



SEMI-ANNUAL VRP PROGRESS REPORT (18 MONTH)

**DIAMOND CRYSTAL DULUTH, LLC
DULUTH, GA
HSI SITE No. 10844**

DECEMBER 2016

PREPARED FOR:

**DIAMOND CRYSTAL DULUTH, LLC
3245 N. BERKELEY LAKE ROAD
DULUTH, GA, 30096-4972**

A handwritten signature in black ink, appearing to read 'M.S. Mudge'.

Matthew S. Mudge
Project Manager

A handwritten signature in black ink, appearing to read 'Howard J. Frank'.

Howard J. Frank, P.G.
Senior Geologist



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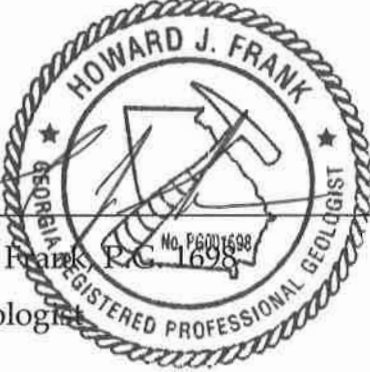
Appendix A	Overland Run-Off Evaluation
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PG Certification

"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et.seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."


Howard J. Frank
Senior Geologist

Date: 12-7-16

1.0 INTRODUCTION

The Voluntary Investigation and Remediation Plan (VIRP) application for the Diamond Crystal Duluth, LLC (Diamond Crystal Duluth) facility, located at 3245 North Berkeley Lake Road in Duluth, Gwinnett County, Georgia (HSI Site No. 10844), was submitted to the Georgia Environmental Protection Division (EPD) on May 11, 2015. The VIRP was approved by the EPD in a letter dated June 8, 2015.

An initial Progress Report was submitted in December 2015 summarizing activities completed during the first six months in the Voluntary Remediation Program (VRP). A semiannual Progress Report was submitted in June 2016 summarizing activities completed during the second six month period (first 12 months) of the VRP. This Progress Report provides a summary of activities conducted from June 2016 through December 2016, the third six month period (first 18 months) in the VRP.

2.0 SUMMARY OF SITE ACTIVITIES

As described in the VRP application, certain activities are scheduled to be completed within the third six month period (first 18 months) after entry to the VRP. Based on previous Progress Reports, as well as comments received from the EPD, additional activities were added to the milestone schedule and reported herein; these activities include:

- Evaluate the overland run-off route and the potential for offsite impacts to surface water/sediment as a result of surface erosion of impacted soils;
- Complete a site groundwater assessment;
- Evaluate the leachability pathway for site soils leaching to groundwater;
- Update on subsurface conditions on adjacent property;
- Report on progress with site paving and controls; and,
- Update the Conceptual Site Model (CSM) and Corrective Action Plan (CAP), if necessary.

A summary of the activities conducted from June 2016 through November 2016 are described in the following sections.

2.1 Overland Run-Off Evaluation

An overland run-off route and the potential for offsite impacts to surface water/sediment as a result of surface erosion of impacted soils were evaluated. As shown on the attached figure in **Appendix A**, the site is divided into two drainage basin areas. Rainfall run-off on the eastern portion of the facility is collected into catch basins which conveys into the municipal storm water sewer along North Berkeley Lake Road. Rainfall run-off from the central and western portion of the facility sheet flows to a storm water ditch running along the west property boundary (with flow from the adjacent parcel) and is directed to a storm water manhole/inlet located offsite, to the northwest (behind the Gwinnett County Fire Station No. 19). The final storm water disposition from this drainage area of the site is not definitive.

The property has limited unpaved surface area, and these areas are largely vegetated or stabilized with mulch or gravel cover, reducing the potential for surface erosion of impacted soils. Additionally, a preliminary site paving and controls plan was

developed for the Diamond Crystal Duluth site and improvements have been made at the facility in stages since 2015, as reported in previous Progress Reports. These improvements will continue to be implemented as part of the long term paving and capping effort at the facility. The paving and capping of exposed areas onsite reduces the potential for surface erosion of impacted soils and sediment laden run-off from leaving the property.

Based on these findings, the overland run-off route does not appear to present the potential for offsite impacts.

2.2 Groundwater Assessment

A groundwater assessment was completed in October and November 2016; three monitoring wells were installed as part of the assessment. A memorandum summarizing the activities and assessment results is included in **Appendix B** for further details.

Based upon the analytical results from representative groundwater samples collected from two onsite monitoring wells, there are no impacts to groundwater observed. The laboratory analytical results indicate that arsenic concentrations in groundwater are below the respective Georgia Rule for Safe Drinking Water Maximum Contaminant Level (MCL).

The proposed groundwater Risk Reduction Standard (RRS) for arsenic at the site shall be Type 1 residential (10 micrograms per liter [$\mu\text{g/L}$]). The proposed RRS for arsenic in groundwater at the Diamond Crystal Duluth site will be used to further assess the need for potential corrective action and to develop the site Corrective Action Plan (CAP).

2.3 Leachability Evaluation

The Georgia EPD responded to the June 2016 Progress Report in a letter dated July 11, 2016. The letter included a comment (provided in Section 3) that if proposing Type 4 soil RRS, the leachability requirement must be met prior to approval of the overall site-specific soil RRS for the site.

During the recent groundwater assessment completed in October and November 2016, soil samples were collected from each 5-foot section of soil cores from the borings installed on the property. The six (6) borings extended from the ground surface to bedrock refusal using direct-push and hollow-stem auger drilling techniques. Boring logs and a table summarizing soil sample testing for total arsenic concentrations are provided within the attached groundwater assessment memorandum (**Appendix B**).

As part of the soil leaching to groundwater evaluation, one soil sample from each boring was submitted for further analytical testing. The soil samples selected for analysis ranged in depth and in detected arsenic concentrations. These soil samples were analyzed for arsenic following a synthetic precipitation leaching procedure (SPLP), pH, and dry weight by GCAL Analytical Laboratory, LLC.

Laboratory results were only recently received and further evaluation of the soil leaching to groundwater pathway is needed. Additional details related to this effort will be completed over the next 6 month reporting period with results provided in the June 2017 (24 month) Progress Report.

2.4 Neighboring Property Conditions

2.4.1 Berkeley Lake Village Owners Association

Site assessment activities were completed at the Berkeley Lake Village Owners Association (BLVOA) property located at 3351 North Berkeley Lake Road NW, Duluth, Georgia. The property is located north of the Diamond Crystal Duluth facility. BLVOA conducted further assessment on the property as part of the VIRP in December 2015 and a VRP Progress Report was submitted to the EPD in July 2016.

Previous assessment activities consisted of collecting surface soil samples from the property which confirmed the widespread presence of arsenic ranging in concentrations from 35.3 to 239.7 milligrams per kilogram (mg/kg) throughout the property. During the reporting period, two groundwater monitoring wells were installed on the property. One of the monitoring wells appears to be damaged and is in the process of being replaced. A representative groundwater sample was collected from the other monitoring well and arsenic was not detected above the laboratory method detection limit.

The progress report indicates that additional soil sampling will be conducted in the two additional parcels that have been added to the site. Also an additional two monitoring wells will be installed on the property.

2.5 Preliminary Paving and Site Controls Plan

A preliminary site paving and controls plan is continuing to be developed for the Diamond Crystal Duluth site. An updated conceptual figure outlining the areas being considered for paving/capping controls is included in **Appendix C**. It is premature to

identify areas requiring corrective action since all proposed site RRS values have yet to be reviewed/approved in conjunction with the EPD.

During the third six month period (first 18 months) in the VRP, Diamond Crystal Duluth prepared additional areas for paving along the west side and northwest corner of the facility building. The work completed included capping these areas with concrete, the locations are shown on the included figure in **Appendix C**.

The preliminary site paving and controls plan will continue to be evaluated as Diamond Crystal Duluth progresses through the VRP and identifies areas requiring corrective action based on applicable exposure pathways/receptors and site RRS values.

2.6 Conceptual Site Model

The Conceptual Site Model (CSM) was updated to reflect the potential receptors presented in the June 2016 (12 month) Progress Report as well as the overland run-off and soil leaching to groundwater exposure routes to potential receptors. The updated CSM is provided in **Appendix D**.

2.7 Corrective Action Plan

No adjustments to the proposed Corrective Action Plan (CAP) are required at this time.

3.0 RESPONSE TO 12-MONTH VRP PROGRESS REPORT COMMENTS

The Diamond Crystal Duluth 12-Month Semi-Annual VRP Progress Report was submitted to the EPD in June 2016. On July 11, 2016 the EPD provided a letter with comments relating to the June 2016 Semi-Annual VRP Progress Report. This section provides responses to the EPD's comments (shown in italicized text, followed by responses).

- 1) *The receptor-specific health-based goals for arsenic in soil are acceptable. However, Section 2.1.3 states, "No development of RRS for the protection of groundwater will be completed at this time, pending results of the groundwater assessment." Please note that unless the proposed RRS is being based on the generic Type 1 or Type 3 soil RRS, the leachability requirement must be met prior to approval of the overall site-specific soil RRS for the site [see section 391-3-19-.07(09)(d)1 of the Rules for Hazardous Site Response]. An evaluation of the leachability pathway is an essential component in the determination of any site-specific soil RRS.*

A leachability evaluation is underway, additional details are provided in Section 2.3 of this Progress Report.

4.0 SITE ACTIVITIES PLANNED FOR NEXT 6 MONTHS

The following activities will be conducted in the next 6 months and summarized in the (24 Month) Semi-Annual VRP Progress Report to be submitted in June 2017:

- Continue the leachability pathway evaluation for site soils leaching to groundwater;
- Report on progress with site paving and controls;
- Update on subsurface conditions on adjacent property; and,
- Update the CSM and CAP, if necessary.

5.0 SUMMARY

All activities related to the VRP implementation to be completed within the third six month period (first 18 months) after entry to the VRP have been completed. A revised milestone schedule is provided in **Table 1**, below.

Table 1.0 Revised Milestone Schedule

Timeline	Date	Activity	Status
-	June 8, 2015	VIRP Application Approved	Complete
Within 45 days of VRP entry	July 21, 2015	Filing of Affidavit with clerk of Superior Court of Gwinnett County pursuant to O.C.G.A. §44-2-20	Complete
Within 30 days of filing affidavit	August 10, 2015	Submittal of copy of receipt of recorded Affidavit to EPD	Complete
Due within first 6 months	December 2015	Provide results of additional horizontal delineation of arsenic in surface soil	Complete
		Update on subsurface conditions on adjacent County Property	
		Submittal of Soil Management Plan	
		Submittal of preliminary paving and site controls plan	
Due within first 12 Months	June 2016	Review RRS for applicable exposure pathways and proposed RRS for the Diamond Crystal Duluth site	Complete
		Report on progress with site paving and controls plan	
		Update on subsurface conditions on adjacent property	
		Adjustments to CSM and CAP, if necessary	
Due within first 18 Months	December 2016	Evaluate overland run-off route and the potential for offsite impacts to surface water/sediment as a result of surface erosion of impacted soils	Complete
		Complete a site groundwater assessment	
		Evaluate the leachability pathway for site soils leaching to groundwater (initiated)	
		Report on progress with site paving and controls plan	
		Update on subsurface conditions on adjacent property	
		Adjustments to CSM and CAP, if necessary	

Table 1.0 Revised Milestone Schedule (cont.)

Timeline	Date	Activity	Status
Due within first 24 Months	June 2017	Continue to evaluate the leachability pathway for site soils leaching to groundwater	Pending
		Report on progress with site paving and controls	
		Update on subsurface conditions on adjacent properties	
		Adjustments to CSM and CAP, if necessary	
Due within first 30 Months	December 2017	Report on progress with site paving and controls	
		Update on subsurface conditions on adjacent properties	
		Adjustments to CSM and CAP, if necessary	
Due within first 60 Months	June 2020	Report on progress with site paving and controls	
		Submit the final Compliance Status Report certifying completion of the CAP	

6.0 MONTHLY INVOICE SUMMARY

The VRP requires that the professional engineer/geologist specified in the VIRP application oversee the implementation of the VIRP in accordance with the provisions, purposes, standards and policies of the Georgia Voluntary Remediation Program Act. During the period from June 2016 through November 2016, SynTerra staff invoiced 139.5 hours on this project. A monthly summary of hours invoiced and a description of services provided is shown in **Table 2**, below.

Table 2.0 Summary of Monthly Hours Invoiced

Month	Hours Billed	Description of Activities
June 2016	18.25	RRS review and calculations (cont. from May 2016) Compiled (cont. from May 2016) and submitted 12 Month VRP Progress Report
July 2016	1.5	2016 planning Reviewed EPD correspondence
August 2016	0	
September 2016	1	Leachability evaluation (reviewed approach)
October 2016	13.5	Groundwater assessment (planning, field preparation, and field activities) Leachability evaluation (reviewed approach)(cont.) Compiled 18 Month VRP Progress Report
November 2016	105.25	Groundwater assessment (field activities cont., data review, memorandum preparation) Leachability evaluation (planning, met with EPD, reviewed guidance)(cont.) RRS review for groundwater Review available progress reports and assessments from other properties included in HSI Site No. 10844 and adjacent to Diamond Crystal Duluth Preliminary paving and site controls plan Compiled 18 Month VRP Progress Report (cont.)

7.0 REFERENCES

Geosyntec. 2016. Voluntary Remediation Program (VRP) Semi-Annual Progress Report, Berkeley Lake Village Owners Association, North Berkeley Lake Road Site, HSI #10844, Duluth, Gwinnett County, GA. July, 2016.

Georgia EPD. 2016. Comments: Semi-Annual VRP Progress Report, Diamond Crystal Duluth Property, North Berkeley Lake Road Site, Duluth, Gwinnett County, HSI # 10844. July 11, 2016.

Georgia EPD. 2016. Comparison of Existing Risk Reduction Standards. <https://epd.georgia.gov/comparison-existing-contamination-risk-reduction-standards-391-3-19-07>. Accessed May 2016.

Georgia EPD. 2016. Hazardous Site Response Act. <https://epd.georgia.gov/hazardous-facility-response-act-guidance>. Accessed May 2016.

