

August 25, 2017

NC Department of Environmental Quality  
Division of Waste Management  
Inactive Hazardous Sites Branch  
1646 Mail Service Center  
217 W. Jones St  
Raleigh, NC 27699-1646

Attn: Ms. Amy Axon

Re: Phase II Remedial Investigation Report  
Rev. 2  
828 Martin Luther King, Jr. Blvd.  
Chapel Hill, NC  
DEQ Site ID NONCD0001486  
H&H Job No. TCH-002

Dear Amy:

Enclosed is Revision 2 of the Phase II Remedial Investigation Report for the property located at 828 Martin Luther King, Jr. Blvd. in Chapel Hill. The Phase II RI Report has been revised based upon your email comments dated July 13, 2017 regarding the presence of erosional coal combustion products (CCPs) south of Bolin Creek Trail.

In addition, as you requested, we have provided brief responses to comments from the Southern Environmental Law Center (SELC) dated May 9, 2017 which were addressed to DEQ. For ease of reference, we have provided SELC's comments below followed by our response.

**Comment**

1. The Coal Ash Extends Into the Floodplain

The coal ash at the Site extends into the floodplain of Bolin Creek. A map showing the approximate location of the coal ash deposit in relation to the 100-year floodplain of Bolin Creek is attached to this letter as Attachment 1. Coal ash and toxic pollutants from the site that are located within the floodplain are likely to be washed downstream when the creek floods.

In addition, elevated flood waters could cause erosion at the base of the 40-foot high coal ash cliff area near the public greenway, further decreasing its structural stability. This situation presents an additional long-term risk to the public and natural resources of Bolin Creek, and is yet another reason why the coal ash cannot be left in place. Instead, it must be removed to safe, dry, lined storage away from public waters.

The federal Resource Conservation and Recovery Act requires that "[f]acilities or practices in floodplains shall not restrict the flow of the base flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human life, wildlife, or land or water resources." 40 C.F.R. § 257.3-1 (a). "Base flood" means a 100-year flood and "floodplain" means "the lowland and relatively flat areas adjoining inland and coastal waters . . . which are inundated by the base flood." *Id.* § 257.3-1 (b)(1)-(2).

Facilities failing to satisfy this requirement of the Act are considered open dumps and practices failing to satisfy it are considered open dumping. *Id.* § 257.1 (a)(1)-(2). Thus, both federal law and common sense dictate that the coal ash be removed from the vicinity of the floodplain.

## Response

**The potential presence of erosional CCP in the floodplain of Bolin Creek will be considered in the evaluation of remedial alternatives in the Remedial Action Plan for the site.**

## Comment

### 2. The Report Confirms Significant Groundwater Contamination But Ignores Hexavalent Chromium

The groundwater sampling data collected for the Report confirm the findings of significant coal ash contamination of groundwater shown by the groundwater monitoring results collected since 2013.

In particular, the most recent sampling data confirm that the coal ash dump is causing elevated levels of coal ash pollutants including:

- Manganese, with concentrations of 172 times the standard. Manganese is known to be toxic to the nervous system. Manganese concentrations greater than the standard of 50 ug/L render water unusable by discoloring the water, giving it a metallic taste, and causing black staining. Exposure to high levels can affect the nervous system; very high levels may impair brain development in children.

Surface water samples from Bolin Creek at the site reveal manganese concentrations three times higher than the upstream background samples, demonstrating that the coal ash dump is contaminating the creek without a permit.

- Thallium, with concentrations of over 26 times the standard. Thallium is a toxic pollutant, 40 C.F.R. § 401.15, and exposure to high levels of thallium can result in harmful health effects, including developmental effects and harm to the reproductive

system.

- Vanadium, with concentrations more than 3,000 times the standard. According to the U.S. Agency for Toxic Substances and Disease Registry, vanadium can cause nausea, diarrhea, and stomach cramps. And the International Agency for Research on Cancer has determined that vanadium is possibly carcinogenic to humans.
- Cobalt, with concentrations 32 times the standard. The International Agency for Research on Cancer has determined that cobalt is possibly carcinogenic to humans.
- Strontium, with concentrations of more than 12 times the background sample level. Exposure to high levels of strontium during infancy and childhood can affect bone growth and cause dental changes. Infants and young children who ingest too much strontium can develop a condition called strontium rickets. Strontium rickets is a disease in which bones are thicker and shorter than normal and may be deformed.
- Selenium, with concentrations over 2.5 times the standard. Selenium is an essential element, but it is also a toxic pollutant, 40 C.F.R. § 401.15, and excess exposure can cause a chemical-specific condition known as selenosis, with symptoms that include hair and nail loss.
- Chromium, with concentrations of 3 times the standard, as discussed in more detail below.

Despite repeated requests, Chapel Hill and DEQ have failed to sample the groundwater for hexavalent chromium, a dangerous mutagenic carcinogen. Chapel Hill did sample for this substance in 2014 and found disturbingly high hexavalent chromium levels in the groundwater that were 3 times the state's total chromium standard and **428 times** the state's health screening level for hexavalent chromium. There is no valid reason to avoid sampling for hexavalent chromium as part of this remedial investigation. We urge the newly-appointed leadership at DEQ to demonstrate their commitment to sound science by requiring hexavalent chromium groundwater samples to be collected so the agency and the public can understand the extent of the contamination at this site and to ensure that remedial decisions about the site can be made with the benefit of full information. If DEQ is unwilling to do so, Chapel Hill should take responsibility and direct its consultant to add hexavalent chromium to its groundwater sampling for all monitoring wells going forward.

The Report does include recent sample results for total chromium, and a concentration of 29 ug/L was detected in new monitoring well MW-6. The Report tries to discount this result, claiming that "chromium has not been detected in other wells above the 2L Groundwater Standard." This is plainly wrong. First, in this same sampling event, total chromium of 31

ug/L was sampled in MW-1, which is upgradient of MW-6 (*see* Report, Fig. 6). Second, levels of total chromium higher than the 29 ug/L result have been detected in numerous other wells in prior sampling events. *See* Report, Table 4. Third, the presence of a very high manganese concentration in the same MW-6 sample (2,500 ug/L) is consistent with coal ash impacts to this well. Thus, Chapel Hill and its consultant have not provided any reason to believe the MW-6 result for chromium is not valid. Further chromium sampling should also include hexavalent chromium, as explained above.

### Response

**In response to DEQ's comments on the January 2017 Phase II RI Report, H&H re-sampled well MW-6 for analysis of total and hexavalent chromium in April 2017. Results of analysis of the samples did not confirm the presence of total chromium in MW-6 and also indicated that hexavalent chromium was not detected in the well. As such, hexavalent chromium is not a compound of concern in groundwater at the site. The results of the MW-6 re-sampling are included in Revision 1 of the Phase II RI Report dated May 11, 2017 and in the attached Revision 2. Please also note that, as noted in the Phase II RI Report, previous detections of chromium in MW-1 are associated with the suspended sediment in the sample due to elevated turbidity.**

### Comment

#### 3. The Available Data Indicate that Coal Ash Extends Into the Groundwater

In order to determine the long-term risk of continued contamination, DEQ and the public need a clear picture of whether the coal ash is in contact with, or even submerged in, the groundwater. H&H's analysis in the Report fails to provide that. Since the available data do indicate that the coal ash is submerged in the groundwater, this is a serious concern that needs to be addressed.

As we pointed out in our initial comments, the Report claims that the ash is separated from the groundwater (*see* Report Fig. 5), but this claim appears to be contradicted by earlier data gathered at the site. Specifically, the well drilling log for MW-1 indicates that a thicker layer of ash extends below the water table. Chapel Hill's response to these concerns states that "[t]he 2013 Well Construction Record is prepared by a driller and is not a geologist's or engineer's boring log." However, monitoring well MW-1 was constructed under the oversight of the Town's original consultant, Falcon Engineering, as part of its 2014 Environmental Site Assessment. Falcon personnel were present at the time that the well was being drilled, as indicated by their collection of sample S-1 from a depth of 15 feet below ground surface. The Well Construction Record was included in the Falcon Engineering report of site activities. Falcon Engineering personnel evidently considered the Well Construction Record to accurately describe site conditions.

If there was a valid reason to suspect that the depth interval and thickness of the subsurface ash recorded for MW-1 could be incorrect, it should also have been assumed that the logs of each of the other monitoring wells installed by Falcon Engineering are inaccurate. Well Construction Records were the only logs provided in Falcon Engineering Reports for wells constructed under these investigations. If H&H actually believes that the stratigraphy of ash, fill, and natural geologic materials at each of the Falcon Engineering monitoring wells is not accurate, that should have been identified as a data need in the Phase II Remedial Investigation Work Plan and soil borings should have been conducted adjacent to the existing wells to fill that need.

The data that H&H does use in the Report actually confirm the highly variable nature of the depth and thickness of ash at the site. In its response to our initial comments, H&H states that "[t]he depth to and thickness of the CCPs at the site, including boring MW-1, was estimated from Table 5 of the March 25, 2014 Falcon Engineering Environmental Site Characterization Report . . . and borings advanced by H&H as part of the Phase II RI." Thus, H&H acknowledges the presence of 25 feet of ash located from 5 to 30 feet below the surface in GP-2, as recorded in Table 5, yet appears to be claiming that the 31 feet of ash documented in the Well Construction Record of MW-1 must be inaccurate because it supposedly is not "consistent" with the Falcon data in Table 5. This conclusion does not seem warranted by the available data, which show that the coal ash varies significantly in thickness.

In addition, MW-1 represents a deeper sample (40 feet) than any of the borings recorded in Table 5. The MW-1 boring log (included with our initial comments, attached) identifies "black ash" extending down to the bottom of the well, which means that this boring may not have located the bottom of the ash and the ash could extend even deeper.

In sum, without additional subsurface data from the site, H&H's conclusion that the ash is separated from the groundwater is not justified.

### **Response**

**H&H stands by its evaluation of the depth of CCP placement at the site with respect to the water table. Nevertheless, the potential presence of CCP near or below the water table will be included in the evaluation of remedial options for the site.**

## Comment

### 4. Remedial Alternatives

We understand that Chapel Hill will be preparing an evaluation of remedial alternatives. DEQ should require Chapel Hill to evaluate multiple ash removal scenarios, including both a complete source removal scenario that would remove all of the coal ash and a partial removal scenario that would remove the thickest portion of the ash around the 40-foot high coal ash cliff area, which is a clear safety hazard and a long-term risk to the public and the environment. The ash removal scenarios should specify available locations for safe, dry, lined disposal of the ash in a properly designed and permitted industrial solid waste landfill, or reuse as lined structural fill.

Meanwhile, any remedial scenarios that do not remove all of the ash should describe both the measures that would attempt to contain pollution from the remaining ash and also the restrictions that would need to be imposed on authorized uses of the property as a result of leaving the source of contamination in place.

Cost estimates for all remedial alternatives should include not only the cost of implementing the measure, but also its effect on the economic value of the property. Any measure that leaves the coal ash in place is likely to result in restrictions on the use of the property and significantly decrease its value.

## Response

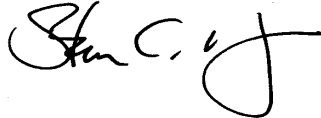
**Multiple remedial alternatives, including removal of the CCPs and leaving the CCPs in place with engineering and institutional controls, will be evaluated as part of the Remedial Action Plan for the site.**

Ms. Amy Axon  
August 25, 2017  
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Should you have any questions or need additional information, please do not hesitate to call me at (704) 586-0007.

Very truly yours,

*Hart & Hickman, PC*

A handwritten signature in black ink, appearing to read "Steven C. Hart". The signature is stylized with a large, sweeping "H" and "T" at the end.

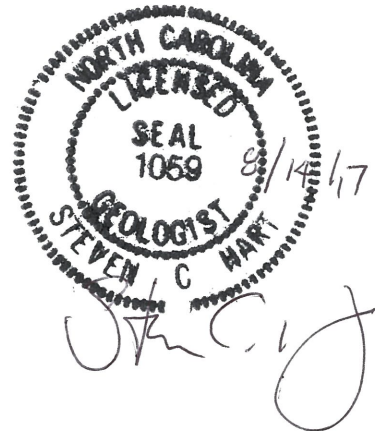
Steven C. Hart, PG  
Principal Hydrogeologist

cc: Lance Norris  
Curtis Brooks  
Wendy Simmons

**Phase II Remedial Investigation  
Report  
Revision 2**

**828 Martin Luther King, Jr. Blvd.  
Chapel Hill, North Carolina  
DEQ ID NONCD0001486**

**H&H Job No. TCH-002  
August 14, 2017**





**Phase II Remedial Investigation Report**  
**828 Martin Luther King, Jr. Blvd**  
**Chapel Hill, North Carolina**  
**H&H Job No. TCH-002**

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## Glossary of Abbreviations

2B Surface Water Standard	North Carolina Surface Water Standard from NCAC Title 15A 2B
2L Groundwater Standard	North Carolina Groundwater Standard from NCAC Title 15A 2L.0202
CCPs	Coal Combustion Products
COPCs	Compounds of Potential Concern
DEQ	Department of Environmental Quality
DO	Dissolved Oxygen
DOT	Department of Transportation
DPT	Direct Push Technology
ESV	Ecological Screening Value
ft	feet
bgs	below ground surface
HASP	Health and Safety Plan
IHSB	Inactive Hazardous Sites Branch
IMAC	Interim Maximum Allowable Concentration
J	Laboratory Qualifier which indicates that a compound was detected but the detected concentration is above the method detection limit (MDL) but less than the laboratory sample quantitation limit (SQL) and is an estimated value
MDL	Method Detection Limit
NCAC	North Carolina Administrative Code
NTU	Nephelometric Turbidity Units
ORP	Oxidation Reduction Potential
POG	Protection of Groundwater

## Glossary of Abbreviations (cont.)

PSRG	Preliminary Soil Remedial Goal
PVC	Polyvinyl chloride
PWR	Partially Weathered Rock
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
SESD	Science and Ecosystem Support Division
SQL	Sample Quantitation Limit
UCL	Upper Confidence Level

**Phase II Remedial Investigation Report**  
**828 Martin Luther King, Jr. Blvd**  
**Chapel Hill, NC**  
**H&H Job No. TCH-002**

**1.0 Introduction**

On behalf of the Town of Chapel Hill, Hart & Hickman, PC (H&H) has prepared this Phase II Remedial Investigation Report (RIR) for the property located at 828 Martin Luther King, Jr. Boulevard, Chapel Hill, Orange County, North Carolina (site). A Site Location Map is included as Figure 1.

Previous assessment activities indicate that the site was initially used as a borrow pit from the late 1950s to early 1960s, and then was used as a fill site from the mid-1960s to the mid-1970s. It appears that the fill initially consisted of construction debris, and then coal combustion products (CCPs) were placed above the construction debris for structural fill. Please note that the Town of Chapel Hill did not place the construction debris or CCPs at the site, but has voluntarily agreed to conduct additional assessment as the current site owner. The Town of Chapel Hill acquired the site in 1980 and constructed the a building on the site in the early 1980s.

Results of previous environmental assessment activities conducted from 2013 to 2016 by Falcon Engineering indicate that certain metals are present in the CCPs that appear to have migrated to nearby soil and groundwater. In a letter dated May 5, 2016, the North Carolina Department of Environmental Quality (DEQ) Inactive Hazardous Sites Branch (IHSB) requested that the Town of Chapel Hill conduct a Phase II Remedial Investigation (RI) of the site. H&H submitted a Phase II Remedial Investigation Work Plan (Phase II RIWP) to DEQ dated July 28, 2016. Based upon DEQ comments, the work plan was revised and Revision 1 of the Phase II RIWP was submitted to DEQ on September 15, 2016. On October 6, 2016, DEQ approved Revision 1 of the Phase II RIWP. The approved Phase II RIWP includes background information about the site including site setting and potential receptors, a summary and evaluation of previous assessment activities, identification of data gaps, and a plan for detailed additional assessment activities.

The initial Phase II RI activities were conducted in October to December 2016. H&H submitted a Phase II RI Report to DEQ dated January 26, 2017 which presented the methods and results of the additional assessment activities performed in accordance with the approved Phase II RIWP. . DEQ subsequently provided comments on the report in a letter dated March 10, 2017. Based upon the comments, H&H conducted limited additional field assessment in April 2017. This report represents Revision 1 of the Phase II RI Report which has been revised based upon DEQ comments and the additional field assessment results.

The purpose of the Phase II RI is to further evaluate geologic and hydrogeologic conditions at the site and to collect additional data to better define the extent of impacts identified during previous assessment activities. The Phase II RI activities built upon the previous assessment activities conducted by others at the site and included the following:

- Visual evaluation of shallow soil [within approximately 2 feet below ground surface (ft bgs)] for the presence of CCPs to determine where CCP may be exposed at or near the ground surface and potential susceptibility to current or future exposure or erosion;
- Collection and analysis of shallow soil samples in the northern “elevated” portion of the site to evaluate concentrations of metals in shallow soil in the elevated portions of the site;
- Collection of CCP samples for leachate analysis to evaluate the potential for metals present in CCP to leach into groundwater;
- Collection and analysis of shallow soil samples along the southern “lower” portion of the site to evaluate previous chromium detections and further evaluate compound concentrations in shallow soils along the greenway;
- Collection of background soil samples to establish naturally occurring conditions of metals in soil;

- Installation of additional groundwater monitoring wells and sampling of existing and newly installed monitoring wells to evaluate background concentrations of metals in groundwater, evaluate groundwater conditions at the site, and evaluate groundwater flow direction;
- Collection of surface water and streambed sediment samples to evaluate the potential for impacts to Bolin Creek; and
- Performance of aquifer slug tests to determine aquifer hydraulic conductivity.

This report is organized into the following sections:

- Section 2.0 – Site Background Information
- Section 3.0 – Environmental Setting
- Section 4.0 – Remedial Investigation Activities
- Section 5.0 – Conceptual Site Model
- Section 6.0 – References

The IHSB certification statements are included inside the front cover of the report.



## 2.0 Site Background Information

### 2.1 Site Location

The subject site is located at 828 Martin Luther King, Jr. Blvd. in Chapel Hill, Orange County, North Carolina. The approximate coordinates of the site building are 35°55'36.69"N latitude and 79°03'10.47"W longitude. The DEQ IHSB identification number for the site is NONCD0001486. A USGS topographic map indicating the location of the site is provided as Figure 1.

### 2.2 Site Description

The site is comprised of one land parcel that is approximately 10.24 acres in size and contains a two-story approximately 35,000 sq. ft building located on the north-central portion of the site that is currently used for police department operations. Asphalt parking lots are located in the northwestern and central portions of the site, and wooded areas are located in the southern and eastern portions of the site. Bolin Creek traverses the southern portion of the site, and a portion of the Bolin Creek Greenway Trail is located in the southern portion of the site just north of and parallel to Bolin Creek. A site plan is included as Figure 2.

The site topography consists of an elevated area where the building and parking lots are located which slopes steeply to the south to a lower area along Bolin Creek. Site topography is indicated in Figure 2. Based upon the results of previous assessment and the Phase II RI activities reported herein, the area where CCPs were placed at the site covers approximately 198,000 sq. ft (approximately 4.5 acres). (Note that this amount does not include the small areas where CCPs have been eroded from the location where they were initially placed). The area of CCP placement is depicted in Figure 7.

## **2.3 Land Usage and Zoning**

The site is zoned R-2 Residential by the Town of Chapel Hill. Adjacent properties are zoned as R-2, with the exception of southern adjacent properties. Southwest and southeast adjacent properties are zoned as R-4 Medium Density Residential Conditional and the south adjacent properties are zoned as NC Neighborhood Commercial.

The surrounding properties are occupied by the following:

- North and Northeast – Bolinwood Drive with residential properties located beyond
- East – Stratford Hills apartment complex followed by vacant land
- South – Greenway and Bolin Creek followed by Lloyd Tire & Alignment and a Gas Station
- West – Martin Luther King, Jr. Blvd. followed by vacant land with residential properties located beyond

A site map with aerial photograph showing surrounding land use is provided as Figure 2.

## **2.4 Site Ownership**

As indicated by the Orange County Tax Records, the owner of the facility prior to Town of Chapel Hill was Richard W. Sparrow. The Town of Chapel Hill purchased the property in 1980 and constructed the building on the site in the early 1980s.

## 3.0 Environmental Setting

### 3.1 Surface Water Hydrology

The site lies within the Piedmont Physiographic region and is part of the Cape Fear River basin. The Piedmont is a plateau that divides North Carolina's mountain and coastal plain regions. It has variable topography, with elevations ranging from approximately 300 feet above mean sea level (msl) in the eastern portion of the Piedmont to approximately 1,500 feet msl in the western portion. The Piedmont is separated from the Coastal Plain region by a fall line, or the point in which rivers transition from rocky, shallow streams to smooth-flowing streams.

Overall, the site slopes to the south from an elevation of approximately 375 ft msl near Bolinwood Drive to an elevation of approximately 300 ft above msl near Bolin Creek, which transverses the southern boundary of the site. The site topography is segmented into two gently graded areas referred to as the "elevated area" and the "lower area" that are separated by a steep embankment which generally runs east-west. The elevated area includes the northern and central portion of the site where the building and asphalt parking lots are located. The lower area of the site gently slopes to the southeast toward Bolin Creek and includes the Bolin Creek Trail.

Stormwater features include a storm water drain located in the northwestern portion of the site, and a stormwater catchment basin located east of the parking lot area. PVC piping was noted emerging and running south down the embankment in the western area of the site. A drainage channel runs southeast from Bolinwood Drive, to the east of the building, into the catchment basin and then south, down the embankment and into the lower area of the site. Portions of this steep embankment show evidence of erosion, such as small gullies in the embankment transitioning to deposition of material along silt barriers installed north of the Bolin Creek Trail.

Bolin Creek discharges into Little Creek, which feeds into Jordan Lake. Jordan Lake discharges to the Haw River, which joins with the Deep River to form the Cape Fear River.

### 3.2 Regional Geology and Hydrogeology

The site is located in the Piedmont Geologic Province of North Carolina, which consists of metamorphic and igneous crystalline bedrock overlain by a region of fractured and folded metamorphic and igneous crystalline bedrock. Meta-igneous and meta-volcanic felsic rocks are typical for Orange County, including the site location (Cunningham and Daniel, 2001). Meta-igneous felsic rocks are light colored, massive to foliated metamorphosed igneous rock bodies. It is common to find local shearing and jointing in meta-igneous felsic rocks. Meta-volcanic felsic rocks are primarily dense, fine-grained, light colored felsic tuffs and felsic crystal tuffs. The recrystallized fine-grained meta-volcanic rocks may be locally sheared and phyllitic zones are common.

In the Piedmont, the bedrock is overlain by regolith (or saprolite) of varying thickness which is derived from the in-place weathering of underlying bedrock. The regolith consists of fine grained material such as clays and silts near the ground surface to partially weathered rock above bedrock.

The hydrogeologic units in the Piedmont generally consist of the following (in descending order):

- Surficial aquifer – The surficial aquifer consists of saprolite, alluvium and soil. In the Piedmont region, these sediments consists of predominately clay-rich saprolite weathered from metamorphic and igneous crystalline bedrock. In locations of active and former stream channels, alluvium deposits may replace or overlie the saprolite. The thickness of this layer can vary from zero to more than 150 ft, with an average thickness of approximately 50 ft. The surficial aquifer typically has high porosity and provides the bulk of the water storage in the Piedmont region.
- Transition zone – In the transition zone, the unconsolidated sediments characteristic of the surficial aquifer grade into bedrock, consisting primarily of weathered bedrock and lesser amounts of saprolite. The thickness of the transition zone depends primarily on the parent rock type and the degree of weathering. Highly foliated metamorphic parent rocks contain planes of weakness that facilitate fractures during weathering that typically form a thicker, well defined transition zone. Massive igneous parent rocks do not fracture as easily and thus

tend to have a thinner, less distinct transition zone in the Piedmont region. The water storage capacity is dependent on the extent of weathering and fracturing in the transition zone.

- Fractured bedrock – The fractured bedrock aquifer includes crystalline rocks below the transition zone. The bedrock contains water in sheet-like openings formed along fractures, and the abundance and size of fractures in bedrock generally decreases with depth. The surficial aquifer feeds the bedrock aquifer system, which can transmit water through a network of fractures to discharge into surface water features.

### 3.3 Site Geology

According to the Geologic Map of North Carolina (1985), the underlying bedrock in the site area is characterized as metamorphosed granitic rock. Depth to bedrock at the site generally ranges from approximately 10 to 15 ft bgs in the northern portion of the site near Bolinwood Rd. and in the southern portion of the site near Bolin Creek. Depth to bedrock in the central portion of the site where fill material has been placed is approximately 45 ft to 50 ft bgs. A north to south trending geologic cross-section is provided as Figure 5. The cross-section extends from MW-5 north of the site across Bolinwood Drive, then across the building parking lot, through the embankment, and then south to Bolin Creek. A cross-section transect location map is provided as Figure 4.

Soil borings conducted at the site as part of the previous and recent assessment activities indicate that the materials present above bedrock generally consist of the following in descending order.

- The native shallow soil generally consists of silty clay saprolite which is approximately 5 to 15 ft thick. In areas where fill material is not present, the saprolite is underlain by a partially weathered rock (PWR) zone that is approximately 5 ft thick, and the PWR is underlain by bedrock.
- In areas where fill has been placed, the shallow cover soil generally consists of clayey silt fill which, in some locations, appears to be mixed with CCP. The CCP was likely mixed with the fill during placement of the cover materials. Where present, the cover material is

less than approximately 2 ft thick to approximately 10 ft thick. In some areas along the embankment, the fill cover is absent (see Section 4.1.1 for additional details about the CCP cover).

- The upper fill material below the cover layer (where present) consists of CCP which ranges in thickness from less than 1 ft where it pinches out in the northern portion of the site, to greater than 20 ft at the embankment separating the elevated and lower areas of the site. Based upon assessment activities, the average CCP thickness appears to be approximately 8 ft. There is also a small area of CCP which has eroded from the embankment and been deposited along the north side of the Bolin Creek Trail (see Figure 7 and Section 4.1.1). This depositional layer of CCP is less than 1 ft to 1.5 ft thick.
- Below the CCP layer appears to be general fill material such as concrete, other debris, and soil, although the character of this material is hard to discern from the limited number of borings which penetrated the material. This material is visible in some portions of the embankment and consists of large pieces of concrete, brick, gravel, soil, and metal debris.

### **3.4 Site Hydrogeology**

#### **3.4.1 Groundwater Elevation and Flow Direction**

On November 9, 2016, existing and newly installed monitoring wells were gauged as part of the Phase II RI. Gauging data are provided in Table 1. Water level data were collected with a decontaminated electronic water level meter. The top of casing elevations for the site monitoring wells were surveyed by CE Group of North Carolina, PLLC on December 8 and 9, 2016. The CE Group survey report is provided in Appendix A.

Initial groundwater was encountered in the unconsolidated materials in all of the borings except MW-5 and MW-7, where initial groundwater was encountered in bedrock. Initial groundwater is present at depths of approximately 5 ft bgs along the Bolin Creek Greenway to approximately 35 ft bgs in the central portion of the site. Where present above bedrock, initial groundwater appears

to be present primarily in the PWR and fill/debris material. It does not appear that CCP materials were placed below the water table (see Figure 5).

During the November 2016 RI, groundwater elevation ranged from approximately 360 ft above msl in background monitoring well MW-5, located northwest of the site across Bolinwood Drive, to approximately 291 ft above msl in downgradient monitoring well MW-4A, located in the southeast portion of the site. An inferred shallow groundwater potentiometric map based on the groundwater elevation data collected on November 9, 2016 is provided as Figure 6. As indicated in the figure, groundwater at the site generally flows south/southeast towards Bolin Creek.

### **3.4.2 Horizontal Gradient**

The horizontal hydraulic gradient is a measure of the slope of the potentiometric head of an aquifer. The horizontal hydraulic gradient calculated for shallow groundwater across the site is approximately 0.07 ft/ft for the November 2016 gauging event.

### **3.4.3 Hydraulic Conductivity and Groundwater Flow Velocity**

#### Hydraulic Conductivity

Hydraulic conductivity is a measure of an aquifer's ability to transmit water. Rising head slug tests were conducted by H&H at six monitoring wells (MW-1, MW-3A, MW-4A, MW-5, MW-6, and MW-7) in December 2016 to evaluate aquifer hydraulic conductivity. During the slug test, a slug of water was removed from each well using a 36-inch or 48-inch long disposable bailer, and the water level recovery in the wells was monitored over time using a Solinst pressure transducer and data logger. The slug test data were analyzed by Bouwer and Rice solution method for an unconfined aquifer using AQTESOLV aquifer test analysis software. The calculated hydraulic conductivities are presented in the table below:

Well ID	Hydraulic Conductivity (ft/day)
MW-1	0.2
MW-3A	0.04
MW-4A	0.04
MW-5	0.1
MW-6	6
MW-7	0.2

The geometric mean hydraulic conductivity for the slug tests in the shallow groundwater is approximately 0.2 ft/day. The slug test data plots are included in Appendix B.

#### Groundwater Flow Velocity

The average linear groundwater flow velocity of groundwater is calculated utilizing the following equation:

$$V_x = \frac{K}{n_e} \times \frac{dH}{dL}$$

Where:

$V_x$  = average linear groundwater velocity parallel to groundwater flow direction;

$K$  = hydraulic conductivity;

$n_e$  = effective porosity; and

$\frac{dH}{dL}$  = hydraulic gradient

Utilizing the average hydraulic gradient for the shallow aquifer (0.07 ft/ft), the geometric mean hydraulic conductivity for the shallow aquifer (0.2 ft/day), and an assumed effective porosity of 0.25, the average groundwater flow velocity for the shallow groundwater is estimated to be approximately 0.06 ft/day (approximately 20 ft/year). Please note that most compounds (such as metals) present in an aquifer do not travel at the same rate as groundwater because their mobility



is reduced by geochemical conditions including adsorption onto aquifer matrix surfaces and chemical transformations that may occur.

#### 4.0 Phase II Remedial Investigation Activities

The RI activities were conducted by H&H in October 2016 through December 2016. Field activities were performed in accordance with a site-specific Health and Safety Plan (HASP) and the Phase II RIWP Revision 1 dated September 15, 2016. Field activities performed during the Phase II RI consisted of the following:

- Installation of 47 shallow soil borings along the steep embankment on the southern portion of the site and select locations along the border of the site to visually assess shallow soil for the presence of CCP;
- Sampling of shallow soil and CCP from six soil borings in the elevated portion of the site;
- Sampling of shallow soil from four soil borings on the lower portion of the site along the Bolin Creek Trail;
- Installation and sampling of soil from five soil borings in background locations;
- Installation of three permanent shallow monitoring wells;
- Collection of depth-to-groundwater measurements from the six site monitoring wells to allow an evaluation of groundwater flow;
- Collection of groundwater samples from three existing and three newly-installed monitoring wells;
- Collection of five surface water and sediment samples from Bolin Creek; and
- Performance of aquifer slug tests at six monitoring wells.

Select photographs of site activities are provided in Appendix C. Sampling locations are provided on Figure 3. Note that the locations of the all of the Phase II RI sampling locations were determined by CE Group, a registered land surveyor. The surveyor report is provided in Appendix A.

## **4.1 Soil Investigation Activities**

### **4.1.1 CCP Cover Evaluation**

H&H advanced 47 shallow hand auger borings to perform a visual inspection of shallow soil along the embankment that separates the elevated and lower areas of the site and in perimeter areas in the western, northern, and northeastern portions of the site. The locations of the CCP cover evaluation borings are indicated in Figures 3 and 7. The soil borings were advanced on a rough 50-ft grid along the embankment, taking into account topography and access to the boring locations. In perimeter areas, the locations were based upon the work plan locations and field judgment. The borings were advanced with a stainless steel hand auger to a depth of 2 ft. During boring advancement, visual observations of the soil were performed and logged to evaluate the presence of soil and/or CCPs. If CCPs were observed within the upper 2 ft of a perimeter boring, additional borings were advanced to delineate the extent of CCP near ground surface.

The CCP cover evaluation boring designations were given an alpha-numeric designation based upon the rough 50-ft grid established across the site. East-west boring row “A” is present in the southern portion of the site, and east-west boring row “I” is located in the northern portion of the site. In a boring row, borings were labeled “1” through “12” from west to east. For example, CCP cover evaluation boring D1 is located in boring row D near the Bolin Creek Trail and is the furthest west boring near Martin Luther King, Jr. Blvd.

### **4.1.2 Elevated Area**

Five soil borings (HH-1 through HH-5) were advanced in the northern, elevated portion of the site. The locations of the borings are indicated in Figures 3 and 8. The purpose of these borings was to 1) evaluate shallow soil metals concentrations in the elevated portions of the site, and 2) to collect samples of the underlying CCPs for leachate analysis to evaluate the potential for metals to leach to groundwater. An additional shallow soil sample was collected from the boring for monitoring well MW-7 to evaluate shallow soil metal concentrations in the eastern portion of the site. Soil borings HH-1 and HH-3 were advanced with a Geoprobe® direct push technology (DPT) drill rig to approximately 10 ft and 15 ft bgs, respectively. The remaining soil borings were advanced using a stainless steel hand auger to a depth of approximately 5 ft bgs. At each boring, one shallow

soil sample from a depth of 0-1 ft was collected for analysis of the site soil compounds of potential concern (COPCs). The soil COPCs are antimony, arsenic, barium, beryllium, cadmium, total chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, strontium, thallium, vanadium, and zinc (analysis by EPA Method 6010/7471) and hexavalent chromium (analysis by EPA Method 7199). In addition, a sample of CCP was collected from a deeper depth from each boring for analysis of the site groundwater COPCs (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, strontium, thallium, vanadium, and zinc) following the Synthetic Precipitation Leaching Procedure (SPLP) by EPA Method 1312.

#### **4.1.3 Lower Area**

H&H advanced three shallow soil borings (HH-6 through HH-8) in the southern, lower portion of the site with a stainless steel hand auger. The locations of the borings are indicated in Figures 3 and 8. In addition, one shallow soil sample was collected from the newly installed monitoring well boring MW-6. Soil borings HH-6 and HH-7 were advanced along the Bolin Creek Trail to evaluate previous total chromium detections near these borings. Soil samples were collected from 0 to 1 ft bgs and analyzed for total chromium by EPA Method 6010 and hexavalent chromium by EPA Method 7199. Soil boring HH-8 was advanced in the southeastern portion of the site along the Bolin Creek Trail. Shallow soil samples collected from HH-8 and MW-6 were collected to further evaluate compound concentrations in the shallow soil along the Bolin Creek Trail and were analyzed for the site soil COPCs.

#### **4.1.4 Background Samples**

H&H advanced four soil borings (BG-1 through BG-4) in locations along Bolin Creek to the west (upgradient) of the site. The samples were collected from the sewer line right of way along the creek in the locations indicated in Figure 8. The borings were advanced to a depth of 3 ft using a stainless steel hand auger. Two soil samples were collected from each boring, one from a shallow depth (0-1 ft) and one from deeper depth (2-3 ft). In addition to these four soil boring locations, two soil samples were collected from background monitoring well MW-5 at depths of 0-1 ft and 6-7 ft bgs. The background soil samples were analyzed for the site soil COPCs.

#### **4.1.5 General Soil Sampling Procedures**

Laboratory supplied sample bottles were used for sample collection. A chain-of-custody record was completed for the samples submitted for analysis and included the sample description, date and time collected, sample matrix, sample container information, and requested analyses. The chain-of-custody forms were signed by H&H sampling personnel and placed with the sample containers into an iced cooler for delivery to a North Carolina certified laboratory (Prism Laboratories, Inc.). Soil samples collected for analysis of hexavalent chromium by EPA Method 7199 were delivered to TestAmerica or SGS Laboratory.

After soil sampling was completed, the DPT boreholes were backfilled with bentonite chips to surface grade and the surface was restored to match the surrounding area.

## **4.2 Soil Investigation Results**

### **4.2.1 CCP Cover Evaluation**

The results of the CCP cover evaluation are summarized in the CCP cover evaluation map provided as Figure 7. Soil boring logs are included in Appendix D. Based upon the results of the previous and Phase II RI activities, H&H categorized CCP presence and cover into the following categories:

- Areas where CCP is not present. There were no observations of CCP in some areas north and south of the Bolin Creek Trail, in the eastern portion of the site, in the northeastern portion of the site, and in the southwestern portion of the site.
- Areas where CCP is present under at least 2 ft of cover soil. Areas that are covered with 2 ft or more of cover soil are depicted in blue in Figure 7 and include most of the area in the central and northwestern portions of the site and some areas along the steep embankment. In some areas, the cover soil contained intermixed CCP. The cover soil is predominately silty clay.
- Areas where CCP is under less than 2 ft of cover soil. Areas that are covered with less than 2 ft of cover soil are depicted in yellow in Figure 7. These areas are located in the far northwestern portion of the site and along the western portion of the embankment. The northwestern portion of the site is primarily covered by grass, with some areas covered by

a paved driveway. As noted above, cover soil is generally composed of silty clay and may be intermixed with CCP.

- Areas where CCP is visible at the ground surface. Areas where CCP is exposed at ground surface are depicted in pink in Figure 7. These areas are located in the eastern portion of the embankment and an isolated area in the central portion of the embankment. Observations of concrete, brick, and other structural debris were also noted along the embankment.
- Areas where CCP appears to have been eroded and deposited in lower areas. Areas where H&H observed eroded and deposited CCP in lower areas of the site are depicted in green in Figure 7, and are located predominately in the eastern portion of the embankment but also a small area in the western portion of the embankment. In these areas, a relatively thin layer of CCP generally less than 1 to 1.5 ft thick is present overlying native soil. This soil profile and the presence of nearby exposed CCP indicates that the CCP layer in the lower area was placed via erosion. The buildup of CCP along erosion barriers placed at the site also indicates movement of CCP from the eastern half of the embankment to the lower area via erosion. During the Phase II RI activities, H&H observed the erosional CCP north of Bolin Creek Trail. However, based upon its March 10, 2017 comments and our discussions with DEQ, DEQ indicated that CCP depositional material has also been observed south of the Bolin Creek Trail. The erosional layer south of Bolin Creek Trail appears to have migrated under the Bolin Creek Trail bridge and to the south side of the trail. Based upon our discussions with DEQ, the approximate area of depositional CCP south of Bolin Creek Trail is indicated in green hatching in Figure 7.

#### **4.2.2 Analytical Data**

The results of analysis of the soil samples collected during the Phase II RI were compared to the site-specific background concentrations and the IHSB Protection of Groundwater (POG), Residential, and Industrial Health-Based Preliminary Soil Remediation Goals (PSRGs). For the background evaluation, the data were compared to the range of background detections and the 95% upper confidence level (UCL) of the background data. The 95% UCLs were determined

using EPA's ProUCL software (Version 5.1). The ProUCL software printouts are included in Appendix G. In addition, published regional background levels in soil in North Carolina are also included in Table 2. Please note that the PSRGs are preliminary screening levels only and are not "cleanup" values. A concentration above a PSRG does not indicate that remediation needs to be performed, only that further evaluation may be warranted.

Analytical data for soil samples is summarized on Table 2, and laboratory analytical reports are included in Appendix E. Soil sample locations are provided on Figure 8. A summary of soil analytical results is provided below.

### Elevated Area

The results of analysis of the shallow soil samples collected from the elevated portions of the site as part of the Phase II RI (HH-1 through HH-5 and MW-7) indicate that, of the metals detected, only arsenic and selenium were detected above site-specific background concentrations and PSRGs. A discussion of the data for these metals is provided below.

### *Arsenic*

Arsenic was detected in soil samples collected in the elevated area of the site at concentrations ranging from 2.4 mg/kg (HH-4 and HH-5) to 9.9 mg/kg (HH-3). Arsenic was detected in background samples ranging from 1.4 mg/kg to 2.3 mg/kg, with a 95% UCL of 2.1 mg/kg. Arsenic was detected significantly above background and PSRGs in samples HH-1, HH-2, and HH-3 only at concentrations ranging from 3.4 mg/kg to 9.9 mg/kg as compared to the residential health-based PSRG of 0.68 mg/kg, the industrial health-based PSRG of 3.0 mg/kg, and the POG PSRG of 5.8 mg/kg.

As noted previously, results of the CCP cover evaluation indicate that small amounts of CCP are intermixed with cover soil. Therefore, the presence of elevated levels of arsenic in the shallow cover soil is likely associated with the presence of minor CCP, which has been shown to contain arsenic up to 72 mg/kg. It is also possible that the cover soil was obtained from a location removed the site with higher concentrations of naturally occurring arsenic than are present near the site

because the arsenic detections are consistent with regional background levels in North Carolina (up to 18 mg/kg).

### *Selenium*

Selenium was detected in one sample (HH-3) significantly above the site-specific background level. In this sample, selenium was detected at 2.4 mg/kg versus the background range of up to 1.7 mg/kg and the 95% UCL of 1.4 mg/kg. The concentration detected in HH-3 slightly exceeds the POG PSRG of 2.1 mg/kg, but does not exceed the residential or industrial PSRGs.

### Lower Area

The results of analysis of the shallow soil samples collected from the lower portions of the site in which analysis of the full suite of soil COPCs was performed (HH-8 and MW-6) indicates that, of the metals detected, only arsenic in HH-8 significantly exceeded the background level and PSRGs. In HH-8, arsenic was detected at 3.6 mg/kg versus the background range of 1.4 to 2.3 mg/kg and the 95% UCL of 2.1 mg/kg. The arsenic concentration detected exceeds the residential and industrial PSRGs but does not exceed the POG PSRG.

HH-6 and HH-7 were collected to evaluate previous detections of chromium in samples collected near the Bolin Creek Trail. In these samples, chromium was detected at concentrations of 20 mg/kg to 22 mg/kg which are consistent with background levels and the previous detections from this area. Hexavalent chromium was not detected in the samples, indicating that the detected chromium is in a trivalent state. Trivalent chromium concentrations were significantly below PSRGs.

### **4.2.3 SPLP Data**

CCP samples were analyzed for the site-specific groundwater COPCs following SPLP. Please note that the SPLP analysis simulates leaching of rainwater through soil to groundwater and the analytical procedure produces an aqueous leachate which is then analyzed for the COPCs. Therefore, the results of the SPLP analyses are compared to the North Carolina Administrative Code (NCAC) Title 15A 2L.0202 Groundwater Standards (2L Groundwater Standards), Interim



Maximum Allowable Concentration (IMAC), and site-specific background groundwater concentrations. Analytical data for the CCP samples is summarized in Table 3, and laboratory analytical reports are included in Appendix E. Soil boring locations are provided on Figure 8.

Several metals were detected above the 2L Groundwater Standards or IMACs and background groundwater concentrations in leachate from the CCP samples (HH-1 through HH-5). A summary of metal detections in leachate is provided below. Please note that in this report a “J” is present after some of the sample concentrations. A “J” is a laboratory qualifier which is used to identify a concentration which is above the method detection limit (MDL) but below the laboratory sample quantitation limit (SQL) and is therefore an estimated concentration.

- Antimony was detected in the leachate of three of six CCP samples collected at estimated concentrations ranging from 3.3J  $\mu\text{g/L}$  (HH-5) to 5.1J  $\mu\text{g/L}$  (HH-4). The detected concentrations are slightly above the IMAC of 1.0  $\mu\text{g/L}$ .
- Arsenic was detected in the leachate of CCP sample HH-3 at an estimated concentration of 18J  $\mu\text{g/L}$  which is slightly above the 2L Groundwater Standard of 10  $\mu\text{g/L}$ .
- Barium was detected above the 2L Groundwater Standard in the leachate of the CCP samples collected from borings HH-2 (830  $\mu\text{g/L}$  and its duplicate at 1,300  $\mu\text{g/L}$ ), HH-3 (740  $\mu\text{g/L}$ ), and HH-5 (1,900  $\mu\text{g/L}$ ). The 2L Groundwater Standard is 700  $\mu\text{g/L}$ .
- Cobalt was detected in the leachate of CCP sample HH-3 at an estimated concentration of 4.6J  $\mu\text{g/L}$ , which is slightly above the IMAC of 1.0  $\mu\text{g/L}$ .
- Lead was detected in the leachate of CCP sample HH-3 at a concentration of 45  $\mu\text{g/L}$ , which is above of the 2L Groundwater Standard of 15  $\mu\text{g/L}$ .
- Manganese was detected in the leachate of CCP samples HH-3 and HH-2 (duplicate only) at concentrations of 290  $\mu\text{g/L}$  and 69  $\mu\text{g/L}$ , respectively. These concentrations are above

the 2L Groundwater Standard of 50 µg/L but do not exceed the site-specific background groundwater concentration of 580 µg/L.

- Selenium was detected in the leachate of all of the CCP samples at concentrations ranging from 28J µg/L (HH-3) to 130 µg/L (HH-1). These selenium concentrations are above the 2L Groundwater Standard of 20 µg/L and the background concentration of 23 µg/L.
- Vanadium was detected in the leachate of five of six CCP samples (all except HH-1) at estimated concentrations of ranging from 2.6J µg/L (HH-2 duplicate) to 23J µg/L (HH-3). The detected concentrations are above the IMAC of 0.3 µg/L.
- Strontium was detected in the SPLP leachate at concentrations ranging from 100 µg/L to 2,500 µg/L. There is no 2L Groundwater Standard for strontium but the site-specific background concentration is 190 µg/L. Strontium was detected significantly above the background level in HH-1 and HH-4.

A comparison of the metals detected in the SPLP leachate to those detected in groundwater (see Section 4.3 below) is provided in the following table. In general, based upon these data, the metals were broken down into four categories:

- Category 1 – Metals that were not detected in SPLP leachate samples or monitor well samples above background and the 2L Standards or IMAC indicate that these metals have not leached to groundwater and are unlikely to leach to groundwater in the future. The metals in this category are beryllium, cadmium, copper, mercury, nickel, zinc, and likely chromium (based upon the re-sampling of well MW-6).
- Category 2 – Metals that were detected in monitor well samples but not SPLP leachate samples above background and the 2L Standards or IMACs indicate that although groundwater has been impacted by these metals, the metal is likely no longer leaching from CCP at levels of concern. The metals in this category are manganese and thallium.
- Category 3 – Metals that were detected in SPLP leachate samples but not in monitor well samples above background and the 2L Standards or IMACs indicate that 1) the metal is not

present above the 2L Standard but there is a potential for the metal to impact groundwater quality in the future, or 2) that site-specific conditions not simulated in the SPLP testing (i.e., complex natural adsorption processes) cause leached metals to precipitate and not be dissolved in groundwater above the 2L Standard. Given the time that the CCPs have been present at the site, the latter explanation is considered more likely. The metals in this category are antimony, arsenic, barium, and lead.

- Category 4 – Metals that were detected in both the SPLP leachate samples and monitoring wells samples above background and the 2L Standards or IMACs indicate that these metals are present above 2L Standards in groundwater and the CCPs have the potential to continue to leach to groundwater at levels of potential concern. The metals in this category are cobalt, selenium, strontium and vanadium.

<b>Metal</b>	<b>Detected Above Background and 2L Standard or IMAC in SPLP Leachate</b>	<b>SPLP Sample Ratio<sup>2</sup></b>	<b>Detected Above Background and 2L Standard or IMAC in Phase II RI Groundwater</b>	<b>Groundwater Sample Ratio<sup>2</sup></b>	<b>Category</b>
Antimony	X	3:5		0:5	3
Arsenic	X	1:5		0:5	3
Barium	X	3:5		0:5	3
Beryllium		0:5		0:5	1
Cadmium		0:5		0:5	1
Chromium		0:5	X <sup>1</sup>	1:5 <sup>1</sup>	1 <sup>1</sup>
Cobalt	X	1:5	X	1:5	4
Copper		0:5		0:5	1
Lead	X	1:5		0:5	3
Manganese		0:5	X	2:5	2
Mercury		0:5		0:5	1
Nickel		0:5		0:5	1
Selenium	X	5:5	X	1:5	4
Strontium	X	4:5	X	3:5	4

<b>Metal</b>	<b>Detected Above Background and 2L Standard or IMAC in SPLP Leachate</b>	<b>SPLP Sample Ratio<sup>2</sup></b>	<b>Detected Above Background and 2L Standard or IMAC in Phase II RI Groundwater</b>	<b>Groundwater Sample Ratio<sup>2</sup></b>	<b>Category</b>
Thallium		0:5	X	1:5	2
Vanadium	X	4:5	X	4:5	4
Zinc		0:5		0:0	1

Notes: 1 = Chromium was not detected in the re-sampling of well MW-6.

2 = Sample Ratio indicates the number of samples with detections above background and 2L Standard or IMAC versus the total number of samples taken.

### 4.3 Groundwater Investigation

Monitoring well installations and sampling of all site monitoring wells were conducted in November 2016 in accordance with the Phase II RIWP. Based upon DEQ's comments on the initial Phase II RI Report submittal, two monitoring wells were re-sampled in April 2017. The methods and results of the groundwater assessment activities are summarized in the following sections.

#### 4.3.1 Monitoring Well Installation

Three additional monitoring wells were installed at the site in the locations described below. The locations of the wells are indicated in Figure 9.

- MW-5 was installed northwest of the site across Bolinwood Drive to evaluate background concentrations of metals in groundwater. Please note that the location of MW-5 was moved from the northwestern portion of the site because of the presence of CCP in shallow soil in this area. The background well was re-located in the Bolinwood right-of-way northwest of the site as indicated in Figure 9.
- MW-6 was installed in the southwestern, downgradient portion of the site along Bolin Creek Trail to evaluate groundwater conditions southwest of the CCP fill area.

- MW-7 was installed in the eastern portion of the site to evaluate groundwater conditions east of the CCP fill area.

Monitoring wells MW-5 and MW-7 were installed utilizing air rotary drilling methods, and monitoring well MW-6 was installed using hollow stem auger drilling methods. MW-6 was installed to a depth 17.5 ft bgs at auger refusal and groundwater was encountered at approximately 10 ft bgs. For MW-5 and MW-7, groundwater was not encountered above bedrock and the wells were installed upon encountering a water bearing fracture. In MW-5, bedrock was encountered at approximately 15 ft bgs, and the wells was installed to a depth of 27.5 ft bgs. In MW-7, bedrock was encountered at approximately 15 ft, and the well was installed to a depth of 69.5 ft bgs.

The monitoring wells were constructed in accordance with the North Carolina well construction regulations. The monitoring wells were constructed of 2-inch diameter PVC with a 10-ft well screen. To reduce turbidity, the monitoring wells were installed with pre-packed well screens. All monitoring wells were completed flush with the ground surface inside flush mount manholes secured with 2 ft by 2 ft concrete pads.

Well construction details are summarized in Table 1. Monitoring well diagrams are included in Appendix D, and well construction records are included in Appendix F.

#### **4.3.2 Monitoring Well Development**

The newly installed monitoring wells were developed in accordance with the Phase II RIWP and EPA Region 4 Science and Ecosystem Support Division (SESD) protocols to remove silt and fines in the wells and sand pack. Development water was containerized in 55-gallon steel drums, properly labeled, and staged onsite for waste characterization and subsequent off-site disposal.

