21 22:09	08/16/21	
Molybdenum	200.8	**3750**	ug/L	1.5	0.2	5	08/27/21 22:09	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-4-5	**Basis:**	NA
Lab Code:	K2108894-009		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**21.6**	ug/L	2.5	0.5	5	08/27/21 22:11	08/16/21	
Lithium	200.8	**785**	ug/L	0.50	0.50	5	08/27/21 22:11	08/16/21	
Molybdenum	200.8	**3710**	ug/L	1.5	0.2	5	08/27/21 22:11	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GGS-COL-INF-MW-17-6	**Basis:**	NA
Lab Code:	K2108894-010		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**120**	ug/L	2.5	0.5	5	08/27/21 22:12	08/16/21	
Lithium	200.8	**843**	ug/L	0.50	0.50	5	08/27/21 22:12	08/16/21	
Molybdenum	200.8	**4020**	ug/L	1.5	0.2	5	08/27/21 22:12	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-3-6	**Basis:**	NA
Lab Code:	K2108894-011		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**1.1 J**	ug/L	2.5	0.5	5	08/27/21 22:14	08/16/21	
Lithium	200.8	**790**	ug/L	0.50	0.50	5	08/27/21 22:14	08/16/21	
Molybdenum	200.8	**4070**	ug/L	1.5	0.2	5	08/27/21 22:14	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-15R-1	**Basis:**	NA
Lab Code:	K2108894-012		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**31.5**	ug/L	0.50	0.50	5	08/27/21 22:15	08/16/21	
Molybdenum	200.8	**175**	ug/L	1.5	0.2	5	08/27/21 22:15	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-5-1	**Basis:**	NA
Lab Code:	K2108894-013		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**2.85**	ug/L	0.50	0.50	5	08/27/21 22:17	08/16/21	
Molybdenum	200.8	**32.2**	ug/L	1.5	0.2	5	08/27/21 22:17	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21 14:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-6-1	**Basis:**	NA
Lab Code:	K2108894-014		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**0.56**	ug/L	0.50	0.50	5	08/27/21 22:18	08/16/21	
Molybdenum	200.8	**2.1**	ug/L	1.5	0.2	5	08/27/21 22:18	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21 21:30
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-5-2	**Basis:**	NA
Lab Code:	K2108894-015		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**7.78**	ug/L	0.50	0.50	5	08/27/21 22:23	08/16/21	
Molybdenum	200.8	**57.5**	ug/L	1.5	0.2	5	08/27/21 22:23	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21 21:30
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-6-2	**Basis:**	NA
Lab Code:	K2108894-016		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**0.79**	ug/L	0.50	0.50	5	08/27/21 22:25	08/16/21	
Molybdenum	200.8	**3.4**	ug/L	1.5	0.2	5	08/27/21 22:25	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-15R-3	**Basis:**	NA
Lab Code:	K2108894-017		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**30.2**	ug/L	0.50	0.50	5	08/27/21 22:26	08/16/21	
Molybdenum	200.8	**119**	ug/L	1.5	0.2	5	08/27/21 22:26	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-5-3	**Basis:**	NA
Lab Code:	K2108894-018		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**14.6**	ug/L	0.50	0.50	5	08/27/21 22:28	08/16/21	
Molybdenum	200.8	**82.9**	ug/L	1.5	0.2	5	08/27/21 22:28	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 13:00
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-6-3	**Basis:**	NA
Lab Code:	K2108894-019		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**1.18**	ug/L	0.50	0.50	5	08/27/21 22:29	08/16/21	
Molybdenum	200.8	**7.1**	ug/L	1.5	0.2	5	08/27/21 22:29	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 18:10
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-5-4	**Basis:**	NA
Lab Code:	K2108894-020		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**10.3**	ug/L	0.50	0.50	5	08/27/21 22:31	08/16/21	
Molybdenum	200.8	**72.4**	ug/L	1.5	0.2	5	08/27/21 22:31	08/16/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2115061-01		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	08/27/21 21:44	08/16/21	
Lithium	200.8	ND U	ug/L	0.10	0.10	1	08/27/21 21:44	08/16/21	
Molybdenum	200.8	**0.05 J**	ug/L	0.30	0.03	1	08/27/21 21:44	08/16/21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21
		Date Extracted:	08/16/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-4-2	**Units:**	ug/L
Lab Code:	K2108894-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2115061-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	0.9 J	50.5	50.0	99	70-130
Lithium	725	771	50.0	91 #	70-130
Molybdenum	3450	3470	25.0	58 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21
		Date Extracted:	08/16/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-INF-MW-17-3	**Units:**	ug/L
Lab Code:	K2108894-002	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2115061-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	118	168	50.0	101	70-130
Lithium	862	882	50.0	41 #	70-130
Molybdenum	3980	3880	25.0	-415 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project	Gaston/201114-01.01 Task 02	**Date Collected:**	07/25/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21

Replicate Sample Summary

Dissolved Metals

Sample Name:	GST-COL-4-2	**Units:**	ug/L
Lab Code:	K2108894-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2115061-03 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	0.9 J	0.8 J	0.9	12	20
Lithium	200.8	0.50	0.50	725	721	723	<1	20
Molybdenum	200.8	1.5	0.2	3450	3490	3470	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108894
Project	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21

Replicate Sample Summary
Dissolved Metals

Sample Name:	GST-COL-INF-MW-17-3	**Units:**	ug/L
Lab Code:	K2108894-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2115061-05 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	118	119	119	<1	20
Lithium	200.8	0.50	0.50	862	847	855	2	20
Molybdenum	200.8	1.5	0.2	3980	3960	3970	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Anchor QEA, LLC
Project: Gaston/201114-01.01 Task 02
Sample Matrix: Water

Service Request: K2108894
Date Analyzed: 08/27/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2115061-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	200.8	49.3	50.0	99	85-115
Lithium	200.8	49.7	50.0	99	85-115
Molybdenum	200.8	26.0	25.0	104	85-115

August 30, 2021 Service Request No:K2108895

Masa Kanematsu
Anchor QEA, LLC
6720 SW Macadam Avenue
Suite 125
Portland, OR 97219

Laboratory Results for: Gaston

Dear Masa,

Enclosed are the results of the sample(s) submitted to our laboratory July 29, 2021
For your reference, these analyses have been assigned our service request number **K2108895.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC
Project: Gaston
Sample Matrix: Water

Service Request: K2108895
Date Received: 07/29/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Eight water samples were received for analysis at ALS Environmental on 07/29/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 08/30/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-6-4			Lab ID: K2108895-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	1.63		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	10.0		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-15R-5			Lab ID: K2108895-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	31.2		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	121		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-5-5			Lab ID: K2108895-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	9.98		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	83.4		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-6-5			Lab ID: K2108895-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	2.65		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	21.9		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-5-6			Lab ID: K2108895-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	96.1		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	640		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-COL-INF-MW-15R-6			Lab ID: K2108895-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	30.2		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	123		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-6-6			Lab ID: K2108895-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	88.2		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	610		0.2	1.5	ug/L	200.8

CLIENT ID: GST-COL-4-6			Lab ID: K2108895-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	19.7		0.5	2.5	ug/L	200.8
Lithium, Dissolved	783		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3930		0.2	1.5	ug/L	200.8

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC **Service Request:**K2108895