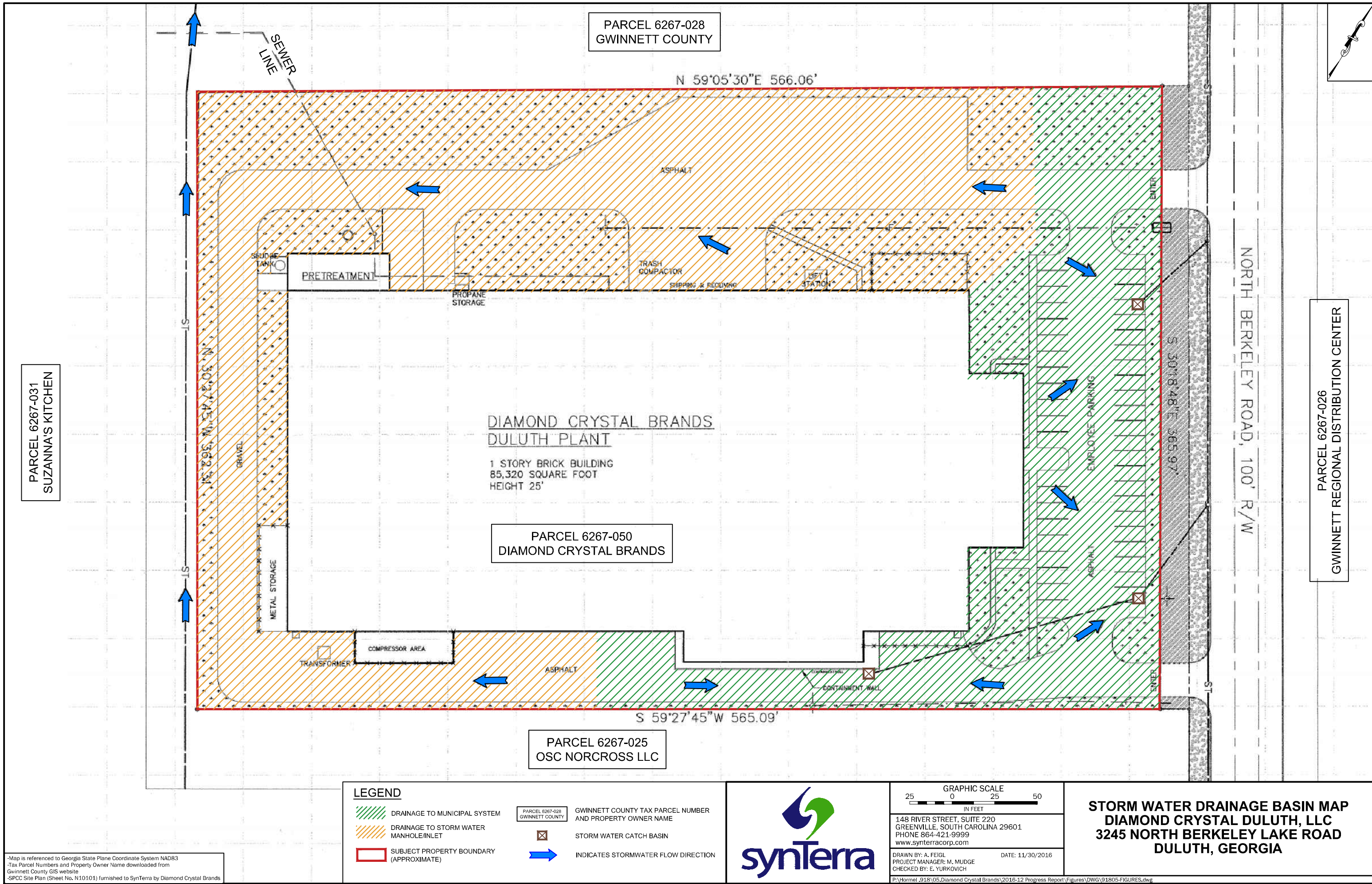
New Jersey DEP. 2013. Development of Site-Specific Impact to Ground Water Soil Remediation Standards Using the Synthetic Precipitation Leaching Procedure. Version 3.0 – November 2013. http://www.nj.gov/dep/srp/guidance/rs/splp_guidance.pdf

USEPA. 1996. Soil Screening Guidance: Technical Background Document. Office of Emergency Response: U.S. Environmental Protection Agency, Washington, DC, EPA/540/R-95/128 PB96-963502. May 1996.

US EPA. 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Emergency and Remedial Response: U.S. Environmental Protection Agency, Washington, D.C. OSWER 9355.4-24. December. 2002. http://www.epa.gov/superfund/health/conmedia/soil/pdfs/ssg_main.pdf

APPENDIX A

OVERLAND RUN-OFF EVALUATION



-Map is referenced to Georgia State Plane Coordinate System NAD83
-Tax Parcel Numbers and Property Owner Name downloaded from Gwinnett County GIS website
-SPCC Site Plan (Sheet No. N10101) furnished to SynTerra by Diamond Crystal Brands

APPENDIX B

GROUNDWATER AND SOIL ASSESSMENT MEMORANDUM



TECHNICAL MEMORANDUM

Date: December 7, 2016 File: 918.05.07

To: Michael Putnam – Diamond Crystal Duluth, LLC

Cc: Matthew S. Mudge - SynTerra

From: Evan M. Yurkovich; Howard J. Frank, P.G.

Subject: Groundwater and Soil Assessment
Diamond Crystal Duluth Facility
3245 North Berkeley Lake Road; Duluth, GA

This memorandum summarizes environmental assessment activities performed by SynTerra in October and November 2016 at 3245 North Berkeley Lake Road, Duluth, Georgia (**Figure 1**). The purpose of the field investigation was to further assess arsenic in soils and groundwater at the Diamond Crystal Duluth, LLC (Duluth Diamond Crystal) facility.

This assessment was conducted to satisfy requirements of the Georgia Environmental Protection Division (EPD) Voluntary Remediation Program (VRP). The facility entered the VRP on June 8, 2015 and is included in a Hazardous Site Inventory (HSI) listing (HSI No. 10844). HSI Site No. 10844 is a multi-property listing comprised of five land parcel units. Adjacent properties are shown on **Figure 2**.

The Georgia EPD responded to the December 2015 *Semi-Annual VRP Progress Report (6 month)* in a letter dated March 18, 2016. The comments provided by the EPD need to be addressed to EPD's satisfaction in order to maintain compliance with the Georgia Hazardous Site Response Act (HSRA). The EPD required Diamond Crystal to complete an assessment of groundwater at the facility.

1.0 FIELD INVESTIGATION

The fieldwork activities were initiated in late October 2016 and completed on November 2, 2016 and included the collection of 30 subsurface soil samples at 6 locations using a drill rig equipped with a direct-push coring device. Additionally, three permanent monitoring wells were installed and groundwater samples were collected. Sample locations located are shown on **Figure 3**.

This section describes the methods used during the field investigation.

1.1 SOIL BORING AND MONITORING WELL ACTIVITIES

Prior to site activities, Ground Penetrating Radar Systems Inc. (GPRS) conducted a subsurface investigation to identify underground utilities in the designated areas on October 31, 2016. Additionally, a public utility notification was submitted to the Georgia 811 to evaluate potential underground utilities located at or near the work areas at the site. No potential utility conflicts were identified.

On October 31 and November 1, 2016, soil sampling activities were conducted by SynTerra personnel and included the advancement of subsurface soil borings at 6 locations with soil samples collected from each location. Permanent monitoring wells were installed at three of these boring locations. The direct-push borings and permanent monitoring wells were installed by GeoLab Drilling, located in Dacula, Georgia. The boring and monitoring wells were installed using a GeoProbe® 6620DT drill rig with direct-push and hollow stem auger drilling capabilities. Soil boring and monitoring well locations are shown on **Figure 3**.

Continuous soil cores were collected using standard GeoProbe® direct-push and macro-core sampling techniques. The borings continued until refusal was met. Locations (SB-1, SB-4, and SB-5) in the northern portion of the property met refusal between 8 and 18 feet below ground surface (ft-bgs) where competent bedrock was encountered. The macro-cores were collected in acetate sleeves that were cut open and examined in the field. Once direct-push techniques met refusal, the drill rig converted to drilling with hollow stem augers until refusal was met at each boring. The soils were described with respect to soil type, color, degree of saturation, and other soil properties (**Attachment 1**).

The monitoring wells were installed by drilling down the soil borings using 4¼-inch inside diameter hollow stem augers. The monitoring wells were constructed of 2-inch diameter PVC casing with 5-foot long well screens. A 20-40 sand was placed in the annulus around the screen and extended to a depth of 3 feet above the top of each well screen. Bentonite pellets were placed at the top of the sand and extended 2 feet above and were then hydrated. Grout was mixed and placed from the top of the bentonite seal to the ground surface. The wells were completed with flush-mount monuments. Monitoring well construction details are included in **Attachment 1**.

1.2 SAMPLE COLLECTION AND PROCESSING

1.2.1 Soil Sample Collection

Borings were advanced from the ground surface to refusal using a 2-inch diameter stainless steel direct push coring device and 4¼-inch inside diameter hollow stem augers. Soil samples were collected within every 5-foot section of soil core. A total of 28 soil samples, in addition to two duplicates (at different locations), were collected from the boring locations.

Sampling information was recorded on field logs and included date, sampling method, sample IDs and depths, soil classification, field observations, and any other applicable notes. The borings were logged using the Unified Soil Classification System. A summary of boring and soil sampling information is provided in **Table 1**.

Each sample was placed in pre-labeled sampling containers, placed in a chilled cooler, and delivered to the analytical testing laboratory under standard chain-of-custody protocols.

1.2.2 Groundwater Sample Collection

On November 1, 2016, the monitoring wells were developed using a 12-volt submersible pump and disposable tubing by repeatedly surging and pumping each to remove accumulated sediment and allowing the sand pack to settle.

Prior to collecting groundwater samples from monitoring wells, the static water level was measured in each well on November 2, 2016. Monitoring well MW-1 was not sampled due to insufficient amount of water within the well screen interval. The monitoring wells were purged with a 12-volt battery operated monsoon pump using low-flow techniques. During purging, the pH, specific conductivity, dissolved oxygen, oxidation-reduction potential (ORP), turbidity and temperature were measured and recorded. Well purging continued until these parameters stabilized (typically three successive readings in which pH +/- 0.1 unit; specific conductivity +/- 3 percent; temperature, dissolved oxygen and turbidity +/- 10 percent; and ORP +/- 10 millivolts). Well sampling logs are included as **Attachment 2**.

1.3 DECONTAMINATION PROCEDURES

Soil samples were collected using a combination of dedicated, single-use equipment and decontaminated, reusable equipment. Dedicated, single-use sampling equipment included nitrile gloves and laboratory-provided sample jars. Reusable sampling equipment included the stainless steel direct push coring device, hollow-stem augers, and development and sampling pumps. The reusable equipment was decontaminated prior to use and between sampling locations to prevent cross-contamination.

1.4 INVESTIGATION-DERIVED WASTE

Soil cuttings and purge water generated during borehole advancement and well development were containerized into 55-gallon drums. Single-use equipment was placed in a garbage bin for disposal as municipal solid waste.

The drums will be properly disposed of at an approved facility following waste characterization/profiling; this activity is in progress at this time.

2.0 MONITORING WELL SURVEY AND WATER LEVEL MEASUREMENTS

The monitoring wells were surveyed relative to Georgia state plane coordinates by LeCraw Engineering, Inc. (Mr. James A. Cannington, Georgia PLS# 2678) on November 3, 2016. In addition, the elevation of the ground surface and the measuring point at the top of each monitoring well casing was surveyed to the nearest 0.01 foot relative to mean sea level. The Monitor Well Location Survey map is provided in **Attachment 3**.

On November 2, 2016, water levels were collected from all of the onsite monitoring wells. The water levels recorded are included on **Table 2**. A potentiometric surface was generated from

the water levels and shown on **Figure 4**. The associated map indicates that groundwater flows to the west.

3.0 ANALYTICAL TESTING

Twenty-eight soil samples and two field duplicates were collected from 6 locations between October 31 and November 1, 2016. Groundwater samples were collected from monitoring wells MW-2 and MW-3, as well as a duplicate sample from MW-3 on November 2, 2016. The samples were submitted to GCAL Analytical Laboratory, LLC in Baton Rouge, Louisiana for analysis. Chain-of-custody procedures were followed from sample collection to sample analysis.

3.1 ANALYTICAL METHODS

The thirty soil samples and three groundwater samples were analyzed for total arsenic by United States Environmental Protection Agency (US EPA) Method 6010C.

3.2 ANALYTICAL RESULTS

Results of the analytical testing are summarized in **Table 3 and 4**. The laboratory analytical reports and chain-of-custody documentation for the sampling activities are included in **Attachment 4**.

A data quality assessment was performed on sample data collected from the site in November 2016. The laboratory data was reviewed for precision, accuracy, and completeness in accordance with the *US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (EPA540-R-10-011, January 2010), and the most recently promulgated versions of the analytical methods.

Upon receipt of the laboratory analytical results, the data package was reviewed for completeness to verify the appropriate samples were collected and the requested analyses performed. The sample collection logs were reviewed and compared against the chain-of-custody documentation to verify the sample collection information was properly transcribed. The chain-of-custody forms were then checked against the laboratory sample check-in documentation. Requirements for proper handling and preservation were met and the samples were properly checked-in and analyzed for the requested analyses.

Laboratory batch quality control data were then evaluated for precision, accuracy, and completeness. Field duplicate results were also compared to verify the sample collection system was under control and generally showed good replication.

Based on this review, the data is usable for quantitative reporting and decision-making purposes as reported.

4.0 DISCUSSION OF RESULTS

Arsenic was detected in all soil samples analyzed. Analytical results are presented in **Table 3**. The highest arsenic concentration detected from any sample was 369 mg/kg at SB-04 at a depth of six ft-bgs (sample ID SB-04_6), located along the north side of the facility building (**Figure 3**). The lowest arsenic concentration detected was 6.19 mg/kg at SB-06 at a depth of 16 ft-bgs (sample ID SB-06_16), located at the northern property boundary.

Arsenic was detected in the groundwater samples analyzed. Analytical results are presented in **Table 4**. The analytical results were compared to the Georgia Rules for Safe Drinking Water Maximum Contaminant Levels (MCL). All of the arsenic detections were below the respective arsenic MCL of 10 micrograms per liter (µg/L).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the sampling and analytical testing completed and summarized in this memorandum, the elevated concentrations of arsenic in surface soil identified at the site appear to have a fairly un-uniform distribution; there are elevated concentrations of arsenic in subsurface soils at varying degrees of concentrations with no clear pattern or source area established. Groundwater does not appear to be impacted by arsenic present in soils at the site.