#### **4.3.3 Monitoring Well Sampling**

##### November 2016 Sampling

Following monitoring well installation, groundwater samples were collected from the newly installed and existing site monitoring wells (MW-1, MW-3A, MW-4A, MW-5, MW-6, and MW-

7) on November 9 and 10, 2016, except MW-7. Due to high turbidity levels in MW-7, H&H redeveloped the monitoring well on November 11, 2016 and then resampled MW-7 on November 14, 2016. Final sample turbidity levels are indicated in Table 4. As indicated in Table 4, all of the sample turbidity levels were less than 10 Nephelometric Turbidity Units (NTU), except for MW-1. Consistent with previous sampling events, turbidity levels in MW-1 remained elevated despite efforts to lower the turbidity. The final sample turbidity in MW-1 was 475 NTU. Because of the elevated turbidity, H&H collected a filtered and unfiltered sample from MW-1. The filtered sample was filtered in the field using a 0.45 micron filter.

As part of the groundwater sampling effort, a complete round of water level measurements was collected from each monitoring well using an electronic water level meter, and the results are discussed above in Section 3.4. Purging and sampling of the monitoring wells were completed using the low flow/low stress purging and sampling method in accordance with EPA Region 4 SESD protocols.

The groundwater samples were submitted to a North Carolina certified laboratory or field tested as follows:

- Groundwater from each monitoring well was field analyzed for dissolved oxygen, oxidation-reduction potential (ORP), pH, conductivity, temperature, and turbidity.
- Groundwater samples collected from each monitoring well were analyzed for the groundwater COPCs antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, strontium, thallium, vanadium, and zinc by EPA Method 6010/7471.

Laboratory supplied sample bottles were used for sample collection and laboratory analyses were performed by Prism Laboratories, Inc. A chain-of-custody record was completed for the samples submitted for chemical analysis and included the sample description, date and time collected, sample matrix, sample container information, and requested analyses. The chain-of-custody forms were signed by H&H sampling personnel and placed with the sample containers into an iced cooler

for delivery to their respective laboratory. Groundwater sampling logs are provided in Appendix H.

#### April 2017 Sampling

Because chromium was detected in well MW-6 greater than two times the 2L Groundwater Standard, in its March 10, 2017 comments on the initial Phase II RI Report, DEQ requested that a sample from the well be collected for analysis of hexavalent chromium. Therefore, on April 3, 2017, H&H collected a sample from well MW-6 for total chromium by EPA Method 6010 and for hexavalent chromium by EPA Method 7199. In addition, to evaluate background concentrations of these metals, H&H also collected samples from background well MW-5 for analysis of chromium and hexavalent chromium. The samples were collected in the same manner as the November 2016 sampling event, and turbidity was below 10 NTU prior to sampling of both wells (see Table 4). The April 2017 samples were analyzed by SGS Laboratories, and the groundwater sampling logs are contained in Appendix H.

#### **4.4 Groundwater Investigation Results**

Analytical data for groundwater samples are summarized on Table 4, and laboratory analytical reports are included in Appendix E. Monitoring well locations are depicted in Figure 9. Monitoring wells MW-1, MW-3A, and MW-5 are also depicted in the Figure 5 cross-section. A summary of groundwater analytical results is provided below. The groundwater data were compared to the background concentrations in MW-5 and the 2L Groundwater Standards or IMACs.

#### Metals

The results of analysis of the groundwater samples indicate that, of the compounds detected, only chromium (in one sample which was not confirmed when re-sampled), cobalt, manganese, selenium, thallium, and vanadium were detected above 2L Groundwater Standards. Arsenic and beryllium were also detected above the 2L Groundwater Standards in the unfiltered sample from MW-1 but not from the filtered sample indicating that the detection of these metals in the unfiltered samples is associated with suspended sediment and not dissolved metals. Sample turbidity has

been elevated in well MW-1 previously and was present at 475 NTU during the November 2016 sampling event.

A discussion of the data for the metals chromium, manganese, selenium, thallium, and vanadium is provided below. Compounds detected above 2L Groundwater Standards and background levels are depicted in Figure 9. There is no 2L Groundwater Standard for strontium, but it was also detected above the background level; therefore, a discussion of the strontium data is also provided below.

#### *Chromium and Hexavalent Chromium*

Chromium was detected at a concentration of 29  $\mu\text{g/L}$  in MW-6 in November 2016, which is above the 2L Groundwater Standard of 10  $\mu\text{g/L}$ . Chromium was also detected in the unfiltered sample from MW-1 at 31  $\mu\text{g/L}$ , but was not detected in the filtered sample indicating that the detection in MW-1 is associated with suspended sediment. Chromium concentrations were not detected above the 2L Groundwater Standard in other groundwater samples.

The results of the re-sampling of well MW-6 in April 2017 for chromium and hexavalent chromium analysis indicate that neither chromium nor hexavalent chromium were detected in the sample. The presence of chromium in the November 2016 sample may have been related to the recent installation of the well prior to sampling at that time.

#### *Cobalt*

Cobalt was detected at a concentration of 32  $\mu\text{g/L}$  in the MW-1 unfiltered sample, and 6.0  $\mu\text{g/L}$ , in the MW-1 filtered sample, which are above the IMAC of 1.0  $\mu\text{g/L}$ . The reduction of cobalt concentrations following filtration indicates that the concentration in the unfiltered sample from MW-1 was primarily from cobalt sorbed to suspended sediments; however, the presence of cobalt concentrations above the IMAC in MW-1 filtered indicate that cobalt was also dissolved in groundwater. Cobalt was not detected in other groundwater samples.



### *Manganese*

Manganese was detected in groundwater samples collected from site monitoring wells in concentrations ranging from 14 µg/L (MW-3A) to 8,600 µg/L (MW-1 unfiltered). The concentration of manganese in background well MW-5 was 580 µg/L which exceeds the 2L Groundwater Standard of 50 µg/L. Manganese was detected above the background level and the 2L Groundwater Standard in MW-1 (filtered and unfiltered) and MW-6 (2,500 µg/L). The similarity of manganese concentrations between MW-1 filtered (8,000 µg/L) and MW-1 unfiltered (8,600 µg/L) indicates that the majority of manganese detected was dissolved in groundwater rather than sorbed to suspended sediments. Concentrations of manganese in MW-3A, MW-4A, and MW-7 were below background levels.

### *Selenium*

Selenium was detected in concentrations ranging from 20 µg/L (MW-6) to 52 µg/L (MW-3A duplicate). Selenium was detected in background well MW-5 at a concentration of 23 µg/L. Only MW-3A indicated a concentration above the 2L Groundwater Standard of 20 µg/L and the background level. Other detected concentrations were similar to or below background levels.

### *Thallium*

Thallium was detected in MW-3A and its duplicate sample at estimated concentrations of 5.3J µg/L and 5.4J µg/L, respectively. The concentration of thallium detected in MW-3A is greater than the IMAC of 0.2 µg/L. Background well MW-5 did not indicate a concentration of thallium above the method detection limit.

### *Vanadium*

Vanadium was detected at concentrations ranging from 0.94 µg/L (MW-3A) to 92 (MW-1 unfiltered), which are above the IMAC of 0.3 µg/L. The MW-1 filtered sample had an estimated vanadium concentration of 1.2J µg/L, indicating that the presence of vanadium in MW-1 unfiltered is primarily associated with suspended sediment. Background well MW-5 indicated an estimated vanadium concentration of 0.39J µg/L. Vanadium was detected slightly above the background concentration in wells MW-1 filtered, MW-3A, MW-6, and MW-7 at concentrations up to 1.2J

µg/L, although all of the detected concentrations were estimated (i.e., J flagged). Because of the similarity of concentrations of vanadium in the site wells (ranging from 0.95J µg/L to 1.2J µg/L) and similarity of the detected concentrations to the background concentration, it is possible the vanadium concentrations are naturally occurring. Further, because wells MW-5, MW-6, and MW-7 have only been sampled once, additional samples should be collected to verify detected concentrations.

### *Strontium*

There is no 2L Groundwater Standard or IMAC for strontium; however strontium was detected above the background concentration of 190 µg/L in MW-1 (2,100 µg/L), MW-3A (2,400 µg/L), and MW-6 (690 µg/L). Please note that the EPA tapwater Regional Screening Level for strontium ranges from 1,200 µg/L (based upon non-carcinogenic hazard index of 0.1) to 12,000 µg/L (based upon non-carcinogenic hazard index of 1).

### Natural Geochemical Parameters

As part of the Phase II RI, site wells were field tested for the following geochemical parameters: dissolved oxygen (DO), ORP, specific conductance, pH, and temperature. Results of the field tests are summarized below:

- DO concentrations ranged from 0.27 mg/L (MW-5) to 6.87 mg/L (MW-1). Oxidizing conditions (DO > 1.0 mg/L) were present in monitoring wells MW-1, MW-3A, MW-4A, and MW-7 while anoxic conditions (DO < 1.0 mg/L) were present in monitoring wells MW-5 and MW-6. Anoxic conditions can result in greater solubility of metals from natural sources.
- ORP levels ranged from 12.2 mV (MW-6) to 300.5 mV (MW-4A). Generally, ORP levels were between 0 and 100 mV with the exception of MW-3A and MW-4A, which were greater than 100 mV. These results indicate that generally oxidizing conditions are present in groundwater across the site.

- Specific conductance ranged from 112  $\mu\text{S}/\text{cm}$  (MW-7) to 1231  $\mu\text{S}/\text{cm}$  (MW-3A). The specific conductance in background well MW-5 was 569  $\mu\text{S}/\text{cm}$ .
- The pH ranged from 5.28 standard units (SU) to 6.96 SU. pH levels are consistent with typical levels for groundwater in the Piedmont region.

#### **4.5 Surface Water and Sediment Investigation**

Surface water and sediment investigation activities included the collection of surface water and sediment samples from five locations in Bolin Creek in accordance with the approved Phase II RIWP. The surface water and sediment sampling locations are depicted in Figure 10. The surface water and sediment samples were co-located. The surface water samples were given an “SW” sample designation, and the sediment samples were given an “SED” sample designation. Sample locations SW-1/SED-1 and SW-2/SED-2 were collected from upgradient locations, sample locations SW-3/SED-3 and SW-4/SED-4 were collected adjacent to the site, and sample locations SW-5/SED-5 were collected near the downgradient boundary.

Surface water and sediment samples were collected on October 27, 2016. Because of laboratory error, H&H was informed by the laboratory that hexavalent chromium surface water samples (which has a short hold time) were out of hold time prior to analysis. Therefore, to ensure comparability of the metals data, all of the surface water samples were re-collected on November 3, 2016. All surface water and sediment samples were collected from downstream locations moving to upstream locations during apparent base flow conditions. Surface water samples were collected by placing the sample bottles directly into the flowing stream and allowing the bottles to fill with water. Sediment samples were collected with a decontaminated stainless steel scoop from areas of observed sediment accumulation.

Please note that the bottom of the Bolin Creek near the site is primarily comprised of large gravel and boulders with small pockets of sand-sized and finer sediment. The sediment samples were collected from these small pockets of accumulated smaller-sized sediment.

Samples were analyzed for the following:

- Surface water from each location were field analyzed for dissolved oxygen, pH, conductivity, temperature, and turbidity.
- The sediment and surface water samples from each locations were analyzed for site soil COPCs.

#### **4.6 Surface Water Sampling Results**

##### Metals

The surface water analytical results are summarized in Table 6, and the laboratory data sheets are provided in Appendix E. The results of analysis of the surface water samples were compared to site-specific background levels, the NCAC Title 15A 2B Surface Water Quality Standards (2B Standards), and, for compounds without a 2B Standard, the EPA Region 4 chronic surface water ecological screening values (ESVs).

Only concentrations of barium, manganese, and strontium were detected in surface water samples. Concentrations of barium, which ranged from 26 µg/L to 27 µg/L, and strontium, which ranged from 100 µg/L to 110 µg/L, were consistent throughout the section of Bolin Creek sampled and are therefore indicative of background conditions.

Concentrations of manganese in the downgradient samples were slightly elevated compared to background. Manganese concentrations ranged from 24 µg/L to 34 µg/L in the downgradient samples and from <10 µg/L to 11 µg/L in the background samples. The concentrations detected in the downgradient samples are less than the EPA surface water ESV of 93 µg/L.

##### Geochemical Parameters

As part of the RI, surface water sampling locations were field tested for the following natural geochemical parameters: DO; turbidity; specific conductance; pH; and temperature. Results of the field tests are summarized in Table 7 and below:

- DO concentrations ranged from 6.54 mg/L (SW-1) to 7.63 mg/L (SW-2). Oxic conditions (DO > 1.0 mg/L) were present throughout the Bolin Creek reach.
- Turbidity within the Bolin Creek samples ranged from 0.39 NTUs (SW-5) to 1.04 NTUs (SW-2), indicating that little suspended sediments were present in surface water samples.
- The specific conductance within the Bolin Creek reach ranged from 168.4  $\mu$ S/cm (SW-1) to 182.5  $\mu$ S/cm (SW-2).
- The pH measured within the Bolin Creek reach ranged from 7.12 SU (SW-1) to 7.68 SU (SW-5).

#### **4.7 Sediment Sampling Results**

The sediment analytical results are summarized in Table 8, and the laboratory data sheets are provided in Appendix E. The results of analysis of the sediment samples were compared to site-specific background sediment levels, site-specific background soil concentrations, the IHSB PSRGs, and the EPA Region 4 sediment ESVs.

The results of analysis of the sediment samples indicate that no sediment concentrations in downgradient samples were detected above the site-specific background sediment and soil concentrations. Concentrations of barium, cobalt, and manganese in downgradient sample SED-5 were detected slightly above the site-specific background sediment samples, but were not detected above site-specific background soil concentrations. The lack of elevated concentrations of these metals in SED-3 and SED-4, which are located closer to the CCP fill area than SED-5, provides further evidence that the detected concentrations of these metals in SED-5 are consistent with background levels.

## 4.8 Investigative Derived Waste

Investigative Derived Waste (IDW) generated during the RI activities, including soil cuttings, purge water, and decontamination water were containerized in appropriately labeled, 55-gallon, DOT-approved, steel drums. IDW was separated based on aqueous and solid media.

Following receipt of waste characterization data, the 55-gallon drums were transported offsite by A&D Environmental Services, Inc. to a permitted facility. A copy of the Non-Hazardous Materials Manifest is included in Appendix I.

## 4.9 QA/QC Program

Field QA/QC samples were analyzed to determine the variability introduced in sampling, handling, shipping, and analysis as well as potential sample heterogeneity. The frequency and types of QA/QC samples collected are discussed below:

### Equipment Blanks

Equipment blanks (field rinseate blanks) were used to evaluate equipment decontamination procedures. At the sample location, laboratory-supplied analyte-free water was poured over or through the clean, non-dedicated sampling equipment, collected in a sample container, and preserved as appropriate. The equipment blank samples were then submitted for analysis for the same analytes as the samples the equipment was used to collect. No compounds were detected in the equipment blank samples.

### Field Duplicate

Field duplicate samples for soil, CCP, groundwater, sediment, and surface water were collected to evaluate the precision of the field sampling procedures. The field duplicate samples were analyzed for the same parameters as the original sample. The analytical results of the original sample and the duplicate sample were used to evaluate the cumulative precision of the analytical method, sample matrix, and sample collection techniques. The results of the soil, CCP, groundwater, surface water, and sediment duplicate samples are provided in Table 2, Table 3, Table 4, Table 6,

and Table 7, respectively. The duplicate sample results indicate good analytical reproducibility of the samples.

## 5.0 Conceptual Site Model

The conceptual site model (CSM) describes the relationship of likely sources, potential release mechanisms, potential exposure routes, and potential receptors at the site and guides potential future actions at the site. Based upon the results of the RI, H&H has developed the following CSM:

- The site is comprised of two main areas: an elevated area and a lower area that are separated by a steep embankment. The elevated area is developed with a building and parking lot but was previously used as a borrow pit and subsequently backfilled with fill material. The lower area contains the Bolin Creek Trail and grades gently down to Bolin Creek. The steep embankment is heavily vegetated, steep, and difficult to traverse.
- The surrounding area is primarily zoned as residential, with the southern adjacent properties zoned as commercial.
- The “undisturbed” site geology consists of a relatively thin layer of silty clay saprolite approximately 5 to 15 ft thick that overlies a thin layer of PWR that is approximately 5 ft thick. The PWR overlies competent fractured bedrock.
- In the disturbed areas of the site, fill was placed in a historical borrow area in the 1960s and 1970s. The lower fill layer consists of construction debris such as concrete, soil, and metals debris, and the upper fill layer consists of CCP. The CCP layer is less than 1 ft thick to greater than 20 ft thick with an average thickness of approximately 8 ft. In the elevated portions of the site, the CCP is capped with clayey silt that ranges in thickness from less than 1 ft to approximately 10 ft thick, with most areas having greater than 2 ft of soil cover.
- Based upon an estimated area where CCP was placed of approximately 4.5 acres and an average thickness of 8 ft, the amount of CCP placed at the site appears to be approximately 60,000 cubic yards.



- Depth to bedrock at the site generally ranges from approximately 10 to 15 ft bgs in the northern portion of the site near Bolinwood Rd. and in the southern portion of the site near Bolin Creek. Depth to bedrock in the central portion of the site where fill material has been placed is approximately 45 ft to 50 ft bgs.
- CCP is exposed at the surface along the eastern and central portions of the embankment that separates the elevated and lower portions of the site. CCP in the western portion of the embankment is covered but with soil that is less than 2 ft thick. Erosion of CCP along some portions of the embankment has resulted in deposition of a layer of CCP generally less than 1 to 1.5 ft thick at the ground surface in some of the lower portions of the site north and south of the Bolin Creek Trail. CCP was not observed by H&H south of Bolin Creek Trail as part of the Phase II RI activities. However, DEQ previously observed erosional CCP south of the Bolin Creek Trail that appears to have migrated under the Bolin Creek Trail bridge.
- Initial groundwater was encountered in the unconsolidated materials except at MW-5 (northwest of the site) and MW-7 (in the eastern portion of the site) where initial groundwater was encountered in bedrock. Initial groundwater is present at depths of approximately 5 ft bgs along the Bolin Creek Greenway to approximately 35 ft bgs in the central portion of the site. Where present above bedrock, initial groundwater appears to be present primarily in the PWR and fill/debris material. It does not appear that CCP materials were placed below the water table.
- Shallow groundwater flow is generally to the south/southeast at the site, and groundwater flow velocities are in the range of approximately 20 ft per year. Metals detected in groundwater will flow at a rate less than the groundwater velocity due to adsorption to aquifer matrix and geochemical interactions.
- Results of analysis of samples of CCP indicate that the following compounds have been detected above background and PSRGs in CCP: arsenic, barium, hexavalent chromium, manganese, mercury, and selenium. The most prevalent compound detected above background and PSRGs in CCP is arsenic. Results of leach testing of the CCP indicates

that antimony, arsenic, barium, cobalt, lead, selenium, and vanadium have the potential to leach into groundwater above background concentrations and the 2L Groundwater Standards or IMACs. Strontium also has the potential to leach above background levels but does not have a 2L Groundwater Standard or IMAC.

- Results of analysis of shallow soil samples collected north of and near Bolin Creek Trail and the cover soil from the elevated portions of the site indicate that the primary compound detected above background and PSRGs is arsenic with less frequent detections of manganese and selenium. Near Bolin Creek Trail, the presence of compounds above PSRGs is associated with erosion of CCP from the embankment and resultant deposition north and south of the trail. In the elevated portions of the site, the presence of compounds above background and PSRGs appears to be associated with minor intermixed CCP which was likely entrained in cover soil during placement. Hexavalent chromium is not a compound of concern in shallow soil at the site.
- The primary route of exposure for shallow soil and CCP is through potential direct contact during public visits to Bolin Creek Trail, worker and public visits to the site building, and potential construction work. Previous risk evaluation performed by DEQ indicated that soil along the Bolin Creek Trail did not pose a significant risk to visitors or construction workers. Although a formal risk evaluation has not been performed for the elevated portions of the site, given the commercial use of the area, the fact that much of the area is paved, and that only lower levels of metals have been detected in cover soil, it is unlikely that shallow soil in the elevated portions of the site poses a significant risk. Direct contact to the exposed areas of CCP is possible but unlikely given the steep embankment and overgrown nature where the CCP is exposed. In addition, a fence has been placed between the Bolin Creek Trail and the areas of exposed CCP to further minimize the potential for direct contact.
- The results of the Phase II RI groundwater analyses indicate that concentrations of cobalt, manganese, chromium (which was not confirmed in re-sampling of the well in which it was detected), cobalt, selenium, thallium, and vanadium exceed background and 2L

Groundwater Standards or IMACs and background. Vanadium concentrations were only slightly elevated and may be naturally occurring. The primary compound detected above 2L Groundwater Standards is manganese with relatively lower concentrations of the other metals. Strontium has also been detected above background in groundwater but does not have a 2L Groundwater Standard or IMAC. The detected concentrations are within the range of EPA tapwater Regional Screening Levels. Geochemical conditions indicate generally normal groundwater pH range and oxic groundwater conditions which generally limit the mobility of metals in groundwater.

- There are no groundwater users (such as water supply wells) in the area of the site. The primary exposure route for impacted groundwater is through discharge to Bolin Creek. Results of surface water and sediment sampling indicate that there is no significant impact to Bolin Creek from either groundwater discharge or potential surface water discharge.

Based upon the results of the RI, H&H recommends that a Remedial Action Plan be prepared to address areas of exposed CCP, areas of erosional CCP, and areas of thinner cover soil along the embankment to minimize the potential for direct contact with CCP, infiltration of rainwater through the CCP, and erosion of CCP.

## 6.0 References

- Brown, P.M. and others. 1985. Geological Map of North Carolina; North Carolina Department of Natural Resources and Community Development.
- Cunningham, W.L. and C.C. Daniel, III. 2001. Investigation of Ground-Water Availability and Quality in Orange County, North Carolina. US Geological Survey. Raleigh, NC. Water-Resources Investigations Report 00-4286.
- DEQ-DWQ. 2013. North Carolina Administrative Code Title 15A Subchapter 2L Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina (2L Standards). April 2013.
- DEQ Division of Waste Management Superfund Section Inactive Hazardous Sites Branch. October 2015. Registered Environmental Consultant Program Implementation Guidance.
- Dragun, J. and K. Chekiri. 2005. Elements in North American Soils, Second Edition. Amhurst Scientific Publishers. 274pp.
- USEPA. August 2015. Region 4 Ecological Risk Assessment Supplemental Guidance Interim Draft. Scientific Support Section, Superfund Division.

**Table 1 (page 1 of 1)**  
**Monitoring Well Construction Details and Groundwater Elevation Data**  
**828 Martin Luther King, Jr. Blvd.**  
**Chapel Hill, North Carolina**  
**H&H Job No. TCH-002**

Well ID	Permanent or Temporary	Date Installed	Date Abandoned	Drilling Method	Well Description	Screen Slot Size (in)	Total Depth (ft bls)	Screened Interval	TOC Elevation (ft)	November 9, 2016	
										Depth to Water (ft bls)	Groundwater Elevation (ft)
MW-1	Permanent	4/29/2013		DPT	2" PVC	0.01	40	30-40	346.12	35.48	310.64
MW-2	Temporary	6/20/2013	6/20/2013	HA	Unknown	Unknown	8	Unknown	--	--	--
MW-3	Permanent	1/27/2014	1/7/2015	Auger	2" PVC	0.01	11	6-11	--	--	--
MW-4	Permanent	1/27/2014	1/6/2015	Auger	2" PVC	0.01	9.2	4.2-9.2	--	--	--
MW-3A	Permanent	5/12/2015		Air Rotary	2" PVC	0.01	16	1-16	298.10	5.91	292.19
MW-4A	Permanent	5/14/2015		Air Rotary	2" PVC	0.01	19	4-19	298.00	6.72	291.28
MW-5	Permanent	11/2/2016		Air Rotary	2" PVC	0.01	27.5	27.5 - 17.5	369.33	9.27	360.06
MW-6	Permanent	11/2/2016		HSA	2" PVC	0.01	17.5	17.5 - 7.5	315.39	9.92	305.47
MW-7	Permanent	11/2/2016		Air Rotary	2" PVC	0.01	69.5	69.5 - 59.5	339.54	46.97	292.57

Notes:

MW-1, MW-3A, MW-4A, MW-5, MW-6, and MW-7 were surveyed by CE Group on December 8, 2016

ft = feet

bls = below land surface

DPT = Direct Push Technology

HA = Hand Auger

HSA = Hollow Stem Auger

TOC = Top of Casing



**Table 3 (page 1 of 1)  
Summary of SPLP Analytical Data  
828 Martin Luther King, Jr. Blvd.  
Chapel Hill, North Carolina  
H&H Job No. TCH-002**

Sample ID	Sample Date	Material Sampled (Soil or CCP)	Sample Depth (ft)	antimony <sup>2</sup>	arsenic <sup>2</sup>	barium	beryllium <sup>2</sup>	cadmium <sup>2</sup>	total chromium <sup>2</sup>	cobalt <sup>2</sup>	copper	lead <sup>2</sup>	manganese	mercury	nickel	selenium	strontium	thallium <sup>2</sup>	vanadium <sup>2</sup>	zinc
HH-1	11/3/2016	CCP	7-8	<2.5	<12	550	<0.5	<0.65	<3.8	<0.55	<50	<8.0	43 J	<0.2	<50	<b>130</b>	2,500	<12	<0.75	310
HH-2	11/3/2016	CCP	2-3	<b>3.9 J</b>	<12	<b>830</b>	<0.5	<0.65	<3.8	<0.55	<50	<8.0	14 J	<0.2	<50	<b>35 J</b>	230	<12	<b>16 J</b>	400
	11/3/2016 <sup>1</sup>	CCP	2-3	<2.5	<12	<b>1,300</b>	<0.5	<0.65	<3.8	<0.55	<50	<8.0	69	<0.2	<50	<b>35 J</b>	170	<12	<b>2.6 J</b>	370
HH-3	11/3/2016	CCP	2-3	<2.5	<b>18 J</b>	<b>740</b>	<0.5	<0.65	<3.8	<b>4.6 J</b>	11 J	<b>45</b>	290	<0.2	<50	<b>28 J</b>	100	<12	<b>23 J</b>	65 J
HH-4	11/3/2016	CCP	4-5	<b>5.1 J</b>	<12	640	<0.5	<0.65	<3.8	<0.55	<50	11 J	13 J	<0.2	<50	<b>31 J</b>	450	<12	<b>5.1 J</b>	<150
HH-5	11/3/2016	CCP	3-4	<b>3.3 J</b>	<12	<b>1,900</b>	<0.5	<0.65	<3.8	<0.55	<50	<8.0	21 J	<0.2	<50	<b>40 J</b>	220	<12	<b>9.0 J</b>	<150
Site-Specific Background Groundwater Concentration				<0.5	<10	51	<2.0	<1.0	<5.0	0.27J	<10	<5.0	580	<0.2	<10	23.0	190	<2.5	0.39J	<30
NC 2L Standard or IMAC				1.0*	10	700	4.0*	2.0	10	1.0*	1,000	15	50	1.0	100	20	NS	0.2*	0.3*	1,000

**Notes:**

Yellow highlighting indicates samples collected as part of Phase II RI

All results in µg/L

<sup>1</sup> denotes duplicate sample taken

<sup>2</sup> denotes metals with non-detection values reported to the method detection limit instead of laboratory reporting limit

**Bold** denotes above 2L Standard or IMAC and background concentration

NC 2L standards from Title 15A NCAC 2L .0202

IMAC = Interim Maximum Allowable Concentration

NS = Not Specified

J = Detected below above method detection limit but below laboratory reporting limit; therefore, result is an estimated concentration

**Table 4 (page 1 of 1)**  
**Summary of Groundwater Analytical Data**  
**828 Martin Luther King, Jr. Blvd.**  
**Chapel Hill, North Carolina**  
**H&H Job No. TCH-002**

Monitoring Well ID	Sample Date	turbidity	aluminum	antimony*	arsenic	barium	beryllium	boron	cadmium	calcium	hexavalent chromium	trivalent chromium	Total chromium	cobalt*	copper	iron	lead	magnesium	manganese	mercury	molybdenum	nickel	potassium	selenium	silver	sodium	strontium	thallium*	vanadium*	zinc	
<b>2L Standard or IMAC</b>		NS	NS	1	10	700	4	700	2	NS	NS	NS	10	1	1,000	300	15	NS	50	1	NS	100	NS	20	20	NS	NS	NS	0.2	0.3	1,000
<b>MW-5 (Background)</b>	11/9/2016	3.8	NA	<0.5	<10	51	<2.0	NA	<1.0	NA	NA	NA	<5.0	0.27 J	<10	NA	<5.0	NA	580	<0.2	NA	<10	NA	23	NA	NA	190	<2.5	0.39 J	<30	
	4/3/2017	8.2	NA	NA	NA	NA	NA	NA	NA	NA	<4.8 U	NA	<10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>MW-1</b>	5/3/2013	NA	5,600	<b>5.4</b>	<b>85</b>	<b>1,100</b>	1.6	NA	0.17	110,000	NA	NA	<b>15</b>	<b>15</b>	25	<b>6,500</b>	5.8	25,000	<b>7,600</b>	ND	NA	12	7,600	2.5	ND	34,000	NA	<b>1.0</b>	<b>38</b>	52	
	2/18/2016	NS	NA	ND	<b>67</b>	<b>1,300</b>	<b>11.0</b>	ND	ND	NA	NA	NA	<b>100</b>	<b>78</b>	170	NA	<b>36</b>	NA	<b>9,600</b>	0.26	ND	58	NA	ND	ND	NA	2,900	ND	<b>260</b>	330	
	2/18/2016 <sup>4</sup>	NS	NA	ND	<b>52</b>	<b>1,100</b>	<b>8.8</b>	ND	ND	NA	NA	NA	<b>86</b>	<b>61</b>	130	NA	<b>29</b>	NA	<b>9,000</b>	0.21	ND	46	NA	ND	ND	NA	2,700	ND	<b>200</b>	260	
	11/10/2016	475.0	NA	<0.5	<b>19</b>	470	<b>4.1</b>	NA	0.15 J	NA	NA	NA	<b>31</b>	<b>32</b>	57	NA	10	NA	<b>8,600</b>	<0.2	NA	21	NA	23	NA	NA	2,200	<2.5	<b>92</b>	99	
	11/10/2016 <sup>4</sup>	NA	NA	<0.5	<10	160	0.53 J	NA	<1.0	NA	NA	NA	<5.0	<b>6.0</b>	<10	NA	<5.0	NA	<b>8,000</b>	<0.2	NA	2.3 J	NA	<20	NA	NA	2,100	<2.5	<b>1.2 J</b>	<30	
<b>MW-2</b>	6/20/2013 <sup>1</sup>	NA	16,000	0.6	8.3	<b>1,100</b>	<b>5.5</b>	NA	0.93	260,000	NA	NA	8.4	<b>23</b>	<b>1,200</b>	<b>13,000</b>	<b>27</b>	47,000	<b>1,200</b>	0.18	NA	70	42,000	18	0.27	52,000	NA	<b>0.48</b>	<b>71</b>	<b>2,200</b>	
<b>MW-3</b>	2/5/2014	NA	NA	NA	ND	160	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	
	2/5/2014 <sup>2</sup>	NA	NA	NA	ND	250	NA	NA	ND	NA	ND	NA	<b>24</b>	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	
	8/15/2014 <sup>3</sup>	1,500	NA	NA	<b>51</b>	<b>830</b>	NA	NA	ND	NA	30	NA	<b>78</b>	NA	NA	NA	<b>30</b>	NA	NA	ND	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	
	8/20/2014 <sup>4</sup>	13.0	NA	NA	ND	220	NA	NA	ND	NA	23	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	
<b>MW-3A</b>	7/21/2015	5.7	NA	NA	ND	67	NA	520	ND	NA	ND	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	
	2/17/2016	1.3	NA	ND	ND	89	ND	ND	ND	NA	NA	NA	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND	NA	23	ND	NA	2,400	ND	ND	ND	
	2/17/2016 <sup>2</sup>	1.3	NA	ND	ND	80	ND	ND	ND	NA	NA	NA	ND	ND	ND	NA	ND	NA	23	ND	ND	ND	NA	26	ND	NA	2,100	ND	ND	ND	
	11/9/2016	1.2	NA	<0.5	<10	53	<2.0	NA	<1.0	NA	NA	NA	<5.0	<0.11	<10	NA	<5.0	NA	14	<0.2	NA	<10	NA	<b>50</b>	NA	NA	2,400	<b>5.4 J</b>	<b>0.94 J</b>	12 J	
	11/9/2016 <sup>2</sup>	1.2	NA	<0.5	<10	53	<2.0	NA	<1.0	NA	NA	NA	<5.0	<0.11	<10	NA	<5.0	NA	15	<0.2	NA	<10	NA	<b>52</b>	NA	NA	2,400	<b>5.3 J</b>	<b>0.95 J</b>	<30	
<b>MW-4</b>	2/5/2014	NA	NA	NA	<b>140</b>	<b>6,500</b>	NA	NA	1.7	NA	ND	NA	<b>930</b>	NA	NA	NA	<b>250</b>	NA	NA	<b>1.4</b>	NA	NA	NA	<b>99</b>	ND	NA	NA	NA	NA	NA	
	8/20/2014 <sup>4,5</sup>	<10	NA	NA	ND	75	NA	NA	ND	NA	ND	NA	ND	NA	NA	NA	ND	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	
<b>MW-4A</b>	7/21/2015	24.7	NA	NA	ND	64	NA	ND	ND	NA	ND	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	
	7/21/2015 <sup>4</sup>	24.7	NA	NA	ND	61	NA	ND	ND	NA	ND	NA	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	
	2/18/2016	189.0	NA	ND	ND	26	ND	ND	ND	NA	NA	NA	ND	ND	ND	NA	7.8	NA	49	ND	ND	ND	NA	ND	ND	NA	110	ND	ND	34	
	2/18/2016 <sup>4</sup>	189.0	NA	ND	ND	33	ND	ND	ND	NA	NA	NA	ND	ND	ND	NA	8.4	NA	41	ND	ND	ND	NA	ND	ND	NA	78	ND	ND	48	
	11/9/2016	4.8	NA	<0.5	<10	36	<2.0	NA	<1.0	NA	NA	NA	1.2 J	<0.11	<10	NA	<5.0	NA	140	<0.2	NA	<10	NA	7.2 J	NA	NA	170	<2.5	<0.15	17 J	
<b>MW-6</b>	11/9/2016	2.5	NA	<0.5	<10	340	<2.0	NA	<1.0	NA	NA	NA	<b>29</b>	<0.11	1.9 J	NA	<5.0	NA	<b>2,500</b>	<0.2	NA	22	NA	20	NA	NA	690	<2.5	<b>1.2 J</b>	<30	
	4/3/2017	7.6	NA	NA	NA	NA	NA	NA	NA	NA	<4.8	NA	<10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
<b>MW-7</b>	11/14/2016	8.9	NA	<0.5	<10	10	<2.0	NA	<1.0	NA	NA	NA	1.3 J	0.17 J	1.6 J	NA	<5.0	NA	140	<0.2	NA	1.6 J	NA	<20	NA	NA	42	<2.5	<b>1.1 J</b>	26 J	

**Notes:**

Yellow highlighting indicates samples collected as part of Phase II RI

All results in ug/l, except turbidity which is NTUs

2L standards from Title 15A NCAC 2L .0202

IMAC = Interim Maximum Allowable Concentration

**Bold** denotes above the 2L standard or IMAC and background levels

ND - Not Detected; NA - Not Analyzed; NS - Not Specified

J - Detected above method detection limit but below laboratory reporting limit; therefore, result is an estimated concentration

U - Below method detection limit

\*reported to the method detection limit instead of laboratory reporting limit

<sup>1</sup> Denotes sample labeled as "Well #1" in the lab report associated with the Limited Phase II ESA prepared by Falcon

<sup>2</sup> Denotes duplicate sample taken.

<sup>3</sup> Denotes sample labeled as "Well 1" in the lab report associated with the October 3, 2014 letter prepared by Falcon

<sup>4</sup> Denotes filtered samples

<sup>5</sup> An unfiltered sample was also collected from MW-4 on August 20, 2014 and the results were reported in mg/kg-wet, presumably because of the high sediment load. These data are not included in this table.

**Analytical Methods:**

Metals by EPA Method 6010C & 6020A

Hexavalent Chromium by EPA Method 7196A / SM3500

Mercury by 7470A/245.1



**Table 5 (page 1 of 1)**  
**Summary of Groundwater Geochemical Parameters**  
**828 Martin Luther King, Jr. Blvd.**  
**Chapel Hill, North Carolina**  
**H&H Job No. TCH-002**

Monitoring Well ID	Sample Date	DO (mg/L)	Temperature (°C)	Conductivity (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
<b>MW-5 (background)</b>	11/9/2016	0.27	20.30	569	6.96	39.2	3.76
	4/3/2017	0.21	17.80	750	6.98	-280.4	8.19
<b>MW-1</b>	5/3/2013	NS	NS	NS	NS	NS	NA
	2/18/2016	NS	NS	NS	NS	NS	NS
	11/10/2016	6.87	17.13	767	6.89	79.0	475
<b>MW-2</b>	6/20/2013	NS	NS	NS	NS	NS	NA
<b>MW-3</b>	2/5/2014	NS	NS	NS	NS	NS	NA
	8/15/2014	NS	NS	NS	NS	NS	1,500
	8/20/2014	NS	NS	NS	NS	NS	13
<b>MW-3A</b>	7/21/2015	NA	15.80	2321	6.50	NA	5.7
	2/17/2016	NS	NS	NS	NS	NS	1.3
	11/9/2016	2.51	18.14	1231	6.63	288.7	1.24
<b>MW-4</b>	2/5/2014	NS	NS	NS	NS	NS	NA
	8/20/2014	NS	NS	NS	NS	NS	<10
<b>MW-4A</b>	7/21/2015	NA	15.64	831	6.25	NA	24.7
	2/18/2016	NS	NS	NS	NS	NS	189
	11/9/2016	1.41	16.91	241	5.43	300.5	4.83
<b>MW-6</b>	11/9/2016	0.61	20.51	607	6.19	12.2	2.54
	4/3/2017	0.23	16.00	452	6.10	-270.0	7.64
<b>MW-7</b>	11/14/2016	1.79	15.66	112	5.28	61.2	8.92

**Notes**

Yellow highlighting indicates samples collected as part of Phase II RI  
 NA - Not Analyzed; NS - Not Specified

**Table 6 (page 1 of 1)  
Summary of Surface Water Analytical Data  
828 Martin Luther King, Jr. Blvd.  
Chapel Hill, North Carolina  
H&H Job No. TCH-002**

Surface Water Sampling Point ID	Sample Date	aluminum	antimony	arsenic	barium	beryllium	cadmium	calcium <sup>2</sup>	hexavalent chromium	trivalent chromium	total chromium	cobalt	copper	iron	lead	magnesium	manganese	mercury	nickel	potassium	selenium	strontium	silver	sodium	thallium	vanadium	zinc	
<b>2B Standard<sup>1</sup></b>		NS	NS	10	1,000	6.5	0.15	100,000	11	24	NS	NS	2.7	NS	0.54	NS	NS	0.012	16	NS	5	14,000	0.06	NS	NS	NS	36	
<b>EPA Region 4 Surface Water Screening Value (Chronic)<sup>3</sup></b>		87	190	150	220	11	0.25	116,000	11	74	NS	19	9	1,000	2.5	82,000	93	0.77	52	53,000	5	5,300	0.06	680,000	6	27	120	
<b>BC-1 (Upstream)</b>	2/5/2014	NA	NA	ND	24	NA	ND	NA	ND	ND	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
<b>SW-1 (Upstream)</b>	11/3/2016	NA	<5.0	<10	27	<2.0	<1.0	NA	<0.74U	NA	<5.0	<5.0	<10	<0.2	<5.0	NA	<10	<0.2	<10	NA	<20	100	NA	NA	<10	<5.0	<30	
<b>SW-2 (Upstream)</b>	11/3/2016	NA	<5.0	<10	27	<2.0	<1.0	NA	<0.74U	NA	<5.0	<5.0	<10	<0.2	<5.0	NA	11	<0.2	<10	NA	<20	100	NA	NA	<10	<5.0	<30	
<b>BC-2 (Bolin Creek at Site)</b>	6/20/2013	290	ND	0.9	27	ND	ND	16,000	NA	ND	ND	0.37	2.6	860	0.50	5,300	100	ND	1.2	2,300	ND	NA	ND	7,800	ND	ND	45	
	2/5/2014	NA	NA	ND	24	NA	ND	NA	ND	ND	ND	NA	NA	NA	ND	NA	NA	ND	NA	NA	ND	NA	ND	NA	NA	NA	NA	
<b>SW-3 (Adjacent)</b>	11/3/2016	NA	<5.0	<10	27	<2.0	<1.0	NA	<0.74U	NA	<5.0	<5.0	<10	<0.2	<5.0	NA	34	<0.2	<10	NA	<20	100	NA	NA	<10	<5.0	<30	
	11/3/2016 <sup>4</sup>	NA	<5.0	<10	27	<2.0	<1.0	NA	<0.74U	NA	<5.0	<5.0	<10	<0.2	<5.0	NA	33	<0.2	<10	NA	<20	110	NA	NA	<10	<5.0	<30	
<b>SW-4 (Adjacent)</b>	11/3/2016	NA	<5.0	<10	27	<2.0	<1.0	NA	<0.74U	NA	<5.0	<5.0	<10	<0.2	<5.0	NA	25	<0.2	<10	NA	<20	110	NA	NA	<10	<5.0	<30	
<b>SW-5 (Downstream)</b>	11/3/2016	NA	<5.0	<10	26	<2.0	<1.0	NA	<0.74U	NA	<5.0	<5.0	<10	<0.2	<5.0	NA	24	<0.2	<10	NA	<20	100	NA	NA	<10	<5.0	<30	

**Notes:**

Yellow highlighting indicates samples collected as part of Phase II RI

All results in ug/l

<sup>1</sup> NC 2B Standard - North Carolina Surface Water Quality Standard adopted per 15A NCAC 2B Section .0100. Values are the lowest of the Freshwater, Water Supply, and Human Health values because Bolin Creek is a WS V classification surface water

<sup>2</sup> the 2B value for calcium is based on total hardness, with a limit of 100,000 ug/L as calcium carbonate

<sup>3</sup> EPA Region 4 Surface Water Screening Values from EPA (2015)

<sup>4</sup> denotes duplicate sample taken

**Bold** denotes above the 2B standard and upstream concentrations

ND - Not Detected; NA - Not Analyzed; NS - Not Specified

**Analytical Methods:**

Metals by 6010C, 6020A

Mercury by 7470A

**Table 7 (page 1 of 1)**  
**Summary of Surface Water Geochemical Parameters**  
**828 Martin Luther King, Jr. Blvd.**  
**Chapel Hill, North Carolina**  
**H&H Job No. TCH-002**

Sample ID	Sample Date	DO (mg/L)	Temperature (°C)	Conductivity (µS/cm)	pH (SU)	Turbidity (NTU)
SW-1 (Upstream)	11/3/2016	6.54	17.7	168.4	7.12	0.76
SW-2 (Upstream)	11/3/2016	7.63	17.3	182.5	7.58	1.04
SW-3 (Adjacent)	11/3/2016	7.19	17.9	178.7	7.50	0.48
SW-4 (Adjacent)	11/3/2016	6.89	17.4	178.0	7.64	0.54
SW-5 (Downstream)	11/3/2016	6.56	17.7	182.4	7.68	0.39

**Notes**

Yellow highlighting indicates samples collected as part of Phase II RI

**Table 8 (page 1 of 1)**  
**Summary of Stream Sediment Analytical Data**  
**828 Martin Luther King, Jr. Blvd.**  
**Chapel Hill, North Carolina**  
**H&H Job No. TCH-002**

Surface Water Sampling Point ID	Sample Date	antimony	arsenic	barium	beryllium	cadmium	hexavalent chromium	trivalent chromium	total chromium	cobalt	copper	lead	manganese	mercury	nickel	selenium	strontium	thallium	vanadium	zinc
SED-1 (Upstream)	10/27/2016	<0.32	1.2	12	<0.32	<0.32	0.24 J	22.76	23	3.9	4.2	4.0	180	<0.026	3.8	<0.64	6.9	<0.64	19	19
SED-2 (Upstream)	10/27/2016	<0.33	2.1	20	0.48	<0.33	<0.40	36	36	7.8	8.0	7.1	330	<0.025	7.2	<0.65	11	<0.65	37	34
	10/27/2016 <sup>1</sup>	<0.32	2.5	17	0.45	<0.32	<0.40	49	49	6.5	9.1	6.7	290	<0.026	6.0	<0.63	12	<0.63	35	31
SED-3 (Adjacent)	10/27/2016	<0.32	1.6	21	0.37	<0.32	<0.39	30	30	6.2	7.4	6.9	220	<0.026	6.8	<0.64	12	<0.64	29	35
SED-4 (Adjacent)	10/27/2016	<0.33	1.2	8.4	<0.33	<0.33	<0.38	34	34	3.5	5.2	3.5	130	<0.027	5.0	<0.65	6.4	<0.65	16	20
SED-5 (Downstream)	10/27/2016	<0.31	1.4	44	0.41	<0.31	<0.37	51	51	9.5	8.6	22	860	<0.025	5.3	<0.62	13	<0.62	35	32
<b>Site Specific Sediment Background Range</b>		<0.32-<0.33	1.2-2.5	12-20	<0.32-0.48	<0.32-<0.33	0.24J-<0.40	22.76-49	23-49	3.9-7.8	4.2-9.1	4-7.1	180-330	<0.25-<0.26	3.8-7.2	<0.63-<0.65	6.9-12	<0.63-<0.65	19-37	19-34
<b>Site Specific Soil Background Range</b>		<0.27-<0.33	1.4-2.3	36-76	0.39-0.99	<0.27-0.38	<0.12-0.88	16.16-38.19	16-39	6.3-27	15-49	21-43	310-940	<0.020-0.28	4.9-20	<0.59-1.7	14-46	<0.53-2.3	34-190	40-230
<b>95% UCL of Site Specific Soil Background Range</b>		--	2.1	58	0.64	--	0.73		25	15	27	30	606	0.168	10	1.4	29	--	84	147
<b>PSRG - Protection of Groundwater</b>		0.90	5.8	580	63	3.0	3.8	360,000	NS	0.90	700	270	65	1.0	130	2.1	NS	0.28	6.0	1,200
<b>PSRG - Residential</b>		6.2	0.68	3,000	32	14.2	0.30	24,000	NS	4.6	620	400	360	2.2	300	78	9,400	0.156	78	4,600
<b>PSRG - Industrial</b>		94	3.0	44,000	460	196	6.3	100,000	NS	70	9,400	800	5,200	3.13	4,400	1,160	100,000	2.4	1,160	70,000
<b>EPA Region 4 Sediment Screening Value<sup>2</sup></b>		3.0*	42	20	NS	1	NS	NS	43.4	50	31.6	36	460	0.18	22.7	11	NS	NS	NS	121

**Notes**

Yellow highlighting indicates samples collected as part of Phase II RI

All results in mg/kg

<sup>1</sup> denotes duplicate sample taken

<sup>2</sup> EPA Region 4 Ecological Screening Value from EPA (2015)

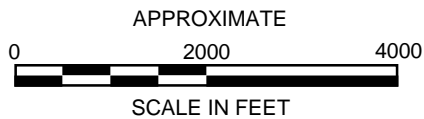
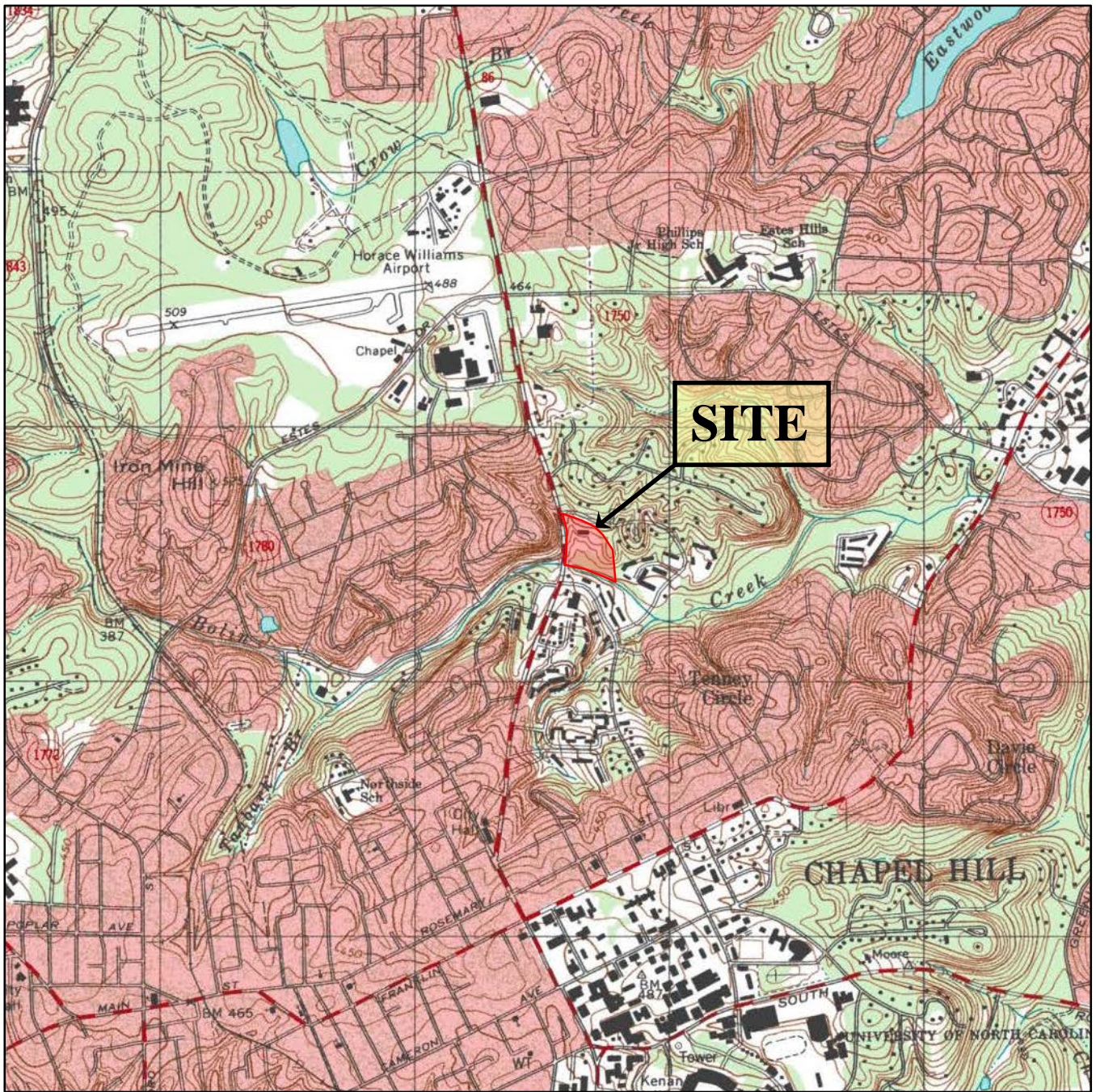
PSRG = North Carolina Inactive Hazardous Site Branch Preliminary Soil Remediation Goals

ND - Not Detected; NA - Not Analyzed; NS - Not Specified

**Analytical Methods:**


Metals by EPA Method 6010C, 6020A

Mercury by EPA Method 7470A



U.S.G.S. QUADRANGLE MAP  
**CHAPEL HILL, NORTH CAROLINA, 2002**

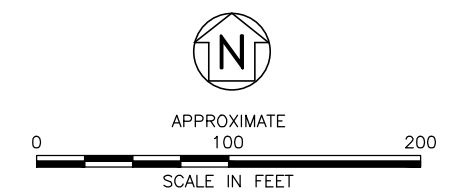
QUADRANGLE  
7.5 MINUTE SERIES (TOPOGRAPHIC)


TITLE	<b>SITE LOCATION MAP</b>	
PROJECT	TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
 2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007 (p) 704-586-0373 (f)		
DATE:	8-23-17	REVISION NO: 0
JOB NO:	TCH-002	FIGURE: 1

\\hh501\hart\hickman\local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II RI Work\Figures\Figures.dwg, FIG 2, 8/23/2017 2:34:42 PM, zbarlow



- LEGEND**
- SITE PROPERTY BOUNDARY
  - - - BOLIN CREEK
  - 101— TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)



TITLE		SITE PLAN	
PROJECT		TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
		2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology	
DATE: 8-23-17	REVISION NO. 0		
JOB NO. TCH-002	FIGURE NO. 2		

\\hh501\hart\hickman\local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II R\Work\Figures\Figures.dwg, FIG 3, 8/23/2017 2:34:58 PM, zbarlow

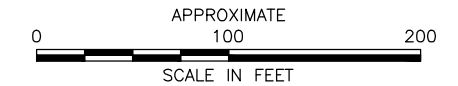


**LEGEND**

- SITE PROPERTY BOUNDARY
- - - BOLIN CREEK
- 101— TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)
- ◆ MONITORING WELL LOCATION (FALCON ENGINEERING)
- ◆ TEMPORARY MONITORING WELL LOCATION (FALCON ENGINEERING)
- SOIL BORING LOCATION (FALCON ENGINEERING)
- ▲ SURFACE WATER SAMPLE LOCATION (FALCON ENGINEERING)
- ◆ ABANDONED MONITORING WELL LOCATION
- ◆ MONITORING WELL LOCATION (H&H)
- SOIL BORING LOCATION (H&H)
- BACKGROUND SOIL BORING LOCATION (H&H)
- ▲ SURFACE WATER SAMPLE LOCATION (H&H)
- COVER EVALUATION BORING LOCATION

**NOTE:**

EXISTING MONITORING WELLS & OCTOBER/ NOVEMBER 2016 SAMPLING LOCATIONS SURVEYED BY CE GROUP ON DECEMBER 8, 9, & 20, 2016.