Project: Gaston/201114-01.01 Task 02

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2108895-001	GST-COL-6-4	7/26/2021	1810
K2108895-002	GST-COL-INF-MW-15R-5	7/27/2021	1035
K2108895-003	GST-COL-5-5	7/27/2021	1035
K2108895-004	GST-COL-6-5	7/27/2021	1035
K2108895-005	GST-COL-5-6	7/28/2021	1415
K2108895-006	GST-COL-COL-INF-MW-15R-6	7/28/2021	1415
K2108895-007	GST-COL-6-6	7/28/2021	1415
K2108895-008	GST-COL-4-6	7/28/2021	1415

K2108897 Rev 5

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
1	GST-COL-INF-MW-16-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
2	GST-COL-1-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
3	GST-COL-2-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
4	GST-COL-1-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
5	GST-COL-2-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
6	GST-COL-INF-MW-16-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
7	GST-COL-1-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
8	GST-COL-2-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
9	GST-COL-1-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
10	GST-COL-2-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
11	GST-COL-INF-MW-16-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
12	GST-COL-1-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
13	GST-COL-2-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
14	GGS-COL-INF-MW-16-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
15	GST-COL-1-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:
Masa Kanematsu	Anchor QEA
Signature/Print Name:	Date/Time:
	7/29/2021 9:00

Received by:	Company:
	JH 7/29/21 1125
Signature/Print Name:	Date/Time:

Relinquished by:	Company:
Signature/Print Name:	Date/Time:

Received by:	Company:
Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

K2108897 S
MP

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
16	GST-COL-2-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
17	GST-COL-INF-MW-17-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
18	GST-COL-3-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
19	GST-COL-4-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
20	GST-COL-3-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
21	GST-COL-4-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
22	GST-COL-INF-MW-17-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
23	GST-COL-3-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
24	GST-COL-4-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
25	GST-COL-3-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
26	GST-COL-4-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
27	GST-COL-INF-MW-17-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
28	GST-COL-3-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
29	GST-COL-4-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
30	GGS-COL-INF-MW-17-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature] 7/29/21 1125	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		
Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

K2108892 5

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019	
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
31	GST-COL-3-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
32	GST-COL-2-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
33	GST-COL-INF-MW-15R-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
34	GST-COL-5-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
35	GST-COL-6-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
36	GST-COL-5-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
37	GST-COL-6-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
38	GST-COL-INF-MW-15R-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
39	GST-COL-5-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
40	GST-COL-6-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
41	GST-COL-5-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
1 42	GST-COL-6-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
2 43	GST-COL-INF-MW-15R-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
3 44	GST-COL-5-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
4 45	GST-COL-6-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature] AS	7/29/21 1125
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
[signature]	7/29/2021 9:00		

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 3 of 4

R2108897-5

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019	
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA
Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Li, Mo (dissolved, Method 200.8)	Arsenic (dissolved, Method 200.8)	Comments/Preservation
46	GGS-COL-INF-MW-16-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
5 47	GST-COL-5-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
48	GST-COL-5-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**
Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature]	ALS
Signature/Print Name: [signature]	Date/Time: 7/29/2021 9:00	Signature/Print Name:	Date/Time: 7/29/21 1125
Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 4 of 4

ALS

Cooler Receipt and Preservation Form

Client Anchor Service Request ~~K20~~ K2108895

Notes, Discrepancies & Resolutions:

Received ~~GST-COL-5-5 7/27/21 1035~~ MP

GST-COL-INF-MW-15R-6 7/28/21 1415

GST-COL-6-6 7/28/21 1415

GST-COL-4-6 7/28/21 1415

Not on COC

Did not ~~receive~~ GST-COL-2-6 7/28/21 1415

GGS-COL-INF-16-6 7/28/21 1415

GST-COL-5-6 - Listed on COC twice

GGS-COL-INF-MW-16-6 - listed on COC twice

GST-COL 2-6 — listed on COC twice

Received not on COC

GST-COL-INF-~~INF~~-MW-15R-6 7/28/21 1415

GST-COL-6-6 7/28/21 1415

GST-COL-4-6 7/28/21 1415

PM MH

Cooler Receipt and Preservation Form

Client Anchor Service Request K21 058895

Received: 7/29/21 Opened: 7/29/21 By: AP Unloaded: 7/29/21 By: AP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified if out of temp	Tracking Number NA	Filed
8.7		IR07					
3.5		IR02					
7.7		IR02					

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:
GST-COL-INF-MW-16-6	GGS-COL-INF-MW-16-6	Date/Time/Process
GST-COL-INF-MW-17-6	GGS-COL-INF-MW-17-6	Date/Time/Process

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: Did not PH Due to Limited Volume
All Samples for Metals analysis, temp not an issue

K2108895

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019

Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
1	GST-COL-INF-MW-16-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
2	GST-COL-1-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
3	GST-COL-2-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
4	GST-COL-1-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
5	GST-COL-2-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
6	GST-COL-INF-MW-16-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
7	GST-COL-1-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
8	GST-COL-2-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
9	GST-COL-1-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
10	GST-COL-2-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
11	GST-COL-INF-MW-16-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
12	GST-COL-1-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
13	GST-COL-2-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
14	GGS-COL-INF-MW-16-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
15	GST-COL-1-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA		ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	7/29/2021 9:00	Cody Graves	7/29/21 1125

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 1 of 4

K2108895

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number:	503-972-5019
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
16	GST-COL-2-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
17	GST-COL-INF-MW-17-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
18	GST-COL-3-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
19	GST-COL-4-1	7/25/2021	14:00	Water	1	X	X	HNO_3 preserved, filtered
20	GST-COL-3-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
21	GST-COL-4-2	7/25/2021	21:30	Water	1	X	X	HNO_3 preserved, filtered
22	GST-COL-INF-MW-17-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
23	GST-COL-3-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
24	GST-COL-4-3	7/26/2021	13:00	Water	1	X	X	HNO_3 preserved, filtered
25	GST-COL-3-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
26	GST-COL-4-4	7/26/2021	18:10	Water	1	X	X	HNO_3 preserved, filtered
27	GST-COL-INF-MW-17-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
28	GST-COL-3-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
29	GST-COL-4-5	7/27/2021	10:35	Water	1	X	X	HNO_3 preserved, filtered
30	GGS-COL-INF-MW-17-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered

ANCHOR QEA
Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**
Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature]	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	7/29/2021 9:00	Cody Graves	7/29/21 1125

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

K2108895

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019

Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
31	GST-COL-3-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
32	GST-COL-4-6	7/28/2021	14:15	Water	1	X	X	HNO_3 preserved, filtered
33	GST-COL-INF-MW-15R-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
34	GST-COL-5-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
35	GST-COL-6-1	7/25/2021	14:00	Water	1	X		HNO_3 preserved, filtered
36	GST-COL-5-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
37	GST-COL-6-2	7/25/2021	21:30	Water	1	X		HNO_3 preserved, filtered
38	GST-COL-INF-MW-15R-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
39	GST-COL-5-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
40	GST-COL-6-3	7/26/2021	13:00	Water	1	X		HNO_3 preserved, filtered
41	GST-COL-5-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
42	GST-COL-6-4	7/26/2021	18:10	Water	1	X		HNO_3 preserved, filtered
43	GST-COL-INF-MW-15R-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
44	GST-COL-5-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered
45	GST-COL-6-5	7/27/2021	10:35	Water	1	X		HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**
Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:
Masa Kanematsu	Anchor QEA
Signature/Print Name:	Date/Time:
	7/29/2021 9:00

Received by:	Company:
[signature]	ALS
Signature/Print Name:	Date/Time:
Cody Graves	7/29/21 1125

Relinquished by:	Company:
Signature/Print Name:	Date/Time:

Received by:	Company:
Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

K2108895

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019	
Date:	7/29/2021
Project Name:	Gaston
Project Number:	201114-01.01 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
46	GGS-COL-INF-MW-15R-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
47	GST-COL-5-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
48	GST-COL-6-6	7/28/2021	14:15	Water	1	X		HNO_3 preserved, filtered
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								

ANCHOR QEA
Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**
Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	[signature]	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	7/29/2021 9:00	Cody Graves	7/29/21 1125

Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Anchor QEA, LLC
Project: Gaston/201114-01.01 Task 02
Service Request: K2108895

Sample Name: GST-COL-6-4
Lab Code: K2108895-001
Sample Matrix: Water
Date Collected: 07/26/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-INF-MW-15R-5
Lab Code: K2108895-002
Sample Matrix: Water
Date Collected: 07/27/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-5-5
Lab Code: K2108895-003
Sample Matrix: Water
Date Collected: 07/27/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-6-5
Lab Code: K2108895-004
Sample Matrix: Water
Date Collected: 07/27/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name: GST-COL-5-6
Lab Code: K2108895-005
Sample Matrix: Water
Date Collected: 07/28/21
Date Received: 07/29/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02		

Sample Name:	GST-COL-COL-INF-MW-15R-6	**Date Collected:**	07/28/21
Lab Code:	K2108895-006	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-6-6	**Date Collected:**	07/28/21
Lab Code:	K2108895-007	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Name:	GST-COL-4-6	**Date Collected:**	07/28/21
Lab Code:	K2108895-008	**Date Received:**	07/29/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	JHINSON	RMOORE

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21 18:10
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-6-4	**Basis:**	NA
Lab Code:	K2108895-001		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**1.63**	ug/L	0.50	0.50	5	08/27/21 22:39	08/16/21	
Molybdenum	200.8	**10.0**	ug/L	1.5	0.2	5	08/27/21 22:39	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-INF-MW-15R-5	**Basis:**	NA
Lab Code:	K2108895-002		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**31.2**	ug/L	0.50	0.50	5	08/27/21 22:45	08/16/21	
Molybdenum	200.8	**121**	ug/L	1.5	0.2	5	08/27/21 22:45	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-5-5	**Basis:**	NA
Lab Code:	K2108895-003		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**9.98**	ug/L	0.50	0.50	5	08/27/21 22:47	08/16/21	
Molybdenum	200.8	**83.4**	ug/L	1.5	0.2	5	08/27/21 22:47	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/27/21 10:35
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-6-5	**Basis:**	NA
Lab Code:	K2108895-004		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**2.65**	ug/L	0.50	0.50	5	08/27/21 22:48	08/16/21	
Molybdenum	200.8	**21.9**	ug/L	1.5	0.2	5	08/27/21 22:48	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-5-6	**Basis:**	NA
Lab Code:	K2108895-005		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**96.1**	ug/L	0.50	0.50	5	08/27/21 22:50	08/16/21	
Molybdenum	200.8	**640**	ug/L	1.5	0.2	5	08/27/21 22:50	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-COL-INF-MW-15R-6	**Basis:**	NA
Lab Code:	K2108895-006		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**30.2**	ug/L	0.50	0.50	5	08/27/21 22:55	08/16/21	
Molybdenum	200.8	**123**	ug/L	1.5	0.2	5	08/27/21 22:55	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-6-6	**Basis:**	NA
Lab Code:	K2108895-007		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**88.2**	ug/L	0.50	0.50	5	08/27/21 22:56	08/16/21	
Molybdenum	200.8	**610**	ug/L	1.5	0.2	5	08/27/21 22:56	08/16/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/28/21 14:15
Sample Matrix:	Water	**Date Received:**	07/29/21 11:25
Sample Name:	GST-COL-4-6	**Basis:**	NA
Lab Code:	K2108895-008		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**19.7**	ug/L	2.5	0.5	5	08/27/21 22:58	08/16/21	
Lithium	200.8	**783**	ug/L	0.50	0.50	5	08/27/21 22:58	08/16/21	
Molybdenum	200.8	**3930**	ug/L	1.5	0.2	5	08/27/21 22:58	08/16/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2115062-01		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	08/27/21 22:36	08/16/21	
Lithium	200.8	ND U	ug/L	0.10	0.10	1	08/27/21 22:36	08/16/21	
Molybdenum	200.8	ND U	ug/L	0.30	0.03	1	08/27/21 22:36	08/16/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project:	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21
		Date Extracted:	08/16/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-6-4	**Units:**	ug/L
Lab Code:	K2108895-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2115062-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	ND U	50.2	50.0	100	70-130
Lithium	1.63	48.8	50.0	94	70-130
Molybdenum	10.0	37.0	25.0	108	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2108895
Project	Gaston/201114-01.01 Task 02	**Date Collected:**	07/26/21
Sample Matrix:	Water	**Date Received:**	07/29/21
		Date Analyzed:	08/27/21

Replicate Sample Summary

Dissolved Metals

Sample Name:	GST-COL-6-4	**Units:**	ug/L
Lab Code:	K2108895-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2115062-03 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	ND U	ND U	ND	-	20
Lithium	200.8	0.50	0.50	1.63	1.52	1.58	7	20
Molybdenum	200.8	1.5	0.2	10.0	9.5	9.8	5	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Anchor QEA, LLC
Project: Gaston/201114-01.01 Task 02
Sample Matrix: Water

Service Request: K2108895
Date Analyzed: 08/27/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2115062-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	200.8	49.4	50.0	99	85-115
Lithium	200.8	47.9	50.0	96	85-115
Molybdenum	200.8	26.8	25.0	107	85-115

September 10, 2021 Service Request No:K2109664

Masa Kanematsu
Anchor QEA, LLC
6720 SW Macadam Avenue
Suite 125
Portland, OR 97219

Laboratory Results for: Gaston

Dear Masa,

Enclosed are the results of the sample(s) submitted to our laboratory August 18, 2021
For your reference, these analyses have been assigned our service request number **K2109664.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Anchor QEA, LLC
Project: Gaston
Sample Matrix: Water