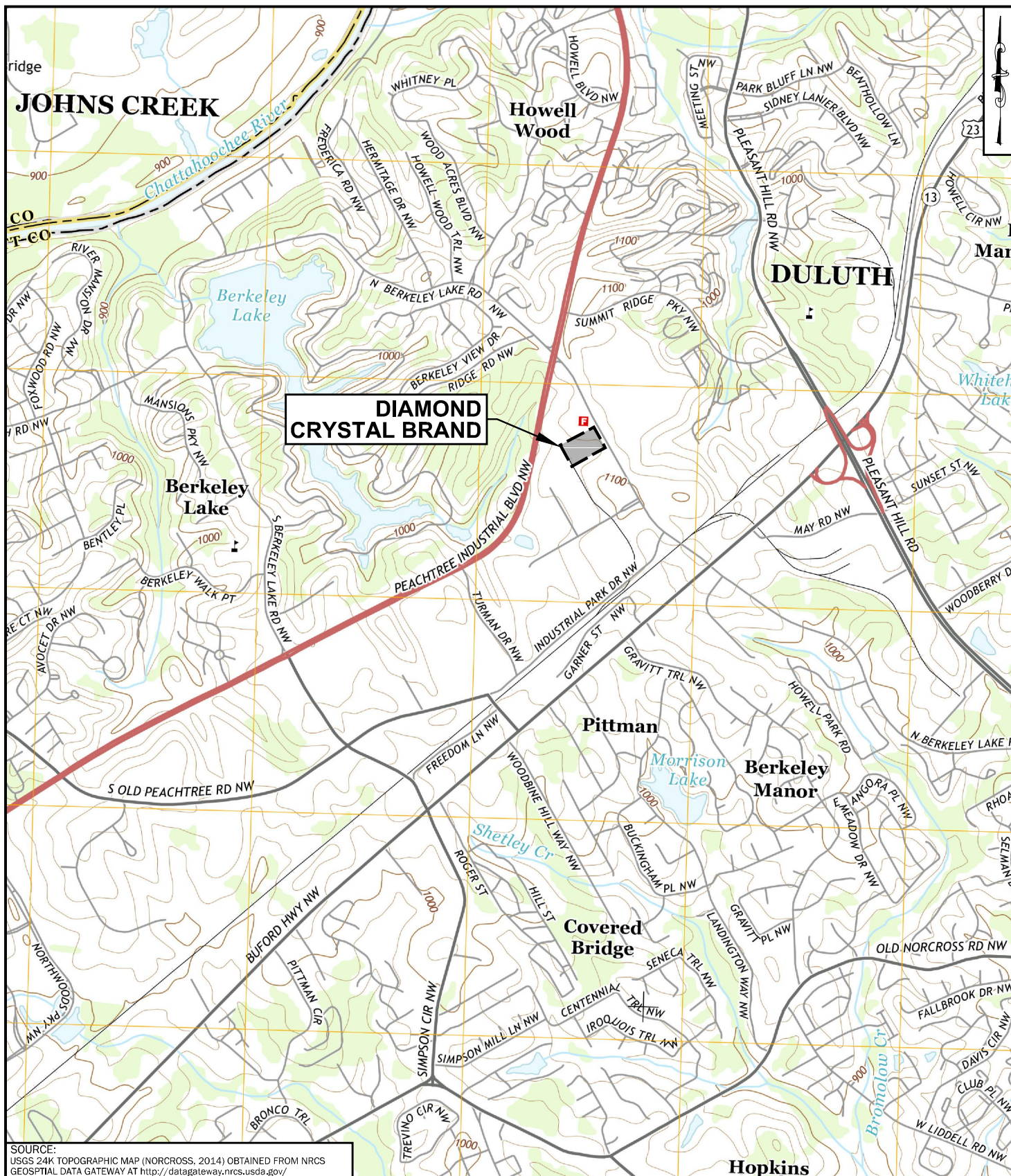
The results of this assessment will be used in conjunction with earlier studies of the site, as well as with assessments from neighboring properties, in evaluating areas requiring potential corrective action at the Diamond Crystal Duluth property.

If there are any questions related to the activities performed or the findings of this assessment, please contact us at (864) 421-9999.

ATTACHMENTS:

- Figure 1 – USGS Topographic Map
- Figure 2 – 2016 Aerial Photograph
- Figure 3 – Boring and Monitoring Well Locations
- Figure 4 – Potentiometric Surface Map, November 2, 2016
- Figure 5 – Cross Section A – A'
- Table 1 – Boring Log Summary
- Table 2 – Well Construction and Water Level Information
- Table 3 – Summary of Soil Analytical Results
- Table 4 – Summary of Groundwater Analytical Results
- Attachment 1 – Geologist Logs and Well Construction Records
- Attachment 2 – Groundwater Sampling Logs
- Attachment 3 – Monitor Well Coordinates – LeCraw Engineering, LLC
- Attachment 4 – Laboratory Analytical Reports

FIGURES



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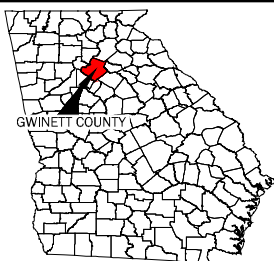


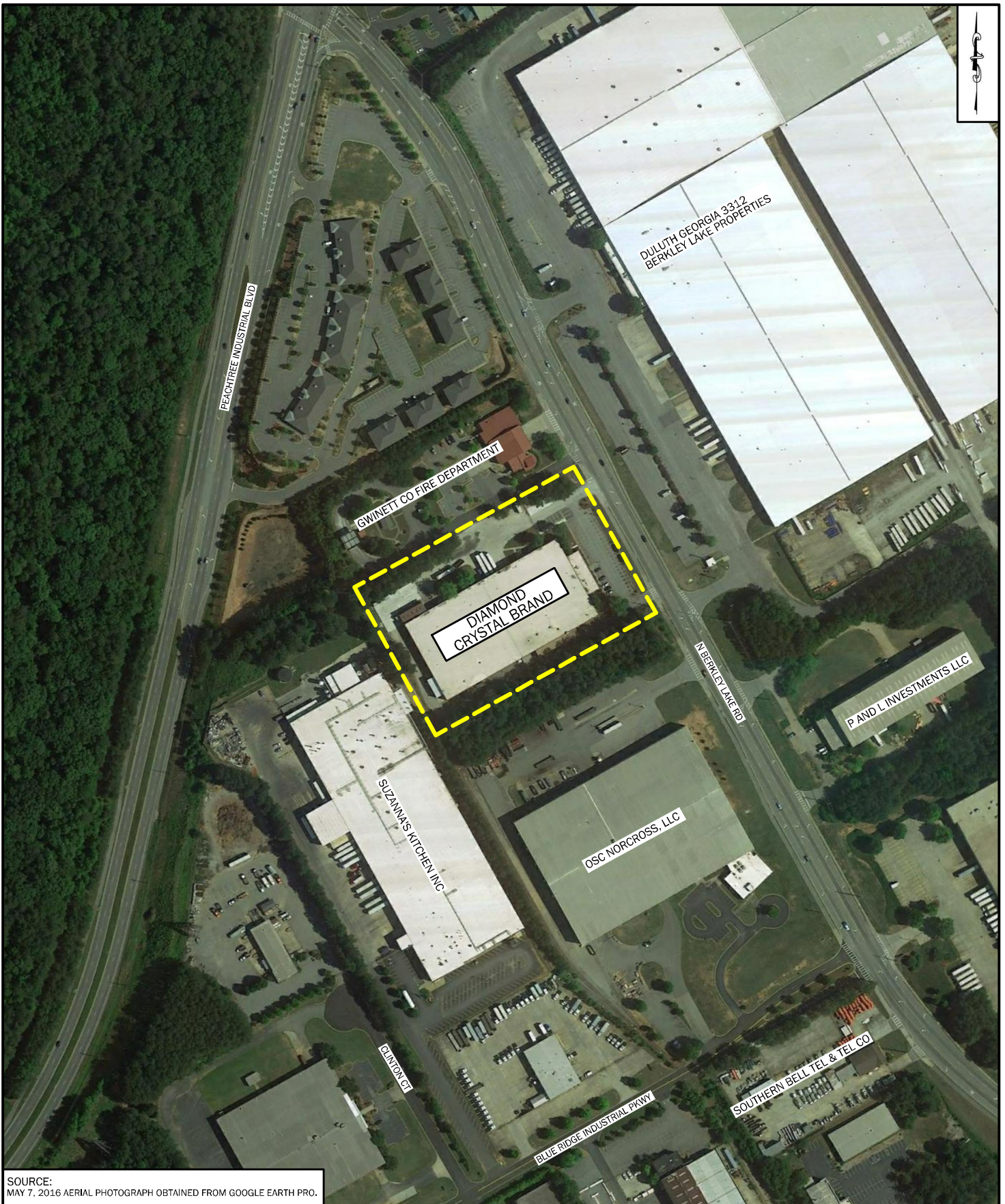
FIGURE 1
USGS TOPOGRAPHIC MAP
DIAMOND CRYSTAL DULUTH, LLC
3245 NORTH BERKELEY LAKE DRIVE
DULUTH, GEORGIA

DRAWN BY: ADAM FEIGL
PROJECT MANAGER: MATT MUDGE
LAYOUT: FIG 1 (USGS MAP)

DATE: 11/08/2016
CONTOUR INTERVAL: 20 FEET
MAP DATE: 2014

GRAPHIC SCALE
1000 0 1000 2000
IN FEET

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SOURCE:
MAY 7, 2016 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.



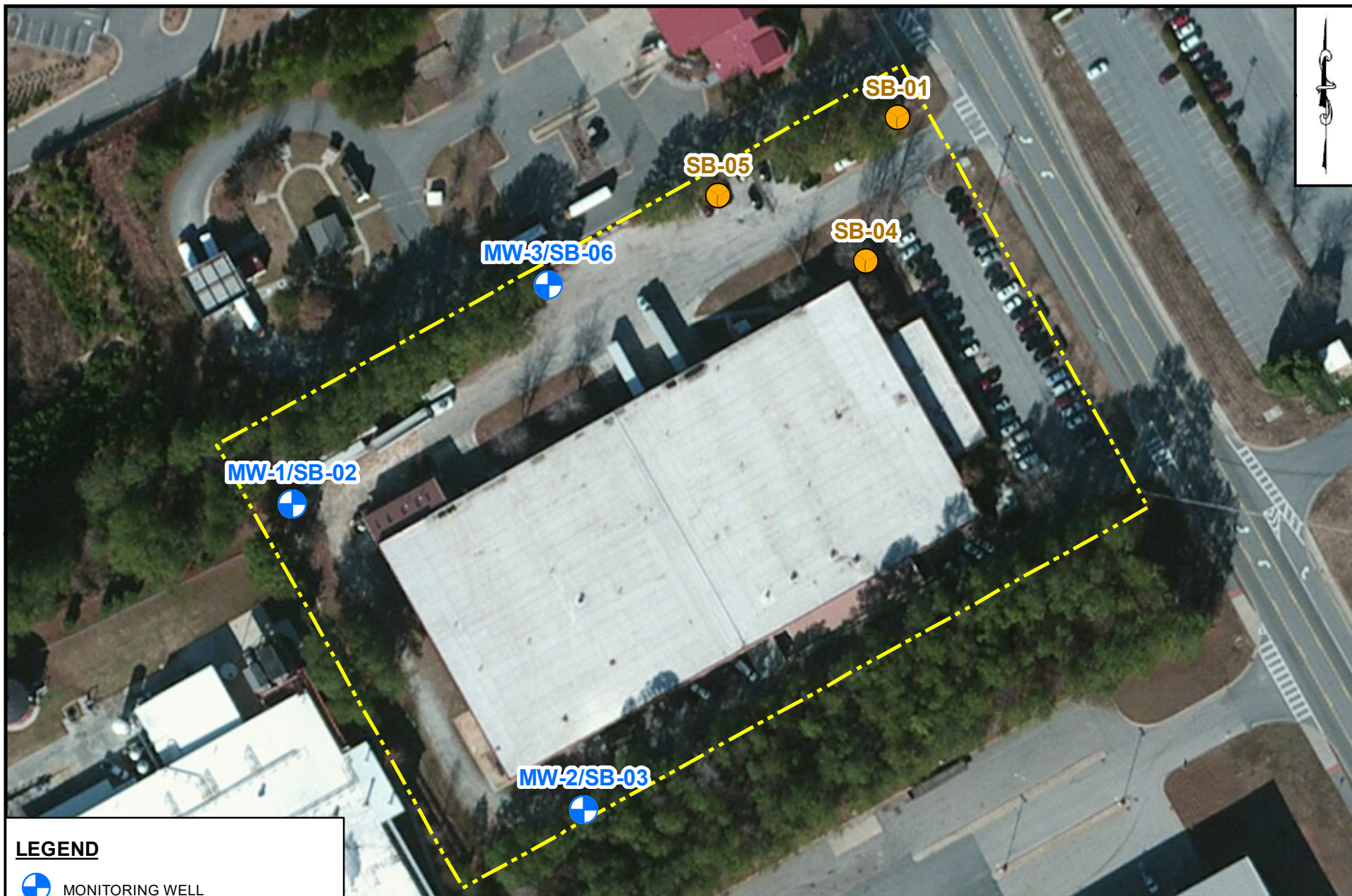
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DRAWN BY: ADAM FEIGL DATE: 11/08/2016
PROJECT MANAGER: MATT MUDGE
LAYOUT: FIG 2 (2016 AERIAL PHOTOGRAPH)


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FIGURE 2
2016 AERIAL PHOTOGRAPH
DIAMOND CRYSTAL DULUTH, LLC
3245 NORTH BERKELEY LAKE ROAD
DULUTH, GEORGIA



LEGEND

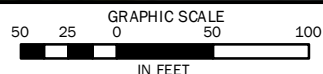
 MONITORING WELL

 SOIL BORING

 APPROXIMATE PARCEL BOUNDARY

NOTES:

1) MAY 7, 2016 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.



148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterracorp.com

DRAWN BY: ADAM FEIGL DATE: 12/07/2016
PROJECT MANAGER: MATT MUDGE
CHECKED BY: EVAN YURKOVICH

P:\Home1.918\05.Diamond Crystal Brands\07. GW Assessment\Figures\IMXD\DIAMOND CRYSTAL SOIL SAMPLE.mxd

FIGURE 3
BORING & MONITORING WELL LOCATIONS
DIAMOND CRYSTAL DULUTH, LLC
3245 NORTH BERKELEY LAKE ROAD
DULUTH, GEORGIA

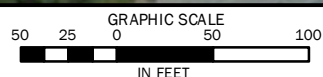


LEGEND

- GROUNDWATER SURFACE CONTOUR
- MONITORING WELL
- SOIL BORING
- APPROXIMATE PARCEL BOUNDARY

NOTES:

1) MAY 7, 2016 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.