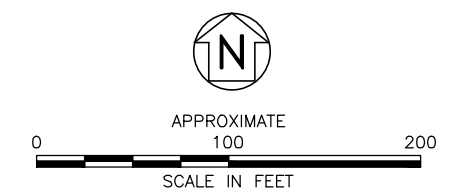
<b>TITLE</b>	
SAMPLE LOCATION MAP	
<b>PROJECT</b>	
TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
<b>SMARTER ENVIRONMENTAL SOLUTIONS</b>	
<span style="font-size: small; vertical-align: middle;">2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology</span>	
DATE: 8-23-17	REVISION NO. 0
JOB NO. TCH-002	FIGURE NO. 3

\\h601\hartickman\local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II R\Work\Figures\Figures.dwg, FIG 4, 8/23/2017 2:35:11 PM, zbarlow



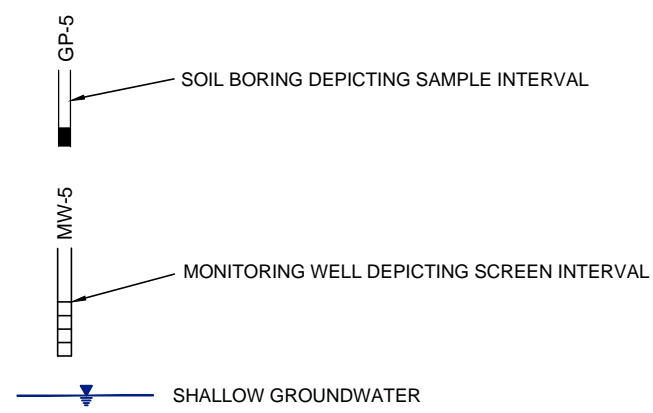
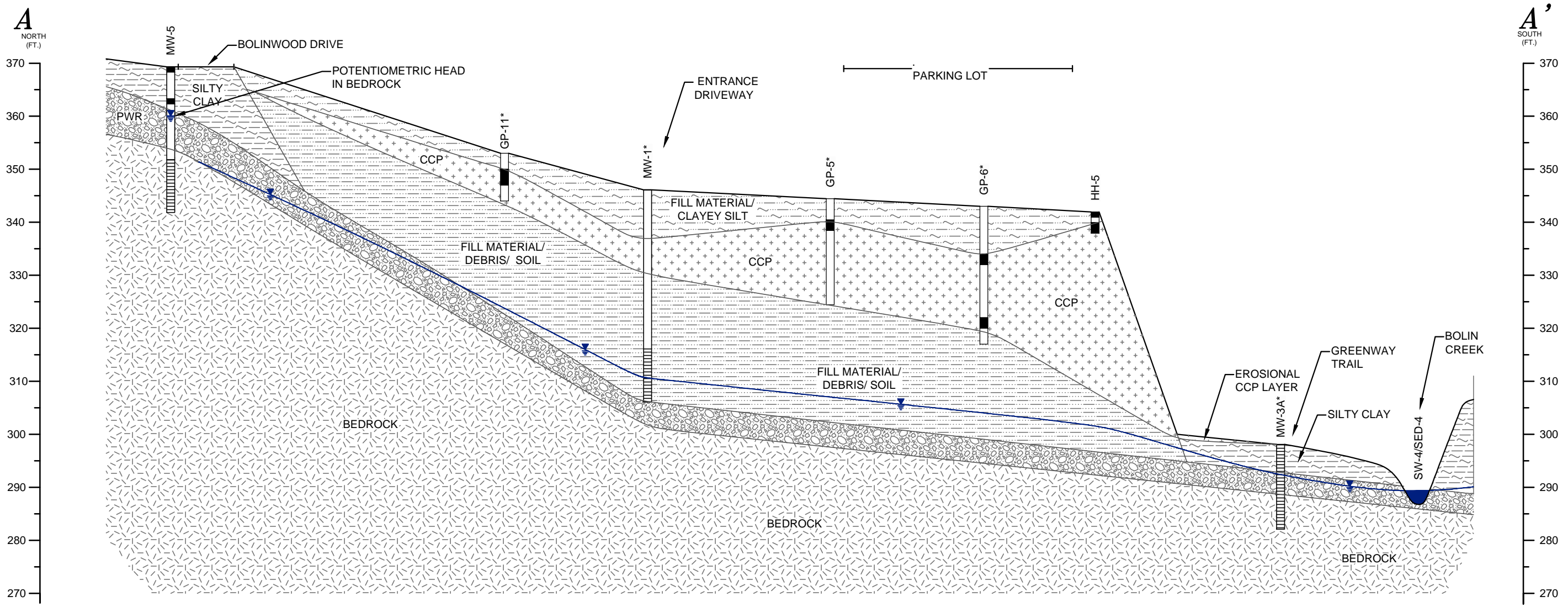
- LEGEND**
- SITE PROPERTY BOUNDARY
  - - - BOLIN CREEK
  - 101— TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)
  - ◆ MONITORING WELL LOCATION (FALCON ENGINEERING)
  - ◆ TEMPORARY MONITORING WELL LOCATION (FALCON ENGINEERING)
  - SOIL BORING LOCATION (FALCON ENGINEERING)
  - ▲ SURFACE WATER SAMPLE LOCATION (FALCON ENGINEERING)
  - ◆ ABANDONED MONITORING WELL LOCATION
  - ◆ MONITORING WELL LOCATION (H&H)
  - SOIL BORING LOCATION (H&H)
  - BACKGROUND SOIL BORING LOCATION (H&H)
  - ▲ SURFACE WATER SAMPLE LOCATION (H&H)
  - A-A CROSS-SECTION TRANSECT LINE

**NOTE:**  
 EXISTING MONITORING WELLS & OCTOBER/ NOVEMBER 2016 SAMPLING LOCATIONS SURVEYED BY CE GROUP ON DECEMBER 8, 9, & 20, 2016.



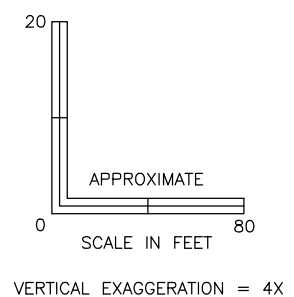
<b>CROSS-SECTION TRANSECT LOCATION MAP</b>	
<b>TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA</b>	
<b>SMARTER ENVIRONMENTAL SOLUTIONS</b>	2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology
DATE: 8-23-17	REVISION NO. 0
JOB NO. TCH-002	FIGURE NO. 4





**LEGEND**

	SILTY CLAY
	FILL MATERIAL/ CLAYEY SILT
	COAL COMBUSTION PRODUCTS (CCPs)
	FILL MATERIAL/ DEBRIS/ SOIL
	PARTIALLY WEATHERED ROCK (PWR)
	BEDROCK



- NOTES:**
1. REFER TO FIGURE 4 OF THIS REPORT FOR CROSS-SECTION TRANSECT.
  2. MW-5 BRACKETS BEDROCK FRACTURE.
  3. \* INDICATES BORING/ MONITORING WELL INSTALLED BY FALCON ENGINEERING, INC.

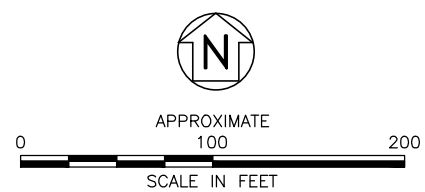
TITLE	<b>CROSS-SECTION A-A'</b>	
PROJECT	TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
	 <b>SMARTER ENVIRONMENTAL SOLUTIONS</b>	2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology
DATE: 8-23-17	REVISION NO. 0	
JOB NO. TCH-002	FIGURE NO. 5	

\\hh601.hartickman.local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II RI Work\Figures\Cross-Section.dwg, FIG 5, 8/23/2017 2:34:17 PM, zbarlow



- LEGEND**
- SITE PROPERTY BOUNDARY
  - - - BOLIN CREEK
  - 101— TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)
  - ◆ MONITORING WELL LOCATION (FALCON ENGINEERING)
  - ◆ TEMPORARY MONITORING WELL LOCATION (FALCON ENGINEERING)
  - ◆ MONITORING WELL LOCATION (H&H)
  - ◆ ABANDONED MONITORING WELL LOCATION
  - - - 295 — GROUNDWATER ELEVATION CONTOUR (FT MSL) (DASHED WHERE INFERRED)
  - APPROXIMATE GROUNDWATER FLOW DIRECTION
  - (305.47) GROUNDWATER ELEVATION (FT MSL)

- NOTES:**
- EXISTING MONITORING WELLS & OCTOBER/NOVEMBER 2016 SAMPLING LOCATIONS SURVEYED BY CE GROUP ON DECEMBER 8, 9, & 20, 2016.
  - MW-5 & MW-7 SCREENED IN BEDROCK.



TITLE	SHALLOW GROUNDWATER POTENTIOMETRIC MAP	
PROJECT	TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
		2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology
DATE: 8-23-17	REVISION NO. 0	
JOB NO. TCH-002	FIGURE NO. 6	

\\hh601\hart\hickman\local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II RI Work\Figures\Figures.dwg, FIG 6, 8/23/2017 2:52:27 PM, zbarlow

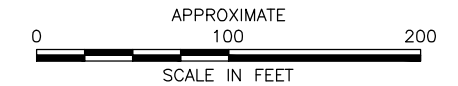


**LEGEND**

- SITE PROPERTY BOUNDARY
- - - BOLIN CREEK
- 101 — TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)
- MONITORING WELL LOCATION (FALCON ENGINEERING)
- TEMPORARY MONITORING WELL LOCATION (FALCON ENGINEERING)
- SOIL BORING LOCATION (FALCON ENGINEERING)
- ABANDONED MONITORING WELL LOCATION
- MONITORING WELL LOCATION (H&H)
- SOIL BORING LOCATION (H&H)
- COVER EVALUATION BORING LOCATION
- CCP UNDER > 2 FT COVER
- CCP UNDER < 2 FT COVER
- CCP EXPOSED AT GROUND SURFACE
- CCP DEPOSITIONAL LAYER
- APPROXIMATE CCP DEPOSITIONAL LAYER AREA REPORTED BY DEQ

**NOTE:**

EXISTING MONITORING WELLS & OCTOBER/ NOVEMBER 2016 SAMPLING LOCATIONS SURVEYED BY CE GROUP ON DECEMBER 8, 9, & 20, 2016.



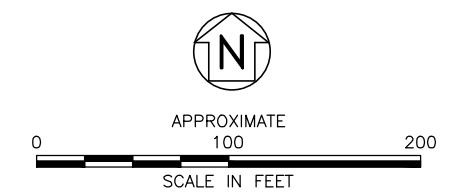
<b>TITLE</b>	
CCP LOCATION & COVER EVALUATION MAP	
<b>PROJECT</b>	
TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
<b>SMARTER ENVIRONMENTAL SOLUTIONS</b>	
<span style="font-size: small; vertical-align: middle;">2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology</span>	
DATE: 8-23-17	REVISION NO. 0
JOB NO. TCH-002	FIGURE NO. 7


\\hh501.hartickman.local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II RI Work\Figures\Figures.dwg, FIG 7, 8/23/2017 2:35:39 PM, zbarlow



- LEGEND**
- SITE PROPERTY BOUNDARY
  - - - BOLIN CREEK
  - 101— TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)
  - SOIL BORING LOCATION (FALCON ENGINEERING)
  - SOIL BORING LOCATION (H&H)
  - BACKGROUND SOIL BORING LOCATION (H&H)
  - ⊕ MONITORING WELL/ SOIL BORING LOCATION (H&H)

**NOTE:**  
 EXISTING MONITORING WELLS & OCTOBER/ NOVEMBER 2016 SAMPLING LOCATIONS SURVEYED BY CE GROUP ON DECEMBER 8, 9, & 20, 2016.



TITLE		SOIL BORING LOCATION MAP	
PROJECT		TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
		2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology	
DATE: 8-23-17	REVISION NO. 0		
JOB NO. TCH-002	FIGURE NO. 8		

\\hh601\hart\hickman\local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II RI Work\Figures\Figures.dwg, FIG 8, 8/23/2017 2:36:02 PM, zbarlow



MW-1	
COBALT	6.0
MANGANESE	8,000
VANADIUM	1.2 J

MW-7	
VANADIUM	1.1 J

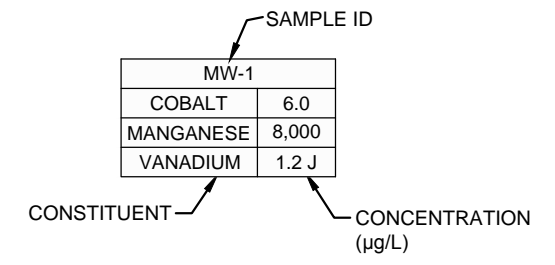
MW-6	
CHROMIUM	29 / <10*
MANGANESE	2,500
VANADIUM	1.2 J

MW-3A	
SELENIUM	52
THALLIUM	5.3 J
VANADIUM	0.95 J

MW-4A	
ALL < BACKGROUND & 2L STANDARD	

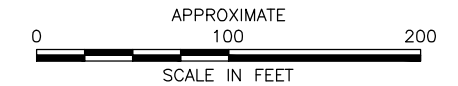
**LEGEND**

- SITE PROPERTY BOUNDARY
- - - BOLIN CREEK
- 101— TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)
- ◆ MONITORING WELL LOCATION (FALCON ENGINEERING)
- ◆ TEMPORARY MONITORING WELL LOCATION (FALCON ENGINEERING)
- ◆ ABANDONED MONITORING WELL LOCATION
- ◆ MONITORING WELL LOCATION (H&H)



**NOTES:**

1. EXISTING MONITORING WELLS & OCTOBER/NOVEMBER 2016 SAMPLING LOCATIONS SURVEYED BY CE GROUP ON DECEMBER 8, 9, & 20, 2016.
2. ONLY COMPOUNDS ABOVE BACKGROUND & 2L STANDARD DEPICTED IN DATA BOXES.
3. SAMPLES COLLECTED NOVEMBER 2016.
4. \* INDICATES CONCENTRATION RESULT OF RE-SAMPLING CONDUCTED ON APRIL 3, 2017.



TITLE <b>GROUNDWATER MONITORING WELL LOCATION MAP</b>	
PROJECT TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
<span style="font-size: small; vertical-align: middle;">2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology</span>	
DATE: 8-23-17	REVISION NO. 0
JOB NO. TCH-002	FIGURE NO. 9

\\hh601.hartickman.local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II R\Work\Figures\Figures.dwg, FIG 9, 8/23/2017 2:36:14 PM, zbarlow

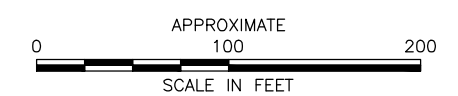


**LEGEND**

- SITE PROPERTY BOUNDARY
- - - BOLIN CREEK
- 101— TOPOGRAPHIC CONTOUR ELEVATION (FT MSL)
- ▲ SURFACE WATER SAMPLE LOCATION (FALCON ENGINEERING)
- ▲ SURFACE WATER SAMPLE LOCATION (H&H)

**NOTE:**

EXISTING MONITORING WELLS & OCTOBER/ NOVEMBER 2016 SAMPLING LOCATIONS SURVEYED BY CE GROUP ON DECEMBER 8, 9, & 20, 2016.



TITLE		SURFACE WATER & SEDIMENT SAMPLE LOCATION MAP	
PROJECT		TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA	
		2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology	
DATE: 8-23-17	REVISION NO. 0		
JOB NO. TCH-002	FIGURE NO. 10		

\\hh501\hart\hickman\local\masterfiles\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-002 - Police Station\PH II R\Work\Figures\Figures.dwg, FIG 10, 8/23/2017 2:36:30 PM, zbarlow

**Appendix A**  
**Report of Survey**



# CE GROUP

301 GLENWOOD AVENUE, SUITE 220  
RALEIGH, NC 27603  
Phone: (919) 367-8790  
E-Mail: shane@cegroupinc.com

## Report of Survey: Chapel Hill Police Department Environmental Samples

I certify that this survey was done under my responsible charge in compliance with the Standard of Practice for Land Surveying (21-56.1600) for Hart & Hickman for the purpose of locating the environmental samples location on property know as Chapel Hill Police Department recorded on deed book 350 page 325 in Orange County North Carolina Register of Deeds.

That before I performed the survey I examined the following documents for project thoroughness and location:

- Deed Book 350 Page 325
- Proposed CCP Cover Investigation Boring Map
- Proposed Additional Sample Location Map

That after examining the documents, I examined the property and found:

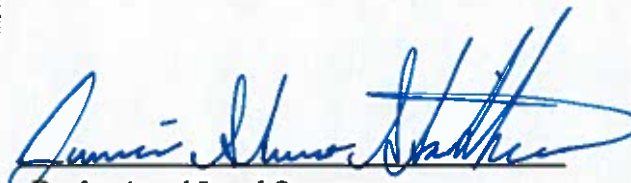
- Monitoring wells
- Soil boring locations
- Surface water sample locations

Upon completion of the survey, I processed and combined NSRS/VRS data with conventional survey data to establish the horizontal and vertical location of environmental samples as set out by Hart & Hickman on the Chapel Hill Police Department project site. No additional locations where performed.

All positions are referenced to the North Carolina State Plane Coordinate System NAD83(NSRS2011), using the national GEOID model 12B.

This 16<sup>th</sup> day of DECEMBER, 2016.



  
Professional Land Surveyor

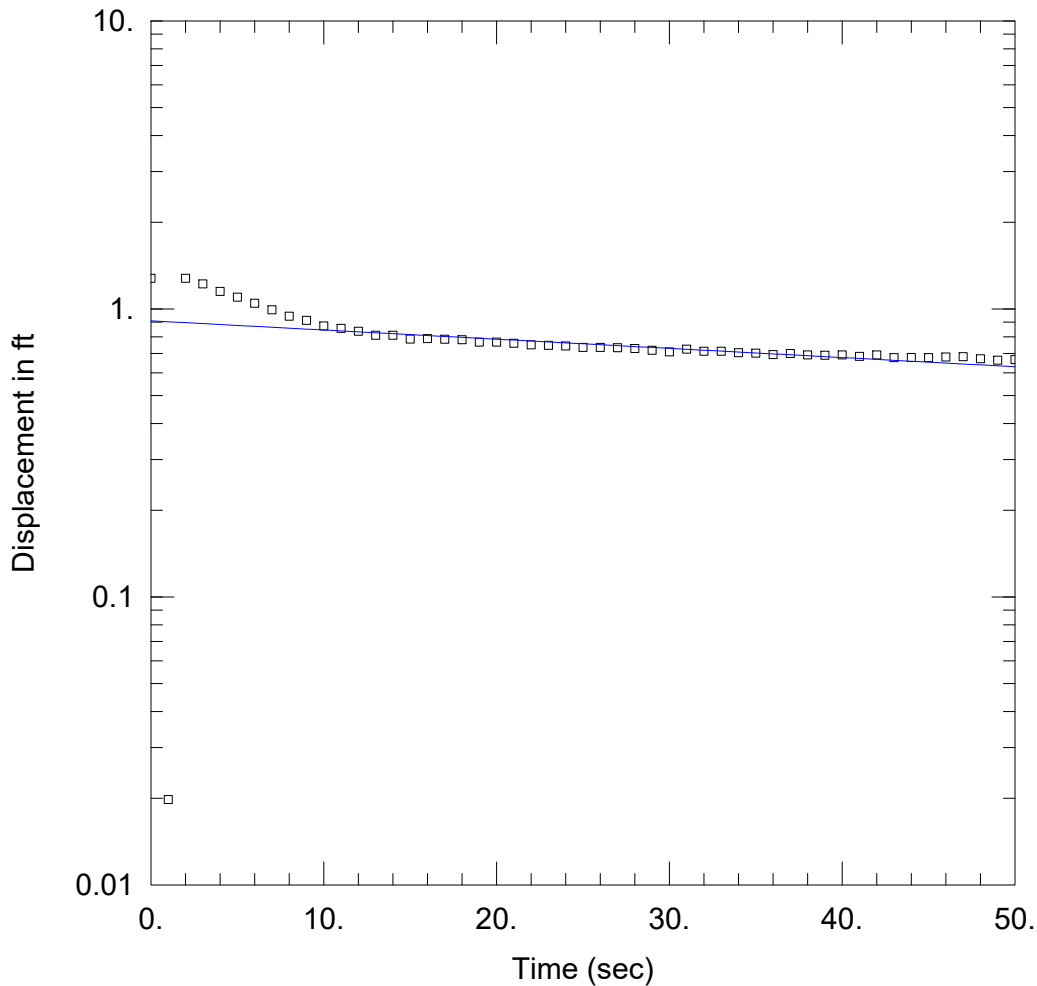


POINT #	Northing	Easting	Elevation	Description
100	791949.33	1984460	341.96	HH-5
101	792206.54	1984238	346.57	MW-1
102	792206.55	1984238	346.12	MW-1_PVC
103	792533.59	1984076	369.33	MW-5_PVC
104	792533.61	1984076	369.72	MW-5
105	791920.71	1984651	339.54	MW-7_PVC
106	791920.65	1984651	340.11	MW-7
107	791796.65	1984561	298	MW-4A_PVC
108	791808.86	1984442	298.1	MW-3A_PVC
109	791808.93	1984442	298.61	MW-3A
110	791920.08	1984200	315.39	MW-6_PVC
111	791920.15	1984200	315.58	MW-6
112	792197.49	1984426	346.54	HH-2
113	792192.04	1984240	345.82	HH-1
114	792460.34	1984073	362.98	I2-A
115	792461.58	1984101	362.81	I2
116	792461.66	1984137	362.08	I2-B
117	792404.05	1984380	377.33	I6
118	792083.25	1984573	339.48	HH-3
202	791828.15	1983855	304.72	BG3
203	791822.12	1983897	305.52	BG2
204	791829.55	1983932	302.83	BG1
205	791849.68	1983933	297.23	SWA-SED
206	791845.51	1983719	300.02	SWA-SED
207	791828.32	1983771	303.11	IPF-0.625-0.1AG
208	791818.4	1983818	306.48	BG4
209	792341.83	1984126	352.33	H1-C
210	792241.99	1984142	343.25	H1
211	792247.8	1984109	346.05	H1-A
212	792114.63	1984119	335.8	G1
213	792050.91	1984116	328.48	F1
214	792026.41	1984123	326.87	E1-C
215	792008.81	1984130	326.27	E1-B
216	791996.52	1984127	323.82	E1-A
217	791996.74	1984135	326.22	E1
218	791937	1984141	318.25	D1
220	791983.42	1984187	328.63	E2
221	791933.94	1984193	316.6	D2
222	791916.59	1984219	314.02	D3-C
223	791914.59	1984237	312	D3-B
224	791922.98	1984241	312.61	D3-A
225	791934.67	1984242	315.15	D3
226	791781.71	1984229	296.24	SWA-SED3
228	791973.49	1984240	321.4	E3
229	791798.54	1984351	299.5	HH-6
230	791712.6	1984406	289.24	SWA-SED4
231	791779.68	1984433	296.68	B8-B
232	791806.07	1984445	297.99	B8-A
233	791816.2	1984440	298.54	HH-7
234	791864.53	1984379	299.8	B7
235	791899.86	1984347	301.64	C6
236	791932.29	1984294	304	D4
237	792006.12	1984281	316.89	F5-A
238	791893.61	1984409	306.51	C7
239	791835.38	1984454	298.85	B8
240	791881.97	1984456	306.29	C8
241	791873.52	1984506	308.27	C9
242	791910.38	1984502	329.22	D9
243	791930.39	1984543	332.61	D10
244	791880.21	1984552	324.96	C10
245	791813.23	1984524	297.26	B9-A
246	791822.6	1984506	297.87	B9
247	791756.23	1984499	296.54	A9-A

Note: All coordinate values are GRID  
Datum: NC\_State Plane 3200 / Geoid 12B

248	791778.92	1984500	296.75	A9
250	791940.65	1984360	309.04	D6
251	791962.81	1984340	305.54	D5
252	791979.75	1984310	306.72	E5
253	792018.64	1984333	315	F5-B
254	792027.73	1984304	317.7	F5
256	791796.33	1984561	298.31	MW-4A
257	791700.24	1984612	294.22	HH-8
258	791566.27	1984708	285.85	SWA-SED5
259	791881.14	1984615	331.87	C11
262	792010.21	1984394	343.99	HH-4
265	792159.45	1984656	341.78	H12
266	792091.16	1984677	331.322	G12
268	791926.11	1984436	333.179	D7

**Appendix B**  
**Slug Test Data**



WELL TEST ANALYSIS

Data Set: S:\...\test 1.aqt  
 Date: 12/22/16

Time: 09:20:58

PROJECT INFORMATION

Company: Hart & Hickman  
 Client: Town of Chapel Hill  
 Project: TCH-002  
 Location: Chapel Hill, NC  
 Test Well: MW-1  
 Test Date: 12/16/16

AQUIFER DATA

Saturated Thickness: 5. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1)

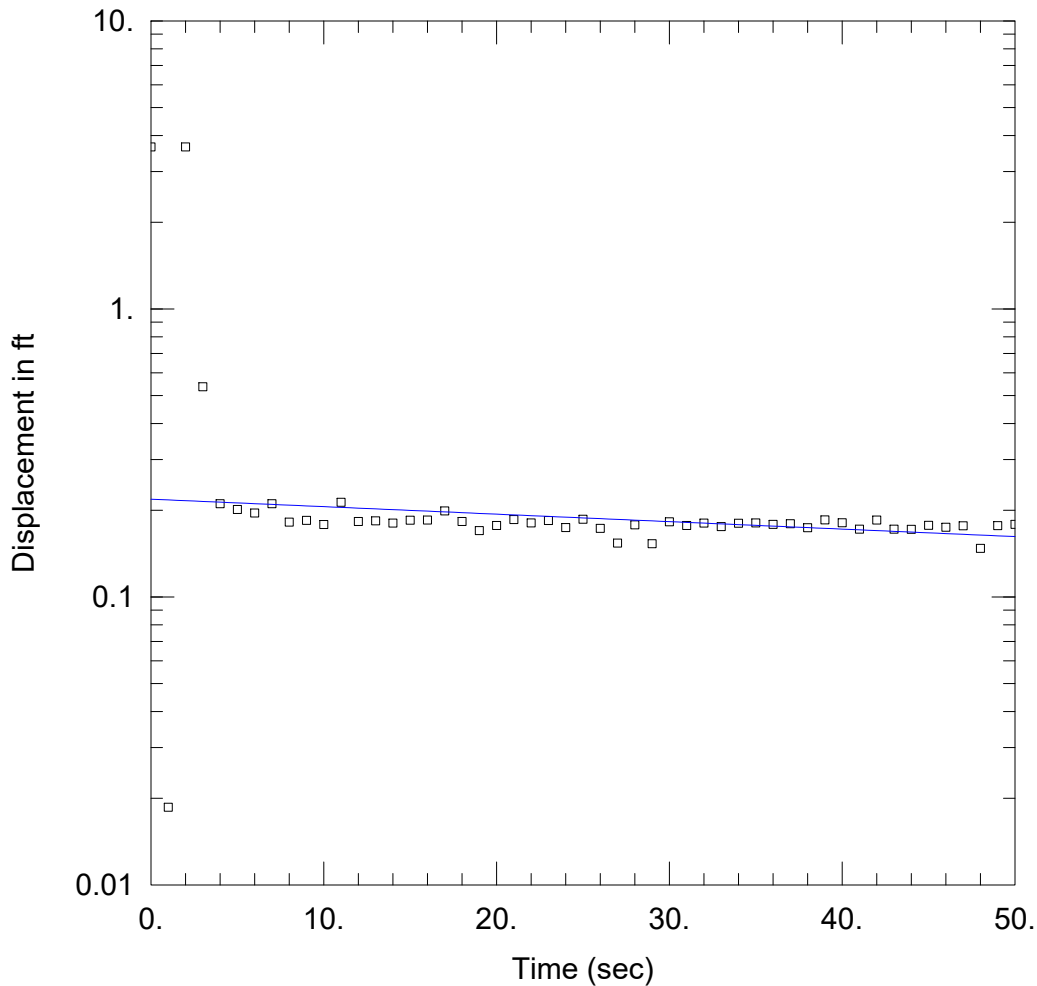
Initial Displacement: 1.277 ft  
 Total Well Penetration Depth: 3.71 ft  
 Casing Radius: 0.167 ft

Static Water Column Height: 3.71 ft  
 Screen Length: 3.71 ft  
 Well Radius: 0.35 ft  
 Gravel Pack Porosity: 0.42

SOLUTION

Aquifer Model: Unconfined  
 K = 8.455 ft/day

Solution Method: Bouwer-Rice  
 y0 = 0.9092 ft



WELL TEST ANALYSIS

Data Set: S:\...\test\_2.aqt  
 Date: 12/21/16

Time: 16:49:14

PROJECT INFORMATION

Company: Hart & Hickman  
 Client: Town of Chapel Hill  
 Project: TCH-002  
 Location: Chapel Hill, NC  
 Test Well: MW-3A  
 Test Date: 12/16/16

AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3A)

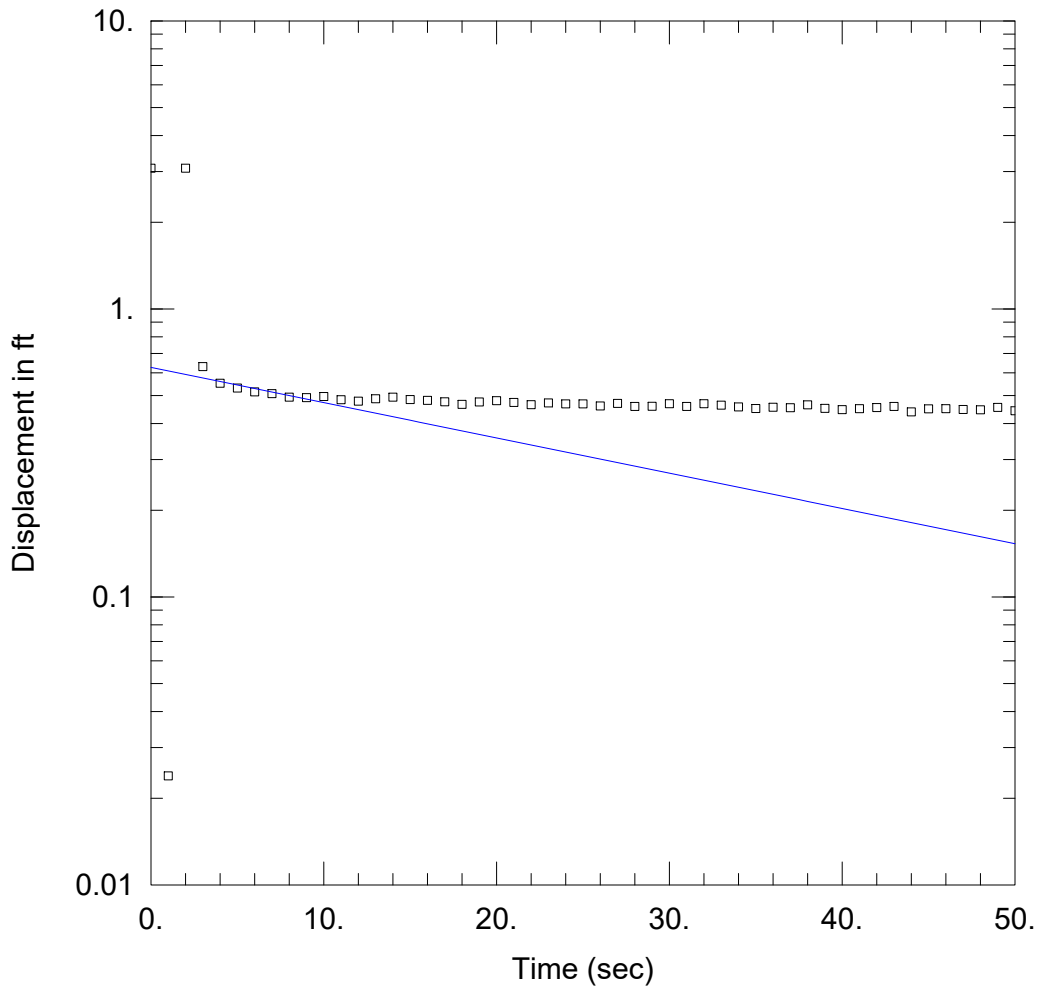
Initial Displacement: 3.65 ft  
 Total Well Penetration Depth: 9.39 ft  
 Casing Radius: 0.167 ft

Static Water Column Height: 9.39 ft  
 Screen Length: 9.39 ft  
 Well Radius: 0.35 ft  
 Gravel Pack Porosity: 0.42

SOLUTION

Aquifer Model: Unconfined  
 K = 4.299 ft/day

Solution Method: Bowser-Rice  
 y0 = 0.2184 ft



WELL TEST ANALYSIS

Data Set: S:\...\test 1.aqt  
 Date: 12/21/16

Time: 16:50:17

PROJECT INFORMATION

Company: Hart & Hickman  
 Client: Town of Chapel Hill  
 Project: TCH-002  
 Location: Chapel Hill, NC  
 Test Well: MW-4A  
 Test Date: 12/16/16

AQUIFER DATA

Saturated Thickness: 15. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4A)

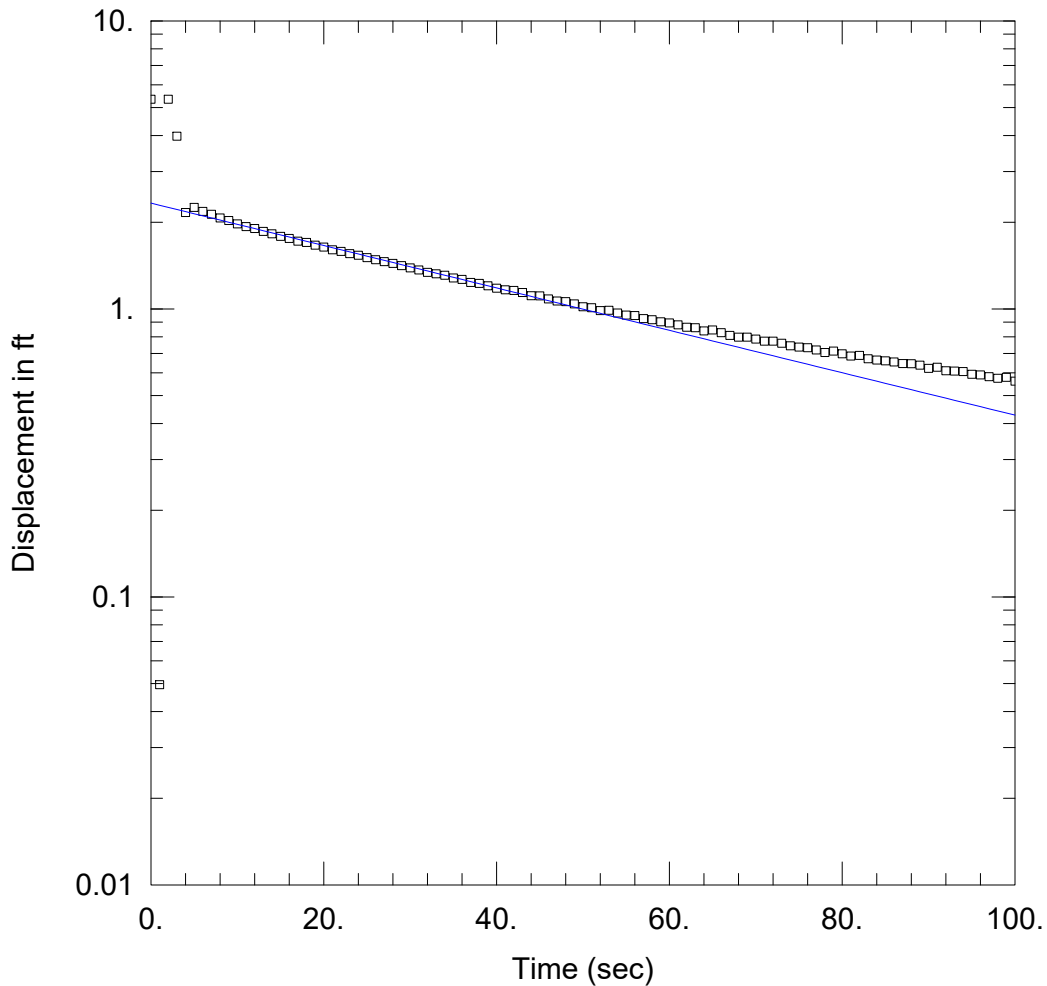
Initial Displacement: 3.079 ft  
 Total Well Penetration Depth: 11.83 ft  
 Casing Radius: 0.167 ft

Static Water Column Height: 11.83 ft  
 Screen Length: 10. ft  
 Well Radius: 0.35 ft

SOLUTION

Aquifer Model: Unconfined  
 K = 7.842 ft/day

Solution Method: Bouwer-Rice  
 y0 = 0.6267 ft



### WELL TEST ANALYSIS

Data Set: S:\...\test 2.aqt  
 Date: 12/21/16

Time: 16:54:52

### PROJECT INFORMATION

Company: Hart & Hickman  
 Client: Town of Chapel Hill  
 Project: TCH-002  
 Location: Chapel Hill, NC  
 Test Well: MW-5  
 Test Date: 12/16/16

### AQUIFER DATA

Saturated Thickness: 2. ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-5)

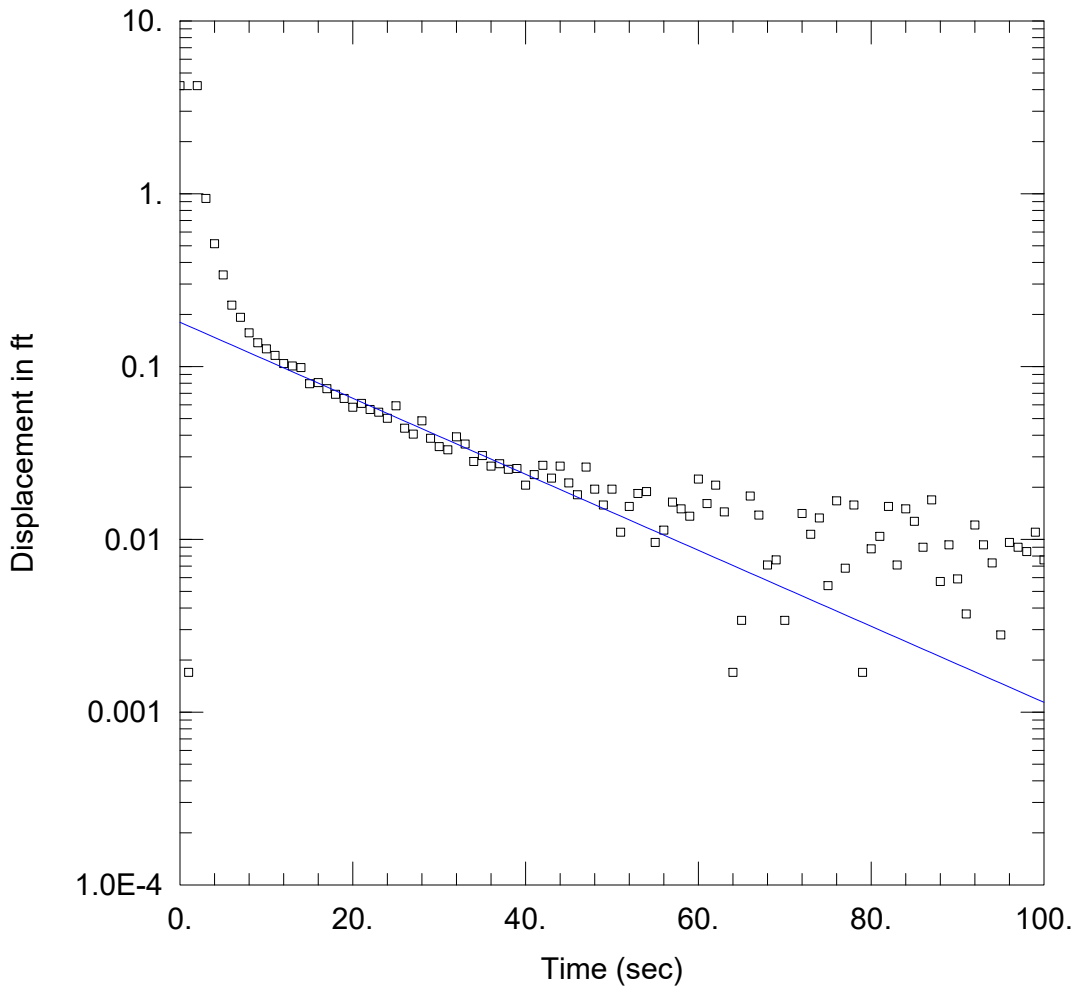
Initial Displacement: 5.348 ft  
 Total Well Penetration Depth: 2. ft  
 Casing Radius: 0.167 ft

Static Water Column Height: 18.15 ft  
 Screen Length: 2. ft  
 Well Radius: 0.35 ft

### SOLUTION

Aquifer Model: Confined  
 K = 12.6 ft/day

Solution Method: Bouwer-Rice  
 y0 = 2.329 ft



### WELL TEST ANALYSIS

Data Set: S:\...\test 2.aqt  
 Date: 12/21/16

Time: 16:57:54

### PROJECT INFORMATION

Company: Hart & Hickman  
 Client: Town of Chapel Hill  
 Project: TCH-002  
 Location: Chapel Hill, NC  
 Test Well: MW-6  
 Test Date: 12/16/16

### AQUIFER DATA

Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

### WELL DATA (MW-6)

Initial Displacement: 4.221 ft  
 Total Well Penetration Depth: 7.9 ft  
 Casing Radius: 0.167 ft

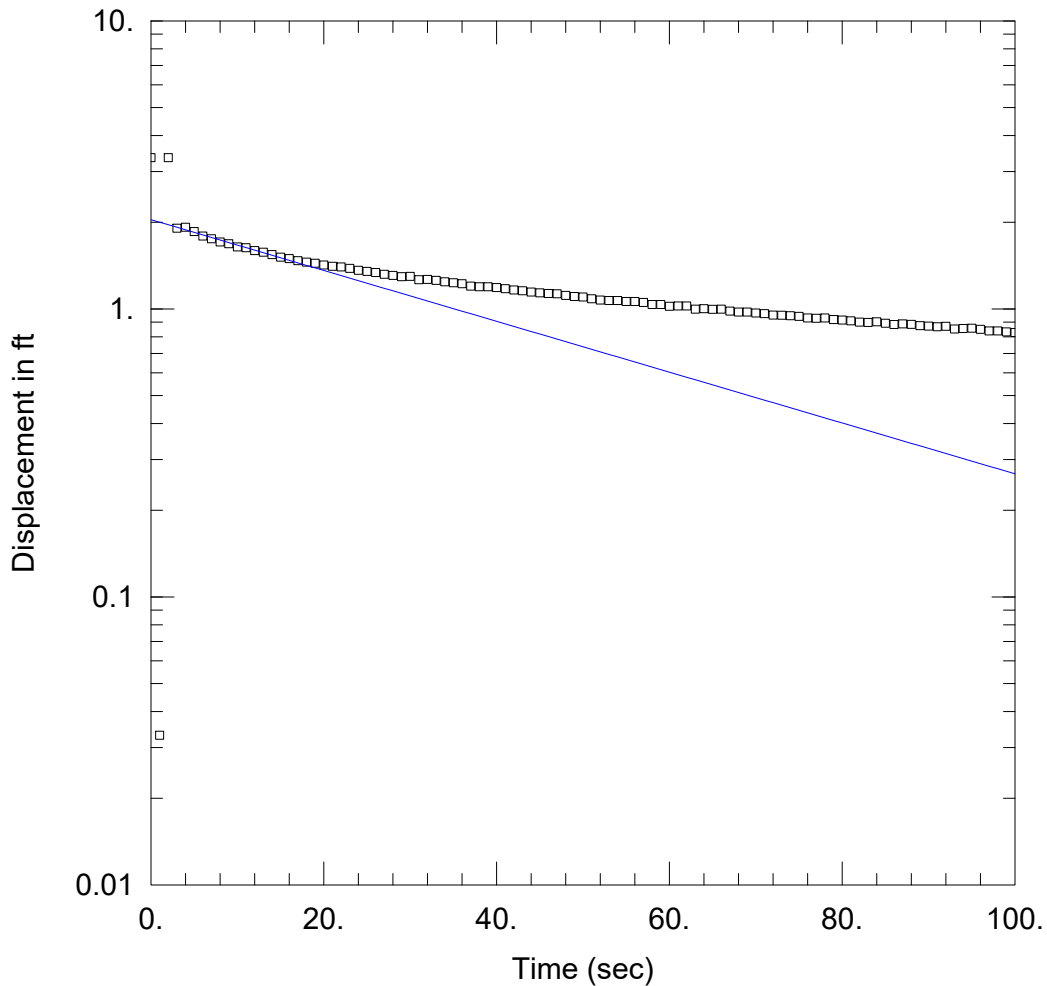
Static Water Column Height: 7.9 ft  
 Screen Length: 7.9 ft  
 Well Radius: 0.35 ft  
 Gravel Pack Porosity: 0.42

### SOLUTION

Aquifer Model: Unconfined  
 K = 38.81 ft/day

Solution Method: Bower-Rice  
 y0 = 0.1803 ft





WELL TEST ANALYSIS

Data Set: S:\...\test 1.aqt  
 Date: 12/21/16

Time: 16:59:55

PROJECT INFORMATION

Company: Hart & Hickman  
 Client: Town of Chapel Hill  
 Project: TCH-002  
 Location: Chapel Hill, NC  
 Test Well: MW-7  
 Test Date: 12/16/16

AQUIFER DATA

Saturated Thickness: 2. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7)

Initial Displacement: 3.351 ft  
 Total Well Penetration Depth: 2. ft  
 Casing Radius: 0.167 ft

Static Water Column Height: 21.81 ft  
 Screen Length: 2. ft  
 Well Radius: 0.35 ft

SOLUTION

Aquifer Model: Confined  
 K = 15.1 ft/day

Solution Method: Bouwer-Rice  
 y0 = 2.041 ft

**Appendix C**  
**Site Photographs**



Photograph 1: Example of CCP in stainless steel hand auger from CCP Evaluation Boring D3.



Photograph 2: CCP compared to cover soil from CCP Evaluation Boring D3.



Photograph 3: CCP exposed at the surface along the central portion of the embankment .



Photograph 4: CCP in the northwest corner of the Site from CCP Evaluation Boring I2.



Photograph 5: Example of brick and concrete debris observed on the embankment.



Photograph 6: Installation of MW-5. View is to the north.



Photograph 7: Installation of MW-6. View is to the northeast.



Photograph 8: Installation of MW-7. View is to the east.



Photograph 9: View of the decontamination pit.



Photograph 10: View of the IDW staging area.

## **Appendix D**

### **Soil Boring Logs/Well Construction Diagrams**



# BORING NUMBER MW-5

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(CL-ML) Slightly moist, medium firm, orangish red silty CLAY with gravel		0
5								5
10						Grey, dry PARTIALLY WEATHERED BEDROCK		10
15						Saturated, water-bearing fracture, PARTIALLY WEATHERED BEDROCK		15
20						Competant BEDROCK		20
25						Saturated, water-bearing fracture, PARTIALLY WEATHERED BEDROCK		25
30						Competant BEDROCK		30
						Refusal at 8.0 feet. Bottom of borehole at 28.0 feet.		30

BORING LOG - HART HICKMAN.GDT - 12/15/16 11:08 - \\HFES01.HARTHICKMAN.LOCAL\MASTERFILES\BBB\_MASTER\_GINT\_PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration  
**DRILL RIG/ METHOD:** Geoprobe 3230DT / HSA/Air Rotary  
**SAMPLING METHOD:** HA/HSA Cuttings/AR Cutting  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/2/16  
**BORING COMPLETED:** 11/2/16  
**TOTAL DEPTH:** 28 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
Sample collected from 0-1 ft bgs and 6-7 ft bgs for analysis of metals by 6010 and Chromium (VI) by 7199.