Service Request: K2109664
Date Received: 08/18/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Forty two water samples were received for analysis at ALS Environmental on 08/18/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 09/10/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-INF-MW-16-7			Lab ID: K2109664-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	123		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	675		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-7			Lab ID: K2109664-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	109		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	645		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-7			Lab ID: K2109664-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	113		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	669		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-16-8			Lab ID: K2109664-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	122		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	671		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-8			Lab ID: K2109664-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	102		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	637		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-8			Lab ID: K2109664-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	114		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	661		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-16-9			Lab ID: K2109664-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	123		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	677		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-9			Lab ID: K2109664-008			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	112		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	653		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-9			Lab ID: K2109664-009			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	114		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	667		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-16-10			Lab ID: K2109664-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	120		0.50	0.50	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-INF-MW-16-10			Lab ID: K2109664-010			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Molybdenum, Dissolved	670		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-1-10			Lab ID: K2109664-011			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	114		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	661		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-2-10			Lab ID: K2109664-012			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	114		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	676		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-7			Lab ID: K2109664-013			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	128		0.5	2.5	ug/L	200.8
Lithium, Dissolved	936		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4260		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-3-7			Lab ID: K2109664-014			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	53.5		0.5	2.5	ug/L	200.8
Lithium, Dissolved	909		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4160		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-4-7			Lab ID: K2109664-015			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	1.3	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	900		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4240		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-8			Lab ID: K2109664-016			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	126		0.5	2.5	ug/L	200.8
Lithium, Dissolved	941		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4340		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-3-8			Lab ID: K2109664-017			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	44.2		0.5	2.5	ug/L	200.8
Lithium, Dissolved	891		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4020		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-4-8			Lab ID: K2109664-018			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	1.3	J	0.5	2.5	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-4-8			Lab ID: K2109664-018			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	887		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4280		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-9			Lab ID: K2109664-019			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	124		0.5	2.5	ug/L	200.8
Lithium, Dissolved	932		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4240		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-3-9			Lab ID: K2109664-020			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	48.5		0.5	2.5	ug/L	200.8
Lithium, Dissolved	912		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4180		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-4-9			Lab ID: K2109664-021			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	1.2	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	852		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3960		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-10			Lab ID: K2109664-022			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	120		0.5	2.5	ug/L	200.8
Lithium, Dissolved	875		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3910		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-3-10			Lab ID: K2109664-023			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	66.9		0.5	2.5	ug/L	200.8
Lithium, Dissolved	857		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3840		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-4-10			Lab ID: K2109664-024			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	1.6	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	876		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3990		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-11			Lab ID: K2109664-025			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	120		0.5	2.5	ug/L	200.8
Lithium, Dissolved	885		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3900		0.15	0.50	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-3-11			Lab ID: K2109664-026			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	58.1		0.5	2.5	ug/L	200.8
Lithium, Dissolved	844		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3870		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-4-11			Lab ID: K2109664-027			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	2.0	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	858		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3940		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-17-12			Lab ID: K2109664-028			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	123		0.5	2.5	ug/L	200.8
Lithium, Dissolved	883		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3950		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-3-12			Lab ID: K2109664-029			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	78.2		0.5	2.5	ug/L	200.8
Lithium, Dissolved	869		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	3970		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-4-12			Lab ID: K2109664-030			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic, Dissolved	2.4	J	0.5	2.5	ug/L	200.8
Lithium, Dissolved	879		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	4020		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-15R-7			Lab ID: K2109664-031			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	32.0		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	118		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-5-7			Lab ID: K2109664-032			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	18.5		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	103		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-6-7			Lab ID: K2109664-033			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	8.29		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	71.5		0.15	0.50	ug/L	200.8

SAMPLE DETECTION SUMMARY

CLIENT ID: GST-COL-INF-MW-15R-8			Lab ID: K2109664-034			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	32.2		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	117		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-5-8			Lab ID: K2109664-035			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	20.2		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	107		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-6-8			Lab ID: K2109664-036			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	9.29		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	81.9		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-15R-9			Lab ID: K2109664-037			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	32.9		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	117		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-5-9			Lab ID: K2109664-038			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	25.2		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	111		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-6-9			Lab ID: K2109664-039			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	13.3		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	97.5		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-INF-MW-15R-10			Lab ID: K2109664-040			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	32.4		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	118		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-5-10			Lab ID: K2109664-041			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	25.3		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	109		0.15	0.50	ug/L	200.8

CLIENT ID: GST-COL-6-10			Lab ID: K2109664-042			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Lithium, Dissolved	17.6		0.50	0.50	ug/L	200.8
Molybdenum, Dissolved	106		0.15	0.50	ug/L	200.8

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2109664-001	GST-COL-INF-MW-16-7	7/29/2021	1245
K2109664-002	GST-COL-1-7	7/29/2021	1245
K2109664-003	GST-COL-2-7	7/29/2021	1245
K2109664-004	GST-COL-INF-MW-16-8	7/30/2021	0954
K2109664-005	GST-COL-1-8	7/30/2021	0954
K2109664-006	GST-COL-2-8	7/30/2021	0954
K2109664-007	GST-COL-INF-MW-16-9	7/31/2021	1302
K2109664-008	GST-COL-1-9	7/31/2021	1302
K2109664-009	GST-COL-2-9	7/31/2021	1302
K2109664-010	GST-COL-INF-MW-16-10	8/2/2021	0821
K2109664-011	GST-COL-1-10	8/2/2021	0821
K2109664-012	GST-COL-2-10	8/2/2021	0821
K2109664-013	GST-COL-INF-MW-17-7	7/29/2021	1245
K2109664-014	GST-COL-3-7	7/29/2021	1245
K2109664-015	GST-COL-4-7	7/29/2021	1245
K2109664-016	GST-COL-INF-MW-17-8	7/30/2021	0954
K2109664-017	GST-COL-3-8	7/30/2021	0954
K2109664-018	GST-COL-4-8	7/30/2021	0954
K2109664-019	GST-COL-INF-MW-17-9	7/31/2021	1302
K2109664-020	GST-COL-3-9	7/31/2021	1302
K2109664-021	GST-COL-4-9	7/31/2021	1302
K2109664-022	GST-COL-INF-MW-17-10	8/2/2021	0821
K2109664-023	GST-COL-3-10	8/2/2021	0821
K2109664-024	GST-COL-4-10	8/2/2021	0821
K2109664-025	GST-COL-INF-MW-17-11	8/4/2021	1420
K2109664-026	GST-COL-3-11	8/4/2021	1420
K2109664-027	GST-COL-4-11	8/4/2021	1420
K2109664-028	GST-COL-INF-MW-17-12	8/6/2021	1313
K2109664-029	GST-COL-3-12	8/6/2021	1313
K2109664-030	GST-COL-4-12	8/6/2021	1313
K2109664-031	GST-COL-INF-MW-15R-7	7/29/2021	1245
K2109664-032	GST-COL-5-7	7/29/2021	1245
K2109664-033	GST-COL-6-7	7/29/2021	1245
K2109664-034	GST-COL-INF-MW-15R-8	7/30/2021	0954
K2109664-035	GST-COL-5-8	7/30/2021	0954
K2109664-036	GST-COL-6-8	7/30/2021	0954
K2109664-037	GST-COL-INF-MW-15R-9	7/31/2021	1302
K2109664-038	GST-COL-5-9	7/31/2021	1302
K2109664-039	GST-COL-6-9	7/31/2021	1302
K2109664-040	GST-COL-INF-MW-15R-10	8/2/2021	0821
K2109664-041	GST-COL-5-10	8/2/2021	0821
K2109664-042	GST-COL-6-10	8/2/2021	0821

K2109664

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019

Date:	8/16/2021
Project Name:	Gaston
Project Number:	201114-01.04 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
1	GST-COL-INF-MW-16-7	7/29/2021	12:45	Water	1	X		HNO_3 preserved, filtered
2	GST-COL-1-7	7/29/2021	12:45	Water	1	X		HNO_3 preserved, filtered
3	GST-COL-2-7	7/29/2021	12:45	Water	1	X		HNO_3 preserved, filtered
4	GST-COL-INF-MW-16-8	7/30/2021	9:54	Water	1	X		HNO_3 preserved, filtered
5	GST-COL-1-8	7/30/2021	9:54	Water	1	X		HNO_3 preserved, filtered
6	GST-COL-2-8	7/30/2021	9:54	Water	1	X		HNO_3 preserved, filtered
7	GST-COL-INF-MW-16-9	7/31/2021	13:02	Water	1	X		HNO_3 preserved, filtered
8	GST-COL-1-9	7/31/2021	13:02	Water	1	X		HNO_3 preserved, filtered
9	GST-COL-2-9	7/31/2021	13:02	Water	1	X		HNO_3 preserved, filtered
10	GST-COL-INF-MW-16-10	8/2/2021	8:21	Water	1	X		HNO_3 preserved, filtered
11	GST-COL-1-10	8/2/2021	8:21	Water	1	X		HNO_3 preserved, filtered
12	GST-COL-2-10	8/2/2021	8:21	Water	1	X		HNO_3 preserved, filtered
13	GST-COL-INF-MW-17-7	7/29/2021	12:45	Water	1	X	X	HNO_3 preserved, filtered
14	GST-COL-3-7	7/29/2021	12:45	Water	1	X	X	HNO_3 preserved, filtered
15	GST-COL-4-7	7/29/2021	12:45	Water	1	X	X	HNO_3 preserved, filtered