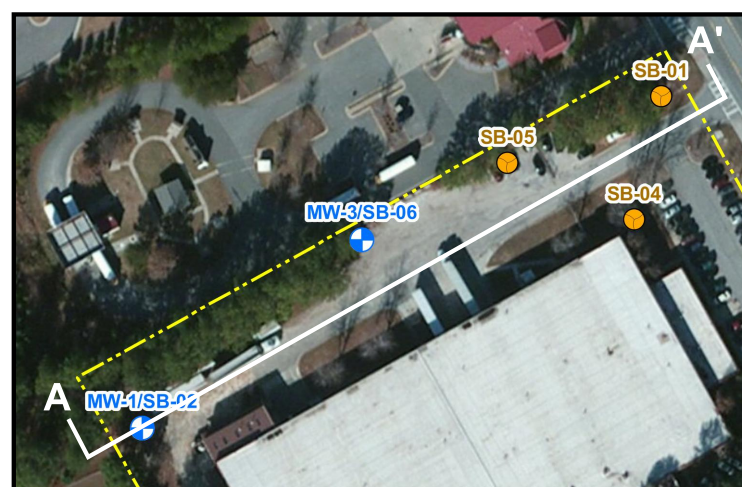
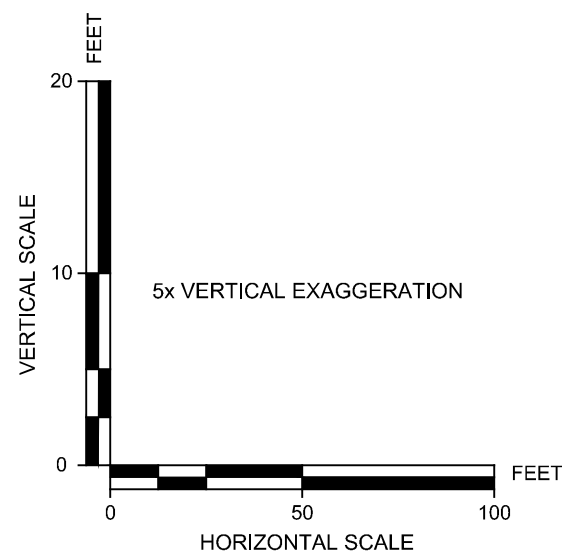
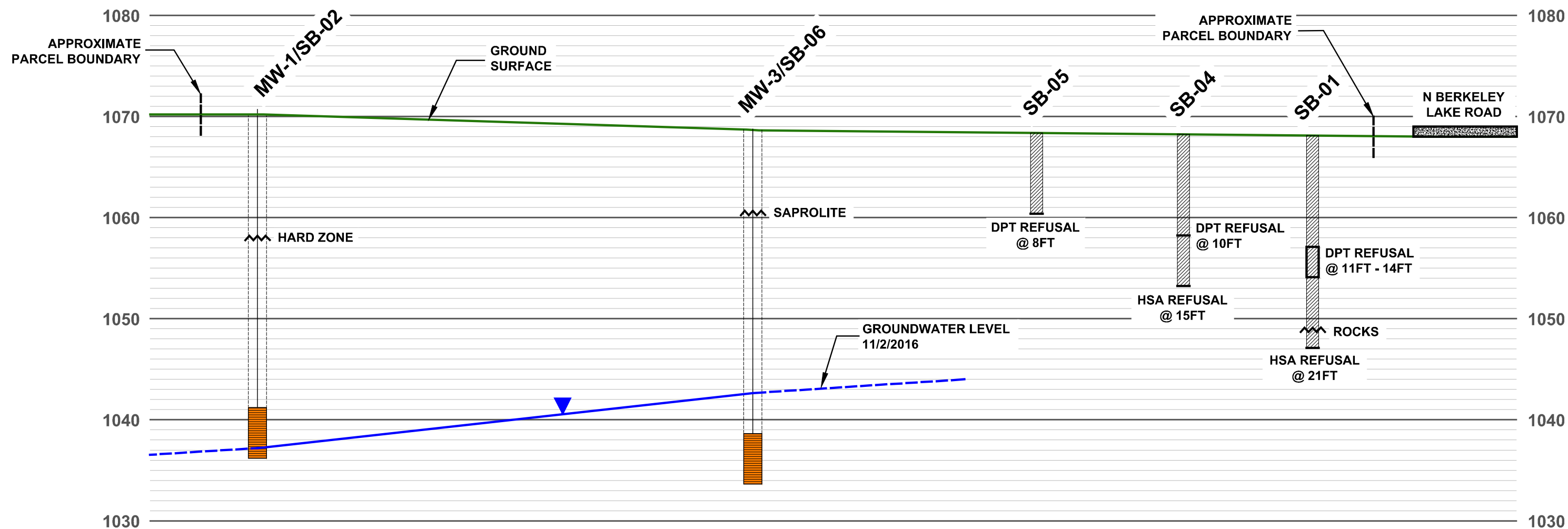


148 RIVER STREET, SUITE 220
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www.synTerraCorp.com

DRAWN BY: ADAM FEIGL DATE: 11/11/2016
PROJECT MANAGER: MATT MUDGE
CHECKED BY: EVAN YURKOVICH

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FIGURE 4
POTENTIOMETRIC SURFACE MAP
DIAMOND CRYSTAL DULUTH, LLC
3245 NORTH BERKELEY LAKE ROAD
DULUTH, GEORGIA



CROSS SECTION LOCATION MAP
NOT TO SCALE

LEGEND

- GROUND SURFACE ELEVATION
- WATER TABLE ELEVATION
- WELL SCREEN
- SOIL BORING
- ROCK LAYER



148 RIVER STREET, SUITE 220
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www.synTerracorp.com

DRAWN BY: A. FEIGL
PROJECT MANAGER: M. MUDGE
CHECKED BY: E. YURKOVICH

DATE: 12/7/2016

DRAWING PATH: P:\Hornel_918\05, Diamond Crystal Brands\07, GW Assessment\Figures\DWG\DIAMOND CRYSTAL CROSS SECTION.dwg

FIGURE 5
CROSS SECTION A-A'
DIAMOND CRYSTAL DULUTH, LLC
3245 NORTH BERKELEY LAKE ROAD
DULUTH, GEORGIA

TABLES

Table 1
Boring Log Summary
Diamond Crystal Duluth, LLC
Duluth, Georgia

Boring	Total Depth of Boring (feet bgs)	Drilling Method	Soil Data Summary				
			Soil Interval (feet bgs)		USCS Soil Type	Field Screening Results	
			From	To		Sample Depth (feet)	Discoloration
SB-01	21	Direct Push	0	0.5	Topsoil, pine needles, small rocks		no
			0.5	2.0	Silty SAND (SP-SM)	1	no
		HSAs	2.0	10.0	Silty SAND (SP-SM)	7	no
			10.0	16.0	Silty SAND (SP-SM), micaceous, hard zone at 11 ft-bgs	13	no
			16.0	21.0	Sandy SILT (ML), micaceous, small rocks at 18 ft-bgs	16	no
MW-01/SB-02	35	Direct Push HSAs	0	0.5	Poorly graded GRAVEL with topsoil (GP)		no
			0.5	4.0	SILT (ML)	2	no
			4.0	5.0	Sandy SILT (ML)		no
			5.0	8.0	Clayey SILT (ML)	7	no
			8.0	11.0	CLAY (CL)		no
			11.0	13.0	CLAY (CL), micaceous, hard zone	12	no
			13.0	17.0	CLAY (CL)	17	no
			17.0	18.0	Silty CLAY (CL-ML)		no
			18.0	22.0	Clay (CL), small rocks		no
			22.0	22.5	Dark brown/black staining (approximate 4-in thick)	23	yes
			22.5	29.0	Clay (CL)	28	no
			29.0	31.0	Clay (CL)		no
MW-02/SB-03	32.5	Direct Push HSAs	31.0	35.0	Clay (CL), wet area from 31 to 34 ft-bgs, saprolite at 34 ft-bgs.		no
			0	0.5	Asphalt		no
			0.5	2.0	Clayey SILT (ML)	2	no
			2.0	3.0	CLAY (CL)		no
			3.0	5.0	Silty CLAY (CL)		no
			5.0	8.0	Sandy SILT (ML)	8	no
			8.0	11.0	SILT (ML)		no
			11.0	14.0	Silty SAND (SM)	14	no
			14.0	16.0	Silty SAND (SM), saprolitic		no
			16.0	20.0	Saprolite		no
			20.0	23.0	Sandy SILT (ML)	23	no
			23.0	25.0	Silty SAND (SM)		no
			25.0	27.0	Sandy SILT (ML)		no
			27.0	31.0	Clayey SILT (ML)	28	no
SB-04	15	Direct Push	31.0	32.5	Silty CLAY (CL)		no
			0	0.5	Topsoil		no
			0.5	3.0	Silty SAND (SM)	2	no
		HSAs	3.0	5.0	Sandy SILT (ML)		no
			5.0	7.0	Silty SAND (SM)	6	no
			7.0	8.0	Silty SAND (SM)		no
SB-05	8	Direct Push	8.0	15.0	Saprolite, micaceous, layered with dark staining	12	yes
			0	0.5	Topsoil, pine needles, small rocks		no
			0.5	6.0	SILT (ML)	2	no
			6.0	7.0	Saprolite, rock layer at 7 ft-bgs	6	no
MW-03/SB-06	39	Direct Push HSAs	7.0	8.0	Silty SAND (SM), with rocks		no
			0	0.5	Gravel and topsoil		no
			0.5	2.0	Silty SAND (SM)	2	no
			2.0	3.0	Silty SAND (SM)		no
			3.0	8.0	Silty SAND (SM)		no
			8.0	10.0	Sandy SILT (ML) saprolitic	9	no
			10.0	12.0	Sandy SILT (ML)	12	no
			12.0	13.0	Silty SAND (SM)		no
			13.0	15.0	Sandy SILT (ML)		no
			15.0	17.0	Sandy SILT (ML) micaceous	16	no
			17.0	23.0	Sandy SILT (ML), micaceous	23	no
			23.0	36.0	Clayey SILT (ML), saprolitic, micaceous	26, 31, 35	no
			36.0	39.0	SILT (ML), saprolite		no

Notes:

bgs = below ground surface
USCS = Unified Soil Classification System

Prepared by: EMY Checked by JYT

Table 2
Well Construction and Water Level Information
Diamond Crystal Duluth, LLC
Duluth, Georgia

Well	Northing (ft.)	Easting (ft.)	TOC Elevation (ft.)	Ground Surface Elevation (ft.)	Screen Interval (ft. BGS)	Total Well Depth (ft. below TOC)	Date of Measurement	Depth to Groundwater (ft. below TOC)	Groundwater Elevation (ft.)
MW-01	1448314.65	2295384.28	1070.38	1070.2	29 to 34	34.67	11/2/2016	33.62	1036.76
MW-02	1448088.81	2295599.97	1071.37	1071.66	25 to 30	30.07	11/2/2016	23.78	1047.59
MW-03	1448476.73	2295573.97	1068.18	1068.64	30 to 35	35.35	11/2/2016	25.97	1042.21

Prepared By: EMY Checked By: JYT

Notes:

TOC - Top of Casing Elevation

ft. - Feet

BGS - Below Ground Surface

NA - Not Available

Wells surveyed by Lecraw Engineering, Inc. on November 3, 2016.

Table 3
Summary of Soil Analytical Results
Diamond Crystal Duluth, LLC
Duluth, Georgia

Boring Location	Date	Sampling Method	Depth (feet bgs)	Arsenic Concentration ² (mg/kg) <CAS 7440-38-2>	Detection Limit (mg/kg)	Type 4 Risk Reduction Standard ⁴ Industrial Worker (mg/kg)	Type 4 Risk Reduction Standard ⁴ Maintenance Worker (mg/kg)	Type 4 Risk Reduction Standard ⁴ Construction Worker (mg/kg)	Type 4 Risk Reduction Standard ⁴ Adolescent Trespasser (mg/kg)
SB-01_1	10/31/2016	Direct Push Core ¹	1	18.1	0.119	762	3,053	322	1,532
SB-01_7	10/31/2016	Direct Push Core ¹	7	9.37	0.114	762	3,053	322	1,532
SB-01_13	10/31/2016	Direct Push Core ¹	13	33	0.104	762	3,053	322	1,532
SB-01_16	10/31/2016	Direct Push Core ¹	16	50.5	1.17	762	3,053	322	1,532
SB-02_2	10/31/2016	Direct Push Core ¹	2	141	1.3	762	3,053	322	1,532
SB-02_7	10/31/2016	Direct Push Core ¹	7	52	1.2	762	3,053	322	1,532
SB-02_12	10/31/2016	Direct Push Core ¹	12	116	1.27	762	3,053	322	1,532
SB-02_17	10/31/2016	Direct Push Core ¹	17	100	1.23	762	3,053	322	1,532
SB-02_23	10/31/2016	Direct Push Core ¹	23	134	1.2	762	3,053	322	1,532
SB-02_28	10/31/2016	Direct Push Core ¹	28	26	0.122	762	3,053	322	1,532
SB-03_2	10/31/2016	Direct Push Core ¹	2	7.36	0.119	762	3,053	322	1,532
SB-03_8	10/31/2016	Direct Push Core ¹	8	46.7	1.17	762	3,053	322	1,532
SB-03_14	10/31/2016	Direct Push Core ¹	14	69.5	1.26	762	3,053	322	1,532
SB-03_23	10/31/2016	Direct Push Core ¹	23	31.1	0.124	762	3,053	322	1,532
SB-03_23 DUP	10/31/2016	Direct Push Core ¹	23	34	0.128	762	3,053	322	1,532
SB-03_28	10/31/2016	Direct Push Core ¹	28	106	1.34	762	3,053	322	1,532
SB-04_2	11/1/2016	Direct Push Core ¹	2	357	1.25	762	3,053	322	1,532
SB-04_6	11/1/2016	Direct Push Core ¹	6	369	1.19	762	3,053	322	1,532
SB-04_12	11/1/2016	Direct Push Core ¹	12	362	1.22	762	3,053	322	1,532
SB-05_2	11/1/2016	Direct Push Core ¹	2	50.2	1.11	762	3,053	322	1,532
SB-05_6	11/1/2016	Direct Push Core ¹	6	111	1.04	762	3,053	322	1,532
SB-06_2	11/1/2016	Direct Push Core ¹	2	10.6	0.113	762	3,053	322	1,532
SB-06_9	11/1/2016	Direct Push Core ¹	9	9.41	0.112	762	3,053	322	1,532
SB-06_12	11/1/2016	Direct Push Core ¹	12	20.5	0.14	762	3,053	322	1,532
SB-06_16	11/1/2016	Direct Push Core ¹	16	6.19	0.135	762	3,053	322	1,532
SB-06_23	11/1/2016	Direct Push Core ¹	23	10.6	0.151	762	3,053	322	1,532
SB-06_26	11/1/2016	Direct Push Core ¹	26	13.9	0.136	762	3,053	322	1,532
SB-06_26 DUP	11/1/2016	Direct Push Core ¹	26	13.9	0.135	762	3,053	322	1,532
SB-06_31	11/1/2016	Direct Push Core ¹	31	88.6	1.37	762	3,053	322	1,532
SB-06_35	11/1/2016	Direct Push Core ¹	35	65.9	1.2	762	3,053	322	1,532

Notes:

¹ = Direct push approach using stainless steel soil coring device

² = Total metals by US EPA Method 6020A

bgs = below ground surface

mg/kg = milligrams per kilogram

³ = Concentrations as listed in Appendix I of the Georgia Rules of Hazardous Site Response

⁴ = Concentrations based on Georgia EPD Risk Reduction Standards 391-3-19-.07

Bold value indicates the concentration exceeds the risk reduction standard

Shaded cell indicates value exceeds Type 4 Risk Reduction Standard for Construction Worker.