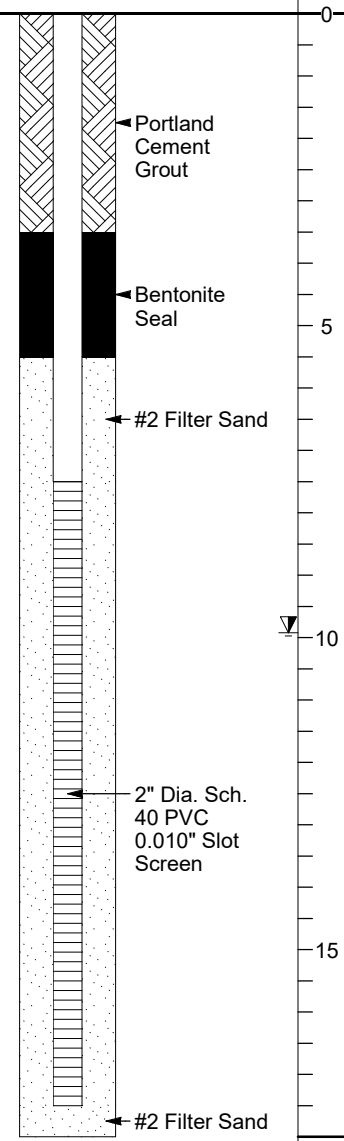
# BORING NUMBER MW-6

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, dark brown, clayey SILT with trace amounts of CCP		0
						Moist, loose, reddish brown, silty CLAY		
5								5
10								10
15								15
18.0						Refusal at 18.0 feet. Bottom of borehole at 18.0 feet.		18.0
20								20



BORING LOG - HART HICKMAN.GDT - 12/15/16 11:08 - \\HFES01.HARTHICKMAN.LOCAL\MASTERFILES\BBB\_MASTER GINT PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration  
**DRILL RIG/ METHOD:** Geoprobe 3230DT / HSA  
**SAMPLING METHOD:** HA/ HSA cuttings  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/2/16  
**BORING COMPLETED:** 11/2/16  
**TOTAL DEPTH:** 18 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
Sample collected from 0-1 ft bgs for analysis of metals by 6010 and Chromium (VI) by 7199.

# BORING NUMBER MW-7

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(CL-ML) Dry, loose, orange, silty CLAY		0
10						Competant BEDROCK		10
20						Dry, non-water bearing fracture, PARTIALLY WEATHERED BEDROCK		20
30						Competant BEDROCK	← Portland Cement Grout	30
40						Dry, non-water bearing fracture, PARTIALLY WEATHERED BEDROCK		40
50						Competant BEDROCK		50
60						Moist, water bearing fracture, PARTIALLY WEATHERED BEDROCK		60
70						Competant BEDROCK	← Bentonite Seal ← #2 Filter Sand	70
						Saturated, water bearing fracture, PARTIALLY WEATHERED BEDROCK		
						Competant BEDROCK	← 2" Dia. Sch. 40 PVC ← 0.010" Slot Screen ← #2 Filter Sand	
						Refusal at 14.0 feet. Bottom of borehole at 70.0 feet.		

BORING LOG - HART HICKMAN.GDT - 12/15/16 11:08 - \\HFES01.HARTHICKMAN\LOCAL\MASTERFILES\BBB MASTER GINT PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration

**DRILL RIG/ METHOD:** Geoprobe 3230DT / HSA/Air Rotary

**SAMPLING METHOD:** HA/ HSA Cuttings/AR Cuttings

**LOGGED BY:** PHS

**DRAWN BY:** PHS

**BORING STARTED:** 11/1/16

**BORING COMPLETED:** 11/2/16

**TOTAL DEPTH:** 70 ft.

**TOP OF CASING ELEV:**

**DEPTH TO WATER:**

**Remarks:**

Sample collected from 0-1 ft bgs for analysis of metals by 6010 and Chromium (VI) by 7199.

# BORING NUMBER HH-1


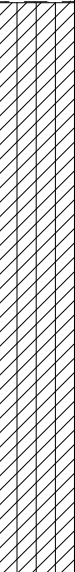
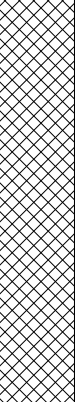
2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Slightly moist, loose, brown, TOPSOIL		0.0
						Slightly moist, loose, reddish brown, clayey SILT with gravel		
2.5								2.5
						Slightly moist, loose, whitish tan, clayey SILT		
5.0								5.0
						Predominately CCP, with trace whitish tan, clayey SILT		
7.5								7.5
						Slightly moist, loose, whitish tan, clayey SILT, intermixed with CCP		
10.0						Bottom of borehole at 10.0 feet.		10.0

BORING LOG - HART HICKMAN.GDT - 12/15/16 11:06 - \\HFES01.HARTHICKMAN.LOCAL\MASTERFILES\BBB\_MASTER GINT PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration  
**DRILL RIG/ METHOD:** Geoprobe 3230DT / HA/DPT  
**SAMPLING METHOD:** HA/ DPT Sleeves  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/3/16  
**BORING COMPLETED:** 11/3/16  
**TOTAL DEPTH:** 10 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
 Sample collected from 0-1 ft bgs for analysis of metals by 6010 and Chromium VI by 7199 and from 2-3 ft bgs for analysis of metals by SPLP.

## BORING NUMBER HH-2

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Slightly moist, loose, reddish brown, clayey SILT		0.0
						Slightly moist, firm, grey and red, silty CLAY with trace amounts of CCP		
2.5						CCP		2.5
5.0						Bottom of borehole at 5.0 feet.		5.0

BORING LOG - HART HICKMAN.GDT - 12/15/16 11:06 - \\HFES01.HARTHICKMAN.LOCAL\MASTERFILES\BBB MASTER GINT PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/3/16  
**BORING COMPLETED:** 11/3/16  
**TOTAL DEPTH:** 5 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
Sample collected from 0-1 ft bgs for analysis of metals by 6010 and Chromium VI by 7199 and from 2-3 ft bgs for analysis of metals by SPLP.

# BORING NUMBER HH-3

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0								0
0-1	Hand icon				Moist, loose, dark brown, silty CLAY intermixed with CCP			
1-2	Hand icon				CCP			
2-15					Moist, medium firm, orange and red, CLAY			
15					Bottom of borehole at 15.0 feet.			15

BORING LOG - HART HICKMAN.GDT - 12/15/16 11:06 - \\HFES01.HARTHICKMAN.LOCAL\MASTERFILES\BBB MASTER GINT PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration  
**DRILL RIG/ METHOD:** Geoprobe 3230DT / HA/DPT  
**SAMPLING METHOD:** HA/ DPT Sleeves  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/3/16  
**BORING COMPLETED:** 11/3/16  
**TOTAL DEPTH:** 15 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
Sample collected from 0-1 ft bgs for analysis of metals by 6010 and Chromium VI by 7199 and from 2-3 ft bgs for analysis of metals by SPLP.

# BORING NUMBER HH-4

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Slightly moist, medium firm, orange, silty CLAY intermixed with brick and concrete debris		0.0
2.5						Dry, loose, brown, clayey SILT intermixed with CCP		2.5
5.0						CCP		5.0
						Bottom of borehole at 5.0 feet.		

BORING LOG - HART HICKMAN.GDT - 12/15/16 11:06 - \\HFES01.HARTHICKMAN.LOCAL\MASTERFILES\BBB MASTER GINT PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/3/16  
**BORING COMPLETED:** 11/3/16  
**TOTAL DEPTH:** 5 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
 Sample collected from 0-1 ft bgs for analysis of metals by 6010 and Chromium VI by 7199 and from 4-5 ft bgs for analysis of metals by SPLP.

# BORING NUMBER HH-5

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Slightly moist, loose, dark brown, clayey SILT		0.0
						Slightly moist, loose, light tan, clayey SAND		
2.5						Slightly moist, medium firm, brown, sandy SILT intermixed with CCP		2.5
						CCP		
5.0						Bottom of borehole at 5.0 feet.		5.0

BORING LOG - HART HICKMAN.GDT - 12/15/16 11:06 - \\HFES01.HARTHICKMAN.LOCAL\MASTERFILES\BBB MASTER GINT PROJECTS\TCH-002.GPJ

**DRILLING CONTRACTOR:** Geologic Exploration  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/3/16  
**BORING COMPLETED:** 11/3/16  
**TOTAL DEPTH:** 5 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
Sample collected from 0-1 ft bgs for analysis of metals by 6010 and Chromium VI by 7199 and from 3-4 ft bgs for analysis of metals by SPLP.



# BORING NUMBER A9

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						Slightly moist, loose, black and brown, predominately CCP mixed with topsoil		0
1						(CL-ML) Slightly moist, loose, brown, silty CLAY with CCP intermixed		1
2						(CL-ML) Slightly moist, loose, brown, silty CLAY with trace amounts of CCP		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/25/16  
**BORING COMPLETED:** 10/25/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER A9-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, dark brown, clayey SILT		0
1						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

## BORING NUMBER B7

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, organic clayey SILT		0
1						(CL-ML) Slightly moist, loose, orange silty CLAY		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/25/16  
**BORING COMPLETED:** 10/25/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER B8

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CCP only		0
1						(ML) Slightly moist, loose, dark brown, clayey SILT		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER B8-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, dark brown, clayey SILT intermixed with CCP		0
						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY intermixed with CCP		
						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY intermixed with CCP		
1								1
2						Bottom of borehole at 2.0 feet.		2

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER B8-B

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, orangish brown clayey silt		0
1						Bottom of borehole at 1.0 feet.		1
2								2

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 1 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER B9

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CCP only		0
1						(ML) Slightly moist, loose, dark brown, clayey SILT intermixed with CCP		1
2						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER B9-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, dark brown, clayey SILT		0
						(CL-ML) Slightly moist, loose, brown, silty CLAY		
1						Bottom of borehole at 1.0 feet.		1
2								2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 1 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.



# BORING NUMBER C10

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1								1
2						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER C11

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1						(CL) Slightly moist, loose, orange, sandy CLAY		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

## BORING NUMBER C6

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, black, organic clayey SILT		0
1						(CL-ML) Slightly moist, medium firm, orange silty CLAY		1
2						(CL-ML) Moist, medium firm, brown, silty CLAY		2
						Bottom of borehole at 2.0 feet.		

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/25/16  
**BORING COMPLETED:** 10/25/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER C7

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CCP only		0
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER C8

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CCP only		0
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER C9

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(SM) Slightly moist, loose, orangish brown, silty SAND		0
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER D1

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
						(ML) Slightly moist, loose, brown, clayey SILT intermixed with CCP		
						(ML) Slightly moist, loose, brown, clayey SILT		
1								1
2						Bottom of borehole at 1.5 feet.		2

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 1.5 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER D10

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1						(CL-ML) Slightly moist, loose, orange, silty CLAY		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.



## BORING NUMBER D2

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
						(ML) Slightly moist, loose, brown, clayey SILT with trace amounts of CCP		
						(ML) Slightly moist, loose, orangish brown, clayey SILT		
1								1
						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY with trace amounts of CCP		
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER D3

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(CL-ML) Slightly moist, medium firm, orangish brown, silty CLAY with CCP intermixed		0
1						CCP only		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER D3-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CCP intermixed with brown organic soil		0
						CCP only		
1						(CL) Slightly moist, medium firm, orange sandy CLAY with concrete and brick debris		1
						(CL) Slightly moist, medium firm, orange sandy CLAY with concrete and brick debris intermixed with CCP		
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER D3-B

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						Predominately CCP intermixed with orange sandy clay		0
1								1
2						(CL) Slightly moist, medium firm, orange, sandy CLAY with trace amounts of CCP		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER D3-C

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, orangish brown, clayey SILT		0
						(ML) Slightly moist, loose, orangish brown, clayey SILT intermixed with CCP		
						(CL-ML) Slightly moist, loose, brown, silty CLAY with gravel		
1						Refusal at 1.0 feet. Bottom of borehole at 1.0 feet.		1
2								2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 1 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER D4

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, black, organic clayey SILT		0
1								1
2						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/25/16  
**BORING COMPLETED:** 10/25/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

## BORING NUMBER D5

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
						(CL-ML) Slightly moist, medium firm, orangish brown, silty CLAY intermixed with CCP		
						(CL-ML) Slightly moist, medium firm, orange, silty CLAY intermixed with CCP		
						Bottom of borehole at 2.0 feet.		
2								2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

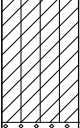
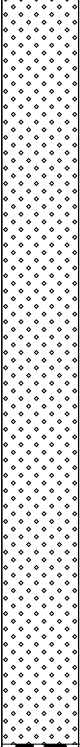

**Remarks:**

# BORING NUMBER D6

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
						(SW) Slightly moist, loose, red and grey, gritty SAND with trace amounts of CCP		
						(GW) Slightly moist, loose, red and grey, GRAVEL intermixed with CCP		
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**



# BORING NUMBER D7

2923 South Tryon Street-Suite 100  
 Charlotte, North Carolina 28203  
 704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
 Raleigh, North Carolina 27607  
 919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0					CCP only			0
1						Refusal at 1.0 feet. Bottom of borehole at 1.0 feet.		1
2								2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 1 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER D9

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CCP only		0
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\ITCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER E1

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1						(CL-ML) Slightly moist, soft, black and brown, silty CLAY with brick debris and CCP		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/25/16  
**BORING COMPLETED:** 10/25/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER E1-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1						(CL-ML) Slightly moist, medium firm, orange, silty CLAY		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

## BORING NUMBER E1-B

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY with trace amounts of CCP		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER E1-C

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
						(CL-ML) Slightly moist, loose, orangish brown, silty CLAY		
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER E2

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT with concrete and brick debris		0
1						Predominately CCP with orange sandy clay and concrete and brick debris		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:47 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

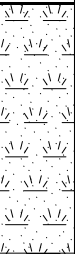

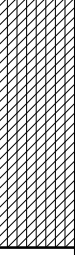
**Remarks:**

# BORING NUMBER E3

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						Slightly moist, loose, black, organic topsoil		0
						Predominately CCP		
						(CL-ML) Slightly moist, loose, brown, silty CLAY intermixed with CCP		
1						Refusal at 1.3 feet. Bottom of borehole at 1.3 feet.		1
2								2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 1.25 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**



# BORING NUMBER E5

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(CL-ML) Moist, loose, brown, silt CLAY		0
						CCP only		
						(ML) Moist, loose, orange clayey SILT intermixed with CCP		
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER F1

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1						(CL-ML) Slightly moist, loose, orange, silty CLAY		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/25/16  
**BORING COMPLETED:** 10/25/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER F5

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(CL-ML) Slightly moist, loose, orange silty CLAY intermixed with CCP		0
1								1
2						Predominately CCP with orange silty clay		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER F5-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(CL-ML) Slightly moist, loose, orange silty CLAY intermixed with CCP		0
1								1
2						CCP only		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER F5-B

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						CCP only		0
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/26/16  
**BORING COMPLETED:** 10/26/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER G1

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
1						(CL-ML) Slightly moist, loose, orange, silty CLAY		1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/25/16  
**BORING COMPLETED:** 10/25/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
No CCP observed.

# BORING NUMBER G12

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, sandy SILT		0
1								1
2						Bottom of borehole at 1.5 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 1.5 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

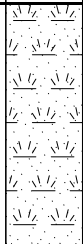
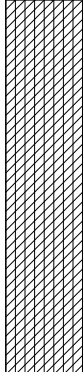

**Remarks:**  
No CCP observed.

# BORING NUMBER H1

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						Slightly moist, loose, brown, TOPSOIL		0
1						(CL-ML) Slightly moist, loose, red, silty CLAY with trace amounts of CCP		1
2						Predominately CCP intermixed with orangish brown silty clay		2
						Bottom of borehole at 2.0 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 12/8/16  
**BORING COMPLETED:** 12/8/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**



# BORING NUMBER H12

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, sandy SILT		0
1						Bottom of borehole at 1.0 feet.		1
2								2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 1 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

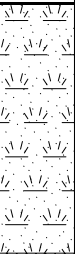
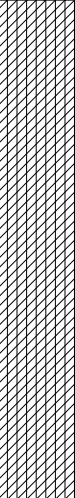
**Remarks:**  
No CCP observed.

# BORING NUMBER H1-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						Slightly moist, loose, brown, TOPSOIL		0
1						(CL-ML) Slightly moist, loose, red, silty CLAY intermixed with CCP and gravel		1
2						Bottom of borehole at 1.5 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 12/8/16  
**BORING COMPLETED:** 12/8/16  
**TOTAL DEPTH:** 1.5 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

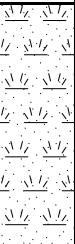
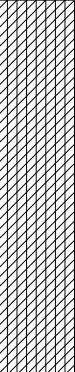

**Remarks:**

# BORING NUMBER H1-B

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						Slightly moist, loose, brown, TOPSOIL		0
1						(CL-ML) Slightly moist, loose, red, silty CLAY with trace amounts of CCP and gravel		1
2						Predominately CCP intermixed with orangish brown silty clay, gravel, and brick		2
						Bottom of borehole at 1.8 feet.		

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 12/8/16  
**BORING COMPLETED:** 12/8/16  
**TOTAL DEPTH:** 1.75 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER I2

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
						(ML) Slightly moist, loose, brown, clayey SILT intermixed with CCP		
1								1
2						Bottom of borehole at 2.0 feet.		2

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/2/16  
**BORING COMPLETED:** 11/2/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

## BORING NUMBER I2-A

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill

**JOB NUMBER:** TCH-002

**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
						(ML) Slightly moist, loose, brown, clayey SILT intermixed with CCP		
1								1
2						Bottom of borehole at 2.0 feet.		2

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/2/16  
**BORING COMPLETED:** 11/2/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

# BORING NUMBER I2-B

2923 South Tryon Street-Suite 100  
Charlotte, North Carolina 28203  
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
Raleigh, North Carolina 27607  
919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill t  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, clayey SILT		0
					CCP only			
1								1
2						Bottom of borehole at 2.0 feet.		2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 11/2/16  
**BORING COMPLETED:** 11/2/16  
**TOTAL DEPTH:** 2 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**



# BORING NUMBER I6

2923 South Tryon Street-Suite 100  
 Charlotte, North Carolina 28203  
 704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
 Raleigh, North Carolina 27607  
 919-847-4241(p) 919-847-4261(f)

**PROJECT:** Chapel Hill  
**JOB NUMBER:** TCH-002  
**LOCATION:** 828 Martin Luther King Jr. Boulevard, Chapel Hill, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	BORING DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0						(ML) Slightly moist, loose, brown, SILT mixed with gravel		0
1						Refusal at 0.8 feet. Bottom of borehole at 0.8 feet.		1
2								2

BORING LOG - HART HICKMAN.GDT - 1/13/17 09:48 - S:\IBBB MASTER GINT PROJECTS\TCH-002 - 2.GPJ

**DRILLING CONTRACTOR:** Hart & Hickman, PC  
**DRILL RIG/ METHOD:** Hand Auger / HA  
**SAMPLING METHOD:** Hand Auger  
**LOGGED BY:** PHS  
**DRAWN BY:** PHS

**BORING STARTED:** 10/27/16  
**BORING COMPLETED:** 10/27/16  
**TOTAL DEPTH:** 0.75 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**  
 No CCP observed.

## **Appendix E**

### **Laboratory Analytical Data**



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-163622-2

Client Project/Site: Prism

For:

Access Analytical Services

7478 Carlisle Street

Irmo, South Carolina 29063

Attn: Ms. Angela Martin

*Cesar C Cortes*

Authorized for release by:

11/9/2016 2:48:23 PM

Cesar Cortes, Project Management Assistant I

(916)373-5600

[cesar.cortes@testamericainc.com](mailto:cesar.cortes@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Sample Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-163622-7	SED-1	Solid	10/27/16 15:15	10/28/16 10:40
440-163622-8	SED-2	Solid	10/27/16 14:55	10/28/16 10:40
440-163622-9	SED-3	Solid	10/27/16 14:35	10/28/16 10:40
440-163622-10	SED-4	Solid	10/27/16 14:20	10/28/16 10:40
440-163622-11	SED-5	Solid	10/27/16 14:05	10/28/16 10:40
440-163622-12	DUP-SED	Solid	10/27/16 00:00	10/28/16 10:40
440-163622-13	HH-6	Solid	10/27/16 12:10	10/28/16 10:40
440-163622-14	HH-7	Solid	10/27/16 11:55	10/28/16 10:40
440-163622-15	HH-8	Solid	10/27/16 11:45	10/28/16 10:40

# Case Narrative

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

---

**Job ID: 440-163622-2**

---

**Laboratory: TestAmerica Irvine**

## Narrative

### Receipt

The samples were received on 10/28/2016 at 10:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

### Receipt Exceptions

The Chain-of-Custody (COC) is not relinquished.

Regarding sample 440-163622-12 (DUP-SED), the Chain-of-Custody (COC) does not provide a sample time. Client did communicate a desired time (00:00) which login currently reflects.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

- 1
- 2
- 3
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- 10
- 11
- 12
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# Client Sample Results

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

**Client Sample ID: SED-1**  
Date Collected: 10/27/16 15:15  
Date Received: 10/28/16 10:40

**Lab Sample ID: 440-163622-7**  
Matrix: Solid  
Percent Solids: 78.0

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.24	J	0.38	0.19	mg/Kg	☒	10/31/16 15:21	11/01/16 23:22	3

**Client Sample ID: SED-2**  
Date Collected: 10/27/16 14:55  
Date Received: 10/28/16 10:40

**Lab Sample ID: 440-163622-8**  
Matrix: Solid  
Percent Solids: 76.5

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.40	0.20	mg/Kg	☒	10/31/16 15:21	11/01/16 23:33	3

**Client Sample ID: SED-3**  
Date Collected: 10/27/16 14:35  
Date Received: 10/28/16 10:40

**Lab Sample ID: 440-163622-9**  
Matrix: Solid  
Percent Solids: 76.7

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.39	0.20	mg/Kg	☒	10/31/16 15:21	11/01/16 23:45	3

**Client Sample ID: SED-4**  
Date Collected: 10/27/16 14:20  
Date Received: 10/28/16 10:40

**Lab Sample ID: 440-163622-10**  
Matrix: Solid  
Percent Solids: 79.0

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.38	0.19	mg/Kg	☒	11/02/16 15:00	11/03/16 13:45	3

**Client Sample ID: SED-5**  
Date Collected: 10/27/16 14:05  
Date Received: 10/28/16 10:40

**Lab Sample ID: 440-163622-11**  
Matrix: Solid  
Percent Solids: 80.8

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.37	0.19	mg/Kg	☒	10/31/16 15:21	11/01/16 23:57	3

**Client Sample ID: DUP-SED**  
Date Collected: 10/27/16 00:00  
Date Received: 10/28/16 10:40

**Lab Sample ID: 440-163622-12**  
Matrix: Solid  
Percent Solids: 75.0

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.40	0.20	mg/Kg	☒	10/31/16 15:21	11/02/16 00:08	3

**Client Sample ID: HH-6**  
Date Collected: 10/27/16 12:10  
Date Received: 10/28/16 10:40

**Lab Sample ID: 440-163622-13**  
Matrix: Solid  
Percent Solids: 91.8

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.33	0.16	mg/Kg	☒	10/31/16 15:21	11/02/16 00:20	3

TestAmerica Irvine

# Client Sample Results

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

**Client Sample ID: HH-7**

**Date Collected: 10/27/16 11:55**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-14**

**Matrix: Solid**

**Percent Solids: 82.2**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.61	0.31	mg/Kg	☼	10/31/16 15:21	11/02/16 00:31	5

**Client Sample ID: HH-8**

**Date Collected: 10/27/16 11:45**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-15**

**Matrix: Solid**

**Percent Solids: 84.6**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.35	0.18	mg/Kg	☼	10/31/16 15:21	11/02/16 00:43	3

# Method Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

Method	Method Description	Protocol	Laboratory
7199	Chromium, Hexavalent (IC)	SW846	TAL IRV
Moisture	Percent Moisture	EPA	TAL IRV

**Protocol References:**

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



# Lab Chronicle

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

**Client Sample ID: SED-1**

**Date Collected: 10/27/16 15:15**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-7**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: SED-1**

**Date Collected: 10/27/16 15:15**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-7**

**Matrix: Solid**

**Percent Solids: 78.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.50 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		3			366075	11/01/16 23:22	TLN	TAL IRV

**Client Sample ID: SED-2**

**Date Collected: 10/27/16 14:55**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-8**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: SED-2**

**Date Collected: 10/27/16 14:55**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-8**

**Matrix: Solid**

**Percent Solids: 76.5**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.48 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		3			366075	11/01/16 23:33	TLN	TAL IRV

**Client Sample ID: SED-3**

**Date Collected: 10/27/16 14:35**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-9**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: SED-3**

**Date Collected: 10/27/16 14:35**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-9**

**Matrix: Solid**

**Percent Solids: 76.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.49 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		3			366075	11/01/16 23:45	TLN	TAL IRV

TestAmerica Irvine



# Lab Chronicle

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

**Client Sample ID: SED-4**

**Lab Sample ID: 440-163622-10**

**Date Collected: 10/27/16 14:20**

**Matrix: Solid**

**Date Received: 10/28/16 10:40**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: SED-4**

**Lab Sample ID: 440-163622-10**

**Date Collected: 10/27/16 14:20**

**Matrix: Solid**

**Date Received: 10/28/16 10:40**

**Percent Solids: 79.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.51 g	100 mL	366556	11/02/16 15:00	TMB	TAL IRV
Total/NA	Analysis	7199		3			366670	11/03/16 13:45	MN	TAL IRV

**Client Sample ID: SED-5**

**Lab Sample ID: 440-163622-11**

**Date Collected: 10/27/16 14:05**

**Matrix: Solid**

**Date Received: 10/28/16 10:40**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: SED-5**

**Lab Sample ID: 440-163622-11**

**Date Collected: 10/27/16 14:05**

**Matrix: Solid**

**Date Received: 10/28/16 10:40**

**Percent Solids: 80.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.50 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		3			366075	11/01/16 23:57	TLN	TAL IRV

**Client Sample ID: DUP-SED**

**Lab Sample ID: 440-163622-12**

**Date Collected: 10/27/16 00:00**

**Matrix: Solid**

**Date Received: 10/28/16 10:40**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: DUP-SED**

**Lab Sample ID: 440-163622-12**

**Date Collected: 10/27/16 00:00**

**Matrix: Solid**

**Date Received: 10/28/16 10:40**

**Percent Solids: 75.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.49 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		3			366075	11/02/16 00:08	TLN	TAL IRV

TestAmerica Irvine

# Lab Chronicle

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

**Client Sample ID: HH-6**

**Date Collected: 10/27/16 12:10**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-13**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: HH-6**

**Date Collected: 10/27/16 12:10**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-13**

**Matrix: Solid**

**Percent Solids: 91.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.48 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		3			366075	11/02/16 00:20	TLN	TAL IRV

**Client Sample ID: HH-7**

**Date Collected: 10/27/16 11:55**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-14**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: HH-7**

**Date Collected: 10/27/16 11:55**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-14**

**Matrix: Solid**

**Percent Solids: 82.2**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.48 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		5			366075	11/02/16 00:31	TLN	TAL IRV

**Client Sample ID: HH-8**

**Date Collected: 10/27/16 11:45**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-15**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			365708	10/29/16 09:34	MMH	TAL IRV

**Client Sample ID: HH-8**

**Date Collected: 10/27/16 11:45**

**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-15**

**Matrix: Solid**

**Percent Solids: 84.6**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.50 g	100 mL	365964	10/31/16 15:21	TMB	TAL IRV
Total/NA	Analysis	7199		3			366075	11/02/16 00:43	TLN	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TestAmerica Irvine

# QC Sample Results

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

## Method: 7199 - Chromium, Hexavalent (IC)

**Lab Sample ID: MB 440-365964/1-A**  
**Matrix: Solid**  
**Analysis Batch: 366075**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 365964**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.30	0.15	mg/Kg		10/31/16 15:21	11/01/16 20:24	3

**Lab Sample ID: LCS 440-365964/2-A**  
**Matrix: Solid**  
**Analysis Batch: 366075**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 365964**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cr (VI)	40.5	36.0		mg/Kg		89	80 - 120

**Lab Sample ID: MB 440-366556/1-A**  
**Matrix: Solid**  
**Analysis Batch: 366670**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 366556**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.30	0.15	mg/Kg		11/02/16 15:00	11/03/16 10:31	3

**Lab Sample ID: LCS 440-366556/2-A**  
**Matrix: Solid**  
**Analysis Batch: 366670**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 366556**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cr (VI)	39.8	31.9		mg/Kg		80	80 - 120

# QC Association Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

## HPLC/IC

### Prep Batch: 365964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-163622-7	SED-1	Total/NA	Solid	3060A	
440-163622-8	SED-2	Total/NA	Solid	3060A	
440-163622-9	SED-3	Total/NA	Solid	3060A	
440-163622-11	SED-5	Total/NA	Solid	3060A	
440-163622-12	DUP-SED	Total/NA	Solid	3060A	
440-163622-13	HH-6	Total/NA	Solid	3060A	
440-163622-14	HH-7	Total/NA	Solid	3060A	
440-163622-15	HH-8	Total/NA	Solid	3060A	
MB 440-365964/1-A	Method Blank	Total/NA	Solid	3060A	
LCS 440-365964/2-A	Lab Control Sample	Total/NA	Solid	3060A	

### Analysis Batch: 366075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-163622-7	SED-1	Total/NA	Solid	7199	365964
440-163622-8	SED-2	Total/NA	Solid	7199	365964
440-163622-9	SED-3	Total/NA	Solid	7199	365964
440-163622-11	SED-5	Total/NA	Solid	7199	365964
440-163622-12	DUP-SED	Total/NA	Solid	7199	365964
440-163622-13	HH-6	Total/NA	Solid	7199	365964
440-163622-14	HH-7	Total/NA	Solid	7199	365964
440-163622-15	HH-8	Total/NA	Solid	7199	365964
MB 440-365964/1-A	Method Blank	Total/NA	Solid	7199	365964
LCS 440-365964/2-A	Lab Control Sample	Total/NA	Solid	7199	365964

### Prep Batch: 366556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-163622-10	SED-4	Total/NA	Solid	3060A	
MB 440-366556/1-A	Method Blank	Total/NA	Solid	3060A	
LCS 440-366556/2-A	Lab Control Sample	Total/NA	Solid	3060A	

### Analysis Batch: 366670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-163622-10	SED-4	Total/NA	Solid	7199	366556
MB 440-366556/1-A	Method Blank	Total/NA	Solid	7199	366556
LCS 440-366556/2-A	Lab Control Sample	Total/NA	Solid	7199	366556

## General Chemistry

### Analysis Batch: 365708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-163622-7	SED-1	Total/NA	Solid	Moisture	
440-163622-8	SED-2	Total/NA	Solid	Moisture	
440-163622-9	SED-3	Total/NA	Solid	Moisture	
440-163622-10	SED-4	Total/NA	Solid	Moisture	
440-163622-11	SED-5	Total/NA	Solid	Moisture	
440-163622-12	DUP-SED	Total/NA	Solid	Moisture	
440-163622-13	HH-6	Total/NA	Solid	Moisture	
440-163622-14	HH-7	Total/NA	Solid	Moisture	
440-163622-15	HH-8	Total/NA	Solid	Moisture	

TestAmerica Irvine

# Definitions/Glossary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Certification Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-2

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

## Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Alaska (UST)	State Program	10	UST-055	12-18-16
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17
Illinois	NELAP	5	200060	03-17-17
Kansas	NELAP	7	E-10375	10-31-16 *
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-29-17
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17
Virginia	NELAP	3	460278	03-14-17
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-16
Wyoming	State Program	8	8TMS-L	01-29-17

\* Certification renewal pending - certification considered valid.

TestAmerica Irvine

440-143622

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 2 QUOTE # TO ENSURE PROPER BILLING: TCH-001

Project Name: \_\_\_\_\_  
 Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)  
 "Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements  
 Invoice To: Access Analytical  
 Address: \_\_\_\_\_

PRISM LABORATORIES, INC.  
 Full Service Analytical & Environmental Solutions  
 449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
 Phone: 704/529-6364 • Fax: 704/525-0409  
 Client Company Name: Prism Labs, Inc.  
 Report To/Contact Name: Robbi Jones  
 Reporting Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax (Yes) (No): \_\_\_\_\_  
 Email (Y s) (No) Email Address: rjones@prismlabs.com  
 EDD Type:  PDF  Excel  Other  
 Site Location Name: TCH-002  
 Site Location Physical Address: Chapel Hill, NC

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL  
 Certification: NELAC \_\_\_\_\_ USACE \_\_\_\_\_ FL \_\_\_\_\_ NC \_\_\_\_\_  
 SC \_\_\_\_\_ OTHER \_\_\_\_\_ N/A \_\_\_\_\_  
 Water Chlorinated: YES \_\_\_\_\_ NO \_\_\_\_\_  
 Sample Iced Upon Collection: YES \_\_\_\_\_ NO \_\_\_\_\_

LAB USE ONLY  
 Samples INTACT upon arrival? YES \_\_\_\_\_ NO \_\_\_\_\_  
 Received ON WET ICE? Temp \_\_\_\_\_  
 PROPER PRESERVATIVES indicated?  
 Received WITHIN HOLDING TIMES?  
 CUSTODY SEALS INTACT?  
 VOLATILES rec'd W/OUT HEADSPACE?  
 PROPER CONTAINERS used?

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
SW-5	10/27/16	1400	Water	P	1	250mL	NA	X		
SW-4		1415		P				X		
SW-3		1430		P				X		
SW-2		1450		P				X		
SW-1		1510		P				X		
DUP-SW				P				X		
SED-1		1515	Soil	G		402		X		
SED-2		1455		G				X		
SED-3		1435		G				X		
SED-4		1420		G				X		



Feb 7 7:55 PM 17 1551  
 29/2.3 JR.74

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature: Patrick Stevens Affiliation: H&H

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) \_\_\_\_\_ Date: 10/27/16 10:30  
 Received By: (Signature) Fedex  
 Relinquished By: (Signature) \_\_\_\_\_ Date: 10/28/16 10:40  
 Received By: (Signature) TAT  
 Relinquished By: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_  
 Received For: Prism Laboratories By: \_\_\_\_\_  
 Log-in Group No. \_\_\_\_\_

PRISM USE ONLY  
 Site Arrival Time: \_\_\_\_\_  
 Site Departure Time: \_\_\_\_\_  
 Field Tech Fee: \_\_\_\_\_  
 Mileage: \_\_\_\_\_

Additional Comments:  
 Ship Fed Ex priority to:  
 Test America, 17461 Derian Ave. - Suite 100, Irvine, CA 92614  
 949.261.1022  
 Fed Ex #215-8067-2

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Fed Ex \_\_\_\_\_ UPS \_\_\_\_\_ Hand-delivered \_\_\_\_\_ Prism Field Service \_\_\_\_\_ Other \_\_\_\_\_  
 NPDES: - NC - SC \_\_\_\_\_  
 UST: - NC - SC \_\_\_\_\_  
 GROUNDWATER: - NC - SC \_\_\_\_\_  
 DRINKING WATER: - NC - SC \_\_\_\_\_  
 SOLID WASTE: - NC - SC \_\_\_\_\_  
 RCRA: - NC - SC \_\_\_\_\_  
 CERCLA: - NC - SC \_\_\_\_\_  
 LANDFILL: - NC - SC \_\_\_\_\_  
 OTHER: - NC - SC \_\_\_\_\_

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL



Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
Phone: 704/529-6364 • Fax: 704/525-0409

Client Company Name: **Prism Labs, Inc.**

Report To/Contact Name: **Robbi Jones**

Reporting Address:

Phone: \_\_\_\_\_ Fax (Yes) (No): \_\_\_\_\_

Email (Y s) (No) Email Address: [rfones@prismlabs.com](mailto:rfones@prismlabs.com)

EDD Type:  PDF  Excel  Other

Site Location Name: **TRH-002**

Site Location Physical Address: **Chapel Hill, NC**

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 2 QUOTE # TO ENSURE PROPER BILLING:

Project Name: **TCH-001**

Short Hold Analysis: (Yes) (No) **UST Project: (Yes) (No)**

\*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: **Access Analytical**

Address:

Purchase Order No./Billing Reference

Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days

"Working Days" 6-9 Days Standard 10 days

Samples received after 15:00 will be processed next business day.

Turnaround time is based on business days, excluding weekends and holidays.

(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

## LAB USE ONLY

Samples INTACT upon arrival? YES NO N/A

Received ON WET ICE? Temp \_\_\_\_\_

PROPER PRESERVATIVES indicated? \_\_\_\_\_

Received WITH-IN HOLDING TIMES? \_\_\_\_\_

CUSTODY SEALS INTACT? \_\_\_\_\_

VOLATILES rec'd W/OUT HEADSPACE? \_\_\_\_\_

PROPER CONTAINERS used? \_\_\_\_\_

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC \_\_\_\_\_ USACE \_\_\_\_\_ FL \_\_\_\_\_ NC \_\_\_\_\_

SC \_\_\_\_\_ OTHER \_\_\_\_\_ N/A

Water Chlorinated: YES \_\_\_\_\_ NO \_\_\_\_\_

Sample Iced Upon Collection: YES  NO \_\_\_\_\_

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				TYPE SEE BELOW	NO.	SIZE				
SED-5	10/27/16	1405	Soil	G	1	40Z	NA	X		
DUP-SED				G	1			X		
HH-6		1210		G	1			X		
HH-7		1155		G	1			X		
HH-8		1145		G	1			X		
RB-SED		1745	Water	P	1	250mL	NA	X		
									Feb. 7775 7917 1551	
									2.21/2.3 RA.7A	

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature: **Patrick Stevens** Sampled By (Print Name): **Patrick Stevens** Affiliation: **HH-11**

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By (Signature): **[Signature]** Received By (Signature): **[Signature]** Military/Hours: **1027/16 1830**

Relinquished By (Signature): **[Signature]** Received By (Signature): **[Signature]** Date: **10/28/16 18:40**

Relinquished By (Signature): **[Signature]** Received For Prism Laboratories By: **[Signature]** Date: \_\_\_\_\_

Method of Shipment: **[Signature]** NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Fed Ex UPS Hand-delivered Prism Field Service Other \_\_\_\_\_

NPDES: **UST: NC - SC** **GROUNDWATER: NC - SC** **DRINKING WATER: NC - SC** **SOLID WASTE: NC - SC** **RCRA: NC - SC** **CERCLA: NC - SC** **LANDFILL: NC - SC** **OTHER: NC - SC**

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

**PRISM USE ONLY**

Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

Additional Comments:  
Ship Fed Ex priority to:  
Test America, 17461  
Derian Ave. - Suite  
100, Irvine, CA 92614  
949.261.1022  
Fed Ex #215-8067-2

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL





## Login Sample Receipt Checklist

Client: Access Analytical Services

Job Number: 440-163622-2

**Login Number: 163622**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Escalante, Maria I**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	COC not relinquished
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	Insufficient time to successfully extract within holding time
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	Missing sample times – Client later provided
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-163622-1

Client Project/Site: Prism

For:

Access Analytical Services

7478 Carlisle Street

Irmo, South Carolina 29063

Attn: Ms. Angela Martin

*Cesar C Cortes*

Authorized for release by:

11/9/2016 2:43:30 PM

Cesar Cortes, Project Management Assistant I

(916)373-5600

[cesar.cortes@testamericainc.com](mailto:cesar.cortes@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Sample Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-163622-1	SW-5	Water	10/27/16 14:00	10/28/16 10:40
440-163622-2	SW-4	Water	10/27/16 14:15	10/28/16 10:40
440-163622-3	SW-3	Water	10/27/16 14:30	10/28/16 10:40
440-163622-4	SW-2	Water	10/27/16 14:50	10/28/16 10:40
440-163622-5	SW-1	Water	10/27/16 15:10	10/28/16 10:40
440-163622-6	DUP-SW	Water	10/27/16 00:00	10/28/16 10:40
440-163622-16	RB-SED	Water	10/27/16 17:45	10/28/16 10:40



# Case Narrative

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

---

**Job ID: 440-163622-1**

---

**Laboratory: TestAmerica Irvine**

## Narrative

### Receipt

The samples were received on 10/28/2016 at 10:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

### Receipt Exceptions

The Chain-of-Custody (COC) is not relinquished.

Regarding sample 440-163622-6 (DUP-SW), the COC does not provide a sample time. Client did communicate a desired time (00:00) which login currently reflects.

Samples SW-5 (440-163622-1), SW-4 (440-163622-2), SW-3 (440-163622-3), SW-2 (440-163622-4), SW-1 (440-163622-5) and DUP-SW (440-163622-6) were received with insufficient time to successfully extract within holding time. This was communicated to the client and the laboratory was instructed to proceed with analysis.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



# Client Sample Results

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

**Client Sample ID: SW-5**  
**Date Collected: 10/27/16 14:00**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-1**  
**Matrix: Water**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND	H	2.0	0.25	ug/L	-		10/28/16 13:04	1

**Client Sample ID: SW-4**  
**Date Collected: 10/27/16 14:15**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-2**  
**Matrix: Water**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND	H	2.0	0.25	ug/L	-		10/28/16 13:15	1

**Client Sample ID: SW-3**  
**Date Collected: 10/27/16 14:30**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-3**  
**Matrix: Water**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND	H	2.0	0.25	ug/L	-		10/28/16 13:27	1

**Client Sample ID: SW-2**  
**Date Collected: 10/27/16 14:50**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-4**  
**Matrix: Water**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND	H	2.0	0.25	ug/L	-		10/28/16 13:39	1

**Client Sample ID: SW-1**  
**Date Collected: 10/27/16 15:10**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-5**  
**Matrix: Water**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND	H	2.0	0.25	ug/L	-		10/28/16 13:50	1

**Client Sample ID: DUP-SW**  
**Date Collected: 10/27/16 00:00**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-6**  
**Matrix: Water**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND	H	2.0	0.25	ug/L	-		10/28/16 12:29	1

**Client Sample ID: RB-SED**  
**Date Collected: 10/27/16 17:45**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-16**  
**Matrix: Water**

**Method: 7199 - Chromium, Hexavalent (IC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.0	0.25	ug/L	-		10/28/16 12:17	1

TestAmerica Irvine

# Method Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

---

Method	Method Description	Protocol	Laboratory
7199	Chromium, Hexavalent (IC)	SW846	TAL IRV

---

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



# Lab Chronicle

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

**Client Sample ID: SW-5**  
**Date Collected: 10/27/16 14:00**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7199		1			365437	10/28/16 13:04	RW	TAL IRV

**Client Sample ID: SW-4**  
**Date Collected: 10/27/16 14:15**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7199		1			365437	10/28/16 13:15	RW	TAL IRV

**Client Sample ID: SW-3**  
**Date Collected: 10/27/16 14:30**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7199		1			365437	10/28/16 13:27	RW	TAL IRV

**Client Sample ID: SW-2**  
**Date Collected: 10/27/16 14:50**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7199		1			365437	10/28/16 13:39	RW	TAL IRV

**Client Sample ID: SW-1**  
**Date Collected: 10/27/16 15:10**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7199		1			365437	10/28/16 13:50	RW	TAL IRV

**Client Sample ID: DUP-SW**  
**Date Collected: 10/27/16 00:00**  
**Date Received: 10/28/16 10:40**

**Lab Sample ID: 440-163622-6**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7199		1			365437	10/28/16 12:29	RW	TAL IRV

TestAmerica Irvine



# Lab Chronicle

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

**Client Sample ID: RB-SED**

**Lab Sample ID: 440-163622-16**

**Date Collected: 10/27/16 17:45**

**Matrix: Water**

**Date Received: 10/28/16 10:40**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7199		1			365437	10/28/16 12:17	RW	TAL IRV

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

- 1
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# QC Sample Results

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

## Method: 7199 - Chromium, Hexavalent (IC)

Lab Sample ID: MB 440-365437/3  
Matrix: Water  
Analysis Batch: 365437

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.0	0.25	ug/L			10/28/16 07:52	1

Lab Sample ID: LCS 440-365437/2  
Matrix: Water  
Analysis Batch: 365437

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	50.0	51.7		ug/L		103	90 - 110

Lab Sample ID: MRL 440-365437/4  
Matrix: Water  
Analysis Batch: 365437

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	1.00	0.990	J	ug/L		99	50 - 150

# QC Association Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

## HPLC/IC

### Analysis Batch: 365437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-163622-1	SW-5	Total/NA	Water	7199	
440-163622-2	SW-4	Total/NA	Water	7199	
440-163622-3	SW-3	Total/NA	Water	7199	
440-163622-4	SW-2	Total/NA	Water	7199	
440-163622-5	SW-1	Total/NA	Water	7199	
440-163622-6	DUP-SW	Total/NA	Water	7199	
440-163622-16	RB-SED	Total/NA	Water	7199	
MB 440-365437/3	Method Blank	Total/NA	Water	7199	
LCS 440-365437/2	Lab Control Sample	Total/NA	Water	7199	
MRL 440-365437/4	Lab Control Sample	Total/NA	Water	7199	

# Definitions/Glossary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Certification Summary

Client: Access Analytical Services  
Project/Site: Prism

TestAmerica Job ID: 440-163622-1

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-17
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	01-31-17 *
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 16-001r	01-23-17
Hawaii	State Program	9	N/A	01-29-17
Kansas	NELAP Secondary AB	7	E-10420	07-31-17
Nevada	State Program	9	CA015312016-2	07-31-17
New Mexico	State Program	6	N/A	01-29-17
Northern Mariana Islands	State Program	9	MP0002	01-29-17
Oregon	NELAP	10	4028	01-29-17
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

## Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Alaska (UST)	State Program	10	UST-055	12-18-16
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17
Illinois	NELAP	5	200060	03-17-17
Kansas	NELAP	7	E-10375	10-31-16 *
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-29-17
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17
Virginia	NELAP	3	460278	03-14-17
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-16
Wyoming	State Program	8	8TMS-L	01-29-17

\* Certification renewal pending - certification considered valid.

TestAmerica Irvine

440-143622

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 2 QUOTE # TO ENSURE PROPER BILLING: TCH-001

Project Name: \_\_\_\_\_

Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)

\*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements

Invoice To: Access Analytical

Address: \_\_\_\_\_

PRISM LABORATORIES, INC.

Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543

Phone: 704/529-6364 • Fax: 704/525-0409

Client Company Name: Prism Labs, Inc.

Report To/Contact Name: Robbi Jones

Reporting Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax (Yes) (No): \_\_\_\_\_

Email (Y s) (No) Email Address: jjones@prismlabs.com

EDD Type:  PDF  Excel  Other

Site Location Name: TCH-002

Site Location Physical Address: Chapel Hill, NC

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

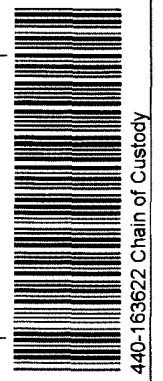
Certification: NELAC \_\_\_\_\_ USACE \_\_\_\_\_ FL \_\_\_\_\_ NC \_\_\_\_\_

SC \_\_\_\_\_ OTHER \_\_\_\_\_ N/A \_\_\_\_\_

Water Chlorinated: YES \_\_\_\_\_ NO \_\_\_\_\_

Sample Iced Upon Collection: YES \_\_\_\_\_ NO \_\_\_\_\_

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
SW-S	10/27/16	1400	Water	P	1	250mL	NA	X		
SW-4		1415		P	1			X		
SW-3		1430		P	1			X		
SW-2		1450		P	1			X		
SW-1		1510		P	1			X		
DUP-SW				P	1			X		
SED-1		1515	Soil	G	1	402		X		
SED-2		1455		G	1			X		
SED-3		1435		G	1			X		
SED-4		1420		G	1			X		



Feb 7 7:55 PM 17 1551

29/2.3 JR.74

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature: Patrick Stevens Sampled By (Print Name): Patrick Stevens Affiliation: HHT

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) Patrick Stevens Received By: (Signature) Fede X Date: 10/27/16 10:30 Military/Hours

Relinquished By: (Signature) \_\_\_\_\_ Received By: (Signature) TAI Date: 10/28/16 10:40

Relinquished By: (Signature) \_\_\_\_\_ Received For: Prism Laboratories By: \_\_\_\_\_

Method of Shipment: Hand-delivered Prisms Field Service Other: \_\_\_\_\_

NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Fed Ex: \_\_\_\_\_ UPS: \_\_\_\_\_ Hand-delivered: \_\_\_\_\_ Prisms Field Service: \_\_\_\_\_ Other: \_\_\_\_\_

NPDES: - NC - SC  UST: - NC - SC  DRINKING WATER: - NC - SC  SOLID WASTE: - NC - SC  RCRA: - NC - SC  CERCLA: - NC - SC  LANDFILL: - NC - SC  OTHER: - NC - SC

Additional Comments: \_\_\_\_\_

Ship Fed Ex priority to: \_\_\_\_\_

Site Arrival Time: \_\_\_\_\_

Site Departure Time: \_\_\_\_\_

Field Tech Fee: \_\_\_\_\_

Mileage: \_\_\_\_\_

Fed Ex #215-8067-2

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL





Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
Phone: 704/529-6364 • Fax: 704/525-0409

Client Company Name: Prism Labs, Inc.