Notes: **Please analyze all analytes with** standard TAT **on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	Ammon Wells	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	8/16/2021 16:00		8-18-21 1645
Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page 1 of 3

KZ1096664

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019

Date:	8/16/2021
Project Name:	Gaston
Project Number:	201114-01.04 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
16	GST-COL-INF-MW-17-8	7/30/2021	9:54	Water	1	X	X	HNO_3 preserved, filtered
17	GST-COL-3-8	7/30/2021	9:54	Water	1	X	X	HNO_3 preserved, filtered
18	GST-COL-4-8	7/30/2021	9:54	Water	1	X	X	HNO_3 preserved, filtered
19	GST-COL-INF-MW-17-9	7/31/2021	13:02	Water	1	X	X	HNO_3 preserved, filtered
20	GST-COL-3-9	7/31/2021	13:02	Water	1	X	X	HNO_3 preserved, filtered
21	GST-COL-4-9	7/31/2021	13:02	Water	1	X	X	HNO_3 preserved, filtered
22	GST-COL-INF-MW-17-10	8/2/2021	8:21	Water	1	X	X	HNO_3 preserved, filtered
23	GST-COL-3-10	8/2/2021	8:21	Water	1	X	X	HNO_3 preserved, filtered
24	GST-COL-4-10	8/2/2021	8:21	Water	1	X	X	HNO_3 preserved, filtered
25	GST-COL-INF-MW-17-11	8/4/2021	14:20	Water	1	X	X	HNO_3 preserved, filtered
26	GST-COL-3-11	8/4/2021	14:20	Water	1	X	X	HNO_3 preserved, filtered
27	GST-COL-4-11	8/4/2021	14:20	Water	1	X	X	HNO_3 preserved, filtered
28	GST-COL-INF-MW-17-12	8/6/2021	13:13	Water	1	X	X	HNO_3 preserved, filtered
29	GST-COL-3-12	8/6/2021	13:13	Water	1	X	X	HNO_3 preserved, filtered
30	GST-COL-4-12	8/6/2021	13:13	Water	1	X	X	HNO_3 preserved, filtered

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Notes: **Please analyze all analytes with** standard TAT **on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	Ammon Weeks	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	8/16/2021 16:00		8-18-21 1045
Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

K2109664

Chain of Custody Record & Laboratory Analysis Request

Laboratory Number: 503-972-5019	
Date:	8/16/2021
Project Name:	Gaston
Project Number:	201114-01.04 Task 02
Project Manager:	Masa Kanematsu
Phone Number:	503-972-5001 (Masa Kanematsu)
Shipment Method:	ALS Carrier

ANCHOR QEA

Jessica Goin
6720 SW Macadam Ave
Suite 125
Portland OR 97219

Line	Field Sample ID	Collection Date	Collection Time	Matrix	No. of Containers	Parameters: Li, Mo (dissolved, Method 200.8)	Parameters: Arsenic (dissolved, Method 200.8)	Comments/Preservation
31	GST-COL-INF-MW-15R-7	7/29/2021	12:45	Water	1	X		HNO_3 preserved, filtered
32	GST-COL-5-7	7/29/2021	12:45	Water	1	X		HNO_3 preserved, filtered
33	GST-COL-6-7	7/29/2021	12:45	Water	1	X		HNO_3 preserved, filtered
34	GST-COL-INF-MW-15R-8	7/30/2021	9:54	Water	1	X		HNO_3 preserved, filtered
35	GST-COL-5-8	7/30/2021	9:54	Water	1	X		HNO_3 preserved, filtered
36	GST-COL-6-8	7/30/2021	9:54	Water	1	X		HNO_3 preserved, filtered
37	GST-COL-INF-MW-15R-9	7/31/2021	13:02	Water	1	X		HNO_3 preserved, filtered
38	GST-COL-5-9	7/31/2021	13:02	Water	1	X		HNO_3 preserved, filtered
39	GST-COL-6-9	7/31/2021	13:02	Water	1	X		HNO_3 preserved, filtered
40	GST-COL-INF-MW-15R-10	8/2/2021	8:21	Water	1	X		HNO_3 preserved, filtered
41	GST-COL-5-10	8/2/2021	8:21	Water	1	X		HNO_3 preserved, filtered
42	GST-COL-6-10	8/2/2021	8:21	Water	1	X		HNO_3 preserved, filtered
43								HNO_3 preserved, filtered
44								HNO_3 preserved, filtered
45								HNO_3 preserved, filtered

Notes: **Please analyze all analytes with standard TAT on this page. Please analyze with Method 200.8 (ICP-MS) for better detection limit.**

Desired reporting limits : As (<2 ug/L) and Mo (<1 ug/L). For Lithium, please use Method 200.8 for better detection limit if possible. Report requirement: Type II (PDF & csv files)

Relinquished by:	Company:	Received by:	Company:
Masa Kanematsu	Anchor QEA	Amman Wells	ALS
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:
	8/16/2021 16:00		8-18-21 1045
Relinquished by:	Company:	Received by:	Company:
Signature/Print Name:	Date/Time:	Signature/Print Name:	Date/Time:

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

PM Mark

Cooler Receipt and Preservation Form

Client Anchor QEA Service Request K21 09664

Received: 3-18-21 Opened: 3-18-21 By: AW Unloaded: 3-18-21 By: AW

1. Samples were received via? *USPS* (*FedEx*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 2, center and left
   If present, were custody seals intact? (Y) N If present, were they signed and dated? Y (N)
4. Was a Temperature Blank present in cooler? NA Y (N) If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA (Y) N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. (NA) Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID/ NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
—	14.2	IR02		—	—	7745 5033 9989	

6. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) (*Gel Packs*) *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Were samples received in good condition (unbroken) NA (Y) N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA (Y) N
10. Did all sample labels and tags agree with custody papers? NA (Y) N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
13. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
14. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Service Request: K2109664

Sample Name: GST-COL-INF-MW-16-7
Lab Code: K2109664-001
Sample Matrix: Water
Date Collected: 07/29/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-1-7
Lab Code: K2109664-002
Sample Matrix: Water
Date Collected: 07/29/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-2-7
Lab Code: K2109664-003
Sample Matrix: Water
Date Collected: 07/29/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-16-8
Lab Code: K2109664-004
Sample Matrix: Water
Date Collected: 07/30/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-1-8
Lab Code: K2109664-005
Sample Matrix: Water
Date Collected: 07/30/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2109664
Project: Gaston/201114-01.04 Task 02

Sample Name: GST-COL-2-8 **Date Collected:** 07/30/21
Lab Code: K2109664-006 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-16-9 **Date Collected:** 07/31/21
Lab Code: K2109664-007 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-1-9 **Date Collected:** 07/31/21
Lab Code: K2109664-008 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-2-9 **Date Collected:** 07/31/21
Lab Code: K2109664-009 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-16-10 **Date Collected:** 08/2/21
Lab Code: K2109664-010 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2109664
Project: Gaston/201114-01.04 Task 02