Prepared by: EMY

Checked by: JYT

Table 4
Summary of Groundwater Analytical Results
Diamond Crystal Duluth, LLC
Duluth, Georgia

Analytes	MW-02	MW-03	MW-03 DUP
Metals (µg/L)			
Arsenic	1.90	3.23	3.02
Risk Reduction Standard	10		
Georgia MCL	10		

Prepared by: EMY

Checked by: MSM

Notes:

1. Groundwater samples were collected on November 2, 2016.
2. Results are in microgram per liter (µg/L).
3. Analytical results are compared to Georgia Rules for Safe Drinking Water Maximum Contaminant Levels (MCL), August 2013.
4. Risk Reduction Standard from Rules of Georgia Department of Natural Resources Environmental Protection Division Media Target Concentrations and Standards Exposure Assumptions Table 1 of Appendix III Groundwater Criteria, November 2016.
5. Bold results indicate detections exceed their respective MCL.

ATTACHMENT 1

GEOLOGIST LOGS AND WELL CONSTRUCTION RECORDS

PROJECT: Diamond Crystal Duluth, LLC	WELL / BORING NO: MW-01/SB-02
PROJECT NO: 918.05	STARTED: 10/31/16 COMPLETED: 10/31/16
DRILLING COMPANY: Geolab Drilling	NORTHING: 1448476.73 EASTING: 2295573.97
DRILLING METHOD: Dual Tube/ HSA	G.S. ELEV: 1068.64 ft MSL M.P. ELEV: 1068.18 ft MSL
BOREHOLE DIAMETER: 2/4.25 IN	DEPTH TO WATER: 33.62 ft TOC TOTAL DEPTH: 35.0 ft BGS
NOTES: BGS- Below Ground Surface	LOGGED BY: E. Yurkovich CHECKED BY: M. Mudge

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (%)	BLOW COUNTS	PID (ppm)	WELL CONSTRUCTION - Flush Mount Monument
		GP	Gravel, grey, mixed with topsoil					
		ML	SILT, brownish red, brittle, small rocks					
5		ML	Sandy SILT, reddish brown, mottled red/white					
		ML	Clayey SILT, brownish red, loose					
10		CL	CLAY, red, stiff, mottled white					← 2" Sch. 40 threaded PVC riser
		CL	CLAY, brownish red, micaceous, firm					← Cement grout
15		CL	CLAY, red, firm.					
		CL ML	Silty CLAY, red					
20		CL	CLAY, red, firm					
		CL	Dark brown/black staining (approximately 4-in thick)					
25		CL	CLAY, red, firm					← Bentonite seal
30		CL	CLAY, light brown/red, firm, moist					← Sand pack (No. 2)
		CL	CLAY, light brown, firm moist. Wet area at 31 ft-bgs. Saprolite at 34 ft-bgs.					Well screen
35			Boring terminated at 35.0' bgs.					

LOG D. DIAMOND CRYSTAL DULUTH, LLC.GPJ GINT STD A4 ASTM LAB.GDT 12/7/16

PROJECT: Diamond Crystal Duluth, LLC	WELL / BORING NO: MW-02/SB-03
PROJECT NO: 918.05	STARTED: 10/31/16 COMPLETED: 10/31/16
DRILLING COMPANY: Geolab Drilling	NORTHING: 1448314.65 EASTING: 2295384.28
DRILLING METHOD: Dual Tube/ HSA	G.S. ELEV: 1070.20 ft MSL M.P. ELEV: 1070.38 ft MSL
BOREHOLE DIAMETER: 2/4.25 IN	DEPTH TO WATER: 23.78 ft TOC TOTAL DEPTH: 32.5 ft BGS
NOTES: BGS- Below Ground Surface	LOGGED BY: E. Yurkovich CHECKED BY: M. Mudge

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (%)	BLOW COUNTS	PID (ppm)	WELL CONSTRUCTION - Flush Mount Monument
			Asphalt					
		ML	Clayey SILT, orangish brown, micaceous					
		CL	CLAY, brownish red, micaceous, firm					
		CL	Silty CLAY, brownish red, micaceous, firm					
5								
		ML	Sandy SILT, yellowish brown, loose					
10		ML	SILT, orangish/light brown, loose, saprolitic					
		SM	Silty SAND, orangish brown/grey					
15		SM	Silty SAND, greyish brown, saprolitic					
			Saprolite, orangish brown, layered					
20								
		ML	Sandy SILT, greyish brown, loose. DPT refusal at 21 ft-bgs, switch to HSAs.					
		SM	Silty SAND, brown, loose					
25								
		ML	Sandy SILT, greyish brown					
30		ML	Clayey SILT, greyish brown, moist					
		CL	Silty CLAY, brown, moist					
			Boring terminated due to auger refusal at 32.5 ft-bgs					
35								

← Cement grout
2" Sch. 40 threaded PVC
riser

← Bentonite seal

← Sand pack (No. 2)

← Well screen

LOG D. DIAMOND CRYSTAL DULUTH, LLC.GPJ GINT STD A4 ASTM LAB.GDT 12/7/16

PROJECT: Diamond Crystal Duluth, LLC	WELL / BORING NO: MW-03/SB-06
PROJECT NO: 918.05	STARTED: 11/1/16 COMPLETED: 11/1/16
DRILLING COMPANY: Geolab Drilling	NORTHING: 1448088.81 EASTING: 2295599.97
DRILLING METHOD: Dual Tube/ HSA	G.S. ELEV: 1071.66 ft MSL M.P. ELEV: 1071.37 ft MSL
BOREHOLE DIAMETER: 2/4.25 IN	DEPTH TO WATER: 25.97 ft TOC TOTAL DEPTH: 39.0 ft BGS
NOTES: BGS- Below Ground Surface	LOGGED BY: E. Yurkovich CHECKED BY: M. Mudge

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (%)	BLOW COUNTS	PID (ppm)	WELL CONSTRUCTION - Flush Mount Monument
		GM	Gravel and topsoil					
		SM	Silty SAND, reddish brown, loose					
		SM	Silty SAND, reddish light brown, soft					
5		SM	Silty SAND, brownish red					
		ML	Sandy SILT, reddish brown, saprolitic					
10		ML	Sandy SILT, reddish light brown, soft					
		SM	Silty SAND, light brown, whitish,					
		ML	Sandy SILT, brown, soft					
15		ML	Sandy SILT, brown, micaceous, compact					
		ML	Sandy SILT, brown, saprolitic, micaceous, layered with quartz					
20								
25								
		ML	Clayey SILT, brown, saprolitic, micaceous					
30								
35		ML	SILT, dark brown, saprolite					
			Boring terminated due to auger refusal at 39 ft-bgs					

← 2" Sch. 40 threaded PVC riser

← Cement grout

↘ Bentonite seal

← Sand pack (No. 2)

← Well screen

LOG D: DIAMOND CRYSTAL DULUTH, LLC.GPJ GINT STD A4 ASTM LAB.GDT 12/7/16

PROJECT: Diamond Crystal Duluth, LLC	WELL / BORING NO: SB-01
PROJECT NO: 918.05	STARTED: 10/31/16 COMPLETED: 10/31/16
DRILLING COMPANY: Geolab Drilling	NORTHING:
DRILLING METHOD: Dual Tube/ HSA	G.S. ELEV: ft MSL M.P. ELEV: ft MSL
BOREHOLE DIAMETER: 2/4.25 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 21.0 ft BGS
NOTES: BGS- Below Ground Surface	LOGGED BY: E. Yurkovich CHECKED BY: M. Mudge

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (%)	BLOW COUNTS	PID (ppm)	WELL CONSTRUCTION
		OL	Topsoil, pine needles, small rocks					
		SP						
		SM	Silty SAND, light brown, dry, loose					
5		SP						
		SM	Silty SAND, light brown, white, dry, loose					
10		SP						
		SM	Silty SAND, light brown, micaceous, loose, dry. Hard zone around 14 ft-bgs					
15								
		ML	Sandy SILT, brown, micaceous, dry. Rocks observed at 18 ft-bgs					
20								
			Boring terminated due to refusal at 21.0' bgs.					
25								
30								
35								

LOG D. DIAMOND CRYSTAL DULUTH, LLC.GPJ GINT STD A4 ASTM LAB.GDT 12/7/16

PROJECT: Diamond Crystal Duluth, LLC	WELL / BORING NO: SB-04
PROJECT NO: 918.05	STARTED: 11/1/16 COMPLETED: 11/1/16
DRILLING COMPANY: Geolab Drilling	NORTHING:
DRILLING METHOD: Dual Tube/ HSA	G.S. ELEV: ft MSL M.P. ELEV: ft MSL
BOREHOLE DIAMETER: 2/4.25 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 15.0 ft BGS
NOTES: BGS- Below Ground Surface	LOGGED BY: E. Yurkovich CHECKED BY: M. Mudge

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (%)	BLOW COUNTS	PID (ppm)	WELL CONSTRUCTION
			Topsoil					
		SM	Silty SAND, reddish brown					
5		ML	Sandy SILT, reddish brown to white/grey brown, soft, loose, dry					
		SM	Silty SAND, grey					
		SM	Silty SAND, whitish grey to reddish brown, firm, small rocks					
10			Saprolite, layered, dark staining, micaceous. DPT refusal at 10 ft-bgs, switch to HSAs.					
15			Boring terminated due to auger refusal at 15 ft-bgs					
20								
25								
30								
35								

LOG D. DIAMOND CRYSTAL DULUTH, LLC.GPJ GINT STD A4 ASTM LAB.GDT 12/7/16

PROJECT: Diamond Crystal Duluth, LLC	WELL / BORING NO: SB-05
PROJECT NO: 918.05	STARTED: 11/1/16 COMPLETED: 11/1/16
DRILLING COMPANY: Geolab Drilling	NORTHING:
DRILLING METHOD: Direct-Push	G.S. ELEV: ft MSL M.P. ELEV: ft MSL
BOREHOLE DIAMETER: 2 IN	DEPTH TO WATER: ft TOC TOTAL DEPTH: 8.0 ft BGS
NOTES: BGS- Below Ground Surface	LOGGED BY: E. Yurkovich CHECKED BY: M. Mudge

DEPTH (ft)	GRAPHIC LOG	USCS	DESCRIPTION	SAMPLE	RECOV. (%)	BLOW COUNTS	PID (ppm)	WELL CONSTRUCTION
		OL	Topsoil, pine needles					
5		ML	SILT, light brown, soft, dry					
			Saprolite, reddish brown. Rock layer at 7 ft-bgs, grey/white small rocks					
		SM	Silty SAND, light brown, rocks					
10			Boring terminated due to DPT refusal at 8 ft-bgs.					
15								
20								
25								
30								
35								

LOG D: DIAMOND CRYSTAL DULUTH, LLC.GPJ GINT STD A4 ASTM LAB.GDT 12/7/16

ATTACHMENT 2

GROUNDWATER SAMPLING LOGS

LOW FLOW SAMPLING LOG



148 River Street, Suite 220
Greenville, South Carolina 29601
(864) 421-9999 • (864) 421-9909 Fax
www.synTerraCorp.com

CLIENT DIAMOND CRYSTAL BRAND

LOCATION: DULUTH, GA

FIELD PERSONNEL: E. Yurkovich

WEATHER: ☐ SUNNY ☒ OVERCAST ☐ RAIN TEMPERATURE (APPROX): 70°F

MULTI METER TYPE/S#: YSI 556 08C101079

TURBIDITY METER TYPE/S# LaMotte 2020mc 8135-2016

WELL ID: MW-2

PUMP/TUBING INTAKE DEPTH: 27 (FT)

START PURGE TIME: 850

MEASURING POINT: TOC

START PURGE DATE: 11/2/16

END PURGE TIME: 953

WELL DIAMETER: 2 (IN)

END PURGE DATE: 11/2/16

FINAL READING TIME: 912

WELL DEPTH: 30.07 (FT)

TOTAL VOLUME PURGED: 2 (GAL)

DEPTH TO WATER: 23.78 (FT)

SAMPLE DATE: 11/2/16

SAMPLE COLLECTION TIME: 953

PURGE METHOD: ☐ Grundfos Pump ☒ 12 Volt Pump ☐ Peristaltic Pump ☐ Dedicated Pump ☐ Teflon Bailer ☐ Polyethylene Bailer
SAMPLE METHOD: ☐ Grundfos Pump ☒ 12 Volt Pump ☐ Peristaltic Pump ☐ Dedicated Pump ☐ Teflon Bailer ☐ Polyethylene Bailer

TIME	WATER LEVEL	FLOW RATE (mL/min)	TEMPERATURE* (° Celsius)	pH* (su)	SPECIFIC CONDUCTANCE* (µS/cm)	DO* (mg/L)	ORP* (mV)	TURBIDITY (NTU)	COMMENTS
857	24.78	130	18.00	6.41	93	8.10	-75.4	798	
900	24.83	120	18.79	6.31	95	8.11	-76.4	154	
903	24.91	120	19.05	6.23	95	8.12	-75.6	101	
906	24.99	120	19.11	6.19	95	7.67	-75.4	101	
909	25.03	180	19.14	6.16	94	7.61	-75.4	93	
912	25.09	180	19.17	6.14	95	7.58	-76.0	9.86	

* Field Parameters collected from flow through cell unless otherwise noted.

COMMENTS: PARAMETERS STABILIZED. WAIT FOR TURBIDITY TO DROP FOR SAMPLE COLLECTION

CONSTITUENTS SAMPLED	NUMBER OF CONTAINERS						CONSTITUENTS SAMPLED	NUMBER OF CONTAINERS					
	125 ml POLY	250 mL POLY	500 mL POLY	1/2 GALLON	40 mL VOA	1 L AMBER		125 ml POLY	250 mL POLY	500 mL POLY	1/2 GALLON	40 mL VOA	1 L AMBER
TOTAL ARBIC	1												

PROTECTIVE CASING:			WELL PAD:			LOCK:			WELL TAG:			VEGETATION:		
<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA

COMMENTS: IF TURBIDITY >10 NTUS, REDEVELOPMENT NEEDED ☐ YES ☐ NO
IF YES, OBSERVATIONS FOLLOWING LOWERING OF TUBING OR PUMP IN WELL:
IF NO, PROVIDE OBSERVATIONS REGARDING NATURAL CONDITIONS:

FIELD VEHICLE ACCESSIBLE ☒ YES ☐ NO

Associated midday/end-of-day DO, conductivity, pH within range? (See calibration sheet for this sample date) ☐ YES ☐ NO. If NO, which parameter
NOTE that reported data should be considered as flagged accordingly.