Report To/Contact Name: Robbi Jones

Reporting Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax (Yes) (No): \_\_\_\_\_

Email (Y s) (No) Email Address: rfones@prismlabs.com

EDD Type:  PDF  Excel  Other

Site Location Name: TCH-002

Site Location Physical Address: Chapel Hill, NC

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 2 QUOTE # TO ENSURE PROPER BILLING:

Project Name: TCH-001

Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)

\*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: Access Analytical

Address: \_\_\_\_\_

## TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC USACE FL NC

Water Chlorinated: YES NO

Sample Iced Upon Collection: YES  NO

SC N/A OTHER

LAB USE ONLY  
Samples INTACT upon arrival? YES NO N/A  
Received ON WET ICE? Temp \_\_\_\_\_  
PROPER PRESERVATIVES indicated? \_\_\_\_\_  
Received WITH-IN HOLDING TIMES? \_\_\_\_\_  
CUSTODY SEALS INTACT? \_\_\_\_\_  
VOLATILES rec'd W/OUT HEADSPACE? \_\_\_\_\_  
PROPER CONTAINERS used? \_\_\_\_\_

Purchase Order No./Billing Reference \_\_\_\_\_  
Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days  
"Working Days" 6-9 Days Standard 10 days  
Samples received after 15:00 will be processed next business day.  
Turnaround time is based on business days, excluding weekends and holidays.  
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES  
RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER		PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				TYPE SEE BELOW	NO. SIZE				
SED-5	10/27/16	1405	Soil	G	1 40Z	NA	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
DUP-SED				G	1				
HH-6		1210		G	1				
HH-7		1155		G	1				
HH-8		1145		G	1				
RB-SED		1745	Water	P	1 250mL	NA			

Feb. 7775 7917 1551  
② 2.91/2.3 RA.7A

Received By: (Signature) Patricia Stevens

Received By: (Signature) Feber

Received By: (Signature) Ju Bank

Received By: (Signature) \_\_\_\_\_

Sampled By (Print Name) Patricia Stevens

Received By (Print Name) \_\_\_\_\_

Received By (Print Name) \_\_\_\_\_

Received By (Print Name) \_\_\_\_\_

Affiliation HHH

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) \_\_\_\_\_

Relinquished By: (Signature) \_\_\_\_\_

Relinquished By: (Signature) \_\_\_\_\_

Relinquished By: (Signature) \_\_\_\_\_

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Fed Ex UPS Hand-delivered Prism Field Service Other \_\_\_\_\_

NPDES: NC - SC NC - SC NC - SC NC - SC NC - SC NC - SC

Drinking Water: NC - SC NC - SC NC - SC NC - SC NC - SC NC - SC

Solid Waste: NC - SC NC - SC NC - SC NC - SC NC - SC NC - SC

RCRA: NC - SC NC - SC NC - SC NC - SC NC - SC NC - SC

CERCLA: NC - SC NC - SC NC - SC NC - SC NC - SC NC - SC

Other: NC - SC NC - SC NC - SC NC - SC NC - SC NC - SC

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

PRESS DOWN FIRMLY - 3 COPIES

PRISM USE ONLY

Site Arrival Time: _____
Site Departure Time: _____
Field Tech Fee: _____
Mileage: _____

Additional Comments:  
Ship Fed Ex priority to:  
Test America, 17461  
Derian Ave. - Suite  
100, Irvine, CA 92614  
949.261.1022  
Fed Ex #215-8067-2

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL



## Login Sample Receipt Checklist

Client: Access Analytical Services

Job Number: 440-163622-1

**Login Number: 163622**

**List Source: TestAmerica Irvine**

**List Number: 1**

**Creator: Escalante, Maria I**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	COC not relinquished
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	Insufficient time to successfully extract within holding time
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	Missing sample times – Client later provided
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION,  
VERIFICATION, TESTING AND CERTIFICATION COMPANY.



*e-Hardcopy 2.0*  
*Automated Report*

### Technical Report for

#### Hart & Hickman

TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

TCH-002

SGS Accutest Job Number: JC31091

Sampling Date: 11/03/16

#### Report to:

Hart & Hickman  
2923 South Tryon Street Suite 100  
Charlotte, NC 28203  
pstevens@harthickman.com

ATTN: Patrick Stevens

Total number of pages in report: 22



Test results contained within this data package meet the requirements  
of the National Environmental Laboratory Accreditation Program  
and/or state specific certification programs as applicable.

Nancy Cole  
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC,  
OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS Accutest.  
Test results relate only to samples analyzed.



ACCUTEST

Nov 16, 2016

Mr. Patrick Stevens  
Hart & Hickman  
2923 South Tryon Street Suite 100  
Charlotte, NC 28203

RE: SGS Accutest - Dayton, Job # JC31134 and JC31091 –Reissues

Dear Mr. Stevens:

The final report for SGS Accutest job number JC31134 and JC31091 has been edited to reflect changes to your data package. These edits have been incorporated into the revised report which is attached.

Specifically, the data has been revised to report to the MDL for sample JC31134 and JC31091. The attached revised report incorporates these revisions.

Please contact Me at (732) 329-0200 if you need further assistance in this matter.

Sincerely,

**Kelly Ramos**  
Project Manager

***SGS Accutest***

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TESTING AND CERTIFICATION COMPANY.

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## Sample Summary

Hart & Hickman

**Job No:** JC31091

TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC  
 Project No: TCH-002

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC31091-1	11/03/16	15:20 PHS	11/04/16	AQ	Surface Water	SW-2
JC31091-2	11/03/16	15:25 PHS	11/04/16	AQ	Surface Water	SW-1
JC31091-3	11/03/16	15:00 PHS	11/04/16	AQ	Surface Water	SW-5
JC31091-4	11/03/16	15:05 PHS	11/04/16	AQ	Surface Water	SW-4
JC31091-5	11/03/16	15:10 PHS	11/04/16	AQ	Surface Water	SW-3
JC31091-6	11/03/16	12:05 PHS	11/04/16	AQ	Surface Water	RB-DPT
JC31091-7	11/03/16	12:30 PHS	11/04/16	AQ	Surface Water	RB-HA
JC31091-8	11/03/16	00:00 PHS	11/04/16	AQ	Surface Water	DUP-SW

## Summary of Hits

**Job Number:** JC31091  
**Account:** Hart & Hickman  
**Project:** TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC  
**Collected:** 11/03/16

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

**JC31091-1**      **SW-2**

No hits reported in this sample.

**JC31091-2**      **SW-1**

No hits reported in this sample.

**JC31091-3**      **SW-5**

No hits reported in this sample.

**JC31091-4**      **SW-4**

No hits reported in this sample.

**JC31091-5**      **SW-3**

No hits reported in this sample.

**JC31091-6**      **RB-DPT**

No hits reported in this sample.

**JC31091-7**      **RB-HA**

No hits reported in this sample.

**JC31091-8**      **DUP-SW**

No hits reported in this sample.

Sample Results

---

Report of Analysis

---

## Report of Analysis

<b>Client Sample ID:</b> SW-2	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-1	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 11:47 TT	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> SW-1	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-2	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 12:03 TT	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL



## Report of Analysis

<b>Client Sample ID:</b> SW-5	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-3	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 10:46 TT	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> SW-4	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-4	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 11:02 TT	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> SW-3		<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-5		<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water		<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC		

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 11:39 TT	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> RB-DPT	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-6	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 10:14 TT	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> RB-HA	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-7	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 10:30 TT	SW846	7199

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> DUP-SW	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31091-8	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> AQ - Surface Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.00074 U	0.0055	0.00074	mg/l	1	11/04/16 12:19 TT	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

Misc. Forms

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Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



# Accutest Laboratories Southeast Chain of Custody

4405 Virland Road, Suite C-15 Orlando, FL 32811  
TEL: 407-425-6700 • FAX: 407-425-0707  
www.accutest.com

FED EX 7776 3241 6918  
Accutest JOB # JC 31091 PAGE 1 OF 1

Accutest Quote # \_\_\_\_\_ SKIFF# \_\_\_\_\_

Client/Reporting Information		Project Information		Analytical Information								Matrix Codes		
Company Name <u>Hart &amp; Hickman</u>		Project Name <u>TC-002</u>		Lab Use Only									DW - Drinking Water GW - Ground Water WW - Wastewater SW - Surface Water SO - Soil SL - Sludge OL - Oil LO - Other Liquid AIR - Air SOL - Other Solid WP - Wastewater	
Address <u>2623 S Taylor Street, Suite 102</u>		Site # <u>625 Martin Luther King Jr. Blvd</u>												
City <u>Greensboro</u> State <u>NC</u> Zip <u>27423</u>		City <u>Greensboro</u> State <u>NC</u>												
Project Contact <u>Leah Stivers</u> Phone <u>336-850-6511</u>		Project # <u>TC-002</u>												
Phone <u>336-850-6511</u>		Fax # _____												
Sample Name(s) <u>Private</u>		Client Order # <u>TC-002</u>												

Accutest Sample #	Field ID / Point of Collection	ANALYSIS INFORMATION														LAB USE ONLY		
		DATE	TIME	SAMP. ID	MATERIAL	TEMP. (C)	PH	PHENOL	AMMONIA	NITRATES	AMMONIUM	COBALT	BIODIAGNOSTIC	BIOWATER	BIOWASTE			
1	Sw-2	4/13/14	1520	825	Sw-2	1		X										
2	Sw-1		1525					X										
3	Sw-5		1527					X										
4	Sw-4		1525					X										
5	Sw-3		1526					X										
6	RB-PPT		1245					X										
7	RB-44	✓	1230	✓	✓	✓	✓	X										
8	DUP-SW					1		X										

TURNAROUND TIME (Business Days): \_\_\_\_\_ Data Deliverable Indicator: \_\_\_\_\_ Comments: Remarks: \_\_\_\_\_

Approved By: Push Code: \_\_\_\_\_

INITIAL ASSESSMENT: [Signature]  
 LABEL VERIFICATION: [Signature]

Emergency or Rush T/A Data Available VIA Email or Lablink: \_\_\_\_\_

COMMERCIAL: 'A' (RESULTS ONLY)  
 COMMERCIAL: 'B' (RESULTS PLUS QC)  
 REGD (EPA LEVEL 3)  
 FULLT (EPA LEVEL 4)  
 EDDS

**Accutest Laboratories**  
 Raleigh, North Carolina  
 Service Center

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sample # <u>1</u>	Date/Time: <u>4/13/14 12:45</u>	Received By: <u>[Signature]</u>	Relinquished by: <u>[Signature]</u>	Date/Time: <u>4/13/14 3:30</u>	Received By: <u>[Signature]</u>
Relinquished by: <u>5</u>	Date/Time: _____	Received By: <u>6</u>	Relinquished by: _____	Date/Time: _____	Received By: <u>8</u>

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: \_\_\_\_\_ Cooler Temperature (s) Celsius: 0.8 C

4.1  
4



**Job Change Order: JC31091**

**Requested Date:** 11/7/2016      **Received Date:** 11/4/2016  
**Account Name:** Hart & Hickman      **Due Date:** 11/18/2016  
**Project Description:** TCH-002, 828 Martin Luther King Junior Boulevard,      **Deliverable:** NEED  
**CSR:** kellyp      **TAT (Days):** 7

=====  
**Sample #:** JC31091-ALL      **Change:**  
**Dept:**      Revise TAT to 7 days, due 11/11

**TAT:** 7  
=====

**Above Changes Per:** Michelle Williams      **Date/Time:** 11/7/2016 11:48:38 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

# SGS Accutest Sample Receipt Summary

**Job Number:** JC31091

**Client:** \_\_\_\_\_

**Project:** TCH-002

**Date / Time Received:** 11/4/2016 8:30:00 AM

**Delivery Method:** FedEx

**Airbill #s:** \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (0.8);  
Cooler Temps (Corrected) °C: Cooler 1: (1.7);

**Cooler Security**

Y or N

Y or N

- |  |  |
|--|--|
| 1. Custody Seals Present: <input checked="" type="checkbox"/> <input type="checkbox"/> | 3. COC Present: <input checked="" type="checkbox"/> <input type="checkbox"/>       |
| 2. Custody Seals Intact: <input checked="" type="checkbox"/> <input type="checkbox"/>  | 4. Smpl Dates/Time OK <input checked="" type="checkbox"/> <input type="checkbox"/> |

**Cooler Temperature**

Y or N

1. Temp criteria achieved:
2. Cooler temp verification: \_\_\_\_\_  
IR Gun
3. Cooler media: \_\_\_\_\_  
Ice (direct contact)
4. No. Coolers: \_\_\_\_\_  
1

**Quality Control Preservation**

Y or N

N/A

- |                                 |                                     |                          |                                     |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Sample Integrity - Documentation**

Y or N

1. Sample labels present on bottles:
2. Container labeling complete:
3. Sample container label / COC agree:

**Sample Integrity - Condition**

Y or N

1. Sample recvd within HT:
2. All containers accounted for:
3. Condition of sample: \_\_\_\_\_  
Intact

**Sample Integrity - Instructions**

Y or N

N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments 1) Received 1 250ml xcr 7199 not listed on coc, Sample ID: Dup SW, will add to coc as -8

**JC31091: Chain of Custody**

Page 3 of 3

4.1  
4

**General Chemistry**

**QC Data Summaries**

---

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC31091  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP1230/GN54606	0.0055	0.0	mg/l	0.0501	0.0476	95.1	90-110%

Associated Samples:

Batch GP1230: JC31091-1, JC31091-2, JC31091-3, JC31091-4, JC31091-5, JC31091-6, JC31091-7, JC31091-8

(\*) Outside of QC limits

5.1  
5

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC31091  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP1230/GN54606	JC31091-1	mg/l	0.00074 U	0.0	0.0	0-20%

Associated Samples:

Batch GP1230: JC31091-1, JC31091-2, JC31091-3, JC31091-4, JC31091-5, JC31091-6, JC31091-7, JC31091-8  
(\* ) Outside of QC limits

5.2  
5

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC31091  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP1230/GN54606	JC31091-1	mg/l	0.00074 U	0.0501	0.047	93.9	85-115%

Associated Samples:

Batch GP1230: JC31091-1, JC31091-2, JC31091-3, JC31091-4, JC31091-5, JC31091-6, JC31091-7, JC31091-8

(\* ) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

5.3  
5

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VERIFICATION, TESTING AND CERTIFICATION COMPANY.



*e-Hardcopy 2.0*  
*Automated Report*

### Technical Report for

Hart & Hickman

TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

TCH-002

SGS Accutest Job Number: JC31134

Sampling Dates: 11/01/16 - 11/03/16



Report to:

Hart & Hickman  
2923 South Tryon Street Suite 100  
Charlotte, NC 28203  
pstevens@harthickman.com

ATTN: Patrick Stevens

Total number of pages in report: **35**



Test results contained within this data package meet the requirements  
of the National Environmental Laboratory Accreditation Program  
and/or state specific certification programs as applicable.

Nancy Cole  
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC,  
OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS Accutest.  
Test results relate only to samples analyzed.



ACCUTEST

Nov 16, 2016

Mr. Patrick Stevens  
Hart & Hickman  
2923 South Tryon Street Suite 100  
Charlotte, NC 28203

RE: SGS Accutest - Dayton, Job # JC31134 and JC31091 –Reissues

Dear Mr. Stevens:

The final report for SGS Accutest job number JC31134 and JC31091 has been edited to reflect changes to your data package. These edits have been incorporated into the revised report which is attached.

Specifically, the data has been revised to report to the MDL for sample JC31134 and JC31091. The attached revised report incorporates these revisions.

Please contact Me at (732) 329-0200 if you need further assistance in this matter.

Sincerely,

**Kelly Ramos**  
Project Manager

**SGS Accutest**

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TESTING AND CERTIFICATION COMPANY.



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1

2

3

4

5



## Sample Summary

Hart & Hickman

**Job No:** JC31134

TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC  
 Project No: TCH-002

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC31134-1	11/01/16	11:35 PHS	11/04/16	SO	Soil	MW-7 (0-1)
JC31134-2	11/02/16	13:30 PHS	11/04/16	SO	Soil	MW-6 (0-1)
JC31134-3	11/02/16	16:05 PHS	11/04/16	SO	Soil	MW-5 (0-1)
JC31134-4	11/02/16	16:35 PHS	11/04/16	SO	Soil	MW-5 (6-7)
JC31134-5	11/03/16	08:45 PHS	11/04/16	SO	Soil	HH-4 (0-1)
JC31134-6	11/03/16	09:25 PHS	11/04/16	SO	Soil	HH-5 (0-1)
JC31134-7	11/03/16	10:05 PHS	11/04/16	SO	Soil	HH-3 (0-1)
JC31134-8	11/03/16	10:30 PHS	11/04/16	SO	Soil	HH-1 (0-1)
JC31134-9	11/03/16	11:15 PHS	11/04/16	SO	Soil	HH-2 (0-1)
JC31134-10	11/03/16	13:55 PHS	11/04/16	SO	Soil	BG-1 (0-1)
JC31134-11	11/03/16	14:10 PHS	11/04/16	SO	Soil	BG-1 (2-3)
JC31134-12	11/03/16	14:15 PHS	11/04/16	SO	Soil	BG-2 (0-1)
JC31134-13	11/03/16	14:40 PHS	11/04/16	SO	Soil	BG-2 (2-3)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## Sample Summary

(continued)

Hart & Hickman

**Job No:** JC31134

TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Project No: TCH-002

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC31134-14	11/03/16	14:50 PHS	11/04/16	SO	Soil	BG-3 (0-1)
JC31134-15	11/03/16	15:00 PHS	11/04/16	SO	Soil	BG-3 (2-3)
JC31134-16	11/03/16	15:10 PHS	11/04/16	SO	Soil	BG-4 (0-1)
JC31134-17	11/03/16	15:20 PHS	11/04/16	SO	Soil	BG-4 (2-3)
JC31134-18	11/03/16	00:00 PHS	11/04/16	SO	Soil	DUP-SOIL

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## Summary of Hits

**Job Number:** JC31134  
**Account:** Hart & Hickman  
**Project:** TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC  
**Collected:** 11/01/16 thru 11/03/16

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

**JC31134-1 MW-7 (0-1)**

Chromium, Hexavalent 0.89 0.59 0.16 mg/kg SW846 3060A/7199

**JC31134-2 MW-6 (0-1)**

Chromium, Hexavalent 0.21 B 0.43 0.12 mg/kg SW846 3060A/7199

**JC31134-3 MW-5 (0-1)**

Chromium, Hexavalent 0.43 B 0.48 0.13 mg/kg SW846 3060A/7199

**JC31134-4 MW-5 (6-7)**

Chromium, Hexavalent 0.81 0.45 0.12 mg/kg SW846 3060A/7199

**JC31134-5 HH-4 (0-1)**

Chromium, Hexavalent 0.50 0.47 0.13 mg/kg SW846 3060A/7199

**JC31134-6 HH-5 (0-1)**

No hits reported in this sample.

**JC31134-7 HH-3 (0-1)**

Chromium, Hexavalent 0.46 B 0.53 0.15 mg/kg SW846 3060A/7199

**JC31134-8 HH-1 (0-1)**

Chromium, Hexavalent 0.45 0.45 0.12 mg/kg SW846 3060A/7199

**JC31134-9 HH-2 (0-1)**

Chromium, Hexavalent 0.43 0.42 0.12 mg/kg SW846 3060A/7199

**JC31134-10 BG-1 (0-1)**

Chromium, Hexavalent 0.87 0.45 0.12 mg/kg SW846 3060A/7199

**JC31134-11 BG-1 (2-3)**

No hits reported in this sample.

## Summary of Hits

**Job Number:** JC31134  
**Account:** Hart & Hickman  
**Project:** TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC  
**Collected:** 11/01/16 thru 11/03/16

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
<b>JC31134-12</b>	<b>BG-2 (0-1)</b>					
Chromium, Hexavalent		0.84	0.45	0.13	mg/kg	SW846 3060A/7199
<b>JC31134-13</b>	<b>BG-2 (2-3)</b>					
Chromium, Hexavalent		0.70	0.61	0.17	mg/kg	SW846 3060A/7199
<b>JC31134-14</b>	<b>BG-3 (0-1)</b>					
Chromium, Hexavalent		0.21 B	0.44	0.12	mg/kg	SW846 3060A/7199
<b>JC31134-15</b>	<b>BG-3 (2-3)</b>					
Chromium, Hexavalent		0.88	0.46	0.13	mg/kg	SW846 3060A/7199
<b>JC31134-16</b>	<b>BG-4 (0-1)</b>					
No hits reported in this sample.						
<b>JC31134-17</b>	<b>BG-4 (2-3)</b>					
Chromium, Hexavalent		0.50 B	0.52	0.14	mg/kg	SW846 3060A/7199
<b>JC31134-18</b>	<b>DUP-SOIL</b>					
Chromium, Hexavalent		0.54	0.53	0.14	mg/kg	SW846 3060A/7199

Sample Results

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Report of Analysis

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# Report of Analysis

31  
3

<b>Client Sample ID:</b> MW-7 (0-1)	<b>Date Sampled:</b> 11/01/16
<b>Lab Sample ID:</b> JC31134-1	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 70.8
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.89	0.59	0.16	mg/kg	1	11/11/16 15:53 TT	SW846	3060A/7199
Solids, Percent	70.8			%	1	11/06/16 17:00 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> MW-6 (0-1)	
<b>Lab Sample ID:</b> JC31134-2	<b>Date Sampled:</b> 11/02/16
<b>Matrix:</b> SO - Soil	<b>Date Received:</b> 11/04/16
	<b>Percent Solids:</b> 97.2
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.21 B	0.43	0.12	mg/kg	1	11/11/16 16:09 TT	SW846	3060A/7199
Solids, Percent	97.2			%	1	11/06/16 17:00 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



## Report of Analysis

<b>Client Sample ID:</b> MW-5 (0-1)	<b>Date Sampled:</b> 11/02/16
<b>Lab Sample ID:</b> JC31134-3	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.1
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.43 B	0.48	0.13	mg/kg	1	11/11/16 15:13 TT	SW846	3060A/7199
Solids, Percent	86.1			%	1	11/06/16 17:00 KP	SM2540	G-97

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

# Report of Analysis

3.4  
3

<b>Client Sample ID:</b> MW-5 (6-7)	<b>Date Sampled:</b> 11/02/16
<b>Lab Sample ID:</b> JC31134-4	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 91.8
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.81	0.45	0.12	mg/kg	1	11/11/16 16:17 TT	SW846	3060A/7199
Solids, Percent	91.8			%	1	11/06/16 17:00 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

# Report of Analysis

<b>Client Sample ID:</b> HH-4 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-5	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 83.7
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.50	0.47	0.13	mg/kg	1	11/11/16 16:32 TT	SW846	3060A/7199
Solids, Percent	83.7			%	1	11/06/16 17:00 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

3.6  
3

<b>Client Sample ID:</b> HH-5 (0-1)		<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-6		<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> 80.8
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC		

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.14 U	0.49	0.14	mg/kg	1	11/11/16 16:56 TT	SW846	3060A/7199
Solids, Percent	80.8			%	1	11/06/16 17:00 KP	SM2540	G-97

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> HH-3 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-7	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 75.2
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.46 B	0.53	0.15	mg/kg	1	11/11/16 17:12 TT	SW846	3060A/7199
Solids, Percent	75.2			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> HH-1 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-8	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 90.8
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.45	0.45	0.12	mg/kg	1	11/11/16 17:20 TT	SW846	3060A/7199
Solids, Percent	90.8			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

# Report of Analysis

<b>Client Sample ID:</b> HH-2 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-9	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 93.3
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.43	0.42	0.12	mg/kg	1	11/11/16 17:43 TT	SW846	3060A/7199
Solids, Percent	93.3			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

# Report of Analysis

<b>Client Sample ID:</b> BG-1 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-10	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 87.1
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.87	0.45	0.12	mg/kg	1	11/11/16 17:59 TT	SW846	3060A/7199
Solids, Percent	87.1			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



## Report of Analysis

<b>Client Sample ID:</b> BG-1 (2-3)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-11	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 89.1
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.12 U	0.44	0.12	mg/kg	1	11/11/16 18:15 TT	SW846	3060A/7199
Solids, Percent	89.1			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> BG-2 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-12	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 88.7
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.84	0.45	0.13	mg/kg	1	11/11/16 18:40 TT	SW846	3060A/7199
Solids, Percent	88.7			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

# Report of Analysis

<b>Client Sample ID:</b> BG-2 (2-3)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-13	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 67.6
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.70	0.61	0.17	mg/kg	1	11/11/16 19:03 TT	SW846	3060A/7199
Solids, Percent	67.6			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> BG-3 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-14	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 92.1
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.21 B	0.44	0.12	mg/kg	1	11/11/16 19:11 TT	SW846	3060A/7199
Solids, Percent	92.1			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> BG-3 (2-3)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-15	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 90.7
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.88	0.46	0.13	mg/kg	1	11/11/16 19:35 TT	SW846	3060A/7199
Solids, Percent	90.7			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

# Report of Analysis

<b>Client Sample ID:</b> BG-4 (0-1)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-16	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 86.3
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.13 U	0.47	0.13	mg/kg	1	11/11/16 19:50 TT	SW846	3060A/7199
Solids, Percent	86.3			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

## Report of Analysis

<b>Client Sample ID:</b> BG-4 (2-3)	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-17	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 79.3
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.50 B	0.52	0.14	mg/kg	1	11/11/16 19:58 TT	SW846	3060A/7199
Solids, Percent	79.3			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

# Report of Analysis

<b>Client Sample ID:</b> DUP-SOIL	<b>Date Sampled:</b> 11/03/16
<b>Lab Sample ID:</b> JC31134-18	<b>Date Received:</b> 11/04/16
<b>Matrix:</b> SO - Soil	<b>Percent Solids:</b> 76.5
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

## General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.54	0.53	0.14	mg/kg	1	11/11/16 20:14 TT	SW846	3060A/7199
Solids, Percent	76.5			%	1	11/06/16 17:30 KP	SM2540	G-97

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL



Misc. Forms

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Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



# Accutest Laboratories Southeast Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811  
TEL: 407-425-6700 • FAX: 407-425-0707

7776 32314680

Accutest JOB #

PAGE 1 OF 2

Client / Reporting Information		Project Information		Analytical Information										Matrix Codes		
Company Name: <b>Hart &amp; Hickman</b>		Project Name: <b>TCH-02</b>												DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid A/R - K SOL - Other Solid NP - N/A		
Address: <b>2023 S. Tryon Street, Suite 100</b>		Street: <b>B2B, Martin Luther King Jr. Blvd</b>														
City: <b>Charlotte</b> State: <b>NC</b> Zip: <b>28223</b>		City: <b>Chapel Hill</b> State: <b>NC</b>														
Project Contact: <b>Patrick Stevens</b> Email: <b>Patrick.Stevens@hickman.com</b>		Project #: <b>TCH-02</b>														
Phone: <b>704-586-0077</b>		Client Purchase Order #: <b>TCH-02</b>														
Sender(s) Name(s): <b>Patrick Stevens</b>																
Accutest Sample #	Field ID / Point of Collection	COLLECTION		CONTAINER INFORMATION										LAB USE ONLY		
		DATE	TIME	SAMPLED BY	LAB #	TOTAL # OF COOLERS	START	STOP	PH	PHOS	AMMONIA	AMMONIUM	ORP		TEMP	
1	MW-7 (0-1)	11/16	1335	PHS	2-1			X							X	
2	MW-6 (0-1)	11/16	1330					X							X	E771
3	MW-5 (0-1)	11/16	16:35					X							X	
4	MW-5 (0-2)	11/16	16:35					X							X	
5	HH-4 (0-1)	11/16	12:45					X							X	
6	HH-5 (0-1)	11/16	12:25					X							X	
7	HH-3 (0-1)	11/16	10:05					X							X	
8	HH-1 (0-1)	11/16	10:30					X							X	
9	HH-2 (0-1)	11/16	11:5					X							X	
10	BG-1 (0-1)	11/16	13:55					X							X	
11	BG-1 (2-3)	11/16	14:10					X							X	
12	BG-2 (0-1)	11/16	14:15					X							X	
TURNDOWN TIME (Business Days)																
<input checked="" type="checkbox"/> 10 Days Standard <input type="checkbox"/> 7 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY/INITIAL ASSESSMENT <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> OTHER		Approved By: (Push Code) _____ Date Deliverable Information: _____ <input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> RED1 (EPA LEVEL 3) <input type="checkbox"/> FULL (EPA LEVEL 4) <input type="checkbox"/> EDD'S												Comments / Remarks  <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <b>Accutest Laboratories</b>              Raleigh, North Carolina              Service Center           </div>		
Relinquished by: <b>Patrick Stevens</b> Date Time: <b>11/16 17:35</b>		Received By: _____ Date Time: _____		Relinquished by: _____ Date Time: _____					Received By: _____ Date Time: _____							
Relinquished by: <b>FedEx</b> Date Time: <b>11/16 9:30</b>		Received By: _____ Date Time: _____		Relinquished by: _____ Date Time: _____					Received By: _____ Date Time: _____							
<b>Lab Use Only:</b> Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: _____ Cooler Temperature (s) Celsius: <b>30 C</b>																

4.1  
4

JC31134: Chain of Custody

Page 1 of 4



# Accutest Laboratories Southeast Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811  
TEL: 407-425-6700 • FAX: 407-425-0707

Accutest JOB #

PAGE 2 OF 2

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Accutest Quote #

SKIFF#

Client / Reporting Information Project Information Analytical Information Matrix Codes

Company Name <u>Holt + Hickman</u>		Project Name <u>TCH-002</u>		Analytical Information								Matrix Codes DW - Drinking Water GW - Ground Water WW - Waste SW - Surface Water SO - Soil SL - Sludge LO - Other Liquid ALR - Air SOL - Other Solid WP - Wipe
Address <u>2423 S. Tiger Street, Suite 100</u>		Street <u>Edinburg Market Center King Jc Blvd</u>		DATE: <u>11/13/16</u> TIME: <u>14:50</u> SAMPLED BY: <u>PHS</u> MATRIX: <u>SW-1</u> TOTAL # OF SAMPLES: <u>1</u> OTHER: <u>X</u> SWMT: <u>X</u> PYS: <u>X</u> SAHM: <u>X</u> PUSM: <u>X</u> MONTM: <u>X</u> HVM: <u>X</u> HVMH: <u>X</u> HVMC: <u>X</u>								
City <u>Charlotte</u>		City <u>Charlotte</u>										
Project Contact <u>Patrick Stevens</u>		Project # <u>TCH-002</u>										
Phone <u>704-566-0007</u>		Fax #										
Samples Name(s) <u>Patrick Stevens</u>		Client Purchase Order # <u>TCH-002</u>										

Accutest Sample #	Field ID / Point of Collection	DATE		SAMPLED BY	MATRIX	TOTAL # OF SAMPLES	OTHER	SWMT	PYS	SAHM	PUSM	MONTM	HVM	HVMH	HVMC	LAB USE ONLY	
		DATE	TIME														
13	BG-2 (2-3)	11/3/16	1450	PHS	SW-1	1		X									
14	BG-3 (0-1)	11/3/16	1450					X									
15	BG-3 (2-3)	11/3/16	1500					X									
16	BG-4 (0-1)	11/3/16	1510					X									
17	BG-4 (2-3)	11/3/16	1520					X									
18	DUP-Soil							X									

TURNAROUND TIME (Business Days) Data Deliverable Information Comments / Remarks

<input checked="" type="checkbox"/> 10 Days Standard <input type="checkbox"/> 7 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> OTHER	Approved By: / Rush Code INITIAL ASSESSMENT _____ LABEL VERIFICATION _____	<input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT (EPA LEVEL 3) <input type="checkbox"/> FULT (EPA LEVEL 4) <input type="checkbox"/> EDDS	Accutest Laboratories Raleigh, North Carolina Service Center
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Sample Custody must be documented below each time samples change possession, include cooler delivery			
Relinquished by: <u>[Signature]</u>	Date/Time: <u>11/3/16 17:35</u>	Received By: <u>[Signature]</u>	Relinquished by: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>11/4/16 07:30</u>	Received By: <u>[Signature]</u>	Relinquished by: <u>[Signature]</u>

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius:



## SGS Accutest Sample Receipt Summary

Job Number: JC31134

Client: \_\_\_\_\_

Project: \_\_\_\_\_

Date / Time Received: 11/4/2016 9:30:00 AM

Delivery Method: \_\_\_\_\_

Airbill #'s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (3.0);

Cooler Temps (Corrected) °C: Cooler 1: (3.9);

**Cooler Security**

Y or N

Y or N

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Cooler Temperature**

Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun                              |                          |
| 3. Cooler media:             | Ice (Bag)                           |                          |
| 4. No. Coolers:              | 1                                   |                          |

**Quality Control Preservation**

Y or N

N/A

- |                                 |                                     |                                     |                                     |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Sample Integrity - Documentation**

Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Sample Integrity - Condition**

Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

**Sample Integrity - Instructions**

Y or N

N/A

- |   |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

JC31134: Chain of Custody

Page 3 of 4

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**Job Change Order: JC31134**

**Requested Date:** 11/7/2016      **Received Date:** 11/4/2016  
**Account Name:** Hart & Hickman      **Due Date:** 11/18/2016  
**Project Description:** TCH-002, 828 Martin Luther King Junior Boulevard,      **Deliverable:** NEED  
**CSR:** kellyp      **TAT (Days):** 7

=====  
**Sample #:** JC31134-ALL      **Change:**  
**Dept:**      Revise TAT to 7 days, due 11/11

**TAT:** 7

**Above Changes Per:** Michelle Williams      **Date/Time:** 11/7/2016 11:47:33 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

**General Chemistry**

**QC Data Summaries**

---

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC31134  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP1361/GN55009	0.40	0.0	mg/kg	40	34.9	87.3	80-120%
Chromium, Hexavalent	GP1361/GN55009			mg/kg	1280	1360	106.3	80-120%
Chromium, Hexavalent	GP1361/GN55009			mg/kg	551	471	85.4	71-95%

Associated Samples:

Batch GP1361: JC31134-1, JC31134-2, JC31134-3, JC31134-4, JC31134-5, JC31134-6, JC31134-7, JC31134-8, JC31134-9, JC31134-10, JC31134-11, JC31134-12, JC31134-13, JC31134-14, JC31134-15, JC31134-16, JC31134-17, JC31134-18  
(\* ) Outside of QC limits

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DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC31134  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP1361/GN55009	JC31134-3	mg/kg	0.43 B	0.55	24.5(a)	0-20%

Associated Samples:

Batch GP1361: JC31134-1, JC31134-2, JC31134-3, JC31134-4, JC31134-5, JC31134-6, JC31134-7, JC31134-8, JC31134-9, JC31134-10, JC31134-11, JC31134-12, JC31134-13, JC31134-14, JC31134-15, JC31134-16, JC31134-17, JC31134-18

(\*) Outside of QC limits

(a) RPD acceptable due to low duplicate and sample concentrations.

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MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC31134  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP1361/GN55009	JC31134-3	mg/kg	0.43 B	48.2	40.1	82.3 (a)	75-125%
Chromium, Hexavalent	GP1361/GN55009	JC31134-3	mg/kg	0.43 B	1360	1040	76.5 (b)	75-125%

Associated Samples:

Batch GP1361: JC31134-1, JC31134-2, JC31134-3, JC31134-4, JC31134-5, JC31134-6, JC31134-7, JC31134-8, JC31134-9, JC31134-10, JC31134-11, JC31134-12, JC31134-13, JC31134-14, JC31134-15, JC31134-16, JC31134-17, JC31134-18

(\* ) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Good recovery on soluble XCR matrix spike. Good recovery (92.3%) on the post-spike.

(b) Good recovery on insoluble XCR matrix spike. See additional comments on soluble matrix spike recovery.

Hart & Hickman (Raleigh)  
Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No.: TCH-002  
Lab Submittal Date: 11/15/2016  
Prism Work Order: 6110292

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

**Narrative Notes:**

This is a Revised Report and supercedes the original laboratory report dated 12/15/16. Dissolved selenium is reported for MW-1.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



Robbi A. Jones  
President/Project Manager



Reviewed By Angela D. Overcash For Robbi A. Jones  
VP Laboratory Services

**Data Qualifiers Key Reference:**

- A Recovery of Low-Level Initial Calibration Check standard (76%) is less than the control limit (80%). Result might have a low bias.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- MC Sample concentration too high for recovery evaluation.
- BRL Below Reporting Limit
- MDL Method Detection Limit
- RPD Relative Percent Difference
- \* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
MW-4A	6110292-01	Water	11/09/16	11/15/16
MW-3A	6110292-02	Water	11/09/16	11/15/16
MW-6	6110292-03	Water	11/09/16	11/15/16
MW-5	6110292-04	Water	11/09/16	11/15/16
MW-1	6110292-05	Water	11/10/16	11/15/16
MW-1 Filtered	6110292-06	Water	11/10/16	11/15/16
Dup- GW	6110292-07	Water	11/10/16	11/15/16

Samples were received in good condition at 1.5 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result		Units
6110292-01	MW-4A	Barium	6010D	0.036		mg/L
6110292-01	MW-4A	Chromium	6010D	0.0012	J	mg/L
6110292-01	MW-4A	Manganese	6010D	0.14		mg/L
6110292-01	MW-4A	Selenium	6010D	0.0072	J	mg/L
6110292-01	MW-4A	Strontium	6010D	0.17		mg/L
6110292-01	MW-4A	Zinc	6010D	0.017	J	mg/L
6110292-02	MW-3A	Barium	6010D	0.053		mg/L
6110292-02	MW-3A	Manganese	6010D	0.014		mg/L
6110292-02	MW-3A	Selenium	6010D	0.050		mg/L
6110292-02	MW-3A	Strontium	6010D	2.4		mg/L
6110292-02	MW-3A	Thallium	6010D	0.0054	J	mg/L
6110292-02	MW-3A	Vanadium	6010D	0.00094	J	mg/L
6110292-02	MW-3A	Zinc	6010D	0.012	J	mg/L
6110292-03	MW-6	Barium	6010D	0.34		mg/L
6110292-03	MW-6	Chromium	6010D	0.029		mg/L
6110292-03	MW-6	Copper	6010D	0.0019	J	mg/L
6110292-03	MW-6	Manganese	6010D	2.5		mg/L
6110292-03	MW-6	Nickel	6010D	0.022		mg/L
6110292-03	MW-6	Selenium	6010D	0.020		mg/L
6110292-03	MW-6	Strontium	6010D	0.69		mg/L
6110292-03	MW-6	Vanadium	6010D	0.0012	J	mg/L
6110292-04	MW-5	Barium	6010D	0.051		mg/L
6110292-04	MW-5	Cobalt	6010D	0.00027	J	mg/L
6110292-04	MW-5	Manganese	6010D	0.58		mg/L
6110292-04	MW-5	Selenium	6010D	0.023		mg/L
6110292-04	MW-5	Strontium	6010D	0.19		mg/L
6110292-04	MW-5	Vanadium	6010D	0.00039	J	mg/L
6110292-05	MW-1	Arsenic	6010D	0.019		mg/L
6110292-05	MW-1	Barium	6010D	0.47		mg/L
6110292-05	MW-1	Beryllium	6010D	0.0041		mg/L
6110292-05	MW-1	Cadmium	6010D	0.00015	J	mg/L
6110292-05	MW-1	Chromium	6010D	0.031		mg/L
6110292-05	MW-1	Cobalt	6010D	0.032		mg/L
6110292-05	MW-1	Copper	6010D	0.057		mg/L
6110292-05	MW-1	Lead	6010D	0.010		mg/L
6110292-05	MW-1	Manganese	6010D	8.6		mg/L
6110292-05	MW-1	Nickel	6010D	0.021		mg/L
6110292-05	MW-1	Selenium	6010D	0.023		mg/L
6110292-05	MW-1	Strontium	6010D	2.2		mg/L
6110292-05	MW-1	Vanadium	6010D	0.092		mg/L
6110292-05	MW-1	Zinc	6010D	0.099		mg/L
6110292-06	MW-1 Filtered	Barium	6010D	0.16		mg/L
6110292-06	MW-1 Filtered	Beryllium	6010D	0.00053	J	mg/L
6110292-06	MW-1 Filtered	Cobalt	6010D	0.0060		mg/L

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Prism ID	Client ID	Parameter	Method	Result	Units
6110292-06	MW-1 Filtered	Manganese	6010D	8.0	mg/L
6110292-06	MW-1 Filtered	Nickel	6010D	0.0023 J	mg/L
6110292-06	MW-1 Filtered	Selenium	6010D	0.024 A	mg/L
6110292-06	MW-1 Filtered	Strontium	6010D	2.1	mg/L
6110292-06	MW-1 Filtered	Vanadium	6010D	0.0012 J	mg/L
6110292-07	Dup- GW	Barium	6010D	0.053	mg/L
6110292-07	Dup- GW	Manganese	6010D	0.015	mg/L
6110292-07	Dup- GW	Selenium	6010D	0.052	mg/L
6110292-07	Dup- GW	Strontium	6010D	2.4	mg/L
6110292-07	Dup- GW	Thallium	6010D	0.0053 J	mg/L
6110292-07	Dup- GW	Vanadium	6010D	0.00095 J	mg/L

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: MW-4A  
 Prism Sample ID: 6110292-01  
 Prism Work Order: 6110292  
 Time Collected: 11/09/16 10:40  
 Time Submitted: 11/15/16 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/21/16 13:50	JAB	P6K0479
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/18/16 2:14	bgm	P6K0398
Arsenic	BRL	mg/L	0.010	0.0024	1	6010D	11/18/16 2:14	bgm	P6K0398
<b>Barium</b>	<b>0.036</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:14</b>	<b>bgm</b>	<b>P6K0398</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	6010D	11/18/16 2:14	bgm	P6K0398
Cadmium	BRL	mg/L	0.0010	0.00013	1	6010D	11/18/16 2:14	bgm	P6K0398
<b>Chromium</b>	<b>0.0012 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00076</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:14</b>	<b>bgm</b>	<b>P6K0398</b>
Cobalt	BRL	mg/L	0.0050	0.00011	1	6010D	11/18/16 2:14	bgm	P6K0398
Copper	BRL	mg/L	0.010	0.0016	1	6010D	11/18/16 2:14	bgm	P6K0398
Lead	BRL	mg/L	0.0050	0.0016	1	6010D	11/18/16 2:14	bgm	P6K0398
<b>Manganese</b>	<b>0.14</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:14</b>	<b>bgm</b>	<b>P6K0398</b>
Nickel	BRL	mg/L	0.010	0.0010	1	6010D	11/18/16 2:14	bgm	P6K0398
<b>Selenium</b>	<b>0.0072 J</b>	<b>mg/L</b>	<b>0.020</b>	<b>0.0044</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:14</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Strontium</b>	<b>0.17</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:14</b>	<b>bgm</b>	<b>P6K0398</b>
Thallium	BRL	mg/L	0.010	0.0025	1	6010D	11/18/16 2:14	bgm	P6K0398
Vanadium	BRL	mg/L	0.0050	0.00015	1	6010D	11/18/16 2:14	bgm	P6K0398
<b>Zinc</b>	<b>0.017 J</b>	<b>mg/L</b>	<b>0.030</b>	<b>0.011</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:14</b>	<b>bgm</b>	<b>P6K0398</b>

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: MW-3A  
 Prism Sample ID: 6110292-02  
 Prism Work Order: 6110292  
 Time Collected: 11/09/16 11:25  
 Time Submitted: 11/15/16 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/21/16 13:54	JAB	P6K0479
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/18/16 2:38	bgm	P6K0398
Arsenic	BRL	mg/L	0.010	0.0024	1	6010D	11/18/16 2:38	bgm	P6K0398
<b>Barium</b>	<b>0.053</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:38</b>	<b>bgm</b>	<b>P6K0398</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	6010D	11/18/16 2:38	bgm	P6K0398
Cadmium	BRL	mg/L	0.0010	0.00013	1	6010D	11/18/16 2:38	bgm	P6K0398
Chromium	BRL	mg/L	0.0050	0.00076	1	6010D	11/18/16 2:38	bgm	P6K0398
Cobalt	BRL	mg/L	0.0050	0.00011	1	6010D	11/18/16 2:38	bgm	P6K0398
Copper	BRL	mg/L	0.010	0.0016	1	6010D	11/18/16 2:38	bgm	P6K0398
Lead	BRL	mg/L	0.0050	0.0016	1	6010D	11/18/16 2:38	bgm	P6K0398
<b>Manganese</b>	<b>0.014</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:38</b>	<b>bgm</b>	<b>P6K0398</b>
Nickel	BRL	mg/L	0.010	0.0010	1	6010D	11/18/16 2:38	bgm	P6K0398
Selenium	<b>0.050</b>	<b>mg/L</b>	<b>0.020</b>	<b>0.0044</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:38</b>	<b>bgm</b>	<b>P6K0398</b>
Strontium	2.4	mg/L	0.010	0.00057	1	6010D	11/18/16 2:38	bgm	P6K0398
Thallium	0.0054 J	mg/L	0.010	0.0025	1	6010D	11/18/16 2:38	bgm	P6K0398
Vanadium	0.00094 J	mg/L	0.0050	0.00015	1	6010D	11/18/16 2:38	bgm	P6K0398
Zinc	0.012 J	mg/L	0.030	0.011	1	6010D	11/18/16 2:38	bgm	P6K0398

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No.: TCH-002  
Sample Matrix: Water

Client Sample ID: MW-6  
Prism Sample ID: 6110292-03  
Prism Work Order: 6110292  
Time Collected: 11/09/16 12:45  
Time Submitted: 11/15/16 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/21/16 13:58	JAB	P6K0479
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/18/16 2:46	bgm	P6K0398
Arsenic	BRL	mg/L	0.010	0.0024	1	6010D	11/18/16 2:46	bgm	P6K0398
<b>Barium</b>	<b>0.34</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	6010D	11/18/16 2:46	bgm	P6K0398
Cadmium	BRL	mg/L	0.0010	0.00013	1	6010D	11/18/16 2:46	bgm	P6K0398
<b>Chromium</b>	<b>0.029</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00076</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
Cobalt	BRL	mg/L	0.0050	0.00011	1	6010D	11/18/16 2:46	bgm	P6K0398
<b>Copper</b>	<b>0.0019 J</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0016</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
Lead	BRL	mg/L	0.0050	0.0016	1	6010D	11/18/16 2:46	bgm	P6K0398
<b>Manganese</b>	<b>2.5</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Nickel</b>	<b>0.022</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0010</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Selenium</b>	<b>0.020</b>	<b>mg/L</b>	<b>0.020</b>	<b>0.0044</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Strontium</b>	<b>0.69</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
Thallium	BRL	mg/L	0.010	0.0025	1	6010D	11/18/16 2:46	bgm	P6K0398
<b>Vanadium</b>	<b>0.0012 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00015</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:46</b>	<b>bgm</b>	<b>P6K0398</b>
Zinc	BRL	mg/L	0.030	0.011	1	6010D	11/18/16 2:46	bgm	P6K0398



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: MW-5  
 Prism Sample ID: 6110292-04  
 Prism Work Order: 6110292  
 Time Collected: 11/09/16 13:45  
 Time Submitted: 11/15/16 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/21/16 14:02	JAB	P6K0479
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/18/16 2:54	bgm	P6K0398
Arsenic	BRL	mg/L	0.010	0.0024	1	6010D	11/18/16 2:54	bgm	P6K0398
<b>Barium</b>	<b>0.051</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:54</b>	<b>bgm</b>	<b>P6K0398</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	6010D	11/18/16 2:54	bgm	P6K0398
Cadmium	BRL	mg/L	0.0010	0.00013	1	6010D	11/18/16 2:54	bgm	P6K0398
Chromium	BRL	mg/L	0.0050	0.00076	1	6010D	11/18/16 2:54	bgm	P6K0398
<b>Cobalt</b>	<b>0.00027 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00011</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:54</b>	<b>bgm</b>	<b>P6K0398</b>
Copper	BRL	mg/L	0.010	0.0016	1	6010D	11/18/16 2:54	bgm	P6K0398
Lead	BRL	mg/L	0.0050	0.0016	1	6010D	11/18/16 2:54	bgm	P6K0398
<b>Manganese</b>	<b>0.58</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:54</b>	<b>bgm</b>	<b>P6K0398</b>
Nickel	BRL	mg/L	0.010	0.0010	1	6010D	11/18/16 2:54	bgm	P6K0398
Selenium	<b>0.023</b>	<b>mg/L</b>	<b>0.020</b>	<b>0.0044</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:54</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Strontium</b>	<b>0.19</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:54</b>	<b>bgm</b>	<b>P6K0398</b>
Thallium	BRL	mg/L	0.010	0.0025	1	6010D	11/18/16 2:54	bgm	P6K0398
<b>Vanadium</b>	<b>0.00039 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00015</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 2:54</b>	<b>bgm</b>	<b>P6K0398</b>
Zinc	BRL	mg/L	0.030	0.011	1	6010D	11/18/16 2:54	bgm	P6K0398

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: MW-1  
 Prism Sample ID: 6110292-05  
 Prism Work Order: 6110292  
 Time Collected: 11/10/16 10:45  
 Time Submitted: 11/15/16 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/21/16 14:06	JAB	P6K0479
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/18/16 3:02	bgm	P6K0398
<b>Arsenic</b>	<b>0.019</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0024</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Barium</b>	<b>0.47</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Beryllium</b>	<b>0.0041</b>	<b>mg/L</b>	<b>0.0020</b>	<b>0.00010</b>	<b>1</b>	<b>6010D</b>	<b>11/21/16 21:36</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Cadmium</b>	<b>0.00015 J</b>	<b>mg/L</b>	<b>0.0010</b>	<b>0.00013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Chromium</b>	<b>0.031</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00076</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Cobalt</b>	<b>0.032</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00011</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Copper</b>	<b>0.057</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0016</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Lead</b>	<b>0.010</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.0016</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Manganese</b>	<b>8.6</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.017</b>	<b>10</b>	<b>6010D</b>	<b>11/21/16 21:45</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Nickel</b>	<b>0.021</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0010</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Selenium</b>	<b>0.023</b>	<b>mg/L</b>	<b>0.020</b>	<b>0.0044</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Strontium</b>	<b>2.2</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
Thallium	BRL	mg/L	0.010	0.0025	1	6010D	11/18/16 3:02	bgm	P6K0398
<b>Vanadium</b>	<b>0.092</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00015</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Zinc</b>	<b>0.099</b>	<b>mg/L</b>	<b>0.030</b>	<b>0.011</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:02</b>	<b>bgm</b>	<b>P6K0398</b>

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: MW-1 Filtered  
 Prism Sample ID: 6110292-06  
 Prism Work Order: 6110292  
 Time Collected: 11/10/16 10:45  
 Time Submitted: 11/15/16 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Dissolved Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/21/16 14:09	JAB	P6K0479
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/23/16 16:19	bgm	P6K0486
Arsenic	BRL	mg/L	0.010	0.0024	1	6010D	11/23/16 16:19	bgm	P6K0486
<b>Barium</b>	<b>0.16</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/23/16 16:19</b>	<b>bgm</b>	<b>P6K0486</b>
<b>Beryllium</b>	<b>0.00053 J</b>	<b>mg/L</b>	<b>0.0020</b>	<b>0.00010</b>	<b>1</b>	<b>6010D</b>	<b>11/23/16 16:19</b>	<b>bgm</b>	<b>P6K0486</b>
Cadmium	BRL	mg/L	0.0010	0.00013	1	6010D	11/23/16 16:19	bgm	P6K0486
Chromium	BRL	mg/L	0.0050	0.00076	1	6010D	11/23/16 16:19	bgm	P6K0486
<b>Cobalt</b>	<b>0.0060</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00011</b>	<b>1</b>	<b>6010D</b>	<b>11/23/16 16:19</b>	<b>bgm</b>	<b>P6K0486</b>
Copper	BRL	mg/L	0.010	0.0016	1	6010D	11/23/16 16:19	bgm	P6K0486
Lead	BRL	mg/L	0.0050	0.0016	1	6010D	11/23/16 16:19	bgm	P6K0486
<b>Manganese</b>	<b>8.0</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.017</b>	<b>10</b>	<b>6010D</b>	<b>11/28/16 16:05</b>	<b>bgm</b>	<b>P6K0486</b>
<b>Nickel</b>	<b>0.0023 J</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0010</b>	<b>1</b>	<b>6010D</b>	<b>11/23/16 16:19</b>	<b>bgm</b>	<b>P6K0486</b>
<b>Selenium</b>	<b>0.024 A</b>	<b>mg/L</b>	<b>0.020</b>	<b>0.0044</b>	<b>1</b>	<b>6010D</b>	<b>11/23/16 16:19</b>	<b>bgm</b>	<b>P6K0486</b>
<b>Strontium</b>	<b>2.1</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>6010D</b>	<b>11/23/16 16:19</b>	<b>bgm</b>	<b>P6K0486</b>
Thallium	BRL	mg/L	0.010	0.0025	1	6010D	11/23/16 16:19	bgm	P6K0486
<b>Vanadium</b>	<b>0.0012 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00015</b>	<b>1</b>	<b>6010D</b>	<b>11/23/16 16:19</b>	<b>bgm</b>	<b>P6K0486</b>
Zinc	BRL	mg/L	0.030	0.011	1	6010D	11/23/16 16:19	bgm	P6K0486