Sample Name: GST-COL-1-10 **Date Collected:** 08/2/21
Lab Code: K2109664-011 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-2-10 **Date Collected:** 08/2/21
Lab Code: K2109664-012 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-17-7 **Date Collected:** 07/29/21
Lab Code: K2109664-013 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-3-7 **Date Collected:** 07/29/21
Lab Code: K2109664-014 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-4-7 **Date Collected:** 07/29/21
Lab Code: K2109664-015 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Service Request: K2109664

Sample Name: GST-COL-INF-MW-17-8
Lab Code: K2109664-016
Sample Matrix: Water
Date Collected: 07/30/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-3-8
Lab Code: K2109664-017
Sample Matrix: Water
Date Collected: 07/30/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-4-8
Lab Code: K2109664-018
Sample Matrix: Water
Date Collected: 07/30/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-17-9
Lab Code: K2109664-019
Sample Matrix: Water
Date Collected: 07/31/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-3-9
Lab Code: K2109664-020
Sample Matrix: Water
Date Collected: 07/31/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Service Request: K2109664

Sample Name: GST-COL-4-9
Lab Code: K2109664-021
Sample Matrix: Water
Date Collected: 07/31/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-17-10
Lab Code: K2109664-022
Sample Matrix: Water
Date Collected: 08/2/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-3-10
Lab Code: K2109664-023
Sample Matrix: Water
Date Collected: 08/2/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-4-10
Lab Code: K2109664-024
Sample Matrix: Water
Date Collected: 08/2/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-17-11
Lab Code: K2109664-025
Sample Matrix: Water
Date Collected: 08/4/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2109664
Project: Gaston/201114-01.04 Task 02

Sample Name: GST-COL-3-11 **Date Collected:** 08/4/21
Lab Code: K2109664-026 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-4-11 **Date Collected:** 08/4/21
Lab Code: K2109664-027 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-17-12 **Date Collected:** 08/6/21
Lab Code: K2109664-028 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-3-12 **Date Collected:** 08/6/21
Lab Code: K2109664-029 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-4-12 **Date Collected:** 08/6/21
Lab Code: K2109664-030 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Service Request: K2109664

Sample Name: GST-COL-INF-MW-15R-7
Lab Code: K2109664-031
Sample Matrix: Water
Date Collected: 07/29/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-5-7
Lab Code: K2109664-032
Sample Matrix: Water
Date Collected: 07/29/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-6-7
Lab Code: K2109664-033
Sample Matrix: Water
Date Collected: 07/29/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-15R-8
Lab Code: K2109664-034
Sample Matrix: Water
Date Collected: 07/30/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-5-8
Lab Code: K2109664-035
Sample Matrix: Water
Date Collected: 07/30/21
Date Received: 08/18/21

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client: Anchor QEA, LLC **Service Request:** K2109664
Project: Gaston/201114-01.04 Task 02

Sample Name: GST-COL-6-8 **Date Collected:** 07/30/21
Lab Code: K2109664-036 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-15R-9 **Date Collected:** 07/31/21
Lab Code: K2109664-037 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-5-9 **Date Collected:** 07/31/21
Lab Code: K2109664-038 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-6-9 **Date Collected:** 07/31/21
Lab Code: K2109664-039 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name: GST-COL-INF-MW-15R-10 **Date Collected:** 08/2/21
Lab Code: K2109664-040 **Date Received:** 08/18/21
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02		

Sample Name:	GST-COL-5-10	**Date Collected:**	08/2/21
Lab Code:	K2109664-041	**Date Received:**	08/18/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Name:	GST-COL-6-10	**Date Collected:**	08/2/21
Lab Code:	K2109664-042	**Date Received:**	08/18/21
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
200.8	ABOYER	RMOORE