* SynTerra is not NC-certified for these parameters. Data collected for information purposes only

LOW FLOW SAMPLING LOG



148 River Street, Suite 220
Greenville, South Carolina 29601
(864) 421-9999 • (864) 421-9909 Fax
www.synTerraCorp.com

CLIENT: DIAMOND CRYSTAL BRANDS

LOCATION: DULUTH, GA

FIELD PERSONNEL: E. YUENKORCH

WEATHER: ☐ SUNNY ☒ OVERCAST ☐ RAIN TEMPERATURE (APPROX): 70°F

MULTI METER TYPE/S#: YSI 556 08C101079

TURBIDITY METER TYPE/S#: LaMotte 2200we 8135-2616

WELL ID: MW-3
MEASURING POINT: TOC
WELL DIAMETER: 2 (IN)
WELL DEPTH: 35.35 (FT)
DEPTH TO WATER: 25.97 (FT)

PUMP/TUBING INTAKE DEPTH: 32 (FT)
START PURGE DATE: 11/2/16
END PURGE DATE: 11/2/16
TOTAL VOLUME PURGED: 1.75 (GAL)
SAMPLE DATE: 11/2/16

START PURGE TIME: 1027
END PURGE TIME: 1120
FINAL READING TIME: 1049
SAMPLE COLLECTION TIME: 1120

PURGE METHOD: ☐ Grundfos Pump ☒ 12 Volt Pump ☐ Peristaltic Pump ☐ Dedicated Pump ☐ Teflon Bailer ☐ Polyethylene Bailer
SAMPLE METHOD: ☐ Grundfos Pump ☒ 12 Volt Pump ☐ Peristaltic Pump ☐ Dedicated Pump ☐ Teflon Bailer ☐ Polyethylene Bailer

TIME	WATER LEVEL	FLOW RATE (mL/min)	TEMPERATURE* (° Celsius)	pH* (su)	SPECIFIC CONDUCTANCE* (µS/cm)	DO* (mg/L)	ORP* (mV)	TURBIDITY (NTU)	COMMENTS
1031	26.97	140	19.02	7.07	72	8.90	-135.9	695	
1034	27.04	120	21.11	6.62	72	7.97	-119.7	302	
1037	27.31	120	21.17	6.61	72	7.84	-118.7	135	
1040	27.45	120	21.11	6.54	72	8.05	-111.3	115	
1043	27.52	120	21.15	6.26	71	7.99	-95.9	103	
1046	27.59	120	21.20	6.26	71	7.93	-99.2	91.7	
1049	27.61	120	21.29	6.29	71	7.87	-100.3	9.95 ←	

* Field Parameters collected from flow through cell unless otherwise noted.

COMMENTS: PARAMETERS STABILIZED. WAIT FOR TURBIDITY TO DROP PRIOR TO SAMPLE COLLECTION.

COLLECT DUPLICATE SAMPLE MW-03 DUP

CONSTITUENTS SAMPLED	NUMBER OF CONTAINERS							CONSTITUENTS SAMPLED	NUMBER OF CONTAINERS						
	125 ml POLY	250 mL POLY	500 mL POLY	1/2 GALLON	40 ml VOA	1 L AMBER	PRESERVATIVE		125 ml POLY	250 mL POLY	500 mL POLY	1/2 GALLON	40 ml VOA	1 L AMBER	PRESERVATIVE
TOTAL ARSENIC	1														

PROTECTIVE CASING:			WELL PAD:			LOCK:			WELL TAG:			VEGETATION:		
<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA	<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> BAD	<input type="checkbox"/> NA

COMMENTS: IF TURBIDITY >10 NTUS, REDEVELOPMENT NEEDED ☐ YES ☐ NO
IF YES, OBSERVATIONS FOLLOWING LOWERING OF TUBING OR PUMP IN WELL:
IF NO, PROVIDE OBSERVATIONS REGARDING NATURAL CONDITIONS:

FIELD VEHICLE ACCESSIBLE ☒ YES ☐ NO

Associated midday/end-of-day DO, conductivity, pH within range? (See calibration sheet for this sample date) ☐ YES ☐ NO. If NO, which parameter
NOTE that reported data should be considered as flagged accordingly.

* SynTerra is not NC-certified for these parameters. Data collected for information purposes only

ATTACHMENT 3

MONITOR WELL COORDINATES – LECRAW ENGINEERING, LLC

Monitoring Well Coordinates
Diamond Crystal Brands Facility
3245 N Berkley Lake Rd., Duluth, GA

Revision 1
11/9/2016

WELL #	NORTHING GEORGIA COORDINATE SYSTEM OF 1985 - WEST ZONE	EASTING GEORGIA COORDINATE SYSTEM OF 1985 - WEST ZONE	GEOGRAPHIC LATITUDE NORTH	GEOGRAPHIC LONGITUDE WEST	ELEVATION NORTH AMERICAN VERTICAL DATUM - 1988	DESCRIPTION
1	1448314.65	2295384.28	33° 58' 53.25"	84° 10' 14.24"	1070.69	TOP OF WELL CAP
1					1070.38	TOP OF PCV CASING
1					1070.20	GROUND
2	1448088.81	2295599.97	33° 58' 51.01"	84° 10' 11.68"	1071.64	TOP OF WELL CAP
2					1071.37	TOP OF PCV CASING
2					1071.66	GROUND
3	1448476.73	2295573.97	33° 58' 54.85"	84° 10' 11.99"	1068.74	TOP OF WELL CAP
3					1068.18	TOP OF PCV CASING
3					1068.64	GROUND

Note: The date of the field work for this location data was 11/3/2016



11-9-2016

AS SURVEYOR FOR LECRAW
ENGINEERING, INC.

ATTACHMENT 4

LABORATORY ANALYTICAL REPORTS

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 11/14/2016

GCAL Report 216110370



Project DCB/918.05.07

<i>Deliver To</i>	<i>Additional Recipients</i>
Matt Mudge Synterra Corp 148 River st Suite 220 Greenville, SC 29601 864-421-9999	NONE



Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 216110370

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Synterra **Report:** 216110370

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the EPA 6020A analysis, a chemical or physical interference necessitated a dilution for samples 21611037001 (SB-01_1), 21611037002 (SB-01_7), 21611037003 (SB-01_13), 21611037010 (SB-02_28), 21611037011 (SB-03_2), 21611037014 (SB-03_23), 21611037015 (SB-03_23 DUP), 21611037022 (SB-06_2), 21611037023 (SB-06_9), 21611037024 (SB-06_12), 21611037025 (SB-06_16), 21611037026 (SB-06_23), 21611037027 (SB-06_26), and 21611037028 (SB-06_26 DUP). This is reflected in elevated detection limits.

In the EPA 6020A analysis, samples 21611037004 (SB-01_16), 21611037005 (SB-02_2), 21611037006 (SB-02_7), 21611037007 (SB-02_12), 21611037008 (SB-02_17), 21611037009 (SB-02_23), 21611037012 (SB-03_8), 21611037013 (SB-03_14), 21611037016 (SB-03_28), 21611037017 (SB-04_2), 21611037018 (SB-04_6), 21611037019 (SB-04_12), 21611037020 (SB-05_2), 21611037021 (SB-05_6), 21611037029 (SB-06_31), and 21611037030 (SB-06_35) had to be diluted in order to bracket the concentration of the target analyte within the calibration range of the instrument.

In the EPA 6020A analysis for prep batch 598194, the MS and/or MSD recovery is outside the control limits for Arsenic. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference or the element is non-homogeneous in the sample. A post-digestion spike was performed.

In the EPA 6020A analysis for prep batch 598193, the MS/MSD recoveries and RPD are not applicable for Arsenic because the sample concentration is greater than four times the spike concentration. The LCS recovery is acceptable.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21611037001	SB-01_1	Solid	10/31/2016 11:15	11/03/2016 10:00
21611037002	SB-01_7	Solid	10/31/2016 11:18	11/03/2016 10:00
21611037003	SB-01_13	Solid	10/31/2016 11:21	11/03/2016 10:00
21611037004	SB-01_16	Solid	10/31/2016 11:24	11/03/2016 10:00
21611037005	SB-02_2	Solid	10/31/2016 12:30	11/03/2016 10:00
21611037006	SB-02_7	Solid	10/31/2016 12:36	11/03/2016 10:00
21611037007	SB-02_12	Solid	10/31/2016 12:41	11/03/2016 10:00
21611037008	SB-02_17	Solid	10/31/2016 12:45	11/03/2016 10:00
21611037009	SB-02_23	Solid	10/31/2016 12:48	11/03/2016 10:00
21611037010	SB-02_28	Solid	10/31/2016 12:51	11/03/2016 10:00
21611037011	SB-03_2	Solid	10/31/2016 17:18	11/03/2016 10:00
21611037012	SB-03_8	Solid	10/31/2016 17:20	11/03/2016 10:00
21611037013	SB-03_14	Solid	10/31/2016 17:22	11/03/2016 10:00
21611037014	SB-03_23	Solid	10/31/2016 17:25	11/03/2016 10:00
21611037015	SB-03_23 DUP	Solid	10/31/2016 17:25	11/03/2016 10:00
21611037016	SB-03_28	Solid	10/31/2016 17:29	11/03/2016 10:00
21611037017	SB-04_2	Solid	11/01/2016 10:50	11/03/2016 10:00
21611037018	SB-04_6	Solid	11/01/2016 10:53	11/03/2016 10:00
21611037019	SB-04_12	Solid	11/01/2016 10:57	11/03/2016 10:00
21611037020	SB-05_2	Solid	11/01/2016 11:25	11/03/2016 10:00
21611037021	SB-05_6	Solid	11/01/2016 11:30	11/03/2016 10:00
21611037022	SB-06_2	Solid	11/01/2016 12:55	11/03/2016 10:00
21611037023	SB-06_9	Solid	11/01/2016 12:58	11/03/2016 10:00
21611037024	SB-06_12	Solid	11/01/2016 13:01	11/03/2016 10:00
21611037025	SB-06_16	Solid	11/01/2016 13:04	11/03/2016 10:00
21611037026	SB-06_23	Solid	11/01/2016 13:07	11/03/2016 10:00
21611037027	SB-06_26	Solid	11/01/2016 13:10	11/03/2016 10:00
21611037028	SB-06_26 DUP	Solid	11/01/2016 13:10	11/03/2016 10:00
21611037029	SB-06_31	Solid	11/01/2016 13:13	11/03/2016 10:00
21611037030	SB-06_35	Solid	11/01/2016 14:30	11/03/2016 10:00

Summary of Compounds Detected

SB-01_1	Collect Date	10/31/2016 11:15	GCAL ID	21611037001
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	18100	119	475	ug/Kg

SB-01_7	Collect Date	10/31/2016 11:18	GCAL ID	21611037002
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	9370	114	456	ug/Kg

SB-01_13	Collect Date	10/31/2016 11:21	GCAL ID	21611037003
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	33000	104	415	ug/Kg

SB-01_16	Collect Date	10/31/2016 11:24	GCAL ID	21611037004
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	50500	1170	4690	ug/Kg

Summary of Compounds Detected

SB-02_2	Collect Date	10/31/2016 12:30	GCAL ID	21611037005
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	141000	1300	5180	ug/Kg

SB-02_7	Collect Date	10/31/2016 12:36	GCAL ID	21611037006
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	52000	1200	4810	ug/Kg

SB-02_12	Collect Date	10/31/2016 12:41	GCAL ID	21611037007
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	116000	1270	5080	ug/Kg

SB-02_17	Collect Date	10/31/2016 12:45	GCAL ID	21611037008
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	100000	1230	4920	ug/Kg

Summary of Compounds Detected

SB-02_23	Collect Date	10/31/2016 12:48	GCAL ID	21611037009
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	134000	1210	4820	ug/Kg

SB-02_28	Collect Date	10/31/2016 12:51	GCAL ID	21611037010
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	26000	122	487	ug/Kg

SB-03_2	Collect Date	10/31/2016 17:18	GCAL ID	21611037011
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	7360	119	477	ug/Kg

SB-03_8	Collect Date	10/31/2016 17:20	GCAL ID	21611037012
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	46700	1170	4670	ug/Kg

Summary of Compounds Detected

SB-03_14	Collect Date	10/31/2016 17:22	GCAL ID	21611037013
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	69500	1260	5040	ug/Kg

SB-03_23	Collect Date	10/31/2016 17:25	GCAL ID	21611037014
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	31100	124	496	ug/Kg

SB-03_23 DUP	Collect Date	10/31/2016 17:25	GCAL ID	21611037015
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	34000	128	514	ug/Kg

SB-03_28	Collect Date	10/31/2016 17:29	GCAL ID	21611037016
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	106000	1340	5350	ug/Kg

Summary of Compounds Detected

SB-04_2	Collect Date	11/01/2016 10:50	GCAL ID	21611037017
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	357000	1250	5020	ug/Kg

SB-04_6	Collect Date	11/01/2016 10:53	GCAL ID	21611037018
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	369000	1190	4760	ug/Kg

SB-04_12	Collect Date	11/01/2016 10:57	GCAL ID	21611037019
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	362000	1220	4860	ug/Kg

SB-05_2	Collect Date	11/01/2016 11:25	GCAL ID	21611037020
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	50200	1110	4460	ug/Kg

Summary of Compounds Detected

SB-05_6	Collect Date	11/01/2016 11:30	GCAL ID	21611037021
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	111000	1040	4160	ug/Kg

SB-06_2	Collect Date	11/01/2016 12:55	GCAL ID	21611037022
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	10600	113	452	ug/Kg

SB-06_9	Collect Date	11/01/2016 12:58	GCAL ID	21611037023
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	9410	112	448	ug/Kg

SB-06_12	Collect Date	11/01/2016 13:01	GCAL ID	21611037024
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	20500	140	560	ug/Kg

Summary of Compounds Detected

SB-06_16	Collect Date	11/01/2016 13:04	GCAL ID	21611037025
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	6190	135	540	ug/Kg

SB-06_23	Collect Date	11/01/2016 13:07	GCAL ID	21611037026
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	10600	151	602	ug/Kg

SB-06_26	Collect Date	11/01/2016 13:10	GCAL ID	21611037027
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	13900	136	545	ug/Kg

SB-06_26 DUP	Collect Date	11/01/2016 13:10	GCAL ID	21611037028
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	13900	135	540	ug/Kg

Summary of Compounds Detected

SB-06_31**Collect Date** 11/01/2016 13:13**GCAL ID** 21611037029**Receive Date** 11/03/2016 10:00**Matrix** Solid