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: Dup- GW  
 Prism Sample ID: 6110292-07  
 Prism Work Order: 6110292  
 Time Collected: 11/10/16 00:00  
 Time Submitted: 11/15/16 09:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/21/16 14:13	JAB	P6K0479
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/18/16 3:18	bgm	P6K0398
Arsenic	BRL	mg/L	0.010	0.0024	1	6010D	11/18/16 3:18	bgm	P6K0398
<b>Barium</b>	<b>0.053</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:18</b>	<b>bgm</b>	<b>P6K0398</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	6010D	11/18/16 3:18	bgm	P6K0398
Cadmium	BRL	mg/L	0.0010	0.00013	1	6010D	11/18/16 3:18	bgm	P6K0398
Chromium	BRL	mg/L	0.0050	0.00076	1	6010D	11/18/16 3:18	bgm	P6K0398
Cobalt	BRL	mg/L	0.0050	0.00011	1	6010D	11/18/16 3:18	bgm	P6K0398
Copper	BRL	mg/L	0.010	0.0016	1	6010D	11/18/16 3:18	bgm	P6K0398
Lead	BRL	mg/L	0.0050	0.0016	1	6010D	11/18/16 3:18	bgm	P6K0398
<b>Manganese</b>	<b>0.015</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:18</b>	<b>bgm</b>	<b>P6K0398</b>
Nickel	BRL	mg/L	0.010	0.0010	1	6010D	11/18/16 3:18	bgm	P6K0398
Selenium	<b>0.052</b>	<b>mg/L</b>	<b>0.020</b>	<b>0.0044</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:18</b>	<b>bgm</b>	<b>P6K0398</b>
Strontium	<b>2.4</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:18</b>	<b>bgm</b>	<b>P6K0398</b>
Thallium	<b>0.0053 J</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0025</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:18</b>	<b>bgm</b>	<b>P6K0398</b>
Vanadium	<b>0.00095 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00015</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:18</b>	<b>bgm</b>	<b>P6K0398</b>
Zinc	BRL	mg/L	0.030	0.011	1	6010D	11/18/16 3:18	bgm	P6K0398

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110292  
Time Submitted: 11/15/2016 9:20:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0398 - 3010A**

**Blank (P6K0398-BLK1)**

Prepared: 11/17/16 Analyzed: 11/18/16

Antimony	BRL	0.0050	mg/L							
Arsenic	BRL	0.010	mg/L							
Barium	BRL	0.010	mg/L							
Beryllium	BRL	0.0020	mg/L							
Cadmium	BRL	0.0010	mg/L							
Chromium	BRL	0.0050	mg/L							
Cobalt	BRL	0.0050	mg/L							
Copper	BRL	0.010	mg/L							
Lead	BRL	0.0050	mg/L							
Manganese	BRL	0.010	mg/L							
Nickel	BRL	0.010	mg/L							
Selenium	BRL	0.020	mg/L							
Strontium	BRL	0.010	mg/L							
Thallium	BRL	0.010	mg/L							
Vanadium	BRL	0.0050	mg/L							
Zinc	BRL	0.030	mg/L							

**LCS (P6K0398-BS1)**

Prepared: 11/17/16 Analyzed: 11/18/16

Antimony	0.240	0.0050	mg/L	0.2500		96	80-120			
Arsenic	0.242	0.010	mg/L	0.2500		97	80-120			
Barium	0.243	0.010	mg/L	0.2500		97	80-120			
Beryllium	0.243	0.0020	mg/L	0.2500		97	80-120			
Cadmium	0.234	0.0010	mg/L	0.2500		94	80-120			
Chromium	0.245	0.0050	mg/L	0.2500		98	80-120			
Cobalt	0.241	0.0050	mg/L	0.2500		97	80-120			
Copper	0.249	0.010	mg/L	0.2500		99	80-120			
Lead	0.238	0.0050	mg/L	0.2500		95	80-120			
Manganese	0.240	0.010	mg/L	0.2500		96	80-120			
Nickel	0.242	0.010	mg/L	0.2500		97	80-120			
Selenium	0.245	0.020	mg/L	0.2500		98	80-120			
Strontium	0.228	0.010	mg/L	0.2500		91	80-120			
Thallium	0.245	0.010	mg/L	0.2500		98	80-120			
Vanadium	0.247	0.0050	mg/L	0.2500		99	80-120			
Zinc	0.241	0.030	mg/L	0.2500		96	80-120			

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110292  
Time Submitted: 11/15/2016 9:20:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0398 - 3010A**

<b>Matrix Spike (P6K0398-MS1)</b>	<b>Source: 6110292-01</b>			<b>Prepared: 11/17/16</b>		<b>Analyzed: 11/18/16</b>				
Antimony	0.238	0.0050	mg/L	0.2500	BRL	95	75-125			
Arsenic	0.243	0.010	mg/L	0.2500	BRL	97	75-125			
Barium	0.272	0.010	mg/L	0.2500	0.0363	94	75-125			
Beryllium	0.239	0.0020	mg/L	0.2500	BRL	96	75-125			
Cadmium	0.229	0.0010	mg/L	0.2500	BRL	91	75-125			
Chromium	0.236	0.0050	mg/L	0.2500	0.00116	94	75-125			
Cobalt	0.232	0.0050	mg/L	0.2500	BRL	93	75-125			
Copper	0.244	0.010	mg/L	0.2500	BRL	98	75-125			
Lead	0.231	0.0050	mg/L	0.2500	BRL	93	75-125			
Manganese	0.373	0.010	mg/L	0.2500	0.137	94	75-125			
Nickel	0.231	0.010	mg/L	0.2500	BRL	92	75-125			
Selenium	0.248	0.020	mg/L	0.2500	0.00720	96	75-125			
Strontium	0.401	0.010	mg/L	0.2500	0.167	94	75-125			
Thallium	0.239	0.010	mg/L	0.2500	BRL	96	75-125			
Vanadium	0.243	0.0050	mg/L	0.2500	BRL	97	75-125			
Zinc	0.257	0.030	mg/L	0.2500	0.0165	96	75-125			

<b>Matrix Spike Dup (P6K0398-MSD1)</b>	<b>Source: 6110292-01</b>			<b>Prepared: 11/17/16</b>		<b>Analyzed: 11/18/16</b>				
Antimony	0.241	0.0050	mg/L	0.2500	BRL	96	75-125	1	20	
Arsenic	0.242	0.010	mg/L	0.2500	BRL	97	75-125	0.4	20	
Barium	0.274	0.010	mg/L	0.2500	0.0363	95	75-125	0.8	20	
Beryllium	0.242	0.0020	mg/L	0.2500	BRL	97	75-125	1	20	
Cadmium	0.229	0.0010	mg/L	0.2500	BRL	92	75-125	0.2	20	
Chromium	0.238	0.0050	mg/L	0.2500	0.00116	95	75-125	0.7	20	
Cobalt	0.232	0.0050	mg/L	0.2500	BRL	93	75-125	0.07	20	
Copper	0.245	0.010	mg/L	0.2500	BRL	98	75-125	0.3	20	
Lead	0.231	0.0050	mg/L	0.2500	BRL	92	75-125	0.3	20	
Manganese	0.387	0.010	mg/L	0.2500	0.137	100	75-125	4	20	
Nickel	0.233	0.010	mg/L	0.2500	BRL	93	75-125	0.8	20	
Selenium	0.247	0.020	mg/L	0.2500	0.00720	96	75-125	0.3	20	
Strontium	0.405	0.010	mg/L	0.2500	0.167	95	75-125	1	20	
Thallium	0.239	0.010	mg/L	0.2500	BRL	96	75-125	0.06	20	
Vanadium	0.244	0.0050	mg/L	0.2500	BRL	98	75-125	0.5	20	
Zinc	0.257	0.030	mg/L	0.2500	0.0165	96	75-125	0.02	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110292  
Time Submitted: 11/15/2016 9:20:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0479 - 7470A</b>										
<b>Blank (P6K0479-BLK1)</b>										
Prepared & Analyzed: 11/21/16										
Mercury	BRL	0.00020	mg/L							
<b>LCS (P6K0479-BS1)</b>										
Prepared & Analyzed: 11/21/16										
Mercury	0.00878	0.00020	mg/L	0.009375		94	80-120			

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110292  
Time Submitted: 11/15/2016 9:20:00AM

**Dissolved Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0486 - 3010A**

**Blank (P6K0486-BLK1)**

Prepared: 11/21/16 Analyzed: 11/23/16

Antimony	BRL	0.0050	mg/L							
Arsenic	BRL	0.010	mg/L							
Barium	BRL	0.010	mg/L							
Beryllium	BRL	0.0020	mg/L							
Cadmium	BRL	0.0010	mg/L							
Chromium	BRL	0.0050	mg/L							
Cobalt	BRL	0.0050	mg/L							
Copper	BRL	0.010	mg/L							
Lead	BRL	0.0050	mg/L							
Manganese	0.00191	0.010	mg/L							J
Nickel	BRL	0.010	mg/L							
Selenium	BRL	0.020	mg/L							
Strontium	BRL	0.010	mg/L							
Thallium	BRL	0.010	mg/L							
Vanadium	BRL	0.0050	mg/L							
Zinc	BRL	0.030	mg/L							

**LCS (P6K0486-BS1)**

Prepared: 11/21/16 Analyzed: 11/23/16

Antimony	0.248	0.0050	mg/L	0.2500		99	80-120			
Arsenic	0.250	0.010	mg/L	0.2500		100	80-120			
Barium	0.251	0.010	mg/L	0.2500		100	80-120			
Beryllium	0.250	0.0020	mg/L	0.2500		100	80-120			
Cadmium	0.251	0.0010	mg/L	0.2500		101	80-120			
Chromium	0.250	0.0050	mg/L	0.2500		100	80-120			
Cobalt	0.251	0.0050	mg/L	0.2500		100	80-120			
Copper	0.248	0.010	mg/L	0.2500		99	80-120			
Lead	0.251	0.0050	mg/L	0.2500		101	80-120			
Manganese	0.249	0.010	mg/L	0.2500		100	80-120			
Nickel	0.250	0.010	mg/L	0.2500		100	80-120			
Selenium	0.247	0.020	mg/L	0.2500		99	80-120			
Strontium	0.234	0.010	mg/L	0.2500		94	80-120			
Thallium	0.257	0.010	mg/L	0.2500		103	80-120			
Vanadium	0.252	0.0050	mg/L	0.2500		101	80-120			
Zinc	0.246	0.030	mg/L	0.2500		98	80-120			





Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Project No: TCH-002

Prism Work Order: 6110292

Time Submitted: 11/15/2016 9:20:00AM

**Dissolved Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0486 - 3010A</b>										
<b>Matrix Spike (P6K0486-MS1)</b>		<b>Source: 6110292-06</b>			Prepared: 11/21/16		Analyzed: 11/23/16			
Antimony	0.251	0.0050	mg/L	0.2500	BRL	100	75-125			
Arsenic	0.265	0.010	mg/L	0.2500	BRL	106	75-125			
Barium	0.396	0.010	mg/L	0.2500	0.156	96	75-125			
Beryllium	0.248	0.0020	mg/L	0.2500	0.000529	99	75-125			
Cadmium	0.245	0.0010	mg/L	0.2500	BRL	98	75-125			
Chromium	0.242	0.0050	mg/L	0.2500	BRL	97	75-125			
Cobalt	0.242	0.0050	mg/L	0.2500	0.00601	94	75-125			
Copper	0.244	0.010	mg/L	0.2500	BRL	98	75-125			
Lead	0.245	0.0050	mg/L	0.2500	BRL	98	75-125			
Manganese	1.00E9	0.010	mg/L	0.2500	7.99	NR	75-125			MC
Nickel	0.237	0.010	mg/L	0.2500	0.00233	94	75-125			
Selenium	0.319	0.020	mg/L	0.2500	0.0238	118	75-125			
Strontium	2.31	0.010	mg/L	0.2500	2.08	90	75-125			
Thallium	0.255	0.010	mg/L	0.2500	BRL	102	75-125			
Vanadium	0.250	0.0050	mg/L	0.2500	0.00125	99	75-125			
Zinc	0.272	0.030	mg/L	0.2500	BRL	109	75-125			
<b>Matrix Spike Dup (P6K0486-MSD1)</b>		<b>Source: 6110292-06</b>			Prepared: 11/21/16		Analyzed: 11/23/16			
Antimony	0.241	0.0050	mg/L	0.2500	BRL	97	75-125	4	20	
Arsenic	0.258	0.010	mg/L	0.2500	BRL	103	75-125	3	20	
Barium	0.387	0.010	mg/L	0.2500	0.156	92	75-125	2	20	
Beryllium	0.239	0.0020	mg/L	0.2500	0.000529	95	75-125	4	20	
Cadmium	0.234	0.0010	mg/L	0.2500	BRL	94	75-125	5	20	
Chromium	0.233	0.0050	mg/L	0.2500	BRL	93	75-125	4	20	
Cobalt	0.233	0.0050	mg/L	0.2500	0.00601	91	75-125	4	20	
Copper	0.236	0.010	mg/L	0.2500	BRL	94	75-125	3	20	
Lead	0.235	0.0050	mg/L	0.2500	BRL	94	75-125	4	20	
Manganese	1.00E9	0.010	mg/L	0.2500	7.99	NR	75-125	0	20	MC
Nickel	0.228	0.010	mg/L	0.2500	0.00233	90	75-125	4	20	
Selenium	0.309	0.020	mg/L	0.2500	0.0238	114	75-125	3	20	
Strontium	2.39	0.010	mg/L	0.2500	2.08	122	75-125	3	20	
Thallium	0.246	0.010	mg/L	0.2500	BRL	98	75-125	4	20	
Vanadium	0.241	0.0050	mg/L	0.2500	0.00125	96	75-125	3	20	
Zinc	0.262	0.030	mg/L	0.2500	BRL	105	75-125	4	20	

### Sample Extraction Data

**Prep Method: 3010A**

Lab Number	Batch	Initial	Final	Date/Time
6110292-06	P6K0486	50 mL	50 mL	11/21/16 9:00
6110292-06	P6K0486	50 mL	50 mL	11/21/16 9:00

**Prep Method: 7470A**

Lab Number	Batch	Initial	Final	Date/Time
6110292-06	P6K0479	20 mL	30 mL	11/21/16 8:25

**Prep Method: 3010A**

Lab Number	Batch	Initial	Final	Date/Time
6110292-01	P6K0398	50 mL	50 mL	11/17/16 9:05
6110292-02	P6K0398	50 mL	50 mL	11/17/16 9:05
6110292-03	P6K0398	50 mL	50 mL	11/17/16 9:05
6110292-04	P6K0398	50 mL	50 mL	11/17/16 9:05
6110292-05	P6K0398	50 mL	50 mL	11/17/16 9:05
6110292-05	P6K0398	50 mL	50 mL	11/17/16 9:05
6110292-05	P6K0398	50 mL	50 mL	11/17/16 9:05
6110292-07	P6K0398	50 mL	50 mL	11/17/16 9:05

**Prep Method: 7470A**

Lab Number	Batch	Initial	Final	Date/Time
6110292-01	P6K0479	20 mL	30 mL	11/21/16 8:25
6110292-02	P6K0479	20 mL	30 mL	11/21/16 8:25
6110292-03	P6K0479	20 mL	30 mL	11/21/16 8:25
6110292-04	P6K0479	20 mL	30 mL	11/21/16 8:25
6110292-05	P6K0479	20 mL	30 mL	11/21/16 8:25
6110292-07	P6K0479	20 mL	30 mL	11/21/16 8:25



Full-Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
Phone: 704/525-6364 • Fax: 704/525-0409

Client Company Name: Hart-Hickman

Report To/Contact Name: Patrick Stevens, Steve Hart

Reporting Address: 3334 Hillsborough St  
Raleigh, NC 27607

Phone: 304-586-0007 Fax (Yes) (No):

Email (Yes) (No) Email Address: patrick.stevens@char-hickman.com

EDD Type: PDF  Excel  Other  sent to Char-Hickman

Site Location Name: Chapel Hill Police Department

Site Location Physical Address: Chapel Hill NC

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING: TCH002

Project Name: TCH002 UST Project: (Yes) (No)

Short Hold Analysis: (Yes) (No)

\*Please ATTACH any project specific reporting (QC LEVEL I III IV)

provisions and/or QC Requirements

Invoice To: accounts payable@char-hickman.com

Address: \_\_\_\_\_

## LAB USE ONLY

Samples INTACT upon arrival?	<u>10/11</u>	YES	NO	N/A
Received ON WET ICE? Temp <u>1.5</u>				
PROPER PRESERVATIVES indicated?				
Received WITHIN HOLDING TIMES?				
CUSTODY SEALS INTACT?				
VOLATILES rec'd W/O/T HEADSPACE?				
PROPER CONTAINERS used?				

### TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC  USACE  FL  NC

Water Chlorinated: YES  NO

Sample Iced Upon Collection: YES  NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
MW-4A	11/9/16	1040	Water	P	1	250mL	HNO3			01
MW-3A	11/9/16	1125								02
MW-6	11/9/16	1245								03
MW-5	11/9/16	1345								04
MW-1 Filtered	11/10/16	1045								05
DUP-6W										07

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature: [Signature] Sampled By (Print Name): Lisa Nickels Affiliation: Hart-Hickman

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11/10/16 Military Hours: 1700

Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11/14/16 Military Hours: 1338

Relinquished By: (Signature) [Signature] Received For Prism Laboratories By: [Signature] Date: 11/15/16 Military Hours: 0920

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Fed Ex  UPS  Hand-delivered  Prism Field Service  Other

NPDES:  NC  SC  NC  SC  NC  SC

UST:  SC  NC  SC  NC  SC  NC  SC

GROUNDWATER:  NC  SC  NC  SC

**PRISM USE ONLY**

Site Arrival Time: \_\_\_\_\_

Site Departure Time: \_\_\_\_\_

Field Tech Fee: \_\_\_\_\_

Mileage: \_\_\_\_\_

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

Hart & Hickman (Raleigh)  
Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Lab Submittal Date: 11/16/2016  
Prism Work Order: 6110311

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

**Narrative Notes:**

This is a Revised Report and supercedes the original laboratory report dated 12/02/16. Results are reported down to the MDL.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



Robbi A. Jones  
President/Project Manager



Reviewed By Angela D. Overcash For Robbi A. Jones  
VP Laboratory Services

**Data Qualifiers Key Reference:**

J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
BRL	Below Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
*	Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
MW-7	6110311-01	Water	11/14/16	11/16/16

Samples were received in good condition at 1.7 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result	Units
6110311-01	MW-7	Barium	6010D	0.010	mg/L
6110311-01	MW-7	Chromium	6010D	0.0013 J	mg/L
6110311-01	MW-7	Cobalt	6010D	0.00017 J	mg/L
6110311-01	MW-7	Copper	6010D	0.0016 J	mg/L
6110311-01	MW-7	Manganese	6010D	0.14	mg/L
6110311-01	MW-7	Nickel	6010D	0.0016 J	mg/L
6110311-01	MW-7	Strontium	6010D	0.042	mg/L
6110311-01	MW-7	Vanadium	6010D	0.0011 J	mg/L
6110311-01	MW-7	Zinc	6010D	0.026 J	mg/L

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Sample Matrix: Water

Client Sample ID: MW-7  
 Prism Sample ID: 6110311-01  
 Prism Work Order: 6110311  
 Time Collected: 11/14/16 15:35  
 Time Submitted: 11/16/16 08:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/22/16 14:36	JAB	P6K0530
Antimony	BRL	mg/L	0.0050	0.00050	1	6010D	11/18/16 3:25	bgm	P6K0398
Arsenic	BRL	mg/L	0.010	0.0024	1	6010D	11/18/16 3:25	bgm	P6K0398
<b>Barium</b>	<b>0.010</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	6010D	11/18/16 3:25	bgm	P6K0398
Cadmium	BRL	mg/L	0.0010	0.00013	1	6010D	11/18/16 3:25	bgm	P6K0398
<b>Chromium</b>	<b>0.0013 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00076</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Cobalt</b>	<b>0.00017 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00011</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Copper</b>	<b>0.0016 J</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0016</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
Lead	BRL	mg/L	0.0050	0.0016	1	6010D	11/18/16 3:25	bgm	P6K0398
<b>Manganese</b>	<b>0.14</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Nickel</b>	<b>0.0016 J</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0010</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
Selenium	BRL	mg/L	0.020	0.0044	1	6010D	11/18/16 3:25	bgm	P6K0398
<b>Strontium</b>	<b>0.042</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
Thallium	BRL	mg/L	0.010	0.0025	1	6010D	11/18/16 3:25	bgm	P6K0398
<b>Vanadium</b>	<b>0.0011 J</b>	<b>mg/L</b>	<b>0.0050</b>	<b>0.00015</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>
<b>Zinc</b>	<b>0.026 J</b>	<b>mg/L</b>	<b>0.030</b>	<b>0.011</b>	<b>1</b>	<b>6010D</b>	<b>11/18/16 3:25</b>	<b>bgm</b>	<b>P6K0398</b>

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110311

Time Submitted: 11/16/2016 8:35:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0398 - 3010A**

**Blank (P6K0398-BLK1)**

Prepared: 11/17/16 Analyzed: 11/18/16

Antimony	BRL	0.0050	mg/L							
Arsenic	BRL	0.010	mg/L							
Barium	BRL	0.010	mg/L							
Beryllium	BRL	0.0020	mg/L							
Cadmium	BRL	0.0010	mg/L							
Chromium	BRL	0.0050	mg/L							
Cobalt	BRL	0.0050	mg/L							
Copper	BRL	0.010	mg/L							
Lead	BRL	0.0050	mg/L							
Manganese	BRL	0.010	mg/L							
Nickel	BRL	0.010	mg/L							
Selenium	BRL	0.020	mg/L							
Strontium	BRL	0.010	mg/L							
Thallium	BRL	0.010	mg/L							
Vanadium	BRL	0.0050	mg/L							
Zinc	BRL	0.030	mg/L							

**LCS (P6K0398-BS1)**

Prepared: 11/17/16 Analyzed: 11/18/16

Antimony	0.240	0.0050	mg/L	0.2500		96	80-120			
Arsenic	0.242	0.010	mg/L	0.2500		97	80-120			
Barium	0.243	0.010	mg/L	0.2500		97	80-120			
Beryllium	0.243	0.0020	mg/L	0.2500		97	80-120			
Cadmium	0.234	0.0010	mg/L	0.2500		94	80-120			
Chromium	0.245	0.0050	mg/L	0.2500		98	80-120			
Cobalt	0.241	0.0050	mg/L	0.2500		97	80-120			
Copper	0.249	0.010	mg/L	0.2500		99	80-120			
Lead	0.238	0.0050	mg/L	0.2500		95	80-120			
Manganese	0.240	0.010	mg/L	0.2500		96	80-120			
Nickel	0.242	0.010	mg/L	0.2500		97	80-120			
Selenium	0.245	0.020	mg/L	0.2500		98	80-120			
Strontium	0.228	0.010	mg/L	0.2500		91	80-120			
Thallium	0.245	0.010	mg/L	0.2500		98	80-120			
Vanadium	0.247	0.0050	mg/L	0.2500		99	80-120			
Zinc	0.241	0.030	mg/L	0.2500		96	80-120			





Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110311  
Time Submitted: 11/16/2016 8:35:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0530 - 7470A</b>										
<b>Blank (P6K0530-BLK1)</b>				Prepared & Analyzed: 11/22/16						
Mercury	BRL	0.00020	mg/L							
<b>LCS (P6K0530-BS1)</b>				Prepared & Analyzed: 11/22/16						
Mercury	0.0101	0.00020	mg/L	0.009375		107	80-120			
<b>Matrix Spike (P6K0530-MS1)</b>				Source: 6110311-01		Prepared & Analyzed: 11/22/16				
Mercury	0.00999	0.00020	mg/L	0.009375	BRL	107	80-120			
<b>Matrix Spike Dup (P6K0530-MSD1)</b>				Source: 6110311-01		Prepared & Analyzed: 11/22/16				
Mercury	0.00971	0.00020	mg/L	0.009375	BRL	104	80-120	3	20	

**Sample Extraction Data**

**Prep Method: 3010A**

Lab Number	Batch	Initial	Final	Date/Time
6110311-01	P6K0398	50 mL	50 mL	11/17/16 9:05

**Prep Method: 7470A**

Lab Number	Batch	Initial	Final	Date/Time
6110311-01	P6K0530	20 mL	30 mL	11/22/16 10:50

**CHAIN OF CUSTODY RECORD**

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING: TCR-002

Project Name: TCR-002    UST Project: Yes (Yes) (No)  
 Short Hold Analysis: Yes (Yes) (No)  
 \*Please ATTACH any project specific reporting (QC LEVEL III III IV) provisions and/or QC Requirements  
 Invoice To: Accounts Payable  
 Address: 1111

Client Company Name: Hart & Hickman  
 Report To/Contact Name: Shelton Primes  
 Reporting Address: 2923 S. Tager Street  
Suite 100 Charlotte NC 28203  
 Phone: 704/566-0027 Fax (Yes) (No):  
 Email Address: Shelton@hartandhickman.com  
 EDD Type: PDF  Excel  Other  
 Site Location Name: TCR-002  
 Site Location Physical Address: Chapel Hill NC

Purchase Order No./Billing Reference  
 Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days  
 "Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved  
 Samples received after 14:00 will be processed next business day.  
 Turnaround time is based on business days, excluding weekends and holidays.  
 (SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

**TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL**  
 Certification: NELAC    DOD    FL    NC     
 SC    OTHER    N/A  
 Water Chlorinated: YES    NO     
 Sample Iced Upon Collection: YES    NO   

LAB USE ONLY	
Sampled/INTACT upon arrival?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Received ON TIME?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Proper preservatives included?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
Received WITHIN HOLDING TIMES?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
CUSTODY SEALS INTACT?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
VOLATILES ARE WITHOUT HEADSPACE?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
PROPER CONTAINERS used?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
TEMP. THRM ID: <u>211</u> Observed: <u>21.0</u> Cont: <u>1.7</u>	

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER		PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO. SIZE				
<u>mw-7</u>	<u>11/14/16</u>	<u>1535</u>	<u>Water</u>	<u>P</u>	<u>250ml</u>	<u>H2O2</u>	<u>metals</u>	<u>metals list: cadmium, chromium, barium, beryllium, cobalt, copper, lead, manganese, mercury, molybdenum, selenium, strontium, thallium, uranium, zinc.</u>	<u>01</u>
<u>RB-SP</u>	<u>11/14/16</u>	<u>1810</u>	<u>Water</u>	<u>P</u>	<u>250ml</u>	<u>H2O2</u>	<u>*</u>	<u>Please place RB-SP on hold!</u>	<u>02</u>

Sampler's Signature: Pete H. ...    Sampled By (Print Name): Patrick Stearns    Affiliation: HHH

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) [Signature]    Received By: (Signature) [Signature]    Date: 11/15/16    Military/Hours: 14:25

Relinquished By: (Signature) [Signature]    Received By: (Signature) [Signature]    Date: 11/16/16    Military/Hours: 0740

Relinquished By: (Signature) [Signature]    Received By: (Signature) [Signature]    Date: 11/16/16    Military/Hours: 0835

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Method of Shipment:  Fed Ex  UPS  Hand-delivered  Prism Field Service  Other Prism

NPDES:  NC  SC    UST:  NC  SC    GROUNDWATER:  NC  SC    DRINKING WATER:  NC  SC    SOLID WASTE:  NC  SC    RCRA:  NC  SC    CERCLA:  NC  SC    LANDFILL:  NC  SC    OTHER:  NC  SC

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

Additional Comments: PRESS DOWN FIRMLY - 3 COPIES

**PRISM USE ONLY**

Site:       Date:   

Site Department:       Time:   

Field Tech:       Email:   

Signature:   

**SEE REVERSE FOR TERMS & CONDITIONS**

ORIGINAL

Hart & Hickman (Raleigh)  
Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Lab Submittal Date: 11/07/2016  
Prism Work Order: 6110120

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



Robbi A. Jones  
President/Project Manager



Reviewed By Robbi A. Jones  
President/Project Manager

**Data Qualifiers Key Reference:**

- A Continuing Calibration Verification standard recovery (82%) is less than the lower control limit (90%). Result has possible low bias.
- BH MB greater than one half of the RL, but the sample concentrations are greater than 10x the MB.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- MC Sample concentration too high for recovery evaluation.
- MI Matrix spike outside of the control limits. Matrix interference suspected.
- BRL Below Reporting Limit
- MDL Method Detection Limit
- RPD Relative Percent Difference
- \* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
MW-7 (0-1)	6110120-01	Solid	11/01/16	11/07/16
MW-6 (0-1)	6110120-02	Solid	11/02/16	11/07/16
MW-5 (0-1)	6110120-03	Solid	11/02/16	11/07/16
MW-5 (6-7)	6110120-04	Solid	11/02/16	11/07/16
HH-4 (0-1)	6110120-05	Solid	11/03/16	11/07/16
HH-4 (4-5)	6110120-06	Solid	11/03/16	11/07/16
HH-5 (0-1)	6110120-07	Solid	11/03/16	11/07/16
HH-5 (3-4)	6110120-08	Solid	11/03/16	11/07/16
HH-3 (0-1)	6110120-09	Solid	11/03/16	11/07/16
HH-1 (0-1)	6110120-10	Solid	11/03/16	11/07/16
HH-3 (2-3)	6110120-11	Solid	11/03/16	11/07/16
HH-1 (7-8)	6110120-12	Solid	11/03/16	11/07/16
HH-2 (2-3)	6110120-13	Solid	11/03/16	11/07/16
HH-2 (0-1)	6110120-14	Solid	11/03/16	11/07/16
BG-1 (0-1)	6110120-15	Solid	11/03/16	11/07/16
BG-1 (2-3)	6110120-16	Solid	11/03/16	11/07/16
BG-2 (0-1)	6110120-17	Solid	11/03/16	11/07/16
BG-2 (2-3)	6110120-18	Solid	11/03/16	11/07/16
BG-3 (0-1)	6110120-19	Solid	11/03/16	11/07/16
BG-3 (2-3)	6110120-20	Solid	11/03/16	11/07/16
BG-4 (0-1)	6110120-21	Solid	11/03/16	11/07/16
BG-4 (2-3)	6110120-22	Solid	11/03/16	11/07/16
Dup	6110120-23	Solid	11/03/16	11/07/16

Samples were received in good condition at 2.6 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result	Units
6110120-01	MW-7 (0-1)	Mercury	*7471B	0.030	mg/kg dry
6110120-01	MW-7 (0-1)	Arsenic	*6010D	2.6	mg/kg dry
6110120-01	MW-7 (0-1)	Barium	*6010D	67	mg/kg dry
6110120-01	MW-7 (0-1)	Beryllium	*6010D	0.87	mg/kg dry
6110120-01	MW-7 (0-1)	Chromium	*6010D	10	mg/kg dry
6110120-01	MW-7 (0-1)	Cobalt	*6010D	3.9	mg/kg dry
6110120-01	MW-7 (0-1)	Copper	*6010D	180	mg/kg dry
6110120-01	MW-7 (0-1)	Lead	*6010D	7.6	mg/kg dry
6110120-01	MW-7 (0-1)	Manganese	*6010D	100	mg/kg dry
6110120-01	MW-7 (0-1)	Nickel	*6010D	2.9	mg/kg dry
6110120-01	MW-7 (0-1)	Strontium	*6010D	6.7	mg/kg dry
6110120-01	MW-7 (0-1)	Vanadium	*6010D	61	mg/kg dry
6110120-01	MW-7 (0-1)	Zinc	*6010D	46	mg/kg dry
6110120-02	MW-6 (0-1)	Mercury	*7471B	0.082	mg/kg dry
6110120-02	MW-6 (0-1)	Arsenic	*6010D	2.9	mg/kg dry
6110120-02	MW-6 (0-1)	Barium	*6010D	38	mg/kg dry
6110120-02	MW-6 (0-1)	Beryllium	*6010D	0.61	mg/kg dry
6110120-02	MW-6 (0-1)	Chromium	*6010D	10	mg/kg dry
6110120-02	MW-6 (0-1)	Cobalt	*6010D	9.5	mg/kg dry
6110120-02	MW-6 (0-1)	Copper	*6010D	23	mg/kg dry
6110120-02	MW-6 (0-1)	Lead	*6010D	12	mg/kg dry
6110120-02	MW-6 (0-1)	Manganese	*6010D	570	mg/kg dry
6110120-02	MW-6 (0-1)	Nickel	*6010D	8.2	mg/kg dry
6110120-02	MW-6 (0-1)	Selenium	*6010D	1.0	mg/kg dry
6110120-02	MW-6 (0-1)	Strontium	*6010D	22	mg/kg dry
6110120-02	MW-6 (0-1)	Thallium	*6010D	0.81	mg/kg dry
6110120-02	MW-6 (0-1)	Vanadium	*6010D	31	mg/kg dry
6110120-02	MW-6 (0-1)	Zinc	*6010D	77	mg/kg dry
6110120-03	MW-5 (0-1)	Arsenic	*6010D	2.1	mg/kg dry
6110120-03	MW-5 (0-1)	Barium	*6010D	76	mg/kg dry
6110120-03	MW-5 (0-1)	Beryllium	*6010D	0.99	mg/kg dry
6110120-03	MW-5 (0-1)	Chromium	*6010D	18	mg/kg dry
6110120-03	MW-5 (0-1)	Cobalt	*6010D	27	mg/kg dry
6110120-03	MW-5 (0-1)	Copper	*6010D	49	mg/kg dry
6110120-03	MW-5 (0-1)	Lead	*6010D	4.0	mg/kg dry
6110120-03	MW-5 (0-1)	Manganese	*6010D	710	mg/kg dry
6110120-03	MW-5 (0-1)	Nickel	*6010D	5.0	mg/kg dry
6110120-03	MW-5 (0-1)	Strontium	*6010D	25	mg/kg dry
6110120-03	MW-5 (0-1)	Vanadium	*6010D	190	mg/kg dry
6110120-03	MW-5 (0-1)	Zinc	*6010D	47	mg/kg dry
6110120-04	MW-5 (6-7)	Arsenic	*6010D	1.4	mg/kg dry
6110120-04	MW-5 (6-7)	Barium	*6010D	61	mg/kg dry
6110120-04	MW-5 (6-7)	Beryllium	*6010D	0.60	mg/kg dry
6110120-04	MW-5 (6-7)	Chromium	*6010D	39	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-04	MW-5 (6-7)	Cobalt	*6010D	19	mg/kg dry
6110120-04	MW-5 (6-7)	Copper	*6010D	18	mg/kg dry
6110120-04	MW-5 (6-7)	Lead	*6010D	0.55	mg/kg dry
6110120-04	MW-5 (6-7)	Manganese	*6010D	940	mg/kg dry
6110120-04	MW-5 (6-7)	Nickel	*6010D	20	mg/kg dry
6110120-04	MW-5 (6-7)	Strontium	*6010D	29	mg/kg dry
6110120-04	MW-5 (6-7)	Thallium	*6010D	2.3	mg/kg dry
6110120-04	MW-5 (6-7)	Vanadium	*6010D	67	mg/kg dry
6110120-04	MW-5 (6-7)	Zinc	*6010D	75	mg/kg dry
6110120-05	HH-4 (0-1)	Arsenic	*6010D	2.4	mg/kg dry
6110120-05	HH-4 (0-1)	Barium	*6010D	72	mg/kg dry
6110120-05	HH-4 (0-1)	Beryllium	*6010D	1.0	mg/kg dry
6110120-05	HH-4 (0-1)	Chromium	*6010D	45	mg/kg dry
6110120-05	HH-4 (0-1)	Cobalt	*6010D	16	mg/kg dry
6110120-05	HH-4 (0-1)	Copper	*6010D	37	mg/kg dry
6110120-05	HH-4 (0-1)	Lead	*6010D	2.3	mg/kg dry
6110120-05	HH-4 (0-1)	Manganese	*6010D	630	mg/kg dry
6110120-05	HH-4 (0-1)	Nickel	*6010D	33	mg/kg dry
6110120-05	HH-4 (0-1)	Strontium	*6010D	42	mg/kg dry
6110120-05	HH-4 (0-1)	Thallium	*6010D	0.60	mg/kg dry
6110120-05	HH-4 (0-1)	Vanadium	*6010D	73	mg/kg dry
6110120-05	HH-4 (0-1)	Zinc	*6010D	70	mg/kg dry
6110120-06	HH-4 (4-5)	Antimony	6010D	0.0051	J mg/L
6110120-06	HH-4 (4-5)	Barium	6010D	0.64	mg/L
6110120-06	HH-4 (4-5)	Lead	6010D	0.011	J mg/L
6110120-06	HH-4 (4-5)	Manganese	6010D	0.013	J mg/L
6110120-06	HH-4 (4-5)	Selenium	6010D	0.031	J mg/L
6110120-06	HH-4 (4-5)	Strontium	6010D	0.45	mg/L
6110120-06	HH-4 (4-5)	Vanadium	6010D	0.0051	J mg/L
6110120-07	HH-5 (0-1)	Arsenic	*6010D	2.4	mg/kg dry
6110120-07	HH-5 (0-1)	Barium	*6010D	73	mg/kg dry
6110120-07	HH-5 (0-1)	Beryllium	*6010D	0.75	mg/kg dry
6110120-07	HH-5 (0-1)	Chromium	*6010D	23	mg/kg dry
6110120-07	HH-5 (0-1)	Cobalt	*6010D	8.4	mg/kg dry
6110120-07	HH-5 (0-1)	Copper	*6010D	19	mg/kg dry
6110120-07	HH-5 (0-1)	Lead	*6010D	9.3	mg/kg dry
6110120-07	HH-5 (0-1)	Manganese	*6010D	410	mg/kg dry
6110120-07	HH-5 (0-1)	Nickel	*6010D	14	mg/kg dry
6110120-07	HH-5 (0-1)	Selenium	*6010D	1.2	mg/kg dry
6110120-07	HH-5 (0-1)	Strontium	*6010D	23	mg/kg dry
6110120-07	HH-5 (0-1)	Vanadium	*6010D	39	mg/kg dry
6110120-07	HH-5 (0-1)	Zinc	*6010D	51	mg/kg dry
6110120-08	HH-5 (3-4)	Antimony	6010D	0.0033	J mg/L
6110120-08	HH-5 (3-4)	Barium	6010D	1.9	mg/L
6110120-08	HH-5 (3-4)	Manganese	6010D	0.021	J mg/L

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Prism ID	Client ID	Parameter	Method	Result		Units
6110120-08	HH-5 (3-4)	Selenium	6010D	0.040	J	mg/L
6110120-08	HH-5 (3-4)	Strontium	6010D	0.22		mg/L
6110120-08	HH-5 (3-4)	Vanadium	6010D	0.0090	J	mg/L
6110120-09	HH-3 (0-1)	Mercury	*7471B	0.076		mg/kg dry
6110120-09	HH-3 (0-1)	Arsenic	*6010D	9.9		mg/kg dry
6110120-09	HH-3 (0-1)	Barium	*6010D	200		mg/kg dry
6110120-09	HH-3 (0-1)	Beryllium	*6010D	1.3		mg/kg dry
6110120-09	HH-3 (0-1)	Chromium	*6010D	18		mg/kg dry
6110120-09	HH-3 (0-1)	Cobalt	*6010D	7.8		mg/kg dry
6110120-09	HH-3 (0-1)	Copper	*6010D	31		mg/kg dry
6110120-09	HH-3 (0-1)	Lead	*6010D	24		mg/kg dry
6110120-09	HH-3 (0-1)	Manganese	*6010D	350		mg/kg dry
6110120-09	HH-3 (0-1)	Nickel	*6010D	8.9		mg/kg dry
6110120-09	HH-3 (0-1)	Selenium	*6010D	2.4		mg/kg dry
6110120-09	HH-3 (0-1)	Strontium	*6010D	36		mg/kg dry
6110120-09	HH-3 (0-1)	Vanadium	*6010D	53		mg/kg dry
6110120-09	HH-3 (0-1)	Zinc	*6010D	100		mg/kg dry
6110120-10	HH-1 (0-1)	Mercury	*7471B	0.052		mg/kg dry
6110120-10	HH-1 (0-1)	Arsenic	*6010D	5.9		mg/kg dry
6110120-10	HH-1 (0-1)	Barium	*6010D	120		mg/kg dry
6110120-10	HH-1 (0-1)	Beryllium	*6010D	1.0		mg/kg dry
6110120-10	HH-1 (0-1)	Chromium	*6010D	21		mg/kg dry
6110120-10	HH-1 (0-1)	Cobalt	*6010D	7.9		mg/kg dry
6110120-10	HH-1 (0-1)	Copper	*6010D	25		mg/kg dry
6110120-10	HH-1 (0-1)	Lead	*6010D	27		mg/kg dry
6110120-10	HH-1 (0-1)	Manganese	*6010D	350		mg/kg dry
6110120-10	HH-1 (0-1)	Nickel	*6010D	8.8		mg/kg dry
6110120-10	HH-1 (0-1)	Selenium	*6010D	0.69		mg/kg dry
6110120-10	HH-1 (0-1)	Strontium	*6010D	31		mg/kg dry
6110120-10	HH-1 (0-1)	Vanadium	*6010D	48		mg/kg dry
6110120-10	HH-1 (0-1)	Zinc	*6010D	50		mg/kg dry
6110120-11	HH-3 (2-3)	Arsenic	6010D	0.018	J	mg/L
6110120-11	HH-3 (2-3)	Barium	6010D	0.74		mg/L
6110120-11	HH-3 (2-3)	Cobalt	6010D	0.0046	J	mg/L
6110120-11	HH-3 (2-3)	Copper	6010D	0.011	J	mg/L
6110120-11	HH-3 (2-3)	Lead	6010D	0.045		mg/L
6110120-11	HH-3 (2-3)	Manganese	6010D	0.29		mg/L
6110120-11	HH-3 (2-3)	Selenium	6010D	0.028	J	mg/L
6110120-11	HH-3 (2-3)	Strontium	6010D	0.10		mg/L
6110120-11	HH-3 (2-3)	Zinc	6010D	0.065	J	mg/L
6110120-11	HH-3 (2-3)	Vanadium	6010D	0.023	J	mg/L
6110120-12	HH-1 (7-8)	Barium	6010D	0.55		mg/L
6110120-12	HH-1 (7-8)	Manganese	6010D	0.043	J	mg/L
6110120-12	HH-1 (7-8)	Selenium	6010D	0.13		mg/L
6110120-12	HH-1 (7-8)	Strontium	6010D	2.5		mg/L

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-12	HH-1 (7-8)	Zinc	6010D	0.31	mg/L
6110120-13	HH-2 (2-3)	Antimony	6010D	0.0039 J	mg/L
6110120-13	HH-2 (2-3)	Barium	6010D	0.83	mg/L
6110120-13	HH-2 (2-3)	Manganese	6010D	0.014 J	mg/L
6110120-13	HH-2 (2-3)	Selenium	6010D	0.035 J	mg/L
6110120-13	HH-2 (2-3)	Strontium	6010D	0.23	mg/L
6110120-13	HH-2 (2-3)	Zinc	6010D	0.40	mg/L
6110120-13	HH-2 (2-3)	Vanadium	6010D	0.016 J	mg/L
6110120-14	HH-2 (0-1)	Mercury	*7471B	0.085	mg/kg dry
6110120-14	HH-2 (0-1)	Arsenic	*6010D	4.9	mg/kg dry
6110120-14	HH-2 (0-1)	Barium	*6010D	140	mg/kg dry
6110120-14	HH-2 (0-1)	Beryllium	*6010D	0.93	mg/kg dry
6110120-14	HH-2 (0-1)	Chromium	*6010D	14	mg/kg dry
6110120-14	HH-2 (0-1)	Cobalt	*6010D	12	mg/kg dry
6110120-14	HH-2 (0-1)	Copper	*6010D	21	mg/kg dry
6110120-14	HH-2 (0-1)	Lead	*6010D	30	mg/kg dry
6110120-14	HH-2 (0-1)	Manganese	*6010D	260	mg/kg dry
6110120-14	HH-2 (0-1)	Nickel	*6010D	5.9	mg/kg dry
6110120-14	HH-2 (0-1)	Selenium	*6010D	1.0	mg/kg dry
6110120-14	HH-2 (0-1)	Strontium	*6010D	25	mg/kg dry
6110120-14	HH-2 (0-1)	Vanadium	*6010D	48	mg/kg dry
6110120-14	HH-2 (0-1)	Zinc	*6010D	43	mg/kg dry
6110120-15	BG-1 (0-1)	Mercury	*7471B	0.033	mg/kg dry
6110120-15	BG-1 (0-1)	Arsenic	*6010D	1.9	mg/kg dry
6110120-15	BG-1 (0-1)	Barium	*6010D	36	mg/kg dry
6110120-15	BG-1 (0-1)	Beryllium	*6010D	0.39	mg/kg dry
6110120-15	BG-1 (0-1)	Chromium	*6010D	18	mg/kg dry
6110120-15	BG-1 (0-1)	Cobalt	*6010D	6.3	mg/kg dry
6110120-15	BG-1 (0-1)	Copper	*6010D	16	mg/kg dry
6110120-15	BG-1 (0-1)	Lead	*6010D	25	mg/kg dry
6110120-15	BG-1 (0-1)	Manganese	*6010D	310	mg/kg dry
6110120-15	BG-1 (0-1)	Nickel	*6010D	5.4	mg/kg dry
6110120-15	BG-1 (0-1)	Selenium	*6010D	1.6	mg/kg dry
6110120-15	BG-1 (0-1)	Strontium	*6010D	15	mg/kg dry
6110120-15	BG-1 (0-1)	Vanadium	*6010D	34	mg/kg dry
6110120-15	BG-1 (0-1)	Zinc	*6010D	43	mg/kg dry
6110120-16	BG-1 (2-3)	Mercury	*7471B	0.28	mg/kg dry
6110120-16	BG-1 (2-3)	Arsenic	*6010D	2.3	mg/kg dry
6110120-16	BG-1 (2-3)	Barium	*6010D	45	mg/kg dry
6110120-16	BG-1 (2-3)	Beryllium	*6010D	0.48	mg/kg dry
6110120-16	BG-1 (2-3)	Chromium	*6010D	19	mg/kg dry
6110120-16	BG-1 (2-3)	Cobalt	*6010D	7.3	mg/kg dry
6110120-16	BG-1 (2-3)	Copper	*6010D	18	mg/kg dry
6110120-16	BG-1 (2-3)	Lead	*6010D	43	mg/kg dry
6110120-16	BG-1 (2-3)	Manganese	*6010D	440	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-16	BG-1 (2-3)	Nickel	*6010D	6.2	mg/kg dry
6110120-16	BG-1 (2-3)	Selenium	*6010D	1.6	mg/kg dry
6110120-16	BG-1 (2-3)	Strontium	*6010D	15	mg/kg dry
6110120-16	BG-1 (2-3)	Vanadium	*6010D	35	mg/kg dry
6110120-16	BG-1 (2-3)	Zinc	*6010D	49	mg/kg dry
6110120-17	BG-2 (0-1)	Mercury	*7471B	0.045	mg/kg dry
6110120-17	BG-2 (0-1)	Arsenic	*6010D	1.9	mg/kg dry
6110120-17	BG-2 (0-1)	Barium	*6010D	45	mg/kg dry
6110120-17	BG-2 (0-1)	Beryllium	*6010D	0.50	mg/kg dry
6110120-17	BG-2 (0-1)	Chromium	*6010D	17	mg/kg dry
6110120-17	BG-2 (0-1)	Cobalt	*6010D	7.4	mg/kg dry
6110120-17	BG-2 (0-1)	Copper	*6010D	18	mg/kg dry
6110120-17	BG-2 (0-1)	Lead	*6010D	32	mg/kg dry
6110120-17	BG-2 (0-1)	Manganese	*6010D	410	mg/kg dry
6110120-17	BG-2 (0-1)	Nickel	*6010D	4.9	mg/kg dry
6110120-17	BG-2 (0-1)	Selenium	*6010D	1.1	mg/kg dry
6110120-17	BG-2 (0-1)	Strontium	*6010D	14	mg/kg dry
6110120-17	BG-2 (0-1)	Vanadium	*6010D	35	mg/kg dry
6110120-17	BG-2 (0-1)	Zinc	*6010D	44	mg/kg dry
6110120-18	BG-2 (2-3)	Mercury	*7471B	0.038	mg/kg dry
6110120-18	BG-2 (2-3)	Arsenic	*6010D	1.9	mg/kg dry
6110120-18	BG-2 (2-3)	Barium	*6010D	52	mg/kg dry
6110120-18	BG-2 (2-3)	Beryllium	*6010D	0.53	mg/kg dry
6110120-18	BG-2 (2-3)	Chromium	*6010D	24	mg/kg dry
6110120-18	BG-2 (2-3)	Cobalt	*6010D	7.5	mg/kg dry
6110120-18	BG-2 (2-3)	Copper	*6010D	20	mg/kg dry
6110120-18	BG-2 (2-3)	Lead	*6010D	26	mg/kg dry
6110120-18	BG-2 (2-3)	Manganese	*6010D	450	mg/kg dry
6110120-18	BG-2 (2-3)	Nickel	*6010D	7.9	mg/kg dry
6110120-18	BG-2 (2-3)	Selenium	*6010D	1.7	mg/kg dry
6110120-18	BG-2 (2-3)	Strontium	*6010D	19	mg/kg dry
6110120-18	BG-2 (2-3)	Vanadium	*6010D	37	mg/kg dry
6110120-18	BG-2 (2-3)	Zinc	*6010D	45	mg/kg dry
6110120-19	BG-3 (0-1)	Mercury	*7471B	0.024	mg/kg dry
6110120-19	BG-3 (0-1)	Arsenic	*6010D	1.7	mg/kg dry
6110120-19	BG-3 (0-1)	Barium	*6010D	44	mg/kg dry
6110120-19	BG-3 (0-1)	Beryllium	*6010D	0.43	mg/kg dry
6110120-19	BG-3 (0-1)	Chromium	*6010D	16	mg/kg dry
6110120-19	BG-3 (0-1)	Cobalt	*6010D	7.5	mg/kg dry
6110120-19	BG-3 (0-1)	Copper	*6010D	15	mg/kg dry
6110120-19	BG-3 (0-1)	Lead	*6010D	25	mg/kg dry
6110120-19	BG-3 (0-1)	Manganese	*6010D	410	mg/kg dry
6110120-19	BG-3 (0-1)	Nickel	*6010D	5.1	mg/kg dry
6110120-19	BG-3 (0-1)	Selenium	*6010D	1.4	mg/kg dry
6110120-19	BG-3 (0-1)	Strontium	*6010D	46	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-19	BG-3 (0-1)	Vanadium	*6010D	37	mg/kg dry
6110120-19	BG-3 (0-1)	Zinc	*6010D	40	mg/kg dry
6110120-20	BG-3 (2-3)	Mercury	*7471B	0.040	mg/kg dry
6110120-20	BG-3 (2-3)	Arsenic	*6010D	2.2	mg/kg dry
6110120-20	BG-3 (2-3)	Barium	*6010D	56	mg/kg dry
6110120-20	BG-3 (2-3)	Beryllium	*6010D	0.54	mg/kg dry
6110120-20	BG-3 (2-3)	Chromium	*6010D	22	mg/kg dry
6110120-20	BG-3 (2-3)	Cobalt	*6010D	7.5	mg/kg dry
6110120-20	BG-3 (2-3)	Copper	*6010D	18	mg/kg dry
6110120-20	BG-3 (2-3)	Lead	*6010D	29	mg/kg dry
6110120-20	BG-3 (2-3)	Manganese	*6010D	410	mg/kg dry
6110120-20	BG-3 (2-3)	Nickel	*6010D	5.2	mg/kg dry
6110120-20	BG-3 (2-3)	Selenium	*6010D	1.2	mg/kg dry
6110120-20	BG-3 (2-3)	Strontium	*6010D	19	mg/kg dry
6110120-20	BG-3 (2-3)	Vanadium	*6010D	40	mg/kg dry
6110120-20	BG-3 (2-3)	Zinc	*6010D	46	mg/kg dry
6110120-21	BG-4 (0-1)	Mercury	*7471B	0.026	mg/kg dry
6110120-21	BG-4 (0-1)	Arsenic	*6010D	1.7	mg/kg dry
6110120-21	BG-4 (0-1)	Barium	*6010D	50	mg/kg dry
6110120-21	BG-4 (0-1)	Beryllium	*6010D	0.50	mg/kg dry
6110120-21	BG-4 (0-1)	Chromium	*6010D	19	mg/kg dry
6110120-21	BG-4 (0-1)	Cobalt	*6010D	9.5	mg/kg dry
6110120-21	BG-4 (0-1)	Copper	*6010D	16	mg/kg dry
6110120-21	BG-4 (0-1)	Lead	*6010D	22	mg/kg dry
6110120-21	BG-4 (0-1)	Manganese	*6010D	450	BH mg/kg dry
6110120-21	BG-4 (0-1)	Nickel	*6010D	6.0	mg/kg dry
6110120-21	BG-4 (0-1)	Strontium	*6010D	16	A mg/kg dry
6110120-21	BG-4 (0-1)	Vanadium	*6010D	53	mg/kg dry
6110120-21	BG-4 (0-1)	Zinc	*6010D	50	mg/kg dry
6110120-22	BG-4 (2-3)	Mercury	*7471B	0.054	mg/kg dry
6110120-22	BG-4 (2-3)	Arsenic	*6010D	2.0	mg/kg dry
6110120-22	BG-4 (2-3)	Barium	*6010D	53	mg/kg dry
6110120-22	BG-4 (2-3)	Beryllium	*6010D	0.52	mg/kg dry
6110120-22	BG-4 (2-3)	Cadmium	*6010D	0.38	mg/kg dry
6110120-22	BG-4 (2-3)	Chromium	*6010D	23	mg/kg dry
6110120-22	BG-4 (2-3)	Cobalt	*6010D	11	mg/kg dry
6110120-22	BG-4 (2-3)	Copper	*6010D	23	mg/kg dry
6110120-22	BG-4 (2-3)	Lead	*6010D	21	mg/kg dry
6110120-22	BG-4 (2-3)	Manganese	*6010D	460	BH mg/kg dry
6110120-22	BG-4 (2-3)	Nickel	*6010D	8.5	mg/kg dry
6110120-22	BG-4 (2-3)	Strontium	*6010D	19	mg/kg dry
6110120-22	BG-4 (2-3)	Vanadium	*6010D	51	mg/kg dry
6110120-22	BG-4 (2-3)	Zinc	*6010D	230	mg/kg dry
6110120-23	Dup	Barium	6010D	1.3	mg/L
6110120-23	Dup	Manganese	6010D	0.069	mg/L