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-16-7	**Basis:**	NA
Lab Code:	K2109664-001		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**123**	ug/L	0.50	0.50	5	09/08/21 15:21	08/25/21	
Molybdenum	200.8	**675**	ug/L	0.50	0.15	5	09/08/21 15:21	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-1-7	**Basis:**	NA
Lab Code:	K2109664-002		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**109**	ug/L	0.50	0.50	5	09/08/21 15:27	08/25/21	
Molybdenum	200.8	**645**	ug/L	0.50	0.15	5	09/08/21 15:27	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-2-7	**Basis:**	NA
Lab Code:	K2109664-003		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**113**	ug/L	0.50	0.50	5	09/08/21 15:32	08/25/21	
Molybdenum	200.8	**669**	ug/L	0.50	0.15	5	09/08/21 15:32	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-16-8	**Basis:**	NA
Lab Code:	K2109664-004		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**122**	ug/L	0.50	0.50	5	09/08/21 15:34	08/25/21	
Molybdenum	200.8	**671**	ug/L	0.50	0.15	5	09/08/21 15:34	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-1-8	**Basis:**	NA
Lab Code:	K2109664-005		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**102**	ug/L	0.50	0.50	5	09/08/21 15:40	08/25/21	
Molybdenum	200.8	**637**	ug/L	0.50	0.15	5	09/08/21 15:40	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-2-8	**Basis:**	NA
Lab Code:	K2109664-006		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**114**	ug/L	0.50	0.50	5	09/08/21 15:42	08/25/21	
Molybdenum	200.8	**661**	ug/L	0.50	0.15	5	09/08/21 15:42	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-16-9	**Basis:**	NA
Lab Code:	K2109664-007		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**123**	ug/L	0.50	0.50	5	09/08/21 15:43	08/25/21	
Molybdenum	200.8	**677**	ug/L	0.50	0.15	5	09/08/21 15:43	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-1-9	**Basis:**	NA
Lab Code:	K2109664-008		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**112**	ug/L	0.50	0.50	5	09/08/21 15:45	08/25/21	
Molybdenum	200.8	**653**	ug/L	0.50	0.15	5	09/08/21 15:45	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-2-9	**Basis:**	NA
Lab Code:	K2109664-009		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**114**	ug/L	0.50	0.50	5	09/08/21 15:47	08/25/21	
Molybdenum	200.8	**667**	ug/L	0.50	0.15	5	09/08/21 15:47	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-16-10	**Basis:**	NA
Lab Code:	K2109664-010		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**120**	ug/L	0.50	0.50	5	09/08/21 15:49	08/25/21	
Molybdenum	200.8	**670**	ug/L	0.50	0.15	5	09/08/21 15:49	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-1-10	**Basis:**	NA
Lab Code:	K2109664-011		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**114**	ug/L	0.50	0.50	5	09/08/21 15:51	08/25/21	
Molybdenum	200.8	**661**	ug/L	0.50	0.15	5	09/08/21 15:51	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-2-10	**Basis:**	NA
Lab Code:	K2109664-012		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**114**	ug/L	0.50	0.50	5	09/08/21 15:53	08/25/21	
Molybdenum	200.8	**676**	ug/L	0.50	0.15	5	09/08/21 15:53	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-17-7	**Basis:**	NA
Lab Code:	K2109664-013		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**128**	ug/L	2.5	0.5	5	09/08/21 15:54	08/25/21	
Lithium	200.8	**936**	ug/L	0.50	0.50	5	09/08/21 15:54	08/25/21	
Molybdenum	200.8	**4260**	ug/L	0.50	0.15	5	09/08/21 15:54	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-3-7	**Basis:**	NA
Lab Code:	K2109664-014		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**53.5**	ug/L	2.5	0.5	5	09/08/21 15:56	08/25/21	
Lithium	200.8	**909**	ug/L	0.50	0.50	5	09/08/21 15:56	08/25/21	
Molybdenum	200.8	**4160**	ug/L	0.50	0.15	5	09/08/21 15:56	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-4-7	**Basis:**	NA
Lab Code:	K2109664-015		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**1.3 J**	ug/L	2.5	0.5	5	09/08/21 16:02	08/25/21	
Lithium	200.8	**900**	ug/L	0.50	0.50	5	09/08/21 16:02	08/25/21	
Molybdenum	200.8	**4240**	ug/L	0.50	0.15	5	09/08/21 16:02	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-17-8	**Basis:**	NA
Lab Code:	K2109664-016		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**126**	ug/L	2.5	0.5	5	09/08/21 16:04	08/25/21	
Lithium	200.8	**941**	ug/L	0.50	0.50	5	09/08/21 16:04	08/25/21	
Molybdenum	200.8	**4340**	ug/L	0.50	0.15	5	09/08/21 16:04	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-3-8	**Basis:**	NA
Lab Code:	K2109664-017		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**44.2**	ug/L	2.5	0.5	5	09/08/21 16:05	08/25/21	
Lithium	200.8	**891**	ug/L	0.50	0.50	5	09/08/21 16:05	08/25/21	
Molybdenum	200.8	**4020**	ug/L	0.50	0.15	5	09/08/21 16:05	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-4-8	**Basis:**	NA
Lab Code:	K2109664-018		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**1.3 J**	ug/L	2.5	0.5	5	09/08/21 16:07	08/25/21	
Lithium	200.8	**887**	ug/L	0.50	0.50	5	09/08/21 16:07	08/25/21	
Molybdenum	200.8	**4280**	ug/L	0.50	0.15	5	09/08/21 16:07	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-17-9	**Basis:**	NA
Lab Code:	K2109664-019		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**124**	ug/L	2.5	0.5	5	09/08/21 16:09	08/25/21	
Lithium	200.8	**932**	ug/L	0.50	0.50	5	09/08/21 16:09	08/25/21	
Molybdenum	200.8	**4240**	ug/L	0.50	0.15	5	09/08/21 16:09	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-3-9	**Basis:**	NA
Lab Code:	K2109664-020		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**48.5**	ug/L	2.5	0.5	5	09/08/21 16:11	08/25/21	
Lithium	200.8	**912**	ug/L	0.50	0.50	5	09/08/21 16:11	08/25/21	
Molybdenum	200.8	**4180**	ug/L	0.50	0.15	5	09/08/21 16:11	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-4-9	**Basis:**	NA
Lab Code:	K2109664-021		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**1.2 J**	ug/L	2.5	0.5	5	09/08/21 18:17	08/25/21	
Lithium	200.8	**852**	ug/L	0.50	0.50	5	09/08/21 18:17	08/25/21	
Molybdenum	200.8	**3960**	ug/L	0.50	0.15	5	09/08/21 18:17	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-17-10	**Basis:**	NA
Lab Code:	K2109664-022		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**120**	ug/L	2.5	0.5	5	09/08/21 18:22	08/25/21	
Lithium	200.8	**875**	ug/L	0.50	0.50	5	09/08/21 18:22	08/25/21	
Molybdenum	200.8	**3910**	ug/L	0.50	0.15	5	09/08/21 18:22	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-3-10	**Basis:**	NA
Lab Code:	K2109664-023		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**66.9**	ug/L	2.5	0.5	5	09/08/21 18:26	08/25/21	
Lithium	200.8	**857**	ug/L	0.50	0.50	5	09/08/21 18:26	08/25/21	
Molybdenum	200.8	**3840**	ug/L	0.50	0.15	5	09/08/21 18:26	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-4-10	**Basis:**	NA
Lab Code:	K2109664-024		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**1.6 J**	ug/L	2.5	0.5	5	09/08/21 18:28	08/25/21	
Lithium	200.8	**876**	ug/L	0.50	0.50	5	09/08/21 18:28	08/25/21	
Molybdenum	200.8	**3990**	ug/L	0.50	0.15	5	09/08/21 18:28	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/04/21 14:20
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-17-11	**Basis:**	NA
Lab Code:	K2109664-025		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**120**	ug/L	2.5	0.5	5	09/08/21 18:32	08/25/21	
Lithium	200.8	**885**	ug/L	0.50	0.50	5	09/08/21 18:32	08/25/21	
Molybdenum	200.8	**3900**	ug/L	0.50	0.15	5	09/08/21 18:32	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/04/21 14:20
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-3-11	**Basis:**	NA
Lab Code:	K2109664-026		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**58.1**	ug/L	2.5	0.5	5	09/08/21 18:34	08/25/21	
Lithium	200.8	**844**	ug/L	0.50	0.50	5	09/08/21 18:34	08/25/21	
Molybdenum	200.8	**3870**	ug/L	0.50	0.15	5	09/08/21 18:34	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/04/21 14:20
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-4-11	**Basis:**	NA
Lab Code:	K2109664-027		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**2.0 J**	ug/L	2.5	0.5	5	09/08/21 18:35	08/25/21	
Lithium	200.8	**858**	ug/L	0.50	0.50	5	09/08/21 18:35	08/25/21	
Molybdenum	200.8	**3940**	ug/L	0.50	0.15	5	09/08/21 18:35	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/06/21 13:13
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-17-12	**Basis:**	NA
Lab Code:	K2109664-028		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**123**	ug/L	2.5	0.5	5	09/08/21 18:37	08/25/21	
Lithium	200.8	**883**	ug/L	0.50	0.50	5	09/08/21 18:37	08/25/21	
Molybdenum	200.8	**3950**	ug/L	0.50	0.15	5	09/08/21 18:37	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/06/21 13:13
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-3-12	**Basis:**	NA
Lab Code:	K2109664-029		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**78.2**	ug/L	2.5	0.5	5	09/08/21 18:38	08/25/21	
Lithium	200.8	**869**	ug/L	0.50	0.50	5	09/08/21 18:38	08/25/21	
Molybdenum	200.8	**3970**	ug/L	0.50	0.15	5	09/08/21 18:38	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/06/21 13:13
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-4-12	**Basis:**	NA
Lab Code:	K2109664-030		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	**2.4 J**	ug/L	2.5	0.5	5	09/08/21 18:40	08/25/21	
Lithium	200.8	**879**	ug/L	0.50	0.50	5	09/08/21 18:40	08/25/21	
Molybdenum	200.8	**4020**	ug/L	0.50	0.15	5	09/08/21 18:40	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-15R-7	**Basis:**	NA
Lab Code:	K2109664-031		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**32.0**	ug/L	0.50	0.50	5	09/08/21 18:42	08/25/21	
Molybdenum	200.8	**118**	ug/L	0.50	0.15	5	09/08/21 18:42	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-5-7	**Basis:**	NA
Lab Code:	K2109664-032		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**18.5**	ug/L	0.50	0.50	5	09/08/21 18:43	08/25/21	
Molybdenum	200.8	**103**	ug/L	0.50	0.15	5	09/08/21 18:43	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21 12:45
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-6-7	**Basis:**	NA
Lab Code:	K2109664-033		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**8.29**	ug/L	0.50	0.50	5	09/08/21 18:45	08/25/21	
Molybdenum	200.8	**71.5**	ug/L	0.50	0.15	5	09/08/21 18:45	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-15R-8	**Basis:**	NA
Lab Code:	K2109664-034		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**32.2**	ug/L	0.50	0.50	5	09/08/21 18:46	08/25/21	
Molybdenum	200.8	**117**	ug/L	0.50	0.15	5	09/08/21 18:46	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-5-8	**Basis:**	NA
Lab Code:	K2109664-035		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**20.2**	ug/L	0.50	0.50	5	09/08/21 18:51	08/25/21	
Molybdenum	200.8	**107**	ug/L	0.50	0.15	5	09/08/21 18:51	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/30/21 09:54
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-6-8	**Basis:**	NA
Lab Code:	K2109664-036		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**9.29**	ug/L	0.50	0.50	5	09/08/21 18:53	08/25/21	
Molybdenum	200.8	**81.9**	ug/L	0.50	0.15	5	09/08/21 18:53	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-15R-9	**Basis:**	NA
Lab Code:	K2109664-037		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**32.9**	ug/L	0.50	0.50	5	09/08/21 18:54	08/25/21	
Molybdenum	200.8	**117**	ug/L	0.50	0.15	5	09/08/21 18:54	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-5-9	**Basis:**	NA
Lab Code:	K2109664-038		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**25.2**	ug/L	0.50	0.50	5	09/08/21 18:56	08/25/21	
Molybdenum	200.8	**111**	ug/L	0.50	0.15	5	09/08/21 18:56	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21 13:02
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-6-9	**Basis:**	NA
Lab Code:	K2109664-039		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**13.3**	ug/L	0.50	0.50	5	09/08/21 18:57	08/25/21	
Molybdenum	200.8	**97.5**	ug/L	0.50	0.15	5	09/08/21 18:57	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-INF-MW-15R-10	**Basis:**	NA
Lab Code:	K2109664-040		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**32.4**	ug/L	0.50	0.50	5	09/08/21 18:59	08/25/21	
Molybdenum	200.8	**118**	ug/L	0.50	0.15	5	09/08/21 18:59	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-5-10	**Basis:**	NA
Lab Code:	K2109664-041		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**25.3**	ug/L	0.50	0.50	5	09/08/21 19:07	08/25/21	
Molybdenum	200.8	**109**	ug/L	0.50	0.15	5	09/08/21 19:07	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21 08:21
Sample Matrix:	Water	**Date Received:**	08/18/21 10:45
Sample Name:	GST-COL-6-10	**Basis:**	NA
Lab Code:	K2109664-042		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	**17.6**	ug/L	0.50	0.50	5	09/08/21 19:12	08/25/21	
Molybdenum	200.8	**106**	ug/L	0.50	0.15	5	09/08/21 19:12	08/25/21	