EPA 6020A

*Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	88600	1370	5490	ug/Kg

SB-06_35**Collect Date** 11/01/2016 14:30**GCAL ID** 21611037030**Receive Date** 11/03/2016 10:00**Matrix** Solid

EPA 6020A

*Results Reported on Dry Weight Basis

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	65900	1200	4800	ug/Kg

Sample Results

SB-01_1	Collect Date	10/31/2016 11:15	GCAL ID	21611037001
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
11/04/2016 09:40	598193	EPA 3050B	10	11/07/2016 14:49	AWG	598374	
CAS#	Parameter			Result	DL	LOQ	Units
7440-38-2	Arsenic			18100	119	475	ug/Kg

SB-01_7	Collect Date	10/31/2016 11:18	GCAL ID	21611037002
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch		
11/04/2016 09:40	598193	EPA 3050B	10	11/07/2016 14:53	AWG	598374		
CAS#	Parameter				Result	DL	LOQ	Units
7440-38-2	Arsenic				9370	114	456	ug/Kg

SB-01_13	Collect Date	10/31/2016 11:21	GCAL ID	21611037003
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch		
11/04/2016 09:40	598193	EPA 3050B	10	11/07/2016 15:00	AWG	598374		
CAS#	Parameter				Result	DL	LOQ	Units
7440-38-2	Arsenic				33000	104	415	ug/Kg

SB-01_16	Collect Date	10/31/2016 11:24	GCAL ID	21611037004
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 11:36	AWG	598450	
CAS#	Parameter			Result	DL	LOQ	Units
7440-38-2	Arsenic			50500	1170	4690	ug/Kg

Sample Results

SB-02_2

Collect Date 10/31/2016 12:30
Receive Date 11/03/2016 10:00

GCAL ID 21611037005
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 11:40	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	141000	1300	5180	ug/Kg	

SB-02_7

Collect Date 10/31/2016 12:36
Receive Date 11/03/2016 10:00

GCAL ID 21611037006
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 11:44	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	52000	1200	4810	ug/Kg	

SB-02_12

Collect Date 10/31/2016 12:41
Receive Date 11/03/2016 10:00

GCAL ID 21611037007
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 11:47	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	116000	1270	5080	ug/Kg	

Sample Results

SB-02_17

Collect Date 10/31/2016 12:45
Receive Date 11/03/2016 10:00

GCAL ID 21611037008
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 11:51	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	100000	1230	4920	ug/Kg	

SB-02_23

Collect Date 10/31/2016 12:48
Receive Date 11/03/2016 10:00

GCAL ID 21611037009
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 12:10	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	134000	1210	4820	ug/Kg	

SB-02_28

Collect Date 10/31/2016 12:51
Receive Date 11/03/2016 10:00

GCAL ID 21611037010
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	10	11/07/2016 16:25	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	26000	122	487	ug/Kg	

Sample Results

SB-03_2

Collect Date 10/31/2016 17:18
Receive Date 11/03/2016 10:00

GCAL ID 21611037011
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	10	11/07/2016 16:44	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	7360	119	477	ug/Kg	

SB-03_8

Collect Date 10/31/2016 17:20
Receive Date 11/03/2016 10:00

GCAL ID 21611037012
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 12:14	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	46700	1170	4670	ug/Kg	

SB-03_14

Collect Date 10/31/2016 17:22
Receive Date 11/03/2016 10:00

GCAL ID 21611037013
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 12:18	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	69500	1260	5040	ug/Kg	

Sample Results

SB-03_23	Collect Date	10/31/2016 17:25	GCAL ID	21611037014
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	10	11/07/2016 17:07	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	31100	124	496	ug/Kg	

SB-03_23 DUP	Collect Date	10/31/2016 17:25	GCAL ID	21611037015
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	10	11/07/2016 17:14	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	34000	128	514	ug/Kg	

SB-03_28	Collect Date	10/31/2016 17:29	GCAL ID	21611037016
	Receive Date	11/03/2016 10:00	Matrix	Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598193	EPA 3050B	100	11/08/2016 12:22	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	106000	1340	5350	ug/Kg	

Sample Results

SB-04_2

Collect Date 11/01/2016 10:50
Receive Date 11/03/2016 10:00

GCAL ID 21611037017
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	100	11/08/2016 12:26	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	357000	1250	5020	ug/Kg	

SB-04_6

Collect Date 11/01/2016 10:53
Receive Date 11/03/2016 10:00

GCAL ID 21611037018
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	100	11/08/2016 12:41	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	369000	1190	4760	ug/Kg	

SB-04_12

Collect Date 11/01/2016 10:57
Receive Date 11/03/2016 10:00

GCAL ID 21611037019
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	100	11/08/2016 12:45	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	362000	1220	4860	ug/Kg	

Sample Results

SB-05_2

Collect Date 11/01/2016 11:25
Receive Date 11/03/2016 10:00

GCAL ID 21611037020
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	100	11/08/2016 12:48	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	50200	1110	4460	ug/Kg	

SB-05_6

Collect Date 11/01/2016 11:30
Receive Date 11/03/2016 10:00

GCAL ID 21611037021
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	100	11/08/2016 12:52	AWG	598450
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	111000	1040	4160	ug/Kg	

SB-06_2

Collect Date 11/01/2016 12:55
Receive Date 11/03/2016 10:00

GCAL ID 21611037022
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	10	11/07/2016 18:27	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	10600	113	452	ug/Kg	

Sample Results

SB-06_9

Collect Date 11/01/2016 12:58
Receive Date 11/03/2016 10:00

GCAL ID 21611037023
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	10	11/07/2016 18:34	AWG	598374

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	9410	112	448	ug/Kg

SB-06_12

Collect Date 11/01/2016 13:01
Receive Date 11/03/2016 10:00

GCAL ID 21611037024
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	10	11/07/2016 18:42	AWG	598374

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	20500	140	560	ug/Kg

SB-06_16

Collect Date 11/01/2016 13:04
Receive Date 11/03/2016 10:00

GCAL ID 21611037025
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	10	11/07/2016 18:50	AWG	598374

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	6190	135	540	ug/Kg

Sample Results

SB-06_23

Collect Date 11/01/2016 13:07
Receive Date 11/03/2016 10:00

GCAL ID 21611037026
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	10	11/07/2016 19:28	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	10600	151	602	ug/Kg	

SB-06_26

Collect Date 11/01/2016 13:10
Receive Date 11/03/2016 10:00

GCAL ID 21611037027
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	10	11/07/2016 19:36	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	13900	136	545	ug/Kg	

SB-06_26 DUP

Collect Date 11/01/2016 13:10
Receive Date 11/03/2016 10:00

GCAL ID 21611037028
Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	10	11/07/2016 19:43	AWG	598374
CAS#	Parameter	Result	DL	LOQ	Units	
7440-38-2	Arsenic	13900	135	540	ug/Kg	

Sample Results

SB-06_31
Collect Date 11/01/2016 13:13

GCAL ID 21611037029

Receive Date 11/03/2016 10:00

Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	100	11/08/2016 12:56	AWG	598450

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	88600	1370	5490	ug/Kg

SB-06_35
Collect Date 11/01/2016 14:30

GCAL ID 21611037030

Receive Date 11/03/2016 10:00

Matrix Solid

EPA 6020A *Results Reported on Dry Weight Basis

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/04/2016 09:40	598194	EPA 3050B	100	11/08/2016 13:00	AWG	598450

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	65900	1200	4800	ug/Kg

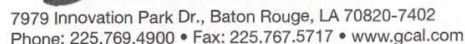
Inorganics QC Summary

Analytical Batch 598374	Client ID GCAL ID	MB598193 1626226	LCS598193 1626227				
Prep Batch 598193	Sample Type Prep Date	MB 11/04/2016 09:40	LCS 11/04/2016 09:40				
Prep Method EPA 3050B	Analysis Date Matrix	11/07/2016 14:41 Solid	11/07/2016 14:45 Solid				
EPA 6020A		Units Result	ug/Kg DL	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	10.0U	10.0	2000	2160	108	80 - 120

Analytical Batch 598450	Client ID GCAL ID	SB-02_17 21611037008	1626094MS 1626228					1626094MSD 1626229				
Prep Batch 598193	Sample Type Prep Date	SAMPLE 11/04/2016 09:40	MS 11/04/2016 09:40					MSD 11/04/2016 09:40				
Prep Method EPA 3050B	Analysis Date Matrix	11/08/2016 11:51 Solid	11/08/2016 11:55 Solid					11/08/2016 11:59 Solid				
EPA 6020A		Units Result	ug/Kg DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Arsenic	7440-38-2	100000	1230	2460	160000	2400*	80 - 120	2460	163000	2560*	2	20

Analytical Batch	Client ID	MB598194		LCS598194			
598374	GCAL ID	1626230		1626231			
Prep Batch	Sample Type	MB		LCS			
598194	Prep Date	11/04/2016 09:40		11/04/2016 09:40			
Prep Method	Analysis Date	11/07/2016 17:29		11/07/2016 17:33			
EPA 3050B	Matrix	Solid		Solid			
EPA 6020A		Units Result	ug/Kg DL	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	10.0U	10.0	2000	2100	105	80 - 120

Analytical Batch 598374	Client ID GCAL ID	SB-06_16 21611037025	1626111MS 1626232 MS 11/04/2016 09:40 11/07/2016 18:57 Solid					1626111MSD 1626233 MSD 11/04/2016 09:40 11/07/2016 19:05 Solid				
Prep Batch 598194	Sample Type Prep Date	SAMPLE 11/04/2016 09:40										
Prep Method EPA 3050B	Analysis Date Matrix	11/07/2016 18:50 Solid										
EPA 6020A		Units Result	ug/Kg DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Arsenic	7440-38-2	6190	135	2700	9630	128*	80 - 120	2700	8500	86	13	20



Client ID: 4945 - Synterra

SDG: 216110370

PM: SAB3



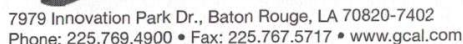
Report to: Client: SYNTERRA Address: 148 RIVER ST GREENVILLE SC 29601 Contact: MATT MUDGE Phone: 864-527-4633 E-mail: mmudge@synterra.com						Bill to: Client: SYNTERRA Address: 148 RIVER ST, SUITE 200 GREENVILLE SC 29601 Contact: Phone: 864-461-9999 E-mail:						Analytical Requests & Method <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TOTAL ARSENIC</div>										GCAL use only: Custody Seal used <input checked="" type="checkbox"/> yes <input type="checkbox"/> no intact <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Temperature °C 0-4, 1-152 32, 55 cpr <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field filtered <input type="checkbox"/> Lab filtered	
P.O. Number				Project Name/Number DOB / 918.05.07																			
Sampled By: EMY																							
Matrix¹	Date	Time (2400)	Comp	Grab	Sample Description	No Con-tainers ↓												Preservative ←					
S	10/31/16	1115		✓	SB-01-1	1	X											1					
S	10/31/16	1118		✓	SB-01-7	1	X											2					
S	10/31/16	1121		✓	SB-01-13	1	X											3					
S	10/31/16	1124		✓	SB-01-16	1	X											4					
S	10/31/16	1230		✓	SB-02-2	1	X											5					
S	10/31/16	1236		✓	SB-02-7	1	X											6					
S	10/31/16	1241		✓	SB-02-12	1	X											7					
S	10/31/16	1245		✓	SB-02-17	1	X											8					
S	10/31/16	1248		✓	SB-02-23	1	X											9					
S	10/31/16	1251		✓	SB-02-28	1	X											10					
S	10/31/16	1255		✓	SB-02-30 EMY	1	X																
S	10/31/16	1718		✓	SB-03-2	1	X											11					
S	10/31/16	1720		✓	SB-03-8	1	X											12					
Air Bill No: 7976 1556 6522																							
Turn Around Time (Business Days): <input type="checkbox"/> 24h* <input type="checkbox"/> 48h* <input type="checkbox"/> 3 days* <input type="checkbox"/> 1 week* <input checked="" type="checkbox"/> Standard (Per Contract/Quote)																							
Relinquished by: (Signature) HUBO ANEZ		Date: 11/2/16		Time: 9:15		Received by: (Signature) HUBO ANEZ		Date: 11/2/16		Time: 9:15		Note: ARCHIVE FOR FUTURE SAMPLES. ★ FOLLOW UP TBD BASED UPON ARSENIC RESULTS By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.											
Relinquished by: (Signature) Forlex		Date: 11-3-16		Time: 1000		Received by: (Signature) Forlex		Date: 11-3-16		Time: 1000													

WHITE: CLIENT FINAL REPORT - CANARY CLIENT

Matrix¹: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.



Client ID: 4945 - Synterra

PM: SAB3



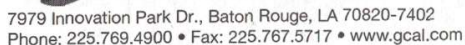
Report to: Client: <u>SYNTERRA</u> Address: <u>148 RIVER ST</u> <u>GREENVILLE SC 29601</u> Contact: <u>MATT MUDGE</u> Phone: <u>864-527-4633</u> E-mail: <u>mmudge@synterra.com</u>		Bill to: Client: <u>SYNTERRA</u> Address: <u>148 RIVER ST, SUITE 200</u> <u>GREENVILLE SC 29601</u> Contact: _____ Phone: <u>864-421-9999</u> E-mail: _____		Analytical Requests & Method <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); border: 1px solid black; padding: 5px; margin-right: 5px;">Total Arsenic</div> <table border="1" style="width: 100%; height: 100px; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> </div>																															GCAL use only: Custody Seal used <input checked="" type="checkbox"/> yes <input type="checkbox"/> no intact <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>0.4, 1.1E26</u> <u>32.55cpm</u> <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field filtered <input type="checkbox"/> Lab filtered	
P.O. Number _____		Project Name/Number <u>DCB / 918.05.07</u>		<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); border: 1px solid black; padding: 5px; margin-right: 5px;">Total Arsenic</div> <table border="1" style="width: 100%; height: 100px; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> </div>																															Preservative <u>13</u>	
Sampled By: <u>BM</u>																								<u>14</u>												
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No Con-tainers ↓																Preservative ←														
S	10/31/16	1728		✓	SB-03-14	1	X															13														
S	10/31/16	1725		✓	SB-03-23	1	X															14														
S	10/31/16	1725		✓	SB-03-23 DUP	1	X															15														
S	10/31/16	1729		✓	SB-03-28	1	X															16														
S	11/1/16	1050		✓	SB-04-2	1	X															17														
S	11/1/16	1053		✓	SB-04-6	1	X															18														
S	11/1/16	1057		✓	SB-04-12	1	X															19														
S	11/1/16	1125		✓	SB-05-2	1	X															20														
S	11/1/16	1130		✓	SB-05-6	1	X															21														
S	11/1/16	1255		✓	SB-06-2	1	X															22														
S	11/1/16	1258		✓	SB-06-9	12	X															23														
S	11/1/16	1301		✓	SB-06-12	12	X															24														
S	11/1/16	1304		✓	SB-06-16	12	X															25														
Air Bill No: <u>7776 1556 6522</u>																																				
Turn Around Time (Business Days): <input type="checkbox"/> 24h* <input type="checkbox"/> 48h* <input type="checkbox"/> 3 days* <input type="checkbox"/> 1 week* <input checked="" type="checkbox"/> Standard (Per Contract/Quote)																																				
Relinquished by: (Signature) <u>[Signature]</u>		Date: <u>11/2/16</u>		Time: <u>915</u>		Received by: (Signature) <u>HUGO ANR2</u>		Date: <u>11/2/16</u>		Time: <u>9:15</u>		Note: <u>ARCHIVE FOR FUTURE SAMPLES</u> <u>* FOLLOW UP BASED UPON ARSENIC RESULTS</u> By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.																								
Relinquished by: (Signature) <u>HUGO ANR2</u>		Date: <u>11/2/16</u>		Time: _____		Received by: (Signature) <u>[Signature]</u>		Date: <u>11/2/16</u>		Time: _____																										
Relinquished by: (Signature) <u>[Signature]</u>		Date: <u>11-3-16</u>		Time: <u>1000</u>		Received by: (Signature) <u>[Signature]</u>		Date: <u>11-3-16</u>		Time: <u>1000</u>																										

WHITE·CLIENT FINAL REPORT - CANARY CLIENT

Matrix¹: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.