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Prism ID	Client ID	Parameter	Method	Result		Units
6110120-23	Dup	Selenium	6010D	0.035	J	mg/L
6110120-23	Dup	Strontium	6010D	0.17		mg/L
6110120-23	Dup	Zinc	6010D	0.37		mg/L
6110120-23	Dup	Vanadium	6010D	0.0026	J	mg/L
6110120-23	Dup	Mercury	*7471B	0.067		mg/kg dry
6110120-23	Dup	Arsenic	*6010D	3.4		mg/kg dry
6110120-23	Dup	Barium	*6010D	110		mg/kg dry
6110120-23	Dup	Beryllium	*6010D	0.79		mg/kg dry
6110120-23	Dup	Chromium	*6010D	20		mg/kg dry
6110120-23	Dup	Cobalt	*6010D	8.4		mg/kg dry
6110120-23	Dup	Copper	*6010D	17		mg/kg dry
6110120-23	Dup	Lead	*6010D	18		mg/kg dry
6110120-23	Dup	Manganese	*6010D	360	BH	mg/kg dry
6110120-23	Dup	Nickel	*6010D	12		mg/kg dry
6110120-23	Dup	Strontium	*6010D	30		mg/kg dry
6110120-23	Dup	Vanadium	*6010D	41		mg/kg dry
6110120-23	Dup	Zinc	*6010D	35		mg/kg dry

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: MW-7 (0-1)  
 Prism Sample ID: 6110120-01  
 Prism Work Order: 6110120  
 Time Collected: 11/01/16 11:35  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	83.8	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.030	mg/kg dry	0.025	0.0014	1	*7471B	11/18/16 8:12	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 0:04	bgm	P6K0165
Arsenic	2.6	mg/kg dry	0.30	0.036	1	*6010D	11/11/16 0:04	bgm	P6K0165
Barium	67	mg/kg dry	0.59	0.087	1	*6010D	11/11/16 0:04	bgm	P6K0165
Beryllium	0.87	mg/kg dry	0.30	0.0065	1	*6010D	11/11/16 0:04	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 0:04	bgm	P6K0165
Chromium	10	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 0:04	bgm	P6K0165
Cobalt	3.9	mg/kg dry	0.30	0.0058	1	*6010D	11/11/16 0:04	bgm	P6K0165
Copper	180	mg/kg dry	15	1.3	25	*6010D	11/11/16 20:42	bgm	P6K0165
Lead	7.6	mg/kg dry	0.30	0.055	1	*6010D	11/11/16 0:04	bgm	P6K0165
Manganese	100	mg/kg dry	0.30	0.059	1	*6010D	11/11/16 0:04	bgm	P6K0165
Nickel	2.9	mg/kg dry	0.59	0.021	1	*6010D	11/11/16 0:04	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.59	0.14	1	*6010D	11/11/16 0:04	bgm	P6K0165
Strontium	6.7	mg/kg dry	0.30	0.0063	1	*6010D	11/11/16 0:04	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.59	0.078	1	*6010D	11/11/16 0:04	bgm	P6K0165
Vanadium	61	mg/kg dry	0.30	0.0070	1	*6010D	11/11/16 0:04	bgm	P6K0165
Zinc	46	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 0:04	bgm	P6K0165

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: MW-6 (0-1)  
 Prism Sample ID: 6110120-02  
 Prism Work Order: 6110120  
 Time Collected: 11/02/16 13:50  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	97.3	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.082	mg/kg dry	0.021	0.0011	1	*7471B	11/18/16 8:25	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.26	0.026	1	*6010D	11/11/16 0:32	bgm	P6K0165
Arsenic	2.9	mg/kg dry	0.26	0.031	1	*6010D	11/11/16 0:32	bgm	P6K0165
Barium	38	mg/kg dry	0.51	0.075	1	*6010D	11/11/16 0:32	bgm	P6K0165
Beryllium	0.61	mg/kg dry	0.26	0.0057	1	*6010D	11/11/16 0:32	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.26	0.0069	1	*6010D	11/11/16 0:32	bgm	P6K0165
Chromium	10	mg/kg dry	0.26	0.043	1	*6010D	11/11/16 0:32	bgm	P6K0165
Cobalt	9.5	mg/kg dry	0.26	0.0050	1	*6010D	11/11/16 0:32	bgm	P6K0165
Copper	23	mg/kg dry	0.51	0.046	1	*6010D	11/11/16 0:32	bgm	P6K0165
Lead	12	mg/kg dry	0.26	0.048	1	*6010D	11/11/16 0:32	bgm	P6K0165
Manganese	570	mg/kg dry	6.4	1.3	25	*6010D	11/11/16 20:50	bgm	P6K0165
Nickel	8.2	mg/kg dry	0.51	0.018	1	*6010D	11/11/16 0:32	bgm	P6K0165
Selenium	1.0	mg/kg dry	0.51	0.12	1	*6010D	11/11/16 0:32	bgm	P6K0165
Strontium	22	mg/kg dry	0.26	0.0054	1	*6010D	11/11/16 0:32	bgm	P6K0165
Thallium	0.81	mg/kg dry	0.51	0.067	1	*6010D	11/11/16 0:32	bgm	P6K0165
Vanadium	31	mg/kg dry	0.26	0.0061	1	*6010D	11/11/16 0:32	bgm	P6K0165
Zinc	77	mg/kg dry	2.6	0.092	1	*6010D	11/11/16 0:32	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: MW-5 (0-1)  
 Prism Sample ID: 6110120-03  
 Prism Work Order: 6110120  
 Time Collected: 11/02/16 16:05  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	85.1	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 8:30	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 0:42	bgm	P6K0165
Arsenic	2.1	mg/kg dry	0.30	0.036	1	*6010D	11/11/16 0:42	bgm	P6K0165
Barium	76	mg/kg dry	0.59	0.087	1	*6010D	11/11/16 0:42	bgm	P6K0165
Beryllium	0.99	mg/kg dry	0.30	0.0065	1	*6010D	11/11/16 0:42	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 0:42	bgm	P6K0165
Chromium	18	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 0:42	bgm	P6K0165
Cobalt	27	mg/kg dry	0.30	0.0058	1	*6010D	11/11/16 0:42	bgm	P6K0165
Copper	49	mg/kg dry	0.59	0.054	1	*6010D	11/11/16 0:42	bgm	P6K0165
Lead	4.0	mg/kg dry	0.30	0.055	1	*6010D	11/11/16 0:42	bgm	P6K0165
Manganese	710	mg/kg dry	7.4	1.5	25	*6010D	11/11/16 20:58	bgm	P6K0165
Nickel	5.0	mg/kg dry	0.59	0.021	1	*6010D	11/11/16 0:42	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.59	0.14	1	*6010D	11/11/16 0:42	bgm	P6K0165
Strontium	25	mg/kg dry	0.30	0.0063	1	*6010D	11/11/16 0:42	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.59	0.078	1	*6010D	11/11/16 0:42	bgm	P6K0165
Vanadium	190	mg/kg dry	7.4	0.18	25	*6010D	11/11/16 20:58	bgm	P6K0165
Zinc	47	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 0:42	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: MW-5 (6-7)  
 Prism Sample ID: 6110120-04  
 Prism Work Order: 6110120  
 Time Collected: 11/02/16 16:35  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	94.4	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.020	0.0011	1	*7471B	11/18/16 8:35	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.27	0.027	1	*6010D	11/11/16 0:52	bgm	P6K0165
Arsenic	1.4	mg/kg dry	0.27	0.032	1	*6010D	11/11/16 0:52	bgm	P6K0165
Barium	61	mg/kg dry	0.53	0.078	1	*6010D	11/11/16 0:52	bgm	P6K0165
Beryllium	0.60	mg/kg dry	0.27	0.0059	1	*6010D	11/11/16 0:52	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.27	0.0071	1	*6010D	11/11/16 0:52	bgm	P6K0165
Chromium	39	mg/kg dry	0.27	0.044	1	*6010D	11/11/16 0:52	bgm	P6K0165
Cobalt	19	mg/kg dry	0.27	0.0052	1	*6010D	11/11/16 0:52	bgm	P6K0165
Copper	18	mg/kg dry	0.53	0.048	1	*6010D	11/11/16 0:52	bgm	P6K0165
Lead	0.55	mg/kg dry	0.27	0.049	1	*6010D	11/11/16 0:52	bgm	P6K0165
Manganese	940	mg/kg dry	6.7	1.3	25	*6010D	11/11/16 21:06	bgm	P6K0165
Nickel	20	mg/kg dry	0.53	0.019	1	*6010D	11/11/16 0:52	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.53	0.13	1	*6010D	11/11/16 0:52	bgm	P6K0165
Strontium	29	mg/kg dry	0.27	0.0056	1	*6010D	11/11/16 0:52	bgm	P6K0165
Thallium	2.3	mg/kg dry	0.53	0.070	1	*6010D	11/11/16 0:52	bgm	P6K0165
Vanadium	67	mg/kg dry	0.27	0.0063	1	*6010D	11/11/16 0:52	bgm	P6K0165
Zinc	75	mg/kg dry	2.7	0.095	1	*6010D	11/11/16 0:52	bgm	P6K0165

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-4 (0-1)  
 Prism Sample ID: 6110120-05  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 08:45  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	87.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 8:39	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.28	0.028	1	*6010D	11/11/16 1:03	bgm	P6K0165
Arsenic	2.4	mg/kg dry	0.28	0.034	1	*6010D	11/11/16 1:03	bgm	P6K0165
Barium	72	mg/kg dry	0.56	0.081	1	*6010D	11/11/16 1:03	bgm	P6K0165
Beryllium	1.0	mg/kg dry	0.28	0.0061	1	*6010D	11/11/16 1:03	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.28	0.0075	1	*6010D	11/11/16 1:03	bgm	P6K0165
Chromium	45	mg/kg dry	0.28	0.047	1	*6010D	11/11/16 1:03	bgm	P6K0165
Cobalt	16	mg/kg dry	0.28	0.0055	1	*6010D	11/11/16 1:03	bgm	P6K0165
Copper	37	mg/kg dry	0.56	0.050	1	*6010D	11/11/16 1:03	bgm	P6K0165
Lead	2.3	mg/kg dry	0.28	0.052	1	*6010D	11/11/16 1:03	bgm	P6K0165
Manganese	630	mg/kg dry	7.0	1.4	25	*6010D	11/11/16 21:14	bgm	P6K0165
Nickel	33	mg/kg dry	0.56	0.020	1	*6010D	11/11/16 1:03	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.56	0.13	1	*6010D	11/11/16 1:03	bgm	P6K0165
Strontium	42	mg/kg dry	0.28	0.0059	1	*6010D	11/11/16 1:03	bgm	P6K0165
Thallium	0.60	mg/kg dry	0.56	0.073	1	*6010D	11/11/16 1:03	bgm	P6K0165
Vanadium	73	mg/kg dry	0.28	0.0066	1	*6010D	11/11/16 1:03	bgm	P6K0165
Zinc	70	mg/kg dry	2.8	0.10	1	*6010D	11/11/16 1:03	bgm	P6K0165



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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-4 (4-5)  
 Prism Sample ID: 6110120-06  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 09:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	79.1	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/17/16 13:59	JAB	P6K0397
<b>Antimony</b>	<b>0.0051 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.0025</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
Arsenic	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 22:42	bgm	P6K0245
<b>Barium</b>	<b>0.64</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	6010D	11/10/16 22:42	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	6010D	11/10/16 22:42	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	6010D	11/10/16 22:42	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	6010D	11/10/16 22:42	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	6010D	11/10/16 22:42	bgm	P6K0245
<b>Lead</b>	<b>0.011 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.0080</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Manganese</b>	<b>0.013 J</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	6010D	11/10/16 22:42	bgm	P6K0245
<b>Selenium</b>	<b>0.031 J</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.022</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Strontium</b>	<b>0.45</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 22:42	bgm	P6K0245
Zinc	BRL	mg/L	0.15	0.056	1	6010D	11/10/16 22:42	bgm	P6K0245
<b>Vanadium</b>	<b>0.0051 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.00075</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-5 (0-1)  
 Prism Sample ID: 6110120-07  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 09:25  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	84.3	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.025	0.0014	1	*7471B	11/18/16 8:44	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 1:23	bgm	P6K0165
Arsenic	2.4	mg/kg dry	0.30	0.036	1	*6010D	11/11/16 1:23	bgm	P6K0165
Barium	73	mg/kg dry	0.60	0.087	1	*6010D	11/11/16 1:23	bgm	P6K0165
Beryllium	0.75	mg/kg dry	0.30	0.0066	1	*6010D	11/11/16 1:23	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 1:23	bgm	P6K0165
Chromium	23	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 1:23	bgm	P6K0165
Cobalt	8.4	mg/kg dry	0.30	0.0058	1	*6010D	11/11/16 1:23	bgm	P6K0165
Copper	19	mg/kg dry	0.60	0.054	1	*6010D	11/11/16 1:23	bgm	P6K0165
Lead	9.3	mg/kg dry	0.30	0.055	1	*6010D	11/11/16 1:23	bgm	P6K0165
Manganese	410	mg/kg dry	7.5	1.5	25	*6010D	11/11/16 21:29	bgm	P6K0165
Nickel	14	mg/kg dry	0.60	0.021	1	*6010D	11/11/16 1:23	bgm	P6K0165
Selenium	1.2	mg/kg dry	0.60	0.14	1	*6010D	11/11/16 1:23	bgm	P6K0165
Strontium	23	mg/kg dry	0.30	0.0063	1	*6010D	11/11/16 1:23	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.60	0.078	1	*6010D	11/11/16 1:23	bgm	P6K0165
Vanadium	39	mg/kg dry	0.30	0.0070	1	*6010D	11/11/16 1:23	bgm	P6K0165
Zinc	51	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 1:23	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-5 (3-4)  
 Prism Sample ID: 6110120-08  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 09:40  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	76.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/17/16 14:10	JAB	P6K0397
<b>Antimony</b>	<b>0.0033 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.0025</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>
Arsenic	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:03	bgm	P6K0245
<b>Barium</b>	<b>1.9</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	6010D	11/10/16 23:03	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	6010D	11/10/16 23:03	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	6010D	11/10/16 23:03	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	6010D	11/10/16 23:03	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	6010D	11/10/16 23:03	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	6010D	11/10/16 23:03	bgm	P6K0245
<b>Manganese</b>	<b>0.021 J</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	6010D	11/10/16 23:03	bgm	P6K0245
<b>Selenium</b>	<b>0.040 J</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.022</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Strontium</b>	<b>0.22</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:03	bgm	P6K0245
Zinc	BRL	mg/L	0.15	0.056	1	6010D	11/10/16 23:03	bgm	P6K0245
<b>Vanadium</b>	<b>0.0090 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.00075</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-3 (0-1)  
 Prism Sample ID: 6110120-09  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 10:05  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	77.2	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.076	mg/kg dry	0.027	0.0015	1	*7471B	11/18/16 8:48	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.33	0.033	1	*6010D	11/11/16 1:42	bgm	P6K0165
Arsenic	9.9	mg/kg dry	0.33	0.040	1	*6010D	11/11/16 1:42	bgm	P6K0165
Barium	200	mg/kg dry	16	2.4	25	*6010D	11/11/16 21:45	bgm	P6K0165
Beryllium	1.3	mg/kg dry	0.33	0.0072	1	*6010D	11/11/16 1:42	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.33	0.0087	1	*6010D	11/11/16 1:42	bgm	P6K0165
Chromium	18	mg/kg dry	0.33	0.054	1	*6010D	11/11/16 1:42	bgm	P6K0165
Cobalt	7.8	mg/kg dry	0.33	0.0064	1	*6010D	11/11/16 1:42	bgm	P6K0165
Copper	31	mg/kg dry	0.65	0.059	1	*6010D	11/11/16 1:42	bgm	P6K0165
Lead	24	mg/kg dry	0.33	0.061	1	*6010D	11/11/16 1:42	bgm	P6K0165
Manganese	350	mg/kg dry	8.1	1.6	25	*6010D	11/11/16 21:45	bgm	P6K0165
Nickel	8.9	mg/kg dry	0.65	0.023	1	*6010D	11/11/16 1:42	bgm	P6K0165
Selenium	2.4	mg/kg dry	0.65	0.15	1	*6010D	11/11/16 1:42	bgm	P6K0165
Strontium	36	mg/kg dry	0.33	0.0069	1	*6010D	11/11/16 1:42	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.65	0.085	1	*6010D	11/11/16 1:42	bgm	P6K0165
Vanadium	53	mg/kg dry	0.33	0.0077	1	*6010D	11/11/16 1:42	bgm	P6K0165
Zinc	100	mg/kg dry	3.3	0.12	1	*6010D	11/11/16 1:42	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-1 (0-1)  
 Prism Sample ID: 6110120-10  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 10:30  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	88.1	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.052	mg/kg dry	0.023	0.0012	1	*7471B	11/18/16 8:53	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/11/16 1:52	bgm	P6K0165
Arsenic	5.9	mg/kg dry	0.29	0.035	1	*6010D	11/11/16 1:52	bgm	P6K0165
Barium	120	mg/kg dry	0.58	0.084	1	*6010D	11/11/16 1:52	bgm	P6K0165
Beryllium	1.0	mg/kg dry	0.29	0.0063	1	*6010D	11/11/16 1:52	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.29	0.0077	1	*6010D	11/11/16 1:52	bgm	P6K0165
Chromium	21	mg/kg dry	0.29	0.048	1	*6010D	11/11/16 1:52	bgm	P6K0165
Cobalt	7.9	mg/kg dry	0.29	0.0056	1	*6010D	11/11/16 1:52	bgm	P6K0165
Copper	25	mg/kg dry	0.58	0.052	1	*6010D	11/11/16 1:52	bgm	P6K0165
Lead	27	mg/kg dry	0.29	0.054	1	*6010D	11/11/16 1:52	bgm	P6K0165
Manganese	350	mg/kg dry	7.2	1.4	25	*6010D	11/11/16 21:53	bgm	P6K0165
Nickel	8.8	mg/kg dry	0.58	0.021	1	*6010D	11/11/16 1:52	bgm	P6K0165
Selenium	0.69	mg/kg dry	0.58	0.14	1	*6010D	11/11/16 1:52	bgm	P6K0165
Strontium	31	mg/kg dry	0.29	0.0061	1	*6010D	11/11/16 1:52	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.58	0.075	1	*6010D	11/11/16 1:52	bgm	P6K0165
Vanadium	48	mg/kg dry	0.29	0.0068	1	*6010D	11/11/16 1:52	bgm	P6K0165
Zinc	50	mg/kg dry	2.9	0.10	1	*6010D	11/11/16 1:52	bgm	P6K0165

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-3 (2-3)  
 Prism Sample ID: 6110120-11  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:25  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	78.7	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/17/16 14:14	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	6010D	11/10/16 23:09	bgm	P6K0245
<b>Arsenic</b>	<b>0.018 J</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.012</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Barium</b>	<b>0.74</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	6010D	11/10/16 23:09	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	6010D	11/10/16 23:09	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	6010D	11/10/16 23:09	bgm	P6K0245
<b>Cobalt</b>	<b>0.0046 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.00055</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Copper</b>	<b>0.011 J</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0080</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Lead</b>	<b>0.045</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.0080</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Manganese</b>	<b>0.29</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	6010D	11/10/16 23:09	bgm	P6K0245
<b>Selenium</b>	<b>0.028 J</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.022</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:09	bgm	P6K0245
<b>Zinc</b>	<b>0.065 J</b>	<b>mg/L</b>	<b>0.15</b>	<b>0.056</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Vanadium</b>	<b>0.023 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.00075</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-1 (7-8)  
 Prism Sample ID: 6110120-12  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:45  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	86.7	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/17/16 14:18	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	6010D	11/10/16 23:15	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:15	bgm	P6K0245
<b>Barium</b>	<b>0.55</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:15</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	6010D	11/10/16 23:15	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	6010D	11/10/16 23:15	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	6010D	11/10/16 23:15	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	6010D	11/10/16 23:15	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	6010D	11/10/16 23:15	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	6010D	11/10/16 23:15	bgm	P6K0245
<b>Manganese</b>	<b>0.043 J</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:15</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	6010D	11/10/16 23:15	bgm	P6K0245
<b>Selenium</b>	<b>0.13</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.022</b>	<b>1</b>	<b>6010D</b>	<b>11/11/16 23:40</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Strontium</b>	<b>2.5</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:15</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:15	bgm	P6K0245
<b>Zinc</b>	<b>0.31</b>	<b>mg/L</b>	<b>0.15</b>	<b>0.056</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:15</b>	<b>bgm</b>	<b>P6K0245</b>
Vanadium	BRL	mg/L	0.025	0.00075	1	6010D	11/10/16 23:15	bgm	P6K0245

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-2 (2-3)  
 Prism Sample ID: 6110120-13  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:45  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	72.8	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/17/16 14:22	JAB	P6K0397
<b>Antimony</b>	<b>0.0039 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.0025</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
Arsenic	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:23	bgm	P6K0245
<b>Barium</b>	<b>0.83</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	6010D	11/10/16 23:23	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	6010D	11/10/16 23:23	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	6010D	11/10/16 23:23	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	6010D	11/10/16 23:23	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	6010D	11/10/16 23:23	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	6010D	11/10/16 23:23	bgm	P6K0245
<b>Manganese</b>	<b>0.014 J</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	6010D	11/10/16 23:23	bgm	P6K0245
<b>Selenium</b>	<b>0.035 J</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.022</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Strontium</b>	<b>0.23</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:23	bgm	P6K0245
<b>Zinc</b>	<b>0.40</b>	<b>mg/L</b>	<b>0.15</b>	<b>0.056</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Vanadium</b>	<b>0.016 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.00075</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-2 (0-1)  
 Prism Sample ID: 6110120-14  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:15  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	87.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.085	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 8:57	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/11/16 2:41	bgm	P6K0165
Arsenic	4.9	mg/kg dry	0.29	0.035	1	*6010D	11/11/16 2:41	bgm	P6K0165
Barium	140	mg/kg dry	0.58	0.085	1	*6010D	11/11/16 2:41	bgm	P6K0165
Beryllium	0.93	mg/kg dry	0.29	0.0064	1	*6010D	11/11/16 2:41	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.29	0.0078	1	*6010D	11/11/16 2:41	bgm	P6K0165
Chromium	14	mg/kg dry	0.29	0.049	1	*6010D	11/11/16 2:41	bgm	P6K0165
Cobalt	12	mg/kg dry	0.29	0.0057	1	*6010D	11/11/16 2:41	bgm	P6K0165
Copper	21	mg/kg dry	0.58	0.052	1	*6010D	11/11/16 2:41	bgm	P6K0165
Lead	30	mg/kg dry	0.29	0.054	1	*6010D	11/11/16 2:41	bgm	P6K0165
Manganese	260	mg/kg dry	7.3	1.5	25	*6010D	11/11/16 22:35	bgm	P6K0165
Nickel	5.9	mg/kg dry	0.58	0.021	1	*6010D	11/11/16 2:41	bgm	P6K0165
Selenium	1.0	mg/kg dry	0.58	0.14	1	*6010D	11/11/16 2:41	bgm	P6K0165
Strontium	25	mg/kg dry	0.29	0.0062	1	*6010D	11/11/16 2:41	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.58	0.076	1	*6010D	11/11/16 2:41	bgm	P6K0165
Vanadium	48	mg/kg dry	0.29	0.0068	1	*6010D	11/11/16 2:41	bgm	P6K0165
Zinc	43	mg/kg dry	2.9	0.10	1	*6010D	11/11/16 2:41	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-1 (0-1)  
 Prism Sample ID: 6110120-15  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 13:55  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	88.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.033	mg/kg dry	0.021	0.0012	1	*7471B	11/18/16 9:02	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.28	0.029	1	*6010D	11/11/16 2:51	bgm	P6K0165
Arsenic	1.9	mg/kg dry	0.28	0.035	1	*6010D	11/11/16 2:51	bgm	P6K0165
Barium	36	mg/kg dry	0.57	0.083	1	*6010D	11/11/16 2:51	bgm	P6K0165
Beryllium	0.39	mg/kg dry	0.28	0.0062	1	*6010D	11/11/16 2:51	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.28	0.0076	1	*6010D	11/11/16 2:51	bgm	P6K0165
Chromium	18	mg/kg dry	0.28	0.047	1	*6010D	11/11/16 2:51	bgm	P6K0165
Cobalt	6.3	mg/kg dry	0.28	0.0056	1	*6010D	11/11/16 2:51	bgm	P6K0165
Copper	16	mg/kg dry	0.57	0.051	1	*6010D	11/11/16 2:51	bgm	P6K0165
Lead	25	mg/kg dry	0.28	0.053	1	*6010D	11/11/16 2:51	bgm	P6K0165
Manganese	310	mg/kg dry	7.1	1.4	25	*6010D	11/11/16 22:43	bgm	P6K0165
Nickel	5.4	mg/kg dry	0.57	0.020	1	*6010D	11/11/16 2:51	bgm	P6K0165
Selenium	1.6	mg/kg dry	0.57	0.13	1	*6010D	11/11/16 2:51	bgm	P6K0165
Strontium	15	mg/kg dry	0.28	0.0060	1	*6010D	11/11/16 2:51	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.57	0.074	1	*6010D	11/11/16 2:51	bgm	P6K0165
Vanadium	34	mg/kg dry	0.28	0.0067	1	*6010D	11/11/16 2:51	bgm	P6K0165
Zinc	43	mg/kg dry	2.8	0.10	1	*6010D	11/11/16 2:51	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-1 (2-3)  
 Prism Sample ID: 6110120-16  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:10  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	86.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.28	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:16	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/11/16 3:00	bgm	P6K0165
Arsenic	2.3	mg/kg dry	0.29	0.035	1	*6010D	11/11/16 3:00	bgm	P6K0165
Barium	45	mg/kg dry	0.57	0.083	1	*6010D	11/11/16 3:00	bgm	P6K0165
Beryllium	0.48	mg/kg dry	0.29	0.0063	1	*6010D	11/11/16 3:00	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.29	0.0077	1	*6010D	11/11/16 3:00	bgm	P6K0165
Chromium	19	mg/kg dry	0.29	0.048	1	*6010D	11/11/16 3:00	bgm	P6K0165
Cobalt	7.3	mg/kg dry	0.29	0.0056	1	*6010D	11/11/16 3:00	bgm	P6K0165
Copper	18	mg/kg dry	0.57	0.052	1	*6010D	11/11/16 3:00	bgm	P6K0165
Lead	43	mg/kg dry	0.29	0.053	1	*6010D	11/11/16 3:00	bgm	P6K0165
Manganese	440	mg/kg dry	7.1	1.4	25	*6010D	11/11/16 22:51	bgm	P6K0165
Nickel	6.2	mg/kg dry	0.57	0.021	1	*6010D	11/11/16 3:00	bgm	P6K0165
Selenium	1.6	mg/kg dry	0.57	0.14	1	*6010D	11/11/16 3:00	bgm	P6K0165
Strontium	15	mg/kg dry	0.29	0.0061	1	*6010D	11/11/16 3:00	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.57	0.075	1	*6010D	11/11/16 3:00	bgm	P6K0165
Vanadium	35	mg/kg dry	0.29	0.0067	1	*6010D	11/11/16 3:00	bgm	P6K0165
Zinc	49	mg/kg dry	2.9	0.10	1	*6010D	11/11/16 3:00	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-2 (0-1)  
 Prism Sample ID: 6110120-17  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:15  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	89.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.045	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:20	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.28	0.028	1	*6010D	11/11/16 3:10	bgm	P6K0165
Arsenic	1.9	mg/kg dry	0.28	0.034	1	*6010D	11/11/16 3:10	bgm	P6K0165
Barium	45	mg/kg dry	0.56	0.082	1	*6010D	11/11/16 3:10	bgm	P6K0165
Beryllium	0.50	mg/kg dry	0.28	0.0062	1	*6010D	11/11/16 3:10	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.28	0.0075	1	*6010D	11/11/16 3:10	bgm	P6K0165
Chromium	17	mg/kg dry	0.28	0.047	1	*6010D	11/11/16 3:10	bgm	P6K0165
Cobalt	7.4	mg/kg dry	0.28	0.0055	1	*6010D	11/11/16 3:10	bgm	P6K0165
Copper	18	mg/kg dry	0.56	0.051	1	*6010D	11/11/16 3:10	bgm	P6K0165
Lead	32	mg/kg dry	0.28	0.052	1	*6010D	11/11/16 3:10	bgm	P6K0165
Manganese	410	mg/kg dry	7.0	1.4	25	*6010D	11/11/16 22:58	bgm	P6K0165
Nickel	4.9	mg/kg dry	0.56	0.020	1	*6010D	11/11/16 3:10	bgm	P6K0165
Selenium	1.1	mg/kg dry	0.56	0.13	1	*6010D	11/11/16 3:10	bgm	P6K0165
Strontium	14	mg/kg dry	0.28	0.0059	1	*6010D	11/11/16 3:10	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.56	0.073	1	*6010D	11/11/16 3:10	bgm	P6K0165
Vanadium	35	mg/kg dry	0.28	0.0066	1	*6010D	11/11/16 3:10	bgm	P6K0165
Zinc	44	mg/kg dry	2.8	0.10	1	*6010D	11/11/16 3:10	bgm	P6K0165

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-2 (2-3)  
 Prism Sample ID: 6110120-18  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:40  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	90.2	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.038	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 9:25	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.27	0.028	1	*6010D	11/11/16 3:19	bgm	P6K0165
Arsenic	1.9	mg/kg dry	0.27	0.033	1	*6010D	11/11/16 3:19	bgm	P6K0165
Barium	52	mg/kg dry	0.55	0.080	1	*6010D	11/11/16 3:19	bgm	P6K0165
Beryllium	0.53	mg/kg dry	0.27	0.0060	1	*6010D	11/11/16 3:19	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.27	0.0074	1	*6010D	11/11/16 3:19	bgm	P6K0165
Chromium	24	mg/kg dry	0.27	0.046	1	*6010D	11/11/16 3:19	bgm	P6K0165
Cobalt	7.5	mg/kg dry	0.27	0.0054	1	*6010D	11/11/16 3:19	bgm	P6K0165
Copper	20	mg/kg dry	0.55	0.050	1	*6010D	11/11/16 3:19	bgm	P6K0165
Lead	26	mg/kg dry	0.27	0.051	1	*6010D	11/11/16 3:19	bgm	P6K0165
Manganese	450	mg/kg dry	6.9	1.4	25	*6010D	11/11/16 23:06	bgm	P6K0165
Nickel	7.9	mg/kg dry	0.55	0.020	1	*6010D	11/11/16 3:19	bgm	P6K0165
Selenium	1.7	mg/kg dry	0.55	0.13	1	*6010D	11/11/16 3:19	bgm	P6K0165
Strontium	19	mg/kg dry	0.27	0.0058	1	*6010D	11/11/16 3:19	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.55	0.072	1	*6010D	11/11/16 3:19	bgm	P6K0165
Vanadium	37	mg/kg dry	0.27	0.0065	1	*6010D	11/11/16 3:19	bgm	P6K0165
Zinc	45	mg/kg dry	2.7	0.098	1	*6010D	11/11/16 3:19	bgm	P6K0165

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-3 (0-1)  
 Prism Sample ID: 6110120-19  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:50  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	83.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.024	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:29	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 3:29	bgm	P6K0165
Arsenic	1.7	mg/kg dry	0.30	0.037	1	*6010D	11/11/16 3:29	bgm	P6K0165
Barium	44	mg/kg dry	0.60	0.087	1	*6010D	11/11/16 3:29	bgm	P6K0165
Beryllium	0.43	mg/kg dry	0.30	0.0066	1	*6010D	11/11/16 3:29	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 3:29	bgm	P6K0165
Chromium	16	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 3:29	bgm	P6K0165
Cobalt	7.5	mg/kg dry	0.30	0.0059	1	*6010D	11/11/16 3:29	bgm	P6K0165
Copper	15	mg/kg dry	0.60	0.054	1	*6010D	11/11/16 3:29	bgm	P6K0165
Lead	25	mg/kg dry	0.30	0.056	1	*6010D	11/11/16 3:29	bgm	P6K0165
Manganese	410	mg/kg dry	7.5	1.5	25	*6010D	11/11/16 23:14	bgm	P6K0165
Nickel	5.1	mg/kg dry	0.60	0.022	1	*6010D	11/11/16 3:29	bgm	P6K0165
Selenium	1.4	mg/kg dry	0.60	0.14	1	*6010D	11/11/16 3:29	bgm	P6K0165
Strontium	46	mg/kg dry	0.30	0.0064	1	*6010D	11/11/16 3:29	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.60	0.079	1	*6010D	11/11/16 3:29	bgm	P6K0165
Vanadium	37	mg/kg dry	0.30	0.0071	1	*6010D	11/11/16 3:29	bgm	P6K0165
Zinc	40	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 3:29	bgm	P6K0165

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-3 (2-3)  
 Prism Sample ID: 6110120-20  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 15:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	93.3	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.040	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:34	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.27	0.027	1	*6010D	11/11/16 3:38	bgm	P6K0165
Arsenic	2.2	mg/kg dry	0.27	0.033	1	*6010D	11/11/16 3:38	bgm	P6K0165
Barium	56	mg/kg dry	0.53	0.078	1	*6010D	11/11/16 3:38	bgm	P6K0165
Beryllium	0.54	mg/kg dry	0.27	0.0059	1	*6010D	11/11/16 3:38	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.27	0.0071	1	*6010D	11/11/16 3:38	bgm	P6K0165
Chromium	22	mg/kg dry	0.27	0.045	1	*6010D	11/11/16 3:38	bgm	P6K0165
Cobalt	7.5	mg/kg dry	0.27	0.0052	1	*6010D	11/11/16 3:38	bgm	P6K0165
Copper	18	mg/kg dry	0.53	0.048	1	*6010D	11/11/16 3:38	bgm	P6K0165
Lead	29	mg/kg dry	0.27	0.050	1	*6010D	11/11/16 3:38	bgm	P6K0165
Manganese	410	mg/kg dry	6.7	1.3	25	*6010D	11/11/16 23:21	bgm	P6K0165
Nickel	5.2	mg/kg dry	0.53	0.019	1	*6010D	11/11/16 3:38	bgm	P6K0165
Selenium	1.2	mg/kg dry	0.53	0.13	1	*6010D	11/11/16 3:38	bgm	P6K0165
Strontium	19	mg/kg dry	0.27	0.0057	1	*6010D	11/11/16 3:38	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.53	0.070	1	*6010D	11/11/16 3:38	bgm	P6K0165
Vanadium	40	mg/kg dry	0.27	0.0063	1	*6010D	11/11/16 3:38	bgm	P6K0165
Zinc	46	mg/kg dry	2.7	0.095	1	*6010D	11/11/16 3:38	bgm	P6K0165

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-4 (0-1)  
 Prism Sample ID: 6110120-21  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 15:10  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	85.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.026	mg/kg dry	0.025	0.0014	1	*7471B	11/18/16 9:38	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/12/16 1:25	bgm	P6K0167
Arsenic	1.7	mg/kg dry	0.29	0.036	1	*6010D	11/12/16 1:25	bgm	P6K0167
Barium	50	mg/kg dry	0.59	0.086	1	*6010D	11/12/16 1:25	bgm	P6K0167
Beryllium	0.50	mg/kg dry	0.29	0.0065	1	*6010D	11/12/16 1:25	bgm	P6K0167
Cadmium	BRL	mg/kg dry	0.29	0.0079	1	*6010D	11/12/16 1:25	bgm	P6K0167
Chromium	19	mg/kg dry	0.29	0.049	1	*6010D	11/12/16 1:25	bgm	P6K0167
Cobalt	9.5	mg/kg dry	0.29	0.0058	1	*6010D	11/12/16 1:25	bgm	P6K0167
Copper	16	mg/kg dry	0.59	0.053	1	*6010D	11/12/16 1:25	bgm	P6K0167
Lead	22	mg/kg dry	0.29	0.055	1	*6010D	11/12/16 1:25	bgm	P6K0167
Manganese	450 BH	mg/kg dry	5.9	1.2	20	*6010D	11/14/16 21:37	bgm	P6K0167
Nickel	6.0	mg/kg dry	0.59	0.021	1	*6010D	11/12/16 1:25	bgm	P6K0167
Selenium	BRL	mg/kg dry	0.59	0.14	1	*6010D	11/12/16 1:25	bgm	P6K0167
Strontium	16 A	mg/kg dry	0.29	0.0062	1	*6010D	11/12/16 1:54	bgm	P6K0167
Thallium	BRL	mg/kg dry	0.59	0.077	1	*6010D	11/12/16 1:25	bgm	P6K0167
Vanadium	53	mg/kg dry	0.29	0.0069	1	*6010D	11/12/16 1:25	bgm	P6K0167
Zinc	50	mg/kg dry	2.9	0.11	1	*6010D	11/12/16 1:25	bgm	P6K0167



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-4 (2-3)  
 Prism Sample ID: 6110120-22  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 15:20  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	74.9	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.054	mg/kg dry	0.026	0.0014	1	*7471B	11/18/16 9:43	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.33	0.033	1	*6010D	11/12/16 1:55	bgm	P6K0167
Arsenic	2.0	mg/kg dry	0.33	0.040	1	*6010D	11/12/16 1:55	bgm	P6K0167
Barium	53	mg/kg dry	0.65	0.095	1	*6010D	11/12/16 1:55	bgm	P6K0167
Beryllium	0.52	mg/kg dry	0.33	0.0072	1	*6010D	11/12/16 1:55	bgm	P6K0167
Cadmium	0.38	mg/kg dry	0.33	0.0087	1	*6010D	11/12/16 1:55	bgm	P6K0167
Chromium	23	mg/kg dry	0.33	0.054	1	*6010D	11/12/16 1:55	bgm	P6K0167
Cobalt	11	mg/kg dry	0.33	0.0064	1	*6010D	11/12/16 1:55	bgm	P6K0167
Copper	23	mg/kg dry	0.65	0.059	1	*6010D	11/12/16 1:55	bgm	P6K0167
Lead	21	mg/kg dry	0.33	0.061	1	*6010D	11/12/16 1:55	bgm	P6K0167
Manganese	460 BH	mg/kg dry	6.5	1.3	20	*6010D	11/14/16 22:04	bgm	P6K0167
Nickel	8.5	mg/kg dry	0.65	0.023	1	*6010D	11/12/16 1:55	bgm	P6K0167
Selenium	BRL	mg/kg dry	0.65	0.15	1	*6010D	11/12/16 1:55	bgm	P6K0167
Strontium	19	mg/kg dry	0.33	0.0069	1	*6010D	11/21/16 18:34	bgm	P6K0167
Thallium	BRL	mg/kg dry	0.65	0.085	1	*6010D	11/12/16 1:55	bgm	P6K0167
Vanadium	51	mg/kg dry	0.33	0.0077	1	*6010D	11/12/16 1:55	bgm	P6K0167
Zinc	230	mg/kg dry	65	2.3	20	*6010D	11/14/16 22:04	bgm	P6K0167

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: Dup  
 Prism Sample ID: 6110120-23  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 00:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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### General Chemistry Parameters

% Solids	70.9	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
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### SPLP Extraction by EPA 1312

SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
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### SPLP Metals

Mercury	BRL	mg/L	0.00020	0.000030	1	7470A	11/17/16 14:26	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	6010D	11/10/16 23:28	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:28	bgm	P6K0245
<b>Barium</b>	<b>1.3</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	6010D	11/10/16 23:28	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	6010D	11/10/16 23:28	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	6010D	11/10/16 23:28	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	6010D	11/10/16 23:28	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	6010D	11/10/16 23:28	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	6010D	11/10/16 23:28	bgm	P6K0245
<b>Manganese</b>	<b>0.069</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	6010D	11/10/16 23:28	bgm	P6K0245
<b>Selenium</b>	<b>0.035 J</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.022</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Strontium</b>	<b>0.17</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	6010D	11/10/16 23:28	bgm	P6K0245
<b>Zinc</b>	<b>0.37</b>	<b>mg/L</b>	<b>0.15</b>	<b>0.056</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Vanadium</b>	<b>0.0026 J</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.00075</b>	<b>1</b>	<b>6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>

### Total Metals

<b>Mercury</b>	<b>0.067</b>	<b>mg/kg dry</b>	<b>0.028</b>	<b>0.0015</b>	<b>1</b>	<b>*7471B</b>	<b>11/18/16 10:28</b>	<b>JAB</b>	<b>P6K0422</b>
Antimony	BRL	mg/kg dry	0.35	0.035	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Arsenic</b>	<b>3.4</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.043</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Barium</b>	<b>110</b>	<b>mg/kg dry</b>	<b>0.71</b>	<b>0.10</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Beryllium</b>	<b>0.79</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0078</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
Cadmium	BRL	mg/kg dry	0.35	0.0095	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Chromium</b>	<b>20</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.059</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Cobalt</b>	<b>8.4</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0069</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Copper</b>	<b>17</b>	<b>mg/kg dry</b>	<b>0.71</b>	<b>0.064</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Lead</b>	<b>18</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.066</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Manganese</b>	<b>360 BH</b>	<b>mg/kg dry</b>	<b>7.1</b>	<b>1.4</b>	<b>20</b>	<b>*6010D</b>	<b>11/14/16 22:12</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Nickel</b>	<b>12</b>	<b>mg/kg dry</b>	<b>0.71</b>	<b>0.025</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
Selenium	BRL	mg/kg dry	0.71	0.17	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Strontium</b>	<b>30</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0075</b>	<b>1</b>	<b>*6010D</b>	<b>11/21/16 18:44</b>	<b>bgm</b>	<b>P6K0167</b>
Thallium	BRL	mg/kg dry	0.71	0.092	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Vanadium</b>	<b>41</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0083</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Zinc</b>	<b>35</b>	<b>mg/kg dry</b>	<b>3.5</b>	<b>0.13</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>

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Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
 Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0165 - 3050B**

**Blank (P6K0165-BLK1)**

Prepared: 11/08/16 Analyzed: 11/10/16

Antimony	BRL	0.25	mg/kg wet							
Arsenic	BRL	0.25	mg/kg wet							
Barium	BRL	0.50	mg/kg wet							
Beryllium	BRL	0.25	mg/kg wet							
Cadmium	BRL	0.25	mg/kg wet							
Chromium	BRL	0.25	mg/kg wet							
Cobalt	BRL	0.25	mg/kg wet							
Copper	BRL	0.50	mg/kg wet							
Lead	BRL	0.25	mg/kg wet							
Manganese	BRL	0.25	mg/kg wet							
Nickel	BRL	0.50	mg/kg wet							
Selenium	BRL	0.50	mg/kg wet							
Strontium	BRL	0.25	mg/kg wet							
Thallium	BRL	0.50	mg/kg wet							
Vanadium	BRL	0.25	mg/kg wet							
Zinc	BRL	2.5	mg/kg wet							

**LCS (P6K0165-BS1)**

Prepared: 11/08/16 Analyzed: 11/10/16

Antimony	23.4	0.25	mg/kg wet	25.00		94	80-120			
Arsenic	23.3	0.25	mg/kg wet	25.00		93	80-120			
Barium	24.4	0.50	mg/kg wet	25.00		98	80-120			
Beryllium	25.1	0.25	mg/kg wet	25.00		100	80-120			
Cadmium	23.4	0.25	mg/kg wet	25.00		94	80-120			
Chromium	24.2	0.25	mg/kg wet	25.00		97	80-120			
Cobalt	23.9	0.25	mg/kg wet	25.00		96	80-120			
Copper	25.6	0.50	mg/kg wet	25.00		103	80-120			
Lead	23.3	0.25	mg/kg wet	25.00		93	80-120			
Manganese	24.4	0.25	mg/kg wet	25.00		97	80-120			
Nickel	23.3	0.50	mg/kg wet	25.00		93	80-120			
Selenium	22.3	0.50	mg/kg wet	25.00		89	80-120			
Strontium	24.0	0.25	mg/kg wet	25.00		96	80-120			
Thallium	23.8	0.50	mg/kg wet	25.00		95	80-120			
Vanadium	24.7	0.25	mg/kg wet	25.00		99	80-120			
Zinc	23.4	2.5	mg/kg wet	25.00		94	80-120			



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
 Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0165 - 3050B**

<b>Matrix Spike (P6K0165-MS1)</b>		<b>Source: 6110120-01</b>			<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/11/16</b>			
Antimony	5.50	0.30	mg/kg dry	30.12	BRL	18	75-125			MI
Arsenic	24.5	0.30	mg/kg dry	30.12	2.58	73	75-125			MI
Barium	94.6	0.60	mg/kg dry	30.12	67.3	91	75-125			
Beryllium	28.7	0.30	mg/kg dry	30.12	0.865	92	75-125			
Cadmium	25.1	0.30	mg/kg dry	30.12	BRL	83	75-125			
Chromium	37.3	0.30	mg/kg dry	30.12	9.97	91	75-125			
Cobalt	29.0	0.30	mg/kg dry	30.12	3.87	83	75-125			
Copper	3.01E10	0.60	mg/kg dry	30.12	182	NR	75-125			MC
Lead	32.8	0.30	mg/kg dry	30.12	7.63	84	75-125			
Manganese	130	0.30	mg/kg dry	30.12	104	87	75-125			
Nickel	27.8	0.60	mg/kg dry	30.12	2.92	83	75-125			
Selenium	21.9	0.60	mg/kg dry	30.12	BRL	73	75-125			MI
Strontium	32.1	0.30	mg/kg dry	30.12	6.71	84	75-125			
Thallium	23.7	0.60	mg/kg dry	30.12	BRL	79	75-125			
Vanadium	87.1	0.30	mg/kg dry	30.12	60.5	88	75-125			
Zinc	79.1	3.0	mg/kg dry	30.12	46.4	109	75-125			

<b>Matrix Spike Dup (P6K0165-MSD1)</b>		<b>Source: 6110120-01</b>			<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/11/16</b>			
Antimony	3.29	0.30	mg/kg dry	29.96	BRL	11	75-125	50	20	MI
Arsenic	22.6	0.30	mg/kg dry	29.96	2.58	67	75-125	8	20	MI
Barium	94.4	0.60	mg/kg dry	29.96	67.3	90	75-125	0.2	20	
Beryllium	28.6	0.30	mg/kg dry	29.96	0.865	93	75-125	0.05	20	
Cadmium	24.7	0.30	mg/kg dry	29.96	BRL	83	75-125	1	20	
Chromium	36.1	0.30	mg/kg dry	29.96	9.97	87	75-125	3	20	
Cobalt	28.5	0.30	mg/kg dry	29.96	3.87	82	75-125	2	20	
Copper	3.00E10	0.60	mg/kg dry	29.96	182	NR	75-125	0.5	20	MC
Lead	31.9	0.30	mg/kg dry	29.96	7.63	81	75-125	3	20	
Manganese	130	0.30	mg/kg dry	29.96	104	89	75-125	0.3	20	
Nickel	27.2	0.60	mg/kg dry	29.96	2.92	81	75-125	2	20	
Selenium	21.1	0.60	mg/kg dry	29.96	BRL	70	75-125	4	20	MI
Strontium	31.7	0.30	mg/kg dry	29.96	6.71	83	75-125	1	20	
Thallium	23.1	0.60	mg/kg dry	29.96	BRL	77	75-125	2	20	
Vanadium	85.5	0.30	mg/kg dry	29.96	60.5	83	75-125	2	20	
Zinc	77.7	3.0	mg/kg dry	29.96	46.4	104	75-125	2	20	