QC Summary Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2116027-01		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	09/08/21 15:18	08/25/21	
Lithium	200.8	ND U	ug/L	0.10	0.10	1	09/08/21 15:18	08/25/21	
Molybdenum	200.8	ND U	ug/L	0.10	0.03	1	09/08/21 15:18	08/25/21	

Analytical Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2116028-01		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	200.8	ND U	ug/L	0.50	0.09	1	09/08/21 18:14	08/25/21	
Lithium	200.8	ND U	ug/L	0.10	0.10	1	09/08/21 18:14	08/25/21	
Molybdenum	200.8	ND U	ug/L	0.10	0.03	1	09/08/21 18:14	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2116029-01		

Dissolved Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Lithium	200.8	ND U	ug/L	0.10	0.10	1	09/08/21 19:04	08/25/21	
Molybdenum	200.8	ND U	ug/L	0.10	0.03	1	09/08/21 19:04	08/25/21	

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/8/21
		Date Extracted:	08/25/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-INF-MW-16-7	**Units:**	ug/L
Lab Code:	K2109664-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2116027-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	5.2	56.2	50.0	102	70-130
Lithium	123	176	50.0	106	70-130
Molybdenum	675	700	25.0	103 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/8/21
		Date Extracted:	08/25/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-1-7	**Units:**	ug/L
Lab Code:	K2109664-002	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2116027-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	0.5 J	54.0	50.0	107	70-130
Lithium	109	165	50.0	113	70-130
Molybdenum	645	673	25.0	109 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/8/21
		Date Extracted:	08/25/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-4-9	**Units:**	ug/L
Lab Code:	K2109664-021	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2116028-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	1.2 J	50.2	50.0	98	70-130
Lithium	852	914	50.0	125 #	70-130
Molybdenum	3960	4020	25.0	239 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/8/21
		Date Extracted:	08/25/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-INF-MW-17-10	**Units:**	ug/L
Lab Code:	K2109664-022	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2116028-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	120	170	50.0	100	70-130
Lithium	875	930	50.0	108 #	70-130
Molybdenum	3910	3990	25.0	338 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project:	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/8/21
		Date Extracted:	08/25/21

Matrix Spike Summary
Dissolved Metals

Sample Name:	GST-COL-5-10	**Units:**	ug/L
Lab Code:	K2109664-041	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2116029-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Lithium	25.3	73.1	50.0	96	70-130
Molybdenum	109	137	25.0	113 #	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/08/21

Replicate Sample Summary
Dissolved Metals

Sample Name:	GST-COL-INF-MW-16-7	**Units:**	ug/L
Lab Code:	K2109664-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2116027-03 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	5.2	5.3	5.3	2	20
Lithium	200.8	0.50	0.50	123	123	123	<1	20
Molybdenum	200.8	0.50	0.15	675	687	681	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	07/29/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/08/21

Replicate Sample Summary
Dissolved Metals

Sample Name:	GST-COL-1-7	**Units:**	ug/L
Lab Code:	K2109664-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2116027-05 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	0.5 J	0.5 J	0.5	<1	20
Lithium	200.8	0.50	0.50	109	110	110	<1	20
Molybdenum	200.8	0.50	0.15	645	644	645	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	07/31/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/08/21

Replicate Sample Summary

Dissolved Metals

Sample Name:	GST-COL-4-9	**Units:**	ug/L
Lab Code:	K2109664-021	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2116028-03 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	1.2 J	1.3 J	1.3	8	20
Lithium	200.8	0.50	0.50	852	862	857	1	20
Molybdenum	200.8	0.50	0.15	3960	3960	3960	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/08/21

Replicate Sample Summary

Dissolved Metals

Sample Name:	GST-COL-INF-MW-17-10	**Units:**	ug/L
Lab Code:	K2109664-022	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2116028-05 Result	Average	RPD	RPD Limit
Arsenic	200.8	2.5	0.5	120	120	120	<1	20
Lithium	200.8	0.50	0.50	875	879	877	<1	20
Molybdenum	200.8	0.50	0.15	3910	3920	3920	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Anchor QEA, LLC	**Service Request:**	K2109664
Project	Gaston/201114-01.04 Task 02	**Date Collected:**	08/02/21
Sample Matrix:	Water	**Date Received:**	08/18/21
		Date Analyzed:	09/08/21

Replicate Sample Summary

Dissolved Metals

Sample Name:	GST-COL-5-10	**Units:**	ug/L
Lab Code:	K2109664-041	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2116029-03 Result	Average	RPD	RPD Limit
Lithium	200.8	0.50	0.50	25.3	25.0	25.2	1	20
Molybdenum	200.8	0.50	0.15	109	111	110	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2109664
Date Analyzed: 09/08/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2116027-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	200.8	50.7	50.0	101	85-115
Lithium	200.8	54.8	50.0	110	85-115
Molybdenum	200.8	27.8	25.0	111	85-115

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2109664
Date Analyzed: 09/08/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2116028-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	200.8	48.9	50.0	98	85-115
Lithium	200.8	51.6	50.0	103	85-115
Molybdenum	200.8	26.5	25.0	106	85-115

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Anchor QEA, LLC
Project: Gaston/201114-01.04 Task 02
Sample Matrix: Water

Service Request: K2109664
Date Analyzed: 09/08/21

Lab Control Sample Summary
Dissolved Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2116029-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Lithium	200.8	50.2	50.0	100	85-115
Molybdenum	200.8	26.1	25.0	104	85-115