Client ID: 4945 - Synterra

SDG: 216110370

PM: SAB3



[illegible]

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

Matrix¹: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

			SAMPLE RECEIVING CHECKLIST			 <small>* 2 1 6 1 1 0 3 7 0 *</small>		
SAMPLE DELIVERY GROUP 216110370			CHECKLIST					
Client	PM SAB3	Transport Method		YES	NO	NA		
4945 - Synterra			Samples received with proper thermal and chemical preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Radioactivity is <1600 cmp? If no, record cmp value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Custody seals present and intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Profile Number			Received By					
271713			Lofton, Katie E.					
			Short holds or RUSH samples received?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Line Item(s)			Receive Date(s)					
2 - Solid- Arsenic			11/03/16	Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
			VOC water containers received with headspace < 6mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Received filtered sample volume for dissolved analysis?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Trip blank present in all coolers containing VOC waters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Samples collected in containers provided by GCAL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
COOLERS			DISCREPANCIES	LAB PRESERVATIONS				
Airbill	Thermometer ID: E26	Temp(°C)	None	None				
7776 1556 6522		0.4 1.1						
NOTES								

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 11/09/2016

GCAL Report 216110369



Project DCB/ 918.05.07

Deliver To

Matt Mudge
Synterra Corp
148 River st
Suite 220
Greenville, SC 29601
864-421-9999

Additional Recipients

NONE



Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
P	RPD between primary and confirmation result is greater than 40

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 216110369

Certifications

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Synterra **Report:** 216110369

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21611036901	MW-2	Water	11/02/2016 09:53	11/03/2016 10:00
21611036902	MW-3	Water	11/02/2016 11:20	11/03/2016 10:00
21611036903	MW-3 DUP	Water	11/02/2016 11:20	11/03/2016 10:00

Summary of Compounds Detected

MW-2	Collect Date	11/02/2016 09:53	GCAL ID	21611036901
	Receive Date	11/03/2016 10:00	Matrix	Water

EPA 6020A

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	1.90	0.25	1.00	ug/L

MW-3	Collect Date	11/02/2016 11:20	GCAL ID	21611036902
	Receive Date	11/03/2016 10:00	Matrix	Water

EPA 6020A

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	3.23	0.25	1.00	ug/L

MW-3 DUP	Collect Date	11/02/2016 11:20	GCAL ID	21611036903
	Receive Date	11/03/2016 10:00	Matrix	Water

EPA 6020A

CAS#	Parameter	Result	DL	LOQ	Units
7440-38-2	Arsenic	3.02	0.25	1.00	ug/L

Sample Results

MW-2	Collect Date	11/02/2016 09:53	GCAL ID	21611036901
	Receive Date	11/03/2016 10:00	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
11/04/2016 09:45	598147	EPA 3010A	1	11/07/2016 23:25	JLN	598385	
CAS#	Parameter			Result	DL	LOQ	Units
7440-38-2	Arsenic			1.90	0.25	1.00	ug/L

MW-3	Collect Date	11/02/2016 11:20	GCAL ID	21611036902
	Receive Date	11/03/2016 10:00	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
11/04/2016 09:45	598147	EPA 3010A	1	11/07/2016 23:29	JLN	598385	
CAS#	Parameter			Result	DL	LOQ	Units
7440-38-2	Arsenic			3.23	0.25	1.00	ug/L

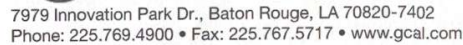
MW-3 DUP	Collect Date	11/02/2016 11:20	GCAL ID	21611036903
	Receive Date	11/03/2016 10:00	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
11/04/2016 09:45	598147	EPA 3010A	1	11/07/2016 23:33	JLN	598385	
CAS#	Parameter			Result	DL	LOQ	Units
7440-38-2	Arsenic			3.02	0.25	1.00	ug/L

Inorganics QC Summary

Analytical Batch 598385	Client ID GCAL ID	MB598147 1625904	LCS598147 1625905				
Prep Batch 598147	Sample Type	MB	LCS				
Prep Method EPA 3010A	Prep Date	11/04/2016 09:45	11/04/2016 09:45				
	Analysis Date	11/07/2016 22:14	11/07/2016 22:18				
	Matrix	Water	Water				
EPA 6020A		Units Result	ug/L DL	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	0.25U	0.25	50.0	52.9	106	80 - 120



Client ID: 4945 - Synterra

SDG: 216110369

PM: SAB3

[illegible]



WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

Matrix¹: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

Checklist

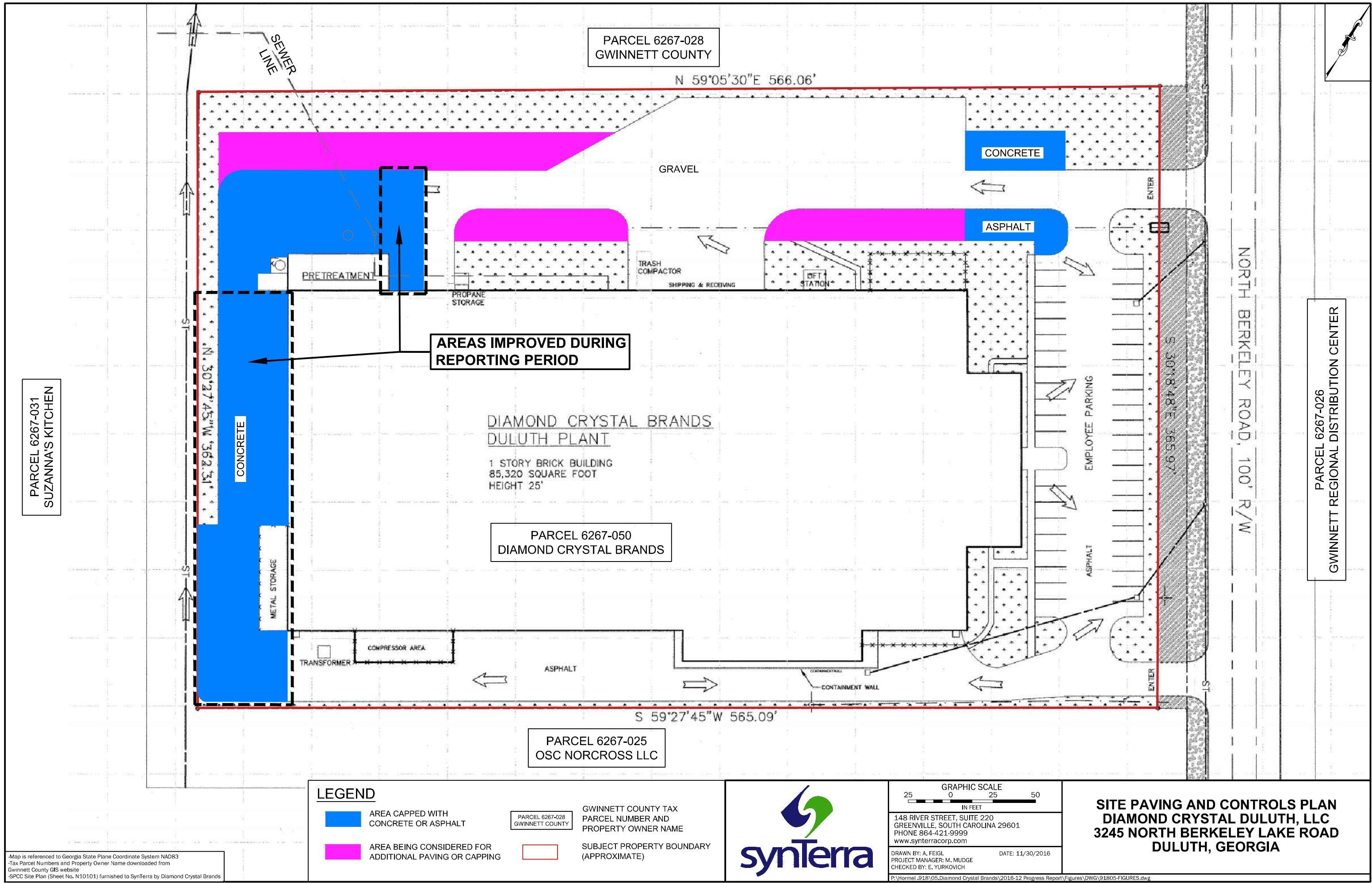
			SAMPLE RECEIVING CHECKLIST			 <small>* 2 1 6 1 1 0 3 6 9 *</small>		
SAMPLE DELIVERY GROUP 216110369			CHECKLIST			YES	NO	NA
Client	PM SAB3	Transport Method	Samples received with proper thermal and chemical preservation?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4945 - Synterra		FEDEX	Radioactivity is <1600 cmp? If no, record cmp value in notes section.			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profile Number 271713		Received By Lofton, Katie E.	Custody seals present and intact?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			COC relinquished and complete (including sample IDs, collect dates/times, and sampler name)?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Short holds or RUSH samples received?			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line Item(s) 1 - Water-Arsenic		Receive Date(s) 11/03/16	All containers received in good condition and within hold time?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			All sample labels and containers received match the chain of custody?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Preservation checked at receipt? Exceptions: VOC, Coliform, TOC, Oil and Grease, DOC			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Preservative added to any containers?			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			VOC water containers received with headspace < 6mm?			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			Received filtered sample volume for dissolved analysis?			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Trip blank present in all coolers containing VOC waters?			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Samples collected in containers provided by GCAL?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
COOLERS			DISCREPANCIES			LAB PRESERVATIONS		
Airbill	Thermometer ID: E26	Temp(°C)	None			None		
7776 1556 6522		0.4 1.1						
NOTES								

Revision 1.5

Page 1 of 1

APPENDIX C

UPDATED PAVING AND SITE CONTROLS PLAN



-Map is referenced to Georgia State Plane Coordinate System NAD83
-Tax Parcel Numbers and Property Owner Name downloaded from
Gwinnett County GIS website
SPCC Site Plan (Sheet No. N10101) furnished to SynTerra by Diamond Crystal Brands

LEGEND

AREA CAPPED WITH CONCRETE OR ASPHALT

AREA BEING CONSIDERED FOR ADDITIONAL PAVING OR CAPPING

PARCEL 6267-028
GWINNETT COUNTY

GWINNETT COUNTY TAX PARCEL NUMBER AND PROPERTY OWNER NAME

SUBJECT PROPERTY BOUNDARY (APPROXIMATE)

25 0 25 50
IN FEET
GRAPHIC SCALE

148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterratorp.com

DRAWN BY: A. FEIGL
PROJECT MANAGER: M. MUDGE
CHECKED BY: E. YURKOVICH

DATE: 11/30/2016

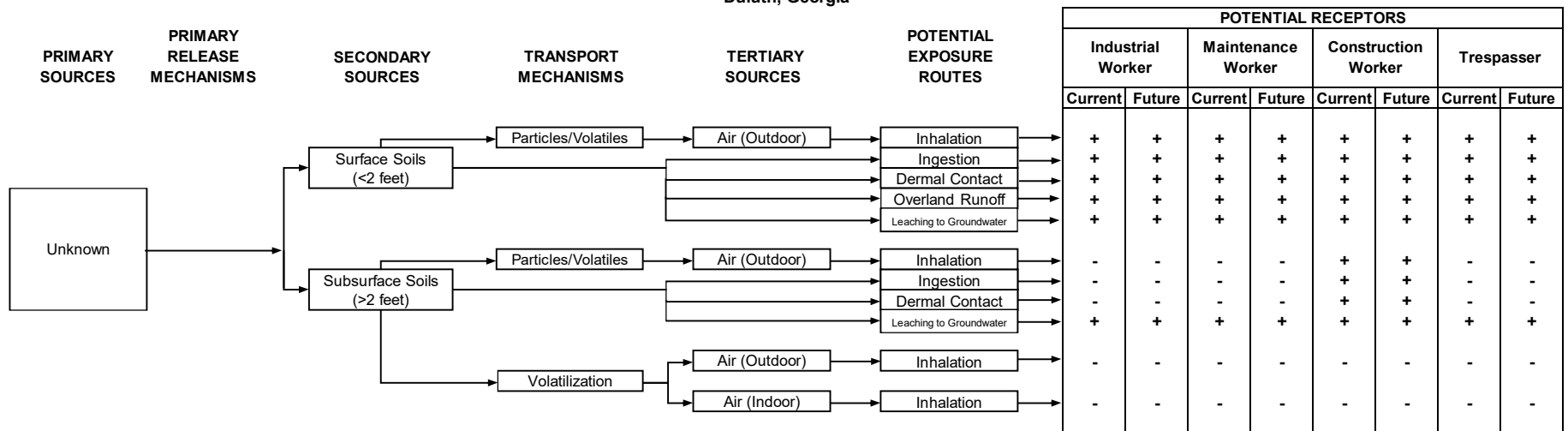
SITE PAVING AND CONTROLS PLAN
DIAMOND CRYSTAL DULUTH, LLC
3245 NORTH BERKELEY LAKE ROAD
DULUTH, GEORGIA

P:\Hornel .918\05.Diamond Crystal Brands\2016-12 Progress Report\Figures\DWG\91805-FIGURES.dwg

APPENDIX D

UPDATED CONCEPTUAL SITE MODEL

Site Conceptual Exposure Model
Diamond Crystal Duluth, LLC
3245 North Berkeley Lake Road
Duluth, Georgia



Notes:

- + This route is a primary source of exposure.
- There is no exposure by this route.