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Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
 Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0167 - 3050B**

**Blank (P6K0167-BLK1)**

Prepared: 11/08/16 Analyzed: 11/12/16

Antimony	BRL	0.25	mg/kg wet							
Arsenic	BRL	0.25	mg/kg wet							
Barium	BRL	0.50	mg/kg wet							
Beryllium	BRL	0.25	mg/kg wet							
Cadmium	BRL	0.25	mg/kg wet							
Chromium	BRL	0.25	mg/kg wet							
Cobalt	BRL	0.25	mg/kg wet							
Copper	BRL	0.50	mg/kg wet							
Lead	BRL	0.25	mg/kg wet							
Manganese	BRL	0.25	mg/kg wet							BH
Nickel	BRL	0.50	mg/kg wet							
Selenium	BRL	0.50	mg/kg wet							
Strontium	BRL	0.25	mg/kg wet							A
Thallium	BRL	0.50	mg/kg wet							
Vanadium	BRL	0.25	mg/kg wet							
Zinc	BRL	2.5	mg/kg wet							

**LCS (P6K0167-BS1)**

Prepared: 11/08/16 Analyzed: 11/12/16

Antimony	24.2	0.25	mg/kg wet	25.00		97	80-120			
Arsenic	24.1	0.25	mg/kg wet	25.00		96	80-120			
Barium	24.9	0.50	mg/kg wet	25.00		100	80-120			
Beryllium	24.9	0.25	mg/kg wet	25.00		100	80-120			
Cadmium	23.5	0.25	mg/kg wet	25.00		94	80-120			
Chromium	24.9	0.25	mg/kg wet	25.00		100	80-120			
Cobalt	24.5	0.25	mg/kg wet	25.00		98	80-120			
Copper	25.1	0.50	mg/kg wet	25.00		100	80-120			
Lead	23.4	0.25	mg/kg wet	25.00		94	80-120			
Manganese	24.3	0.25	mg/kg wet	25.00		97	80-120			
Nickel	24.2	0.50	mg/kg wet	25.00		97	80-120			
Selenium	23.8	0.50	mg/kg wet	25.00		95	80-120			
Strontium	20.9	0.25	mg/kg wet	25.00		84	80-120			A
Thallium	24.4	0.50	mg/kg wet	25.00		97	80-120			
Vanadium	25.6	0.25	mg/kg wet	25.00		102	80-120			
Zinc	24.1	2.5	mg/kg wet	25.00		96	80-120			



Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
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**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0167 - 3050B**

<b>Matrix Spike (P6K0167-MS1)</b>		<b>Source: 6110120-21</b>			<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/12/16</b>			
Antimony	5.28	0.29	mg/kg dry	29.06	0.0314	18	75-125			MI
Arsenic	23.5	0.29	mg/kg dry	29.06	1.72	75	75-125			
Barium	80.2	0.58	mg/kg dry	29.06	50.2	103	75-125			
Beryllium	25.4	0.29	mg/kg dry	29.06	0.500	86	75-125			
Cadmium	22.3	0.29	mg/kg dry	29.06	0.0938	76	75-125			
Chromium	47.2	0.29	mg/kg dry	29.06	19.4	96	75-125			
Cobalt	32.6	0.29	mg/kg dry	29.06	9.54	79	75-125			
Copper	45.8	0.58	mg/kg dry	29.06	16.3	102	75-125			
Lead	43.8	0.29	mg/kg dry	29.06	21.9	75	75-125			
Manganese	2.91E10	0.29	mg/kg dry	29.06	452	NR	75-125			MI
Nickel	30.0	0.58	mg/kg dry	29.06	6.01	82	75-125			
Selenium	22.8	0.58	mg/kg dry	29.06	BRL	79	75-125			
Strontium	47.9	0.29	mg/kg dry	29.06	15.9	110	75-125			A
Thallium	23.1	0.58	mg/kg dry	29.06	BRL	79	75-125			
Vanadium	80.3	0.29	mg/kg dry	29.06	53.1	93	75-125			
Zinc	78.2	2.9	mg/kg dry	29.06	50.2	96	75-125			

<b>Matrix Spike Dup (P6K0167-MSD1)</b>		<b>Source: 6110120-21</b>			<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/12/16</b>			
Antimony	6.70	0.29	mg/kg dry	29.35	0.0314	23	75-125	24	20	MI
Arsenic	24.8	0.29	mg/kg dry	29.35	1.72	79	75-125	5	20	
Barium	79.9	0.59	mg/kg dry	29.35	50.2	101	75-125	0.3	20	
Beryllium	26.7	0.29	mg/kg dry	29.35	0.500	89	75-125	5	20	
Cadmium	23.4	0.29	mg/kg dry	29.35	0.0938	79	75-125	5	20	
Chromium	46.5	0.29	mg/kg dry	29.35	19.4	92	75-125	2	20	
Cobalt	34.1	0.29	mg/kg dry	29.35	9.54	84	75-125	5	20	
Copper	47.2	0.59	mg/kg dry	29.35	16.3	105	75-125	3	20	
Lead	41.8	0.29	mg/kg dry	29.35	21.9	68	75-125	5	20	MI
Manganese	2.94E10	0.29	mg/kg dry	29.35	452	NR	75-125	1	20	MI
Nickel	30.3	0.59	mg/kg dry	29.35	6.01	83	75-125	1	20	
Selenium	23.6	0.59	mg/kg dry	29.35	BRL	80	75-125	3	20	
Strontium	47.8	0.29	mg/kg dry	29.35	15.9	108	75-125	0.2	20	A
Thallium	24.2	0.59	mg/kg dry	29.35	BRL	82	75-125	5	20	
Vanadium	81.3	0.29	mg/kg dry	29.35	53.1	96	75-125	1	20	
Zinc	80.8	2.9	mg/kg dry	29.35	50.2	104	75-125	3	20	

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Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
 Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0167 - 3050B</b>										
<b>Post Spike (P6K0167-PS1)</b>										
			<b>Source: 6110120-21</b>		Prepared: 11/08/16		Analyzed: 11/12/16			
Antimony	0.830		mg/L	1.000	0.00108	83	80-120			
Arsenic	0.902		mg/L	1.000	0.0588	84	80-120			
Barium	2.49		mg/L	1.000	1.72	76	80-120			MI
Beryllium	0.855		mg/L	1.000	0.0171	84	80-120			
Cadmium	0.771		mg/L	1.000	0.00321	77	80-120			MI
Chromium	1.47		mg/L	1.000	0.664	80	80-120			
Cobalt	1.12		mg/L	1.000	0.327	80	80-120			
Copper	1.45		mg/L	1.000	0.557	90	80-120			
Lead	1.48		mg/L	1.000	0.749	74	80-120			MI
Manganese	1.00E9		mg/L	1.000	15.5	NR	80-120			MC
Nickel	0.992		mg/L	1.000	0.206	79	80-120			MI
Selenium	0.840		mg/L	1.000	-0.00217	84	80-120			
Strontium	1.22		mg/L	1.000	0.546	67	80-120			A, MI
Thallium	0.784		mg/L	1.000	0.000655	78	80-120			MI
Vanadium	2.62		mg/L	1.000	1.82	80	80-120			
Zinc	2.50		mg/L	1.000	1.72	78	80-120			MI

**Batch P6K0421 - 7471B**

<b>Blank (P6K0421-BLK1)</b>										
					Prepared: 11/17/16		Analyzed: 11/18/16			
Mercury	BRL	0.020	mg/kg wet							
<b>LCS (P6K0421-BS1)</b>										
					Prepared: 11/17/16		Analyzed: 11/18/16			
Mercury	0.426	0.020	mg/kg wet	0.4167		102	80-120			
<b>Matrix Spike (P6K0421-MS1)</b>										
			<b>Source: 6110120-01</b>		Prepared: 11/17/16		Analyzed: 11/18/16			
Mercury	0.488	0.023	mg/kg dry	0.4733	0.0296	97	80-120			



Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
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**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0421 - 7471B</b>										
<b>Matrix Spike Dup (P6K0421-MSD1)</b>		<b>Source: 6110120-01</b>			Prepared: 11/17/16 Analyzed: 11/18/16					
Mercury	0.520	0.022	mg/kg dry	0.4659	0.0296	105	80-120	6	20	
<b>Batch P6K0422 - 7471B</b>										
<b>Blank (P6K0422-BLK1)</b>		Prepared: 11/17/16 Analyzed: 11/18/16								
Mercury	BRL	0.020	mg/kg wet							
<b>LCS (P6K0422-BS1)</b>		Prepared: 11/17/16 Analyzed: 11/18/16								
Mercury	0.485	0.020	mg/kg wet	0.4167		116	80-120			
<b>Matrix Spike (P6K0422-MS1)</b>		<b>Source: 6110120-23</b>			Prepared: 11/17/16 Analyzed: 11/18/16					
Mercury	0.722	0.029	mg/kg dry	0.5977	0.0667	110	80-120			
<b>Matrix Spike Dup (P6K0422-MSD1)</b>		<b>Source: 6110120-23</b>			Prepared: 11/17/16 Analyzed: 11/18/16					
Mercury	0.745	0.031	mg/kg dry	0.6412	0.0667	106	80-120	3	20	



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Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

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**SPLP Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0245 - 3010A**

**Blank (P6K0245-BLK1)**

Prepared & Analyzed: 11/10/16

Antimony	BRL	0.025	mg/L							
Arsenic	BRL	0.050	mg/L							
Barium	BRL	0.050	mg/L							
Beryllium	BRL	0.010	mg/L							
Cadmium	BRL	0.0050	mg/L							
Chromium	BRL	0.025	mg/L							
Cobalt	BRL	0.025	mg/L							
Copper	BRL	0.050	mg/L							
Lead	BRL	0.025	mg/L							
Manganese	BRL	0.050	mg/L							
Nickel	BRL	0.050	mg/L							
Selenium	BRL	0.10	mg/L							
Strontium	BRL	0.050	mg/L							
Thallium	BRL	0.050	mg/L							
Zinc	BRL	0.15	mg/L							
Vanadium	BRL	0.025	mg/L							

**LCS (P6K0245-BS1)**

Prepared & Analyzed: 11/10/16

Antimony	1.23	0.025	mg/L	1.250		98	80-120			
Arsenic	1.23	0.050	mg/L	1.250		99	80-120			
Barium	1.25	0.050	mg/L	1.250		100	80-120			
Beryllium	1.24	0.010	mg/L	1.250		99	80-120			
Cadmium	1.25	0.0050	mg/L	1.250		100	80-120			
Chromium	1.24	0.025	mg/L	1.250		99	80-120			
Cobalt	1.25	0.025	mg/L	1.250		100	80-120			
Copper	1.23	0.050	mg/L	1.250		98	80-120			
Lead	1.25	0.025	mg/L	1.250		100	80-120			
Manganese	1.25	0.050	mg/L	1.250		100	80-120			
Nickel	1.24	0.050	mg/L	1.250		99	80-120			
Selenium	1.20	0.10	mg/L	1.250		96	80-120			
Strontium	1.19	0.050	mg/L	1.250		95	80-120			
Thallium	1.28	0.050	mg/L	1.250		102	80-120			
Zinc	1.20	0.15	mg/L	1.250		96	85-115			
Vanadium	1.25	0.025	mg/L	1.250		100	80-120			

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

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**SPLP Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0245 - 3010A**

<b>Matrix Spike (P6K0245-MS1)</b>	<b>Source: 6110120-06</b>			<b>Prepared &amp; Analyzed: 11/10/16</b>						
Antimony	1.23	0.025	mg/L	1.250	0.00513	98	75-125			
Arsenic	1.23	0.050	mg/L	1.250	BRL	99	75-125			
Barium	1.90	0.050	mg/L	1.250	0.637	101	75-125			
Beryllium	1.24	0.010	mg/L	1.250	BRL	99	75-125			
Cadmium	1.24	0.0050	mg/L	1.250	BRL	99	75-125			
Chromium	1.24	0.025	mg/L	1.250	BRL	99	75-125			
Cobalt	1.25	0.025	mg/L	1.250	BRL	100	75-125			
Copper	1.24	0.050	mg/L	1.250	BRL	99	75-125			
Lead	1.26	0.025	mg/L	1.250	0.0113	100	75-125			
Manganese	1.25	0.050	mg/L	1.250	0.0126	99	75-125			
Nickel	1.23	0.050	mg/L	1.250	BRL	99	75-125			
Selenium	1.24	0.10	mg/L	1.250	0.0306	97	75-125			
Strontium	1.64	0.050	mg/L	1.250	0.454	95	75-125			
Thallium	1.27	0.050	mg/L	1.250	BRL	101	75-125			
Zinc	1.29	0.15	mg/L	1.250	BRL	104	70-130			
Vanadium	1.24	0.025	mg/L	1.250	0.00511	99	75-125			

<b>Matrix Spike Dup (P6K0245-MSD1)</b>	<b>Source: 6110120-06</b>			<b>Prepared &amp; Analyzed: 11/10/16</b>						
Antimony	1.24	0.025	mg/L	1.250	0.00513	99	75-125	0.9	20	
Arsenic	1.25	0.050	mg/L	1.250	BRL	100	75-125	2	20	
Barium	1.93	0.050	mg/L	1.250	0.637	104	75-125	2	20	
Beryllium	1.26	0.010	mg/L	1.250	BRL	101	75-125	2	20	
Cadmium	1.26	0.0050	mg/L	1.250	BRL	101	75-125	2	20	
Chromium	1.26	0.025	mg/L	1.250	BRL	101	75-125	2	20	
Cobalt	1.27	0.025	mg/L	1.250	BRL	102	75-125	2	20	
Copper	1.26	0.050	mg/L	1.250	BRL	101	75-125	2	20	
Lead	1.27	0.025	mg/L	1.250	0.0113	101	75-125	1	20	
Manganese	1.28	0.050	mg/L	1.250	0.0126	101	75-125	2	20	
Nickel	1.26	0.050	mg/L	1.250	BRL	101	75-125	2	20	
Selenium	1.25	0.10	mg/L	1.250	0.0306	98	75-125	0.5	20	
Strontium	1.65	0.050	mg/L	1.250	0.454	95	75-125	0.5	20	
Thallium	1.29	0.050	mg/L	1.250	BRL	103	75-125	2	20	
Zinc	1.30	0.15	mg/L	1.250	BRL	104	70-130	0.06	20	
Vanadium	1.27	0.025	mg/L	1.250	0.00511	101	75-125	2	20	



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Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

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SPLP Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0397 - 7470A</b>										
<b>Blank (P6K0397-BLK1)</b>				Prepared & Analyzed: 11/17/16						
Mercury	BRL	0.00020	mg/L							
<b>LCS (P6K0397-BS1)</b>				Prepared & Analyzed: 11/17/16						
Mercury	0.00910	0.00020	mg/L	0.009375		97	80-120			
<b>Matrix Spike (P6K0397-MS1)</b>				Source: 6110120-06 Prepared & Analyzed: 11/17/16						
Mercury	0.00896	0.00020	mg/L	0.009375	BRL	96	80-120			
<b>Matrix Spike Dup (P6K0397-MSD1)</b>				Source: 6110120-06 Prepared & Analyzed: 11/17/16						
Mercury	0.00883	0.00020	mg/L	0.009375	BRL	94	80-120	1	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120

Time Submitted: 11/7/2016 8:00:00AM

**General Chemistry Parameters - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0270 - Solids, Dry Weight</b>										
<b>Duplicate (P6K0270-DUP1)</b>		<b>Source: 6110120-02</b>			<b>Prepared &amp; Analyzed: 11/10/16</b>					
% Solids	97.2	0.100	% by Weight		97.3			0.05	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120

Time Submitted: 11/7/2016 8:00:00AM

**SPLP Extraction by EPA 1312 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0226 - 1312</b>										
<b>Blank (P6K0226-BLK1)</b>					Prepared: 11/09/16 Analyzed: 11/10/16					
SPLP Extraction	Complete		N/A							

### Sample Extraction Data

#### Prep Method: Solids, Dry Weight

Lab Number	Batch	Initial	Final	Date/Time
6110120-01	P6K0270	30 g	30 g	11/10/16 15:09
6110120-02	P6K0270	30 g	30 g	11/10/16 15:09
6110120-03	P6K0270	30 g	30 g	11/10/16 15:09
6110120-04	P6K0270	30 g	30 g	11/10/16 15:09
6110120-05	P6K0270	30 g	30 g	11/10/16 15:09
6110120-06	P6K0270	30 g	30 g	11/10/16 15:09
6110120-07	P6K0270	30 g	30 g	11/10/16 15:09
6110120-08	P6K0270	30 g	30 g	11/10/16 15:09
6110120-09	P6K0270	30 g	30 g	11/10/16 15:09
6110120-10	P6K0270	30 g	30 g	11/10/16 15:09
6110120-11	P6K0270	30 g	30 g	11/10/16 15:09
6110120-12	P6K0270	30 g	30 g	11/10/16 15:09
6110120-13	P6K0270	30 g	30 g	11/10/16 15:09
6110120-14	P6K0270	30 g	30 g	11/10/16 15:09
6110120-15	P6K0270	30 g	30 g	11/10/16 15:09
6110120-16	P6K0270	30 g	30 g	11/10/16 15:09
6110120-17	P6K0270	30 g	30 g	11/10/16 15:09
6110120-18	P6K0270	30 g	30 g	11/10/16 15:09
6110120-19	P6K0270	30 g	30 g	11/10/16 15:09
6110120-20	P6K0270	30 g	30 g	11/10/16 15:09
6110120-21	P6K0270	30 g	30 g	11/10/16 15:09
6110120-22	P6K0270	30 g	30 g	11/10/16 15:09
6110120-23	P6K0270	30 g	30 g	11/10/16 15:09

#### Prep Method: 1312

Lab Number	Batch	Initial	Final	Date/Time
6110120-06	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-08	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-11	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-12	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-13	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-23	P6K0226	100 g	2000 mL	11/09/16 14:05

#### Prep Method: 3010A

Lab Number	Batch	Initial	Final	Date/Time
6110120-06	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-08	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-11	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-12	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-12	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-13	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-23	P6K0245	10 mL	50 mL	11/10/16 13:30

#### Prep Method: 7470A

Lab Number	Batch	Initial	Final	Date/Time
6110120-06	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-08	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-11	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-12	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-13	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-23	P6K0397	20 mL	30 mL	11/17/16 8:50

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### Sample Extraction Data

Prep Method: 3050B

Lab Number	Batch	Initial	Final	Date/Time
6110120-01	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-01	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-02	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-02	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-03	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-03	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-04	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-04	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-05	P6K0165	2.05 g	50 mL	11/08/16 8:30
6110120-05	P6K0165	2.05 g	50 mL	11/08/16 8:30
6110120-07	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-07	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-09	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-09	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-10	P6K0165	1.97 g	50 mL	11/08/16 8:30
6110120-10	P6K0165	1.97 g	50 mL	11/08/16 8:30
6110120-14	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-14	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-15	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-15	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-16	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-16	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-17	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-17	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-18	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-18	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-19	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-19	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-20	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-20	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-21	P6K0167	1.99 g	50 mL	11/08/16 8:30
6110120-21	P6K0167	1.99 g	50 mL	11/08/16 8:30
6110120-21	P6K0167	1.99 g	50 mL	11/08/16 8:30
6110120-22	P6K0167	2.05 g	50 mL	11/08/16 8:30
6110120-22	P6K0167	2.05 g	50 mL	11/08/16 8:30
6110120-22	P6K0167	2.05 g	50 mL	11/08/16 8:30
6110120-23	P6K0167	2 g	50 mL	11/08/16 8:30
6110120-23	P6K0167	2 g	50 mL	11/08/16 8:30
6110120-23	P6K0167	2 g	50 mL	11/08/16 8:30

Prep Method: 7471B

Lab Number	Batch	Initial	Final	Date/Time
6110120-01	P6K0421	0.57 g	50 mL	11/17/16 13:50
6110120-02	P6K0421	0.59 g	50 mL	11/17/16 13:50
6110120-03	P6K0421	0.61 g	50 mL	11/17/16 13:50
6110120-04	P6K0421	0.65 g	50 mL	11/17/16 13:50
6110120-05	P6K0421	0.59 g	50 mL	11/17/16 13:50
6110120-07	P6K0421	0.58 g	50 mL	11/17/16 13:50
6110120-09	P6K0421	0.57 g	50 mL	11/17/16 13:50
6110120-10	P6K0421	0.6 g	50 mL	11/17/16 13:50
6110120-14	P6K0421	0.59 g	50 mL	11/17/16 13:50
6110120-15	P6K0421	0.64 g	50 mL	11/17/16 13:50
6110120-16	P6K0421	0.63 g	50 mL	11/17/16 13:50
6110120-17	P6K0421	0.6 g	50 mL	11/17/16 13:50
6110120-18	P6K0421	0.58 g	50 mL	11/17/16 13:50
6110120-19	P6K0421	0.65 g	50 mL	11/17/16 13:50

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### Sample Extraction Data

Prep Method: 7471B

Lab Number	Batch	Initial	Final	Date/Time
6110120-20	P6K0421	0.58 g	50 mL	11/17/16 13:50
6110120-21	P6K0421	0.57 g	50 mL	11/17/16 13:50
6110120-22	P6K0421	0.62 g	50 mL	11/17/16 13:50
6110120-23	P6K0422	0.61 g	50 mL	11/17/16 13:50

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449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543  
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409



**CHAIN OF CUSTODY RECORD**

LAB USE ONLY

YES NO N/A

Client Company Name: Howe & Hickman  
 Report To/Contact Name: Patrick Stevens  
 Reporting Address: 2023 S. Taylor Street  
Suite 100 Charlotte NC 28203  
 Phone: 704-516-6474 Fax (Yes) (NO):  
 Email Address: P.Stevens@howehickman.com  
 EDD Type: PDF  Excel  Other  
 Site Location Name: TCH-002  
 Site Location Physical Address: Cape Hill Dr

PAGE 1 OF 3 QUOTE # TO ENSURE PROPER BILLING: TCH-002  
 Project Name: TCH-002 UST Project: (Yes) (NO)  
 Short Hold Analysis: (Yes) (NO)  
 \*Please ATTACH any project specific reporting (QC LEVEL I III IIII IV) provisions and/or QC Requirements  
 Invoice To: Account Payable  
 Address: " "

Purchase Order No./Billing Reference: TCH-002  
 Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days  
 "Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved  
 Samples received after 14:00 will be processed next business day.  
 Turnaround time is based on business days, excluding weekends and holidays.  
 (SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

TO BE FILLED IN BY CLIENTS/SAMPLING PERSONNEL  
 Certification: MELAC SC DOD FL N/A  
 Water Chlorinated: YES NO  
 Sample Iced Upon Collection: YES NO

LAB USE ONLY

Samples INTACT upon arrival?  YES  NO  N/A  
 Received ON WET ICE?  YES  NO  N/A  
 PROPER PRESERVATIVES indicated?  YES  NO  N/A  
 Received WITHIN HOLDING TIMES?  YES  NO  N/A  
 CUSTODY SEALS INTACT?  YES  NO  N/A  
 VOLATILES rec'd w/OUT HEADSPACE?  YES  NO  N/A  
 PROPER CONTAINERS used?  YES  NO  N/A  
 TEMP. Therm ID: 1RT-11 Observed: 3.0 °C / Corr: 2.6 °C

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
MW-7 (0-1)	11/11/16	1135	Soil	G	1	4oz	NA		* Metals list: antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, magnesium, nickel, selenium, silver, thallium, uranium, & zinc	01
MW-6 (0-1)	11/21/16	1350			1					02
MW-5 (0-1)	11/21/16	1605			1					03
MW-5 (0-1)	11/21/16	1635			1					04
MW-4 (0-1)	11/31/16	845			1					05
MW-4 (4-5)	11/31/16	900			1					06
MW-5 (0-1)		925			1					07
MW-5 (3-4)		940			1					08
MW-3 (0-1)		1005			1					09
MW-1 (0-1)		1030			1					10

Sampler's Signature: [Signature] Sampled By (Print Name): Patrick Stevens Affiliation: Howe

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Releasable By (Signature): [Signature] Received By (Signature): [Signature] Date: 11/4/16 Military/Hours: 1650

Releasable By (Signature): [Signature] Received By (Signature): [Signature] Date: 11/4/16 Military/Hours: 1500

Releasable By (Signature): [Signature] Received By (Signature): [Signature] Date: 11-7-16 Military/Hours: 0800

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Method of Shipment:  Fed Ex  UPS  Hand-delivered  Prism Field Service  Other

NPDES:  NC  SC  GROUNDWATER:  NC  SC  DRINKING WATER:  NC  SC  SOLID WASTE:  NC  SC  RCRA:  NC  SC  CERCLA:  NC  SC  LANDFILL:  NC  SC  OTHER:  NC  SC

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

PRISM USE ONLY

Site Arrival Time: \_\_\_\_\_  
 Site Departure Time: \_\_\_\_\_  
 Field Tech Fee: \_\_\_\_\_  
 Mileage: \_\_\_\_\_

Additional Comments: \_\_\_\_\_

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Full-Service Analytical & Environmental Solutions

449 Springbrook Road • Charlotte, NC 28217  
Phone 704/529-6364 • Fax: 704/525-0409

Client Company Name: Hart & Hickman

Report To/Contact Name: Patrick Stevens

Reporting Address: 2023 S. Tryon Street

Suite 100 Charlotte, NC 28203

Phone: 704-586-0027 Fax (Yes) (No):

Email Address: patrick.stevens@hartandhickman.com

EDD Type: PDF  Excel  Other

Site Location Name: TC14-002

Site Location Physical Address: Chapel Hill, NC

# CHAIN OF CUSTODY RECORD

PAGE 2 OF 3 QUOTE # TO ENSURE PROPER BILLING: TC14-002

Project Name: TC14-002 UST Project: (Yes) (NO)

Short Hold Analysis: (Yes) (NO)

\*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: Accounts Payable

Address: 11

Purchase Order No./Billing Reference

Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days

"Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved

Samples received after 14:00 will be processed next business day.

Turnaround time is based on business days, excluding weekends and holidays.

(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

## LAB USE ONLY

Samples INTACT upon arrival?	YES	NO	N/A
Received ON WET ICE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER PRESERVATIVES indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOLATILES rec'd W/OUT HEADSPACE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER CONTAINERS used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEMP: Therm ID: <u>RT-1</u> Observed: <u>3.0</u> °C / Corr: <u>2.8</u> °C			

## TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC  DOD  FL  NC

Water Chlorinated: YES  NO

Sample Iced Upon Collection: YES  NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
H4-3 (2-3)	11/3/16	1125	Soil	G	1	402	N/A	NG	X	11
H4-1 (2-8)		1145							X	12
H4-2 (2-3)		1145							X	13
H4-2 (0-1)		1115							X	14
B4-1 (0-1)		1355							X	15
B4-1 (2-3)		1410							X	16
B4-2 (0-1)		1415							X	17
B4-2 (2-3)		1440							X	18
B4-3 (0-1)		1450							X	19
B4-3 (2-3)		1500							X	20

Sampler's Signature: \_\_\_\_\_ Sampled By (Print Name): Patrick Stevens Affiliation: H4-4

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) \_\_\_\_\_ Received By: (Signature) \_\_\_\_\_ Date: 11/4/16 Military/Hours: 1050

Relinquished By: (Signature) \_\_\_\_\_ Received By: (Signature) \_\_\_\_\_ Date: 11/4/16 Military/Hours: 1520

Relinquished By: (Signature) \_\_\_\_\_ Received For Prism Laboratories By: \_\_\_\_\_ Date: 11-7-16 Military/Hours: 0820

Method of Shipment: UPS NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Method of Shipment:  Fed Ex  UPS  Hand-delivered  Prism Field Service  Other

Groundwater:  GNDW  SC  GNDW  SC

Drinking Water:  DW  SC  DW  SC

Solid Waste:  SW  SC  SW  SC

RCRA:  RCRA  SC  RCRA  SC

CERCLA:  CERCLA  SC  CERCLA  SC

Landfill:  LF  SC  LF  SC

Other:  OTH  SC  OTH  SC

Container Type Codes: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

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## PRISM USE ONLY

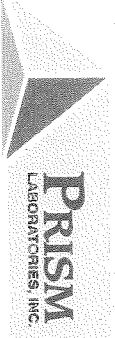
Site Arrival Time: \_\_\_\_\_

Site Departure Time: \_\_\_\_\_

Field Tech Fee: \_\_\_\_\_

Mileage: \_\_\_\_\_

SEE REVERSE FOR TERMS & CONDITIONS



Full Service Analytical & Environmental Solutions

440 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
 Phone: 704/529-6364 • Fax: 704/523-0409

Client Company Name: HAT HICKMAN

Report To/Contact Name: Patrick Stevens

Reporting Address: 2035 Teton Street Suite 100

Charlotte NC 28203

Phone: 704-529-6364 Fax (Yes) (No):

Email (Yes) (No) Email Address: Patrick.Stevens@hickman.com

EDD Type: PDF  Excel  Other

Site Location Name: TCH-002

Site Location Physical Address: Orange Hill Rd

# CHAIN OF CUSTODY RECORD

PAGE 3 OF 3 QUOTE # TO ENSURE PROPER BILLING: TCH-002

Project Name: TCH-002 USR Project: (Yes) (No)

Short Hold Analysis: (Yes) (No)

\*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: Arramb Pascale

Address: 11 11

Purchase Order No./Billing Reference: TCH-002

Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days

"Working Days"  6-9 Days  Standard 10 days  Pre-Approved

Samples received after 15:00 will be processed next business day.

Turnaround time is based on business days, excluding weekends and holidays.

(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

## LAB USE ONLY

Samples INTACT upon arrival?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
Received ON WET ICE? Temp <u>2.6</u>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
PROPER PRESERVATIVES indicated?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
Received WITHIN HOLDING TIMES?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
CUSTODY SEALS INTACT?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
VOLATILES rec'd W/OUT HEADSPACE?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
PROPER CONTAINERS used?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A

## TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC  USACE  FL  NC

Water Chlorinated: YES  NO

Sample Iced Upon Collection: YES  NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
B6-4(6-1)	11/3/16	1510	Soil	G	1	402	NA	X		21
B6-4(2-3)	11/3/16	1520	Soil	G	1	402	NA	X		22
DUP								X		23

Sampler's Signature: [Signature] Sampled By (Print Name): Patrick Stevens Affiliation: HAT

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11/4/16 Military/Hours: 1050

Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11/4/16 Military/Hours: 1520

Relinquished By: (Signature) [Signature] Received For Prism Laboratories By: [Signature] Date: 11-7-16 Military/Hours: 0800

Method of Shipment: 11-4-16 1800 NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

COG Group No. 0110120

Additional Comments:

Fed Ex  UPS  Hand-delivered  Prism Field Service  Other  
 NPDES:  NC  SC  NC  SC  NC  SC  NC  SC  NC  SC  
 GROUNDWATER:  NC  SC  NC  SC  NC  SC  
 DRINKING WATER:  NC  SC  NC  SC  
 SOLID WASTE:  NC  SC  NC  SC  
 RCRA:  NC  SC  NC  SC  
 CERCLA  NC  SC  
 LANDFILL  NC  SC  
 OTHER:  NC  SC

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

**PRISM USE ONLY**

Site Arrival Time: \_\_\_\_\_

Site Departure Time: \_\_\_\_\_

Field Tech Fee: \_\_\_\_\_

Mileage: \_\_\_\_\_

**SEE REVERSE FOR TERMS & CONDITIONS**

Hart & Hickman (Raleigh)  
Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No.: TCH-002  
Lab Submittal Date: 11/07/2016  
Prism Work Order: 6110118

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

**Narrative Notes:**

This is a Revised Report and supercedes the original laboratory report dated 11/15/16. Mercury was added at the request of the client.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



Robbi A. Jones  
President/Project Manager



Reviewed By Robbi A. Jones  
President/Project Manager

**Data Qualifiers Key Reference:**

- A Low-level Initial Calibration Verification Standard (0.001 mg/L) recovery (74%) is less than the lower control limit (80%). Results might have a slight (0.5 ug/L) low bias.
- B Analyte is found in the associated blank at a concentration >1/2 RL.
- BL MB greater than one half of the RL, but the sample concentrations are less than the RL.
- BRL Below Reporting Limit
- MDL Method Detection Limit
- RPD Relative Percent Difference
- \* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
SW-5	6110118-01	Water	11/03/16	11/07/16
SW-4	6110118-02	Water	11/03/16	11/07/16
SW-3	6110118-03	Water	11/03/16	11/07/16
SW-2	6110118-04	Water	11/03/16	11/07/16
SW-1	6110118-05	Water	11/03/16	11/07/16
RB-DPT	6110118-06	Water	11/03/16	11/07/16
RB-HA	6110118-07	Water	11/03/16	11/07/16
Dup-SW	6110118-08	Water	11/03/16	11/07/16

Samples were received in good condition at 2.6 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result	Units
6110118-01	SW-5	Barium	*6010D	0.026	mg/L
6110118-01	SW-5	Manganese	*6010D	0.024	mg/L
6110118-01	SW-5	Strontium	*6010D	0.10	mg/L
6110118-02	SW-4	Barium	*6010D	0.027	mg/L
6110118-02	SW-4	Manganese	*6010D	0.025	mg/L
6110118-02	SW-4	Strontium	*6010D	0.11	mg/L
6110118-03	SW-3	Barium	*6010D	0.027	mg/L
6110118-03	SW-3	Manganese	*6010D	0.034	mg/L
6110118-03	SW-3	Strontium	*6010D	0.10	mg/L
6110118-04	SW-2	Barium	*6010D	0.027	mg/L
6110118-04	SW-2	Manganese	*6010D	0.011	mg/L
6110118-04	SW-2	Strontium	*6010D	0.10	mg/L
6110118-05	SW-1	Barium	*6010D	0.027	mg/L
6110118-05	SW-1	Strontium	*6010D	0.10	mg/L
6110118-08	Dup-SW	Barium	*6010D	0.027	mg/L
6110118-08	Dup-SW	Manganese	*6010D	0.033	mg/L
6110118-08	Dup-SW	Strontium	*6010D	0.11	mg/L

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-5  
 Prism Sample ID: 6110118-01  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 15:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:15	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/9/16 23:05	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/9/16 23:05	bgm	P6K0163
<b>Barium</b>	<b>0.026</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:05</b>	<b>bgm</b>	<b>P6K0163</b>
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 21:06	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/9/16 23:05	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/9/16 23:05	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/9/16 23:05	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/9/16 23:05	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/9/16 23:05	bgm	P6K0163
<b>Manganese</b>	<b>0.024</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/14/16 18:59</b>	<b>bgm</b>	<b>P6K0305</b>
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/9/16 23:05	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 21:06	bgm	P6K0163
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:05</b>	<b>bgm</b>	<b>P6K0163</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/9/16 23:05	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/9/16 23:05	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/9/16 23:05	bgm	P6K0163

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-4  
 Prism Sample ID: 6110118-02  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 15:05  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:19	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/9/16 23:29	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/9/16 23:29	bgm	P6K0163
<b>Barium</b>	<b>0.027</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:29</b>	<b>bgm</b>	<b>P6K0163</b>
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 21:30	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/9/16 23:29	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/9/16 23:29	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/9/16 23:29	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/9/16 23:29	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/9/16 23:29	bgm	P6K0163
<b>Manganese</b>	<b>0.025</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/14/16 18:35</b>	<b>bgm</b>	<b>P6K0305</b>
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/9/16 23:29	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 21:30	bgm	P6K0163
<b>Strontium</b>	<b>0.11</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:29</b>	<b>bgm</b>	<b>P6K0163</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/9/16 23:29	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/9/16 23:29	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/9/16 23:29	bgm	P6K0163



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-3  
 Prism Sample ID: 6110118-03  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 15:10  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:23	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/9/16 23:36	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/9/16 23:36	bgm	P6K0163
<b>Barium</b>	<b>0.027</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:36</b>	<b>bgm</b>	<b>P6K0163</b>
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 21:37	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/9/16 23:36	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/9/16 23:36	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/9/16 23:36	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/9/16 23:36	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/9/16 23:36	bgm	P6K0163
<b>Manganese</b>	<b>0.034</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/14/16 19:06</b>	<b>bgm</b>	<b>P6K0305</b>
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/9/16 23:36	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 21:37	bgm	P6K0163
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:36</b>	<b>bgm</b>	<b>P6K0163</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/9/16 23:36	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/9/16 23:36	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/9/16 23:36	bgm	P6K0163

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-2  
 Prism Sample ID: 6110118-04  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 15:20  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:26	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/9/16 23:44	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/9/16 23:44	bgm	P6K0163
<b>Barium</b>	<b>0.027</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:44</b>	<b>bgm</b>	<b>P6K0163</b>
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 21:45	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/9/16 23:44	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/9/16 23:44	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/9/16 23:44	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/9/16 23:44	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/9/16 23:44	bgm	P6K0163
<b>Manganese</b>	<b>0.011</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/14/16 19:14</b>	<b>bgm</b>	<b>P6K0305</b>
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/9/16 23:44	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 21:45	bgm	P6K0163
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:44</b>	<b>bgm</b>	<b>P6K0163</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/9/16 23:44	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/9/16 23:44	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/9/16 23:44	bgm	P6K0163

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-1  
 Prism Sample ID: 6110118-05  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 15:25  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:30	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/9/16 23:52	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/9/16 23:52	bgm	P6K0163
<b>Barium</b>	<b>0.027</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:52</b>	<b>bgm</b>	<b>P6K0163</b>
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 21:53	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/9/16 23:52	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/9/16 23:52	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/9/16 23:52	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/9/16 23:52	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/9/16 23:52	bgm	P6K0163
Manganese	BRL	mg/L	0.010	0.0017	1	*6010D	11/14/16 19:22	bgm	P6K0305
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/9/16 23:52	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 21:53	bgm	P6K0163
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/9/16 23:52</b>	<b>bgm</b>	<b>P6K0163</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/9/16 23:52	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/9/16 23:52	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/9/16 23:52	bgm	P6K0163

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: RB-DPT  
 Prism Sample ID: 6110118-06  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 12:05  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:34	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/9/16 23:59	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/9/16 23:59	bgm	P6K0163
Barium	BRL	mg/L	0.010	0.0013	1	*6010D	11/9/16 23:59	bgm	P6K0163
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 22:01	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/9/16 23:59	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/9/16 23:59	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/9/16 23:59	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/9/16 23:59	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/9/16 23:59	bgm	P6K0163
Manganese	BRL BL	mg/L	0.010	0.0017	1	*6010D	11/9/16 23:59	bgm	P6K0163
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/9/16 23:59	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 22:01	bgm	P6K0163
Strontium	BRL	mg/L	0.010	0.00057	1	*6010D	11/9/16 23:59	bgm	P6K0163
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/9/16 23:59	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/9/16 23:59	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/9/16 23:59	bgm	P6K0163

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: RB-HA  
 Prism Sample ID: 6110118-07  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 12:30  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:38	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/10/16 0:05	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/10/16 0:05	bgm	P6K0163
Barium	BRL	mg/L	0.010	0.0013	1	*6010D	11/10/16 0:05	bgm	P6K0163
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 22:06	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/10/16 0:05	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/10/16 0:05	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/10/16 0:05	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/10/16 0:05	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/10/16 0:05	bgm	P6K0163
Manganese	BRL BL	mg/L	0.010	0.0017	1	*6010D	11/10/16 0:05	bgm	P6K0163
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/10/16 0:05	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 22:06	bgm	P6K0163
Strontium	BRL	mg/L	0.010	0.00057	1	*6010D	11/10/16 0:05	bgm	P6K0163
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/10/16 0:05	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/10/16 0:05	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/10/16 0:05	bgm	P6K0163

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: Dup-SW  
 Prism Sample ID: 6110118-08  
 Prism Work Order: 6110118  
 Time Collected: 11/03/16 00:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/18/16 13:42	JAB	P6K0438
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/10/16 0:11	bgm	P6K0163
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/10/16 0:11	bgm	P6K0163
<b>Barium</b>	<b>0.027</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 0:11</b>	<b>bgm</b>	<b>P6K0163</b>
Beryllium	BRL A	mg/L	0.0020	0.00010	1	*6010D	11/10/16 22:12	bgm	P6K0163
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/10/16 0:11	bgm	P6K0163
Chromium	BRL BL	mg/L	0.0050	0.00076	1	*6010D	11/10/16 0:11	bgm	P6K0163
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/10/16 0:11	bgm	P6K0163
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/10/16 0:11	bgm	P6K0163
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/10/16 0:11	bgm	P6K0163
<b>Manganese</b>	<b>0.033</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/14/16 19:29</b>	<b>bgm</b>	<b>P6K0305</b>
Nickel	BRL BL	mg/L	0.010	0.0010	1	*6010D	11/10/16 0:11	bgm	P6K0163
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/10/16 22:12	bgm	P6K0163
<b>Strontium</b>	<b>0.11</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 0:11</b>	<b>bgm</b>	<b>P6K0163</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/10/16 0:11	bgm	P6K0163
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/10/16 0:11	bgm	P6K0163
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/10/16 0:11	bgm	P6K0163

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110118  
Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0163 - 3010A</b>										
<b>Blank (P6K0163-BLK1)</b>										
Prepared: 11/08/16 Analyzed: 11/09/16										
Antimony	BRL	0.0050	mg/L							
Arsenic	BRL	0.010	mg/L							
Barium	BRL	0.010	mg/L							
Beryllium	BRL	0.0020	mg/L							
Cadmium	BRL	0.0010	mg/L							
Chromium	0.0209	0.0050	mg/L							BL
Cobalt	BRL	0.0050	mg/L							
Copper	BRL	0.010	mg/L							
Lead	BRL	0.0050	mg/L							
Manganese	0.0181	0.010	mg/L							BL
Nickel	0.0144	0.010	mg/L							BL
Selenium	BRL	0.020	mg/L							
Strontium	BRL	0.010	mg/L							
Thallium	BRL	0.010	mg/L							
Vanadium	BRL	0.0050	mg/L							
Zinc	BRL	0.030	mg/L							
<b>LCS (P6K0163-BS1)</b>										
Prepared: 11/08/16 Analyzed: 11/09/16										
Antimony	0.260	0.0050	mg/L	0.2500		104	80-120			
Arsenic	0.261	0.010	mg/L	0.2500		104	80-120			
Barium	0.264	0.010	mg/L	0.2500		105	80-120			
Beryllium	0.250	0.0020	mg/L	0.2500		100	80-120			
Cadmium	0.261	0.0010	mg/L	0.2500		104	80-120			
Chromium	0.261	0.0050	mg/L	0.2500		104	80-120			B
Cobalt	0.264	0.0050	mg/L	0.2500		105	80-120			
Copper	0.252	0.010	mg/L	0.2500		101	80-120			
Lead	0.258	0.0050	mg/L	0.2500		103	80-120			
Manganese	0.260	0.010	mg/L	0.2500		104	80-120			B
Nickel	0.263	0.010	mg/L	0.2500		105	80-120			B
Selenium	0.247	0.020	mg/L	0.2500		99	80-120			
Strontium	0.247	0.010	mg/L	0.2500		99	80-120			
Thallium	0.265	0.010	mg/L	0.2500		106	80-120			
Vanadium	0.263	0.0050	mg/L	0.2500		105	80-120			
Zinc	0.258	0.030	mg/L	0.2500		103	80-120			

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110118  
Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0163 - 3010A**

<b>Matrix Spike (P6K0163-MS1)</b>		<b>Source: 6110118-01</b>			<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/09/16</b>			
Antimony	0.262	0.0050	mg/L	0.2500	BRL	105	75-125			
Arsenic	0.263	0.010	mg/L	0.2500	BRL	105	75-125			
Barium	0.288	0.010	mg/L	0.2500	0.0257	105	75-125			
Beryllium	0.258	0.0020	mg/L	0.2500	BRL	103	75-125			
Cadmium	0.259	0.0010	mg/L	0.2500	BRL	104	75-125			
Chromium	0.260	0.0050	mg/L	0.2500	BRL	104	75-125			B
Cobalt	0.261	0.0050	mg/L	0.2500	BRL	104	75-125			
Copper	0.254	0.010	mg/L	0.2500	BRL	102	75-125			
Lead	0.256	0.0050	mg/L	0.2500	BRL	103	75-125			
Manganese	0.276	0.010	mg/L	0.2500	0.0236	101	75-125			B
Nickel	0.259	0.010	mg/L	0.2500	BRL	103	75-125			B
Selenium	0.262	0.020	mg/L	0.2500	0.00966	101	75-125			
Strontium	0.358	0.010	mg/L	0.2500	0.105	101	75-125			
Thallium	0.262	0.010	mg/L	0.2500	BRL	105	75-125			
Vanadium	0.265	0.0050	mg/L	0.2500	0.000669	106	75-125			
Zinc	0.274	0.030	mg/L	0.2500	BRL	110	75-125			

<b>Matrix Spike Dup (P6K0163-MSD1)</b>		<b>Source: 6110118-01</b>			<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/09/16</b>			
Antimony	0.265	0.0050	mg/L	0.2500	BRL	106	75-125	1	20	
Arsenic	0.262	0.010	mg/L	0.2500	BRL	105	75-125	0.4	20	
Barium	0.290	0.010	mg/L	0.2500	0.0257	106	75-125	0.5	20	
Beryllium	0.247	0.0020	mg/L	0.2500	BRL	99	75-125	4	20	
Cadmium	0.262	0.0010	mg/L	0.2500	BRL	105	75-125	0.9	20	
Chromium	0.261	0.0050	mg/L	0.2500	BRL	104	75-125	0.5	20	B
Cobalt	0.262	0.0050	mg/L	0.2500	BRL	105	75-125	0.4	20	
Copper	0.257	0.010	mg/L	0.2500	BRL	103	75-125	1	20	
Lead	0.258	0.0050	mg/L	0.2500	BRL	103	75-125	0.6	20	
Manganese	0.278	0.010	mg/L	0.2500	0.0236	102	75-125	0.8	20	B
Nickel	0.260	0.010	mg/L	0.2500	BRL	104	75-125	0.4	20	B
Selenium	0.253	0.020	mg/L	0.2500	0.00966	97	75-125	4	20	
Strontium	0.362	0.010	mg/L	0.2500	0.105	103	75-125	1	20	
Thallium	0.265	0.010	mg/L	0.2500	BRL	106	75-125	1	20	
Vanadium	0.266	0.0050	mg/L	0.2500	0.000669	106	75-125	0.3	20	
Zinc	0.276	0.030	mg/L	0.2500	BRL	110	75-125	0.7	20	



Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110118  
Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0305 - 3010A**

**Blank (P6K0305-BLK1)**

Prepared & Analyzed: 11/14/16

Antimony	BRL	0.0050	mg/L							
Arsenic	BRL	0.010	mg/L							
Barium	BRL	0.010	mg/L							
Beryllium	BRL	0.0020	mg/L							
Cadmium	BRL	0.0010	mg/L							
Chromium	BRL	0.0050	mg/L							
Cobalt	BRL	0.0050	mg/L							
Copper	BRL	0.010	mg/L							
Lead	BRL	0.0050	mg/L							
Manganese	BRL	0.010	mg/L							
Nickel	BRL	0.010	mg/L							
Selenium	BRL	0.020	mg/L							
Strontium	BRL	0.010	mg/L							
Thallium	BRL	0.010	mg/L							
Vanadium	BRL	0.0050	mg/L							
Zinc	BRL	0.030	mg/L							

**LCS (P6K0305-BS1)**

Prepared & Analyzed: 11/14/16

Antimony	0.244	0.0050	mg/L	0.2500	98	80-120
Arsenic	0.243	0.010	mg/L	0.2500	97	80-120
Barium	0.251	0.010	mg/L	0.2500	100	80-120
Beryllium	0.250	0.0020	mg/L	0.2500	100	80-120
Cadmium	0.242	0.0010	mg/L	0.2500	97	80-120
Chromium	0.248	0.0050	mg/L	0.2500	99	80-120
Cobalt	0.250	0.0050	mg/L	0.2500	100	80-120
Copper	0.256	0.010	mg/L	0.2500	102	80-120
Lead	0.246	0.0050	mg/L	0.2500	98	80-120
Manganese	0.249	0.010	mg/L	0.2500	100	80-120
Nickel	0.248	0.010	mg/L	0.2500	99	80-120
Selenium	0.239	0.020	mg/L	0.2500	96	80-120
Strontium	0.213	0.010	mg/L	0.2500	85	80-120
Thallium	0.253	0.010	mg/L	0.2500	101	80-120
Vanadium	0.252	0.0050	mg/L	0.2500	101	80-120
Zinc	0.247	0.030	mg/L	0.2500	99	80-120

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6110118  
Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0305 - 3010A**

<b>Matrix Spike (P6K0305-MS1)</b>	<b>Source: 6110118-02</b>			<b>Prepared &amp; Analyzed: 11/14/16</b>						
Antimony	0.249	0.0050	mg/L	0.2500	BRL	100	75-125			
Arsenic	0.248	0.010	mg/L	0.2500	BRL	99	75-125			
Barium	0.275	0.010	mg/L	0.2500	0.0253	100	75-125			
Beryllium	0.251	0.0020	mg/L	0.2500	BRL	100	75-125			
Cadmium	0.241	0.0010	mg/L	0.2500	BRL	96	75-125			
Chromium	0.248	0.0050	mg/L	0.2500	BRL	99	75-125			
Cobalt	0.247	0.0050	mg/L	0.2500	BRL	99	75-125			
Copper	0.262	0.010	mg/L	0.2500	BRL	105	75-125			
Lead	0.247	0.0050	mg/L	0.2500	BRL	99	75-125			
Manganese	0.274	0.010	mg/L	0.2500	0.0251	99	75-125			
Nickel	0.245	0.010	mg/L	0.2500	BRL	98	75-125			
Selenium	0.251	0.020	mg/L	0.2500	0.00905	97	75-125			
Strontium	0.310	0.010	mg/L	0.2500	0.0944	86	75-125			
Thallium	0.253	0.010	mg/L	0.2500	BRL	101	75-125			
Vanadium	0.253	0.0050	mg/L	0.2500	0.000697	101	75-125			
Zinc	0.263	0.030	mg/L	0.2500	0.0130	100	75-125			

<b>Matrix Spike Dup (P6K0305-MSD1)</b>	<b>Source: 6110118-02</b>			<b>Prepared &amp; Analyzed: 11/14/16</b>						
Antimony	0.258	0.0050	mg/L	0.2500	BRL	103	75-125	4	20	
Arsenic	0.257	0.010	mg/L	0.2500	BRL	103	75-125	4	20	
Barium	0.286	0.010	mg/L	0.2500	0.0253	104	75-125	4	20	
Beryllium	0.262	0.0020	mg/L	0.2500	BRL	105	75-125	4	20	
Cadmium	0.250	0.0010	mg/L	0.2500	BRL	100	75-125	4	20	
Chromium	0.257	0.0050	mg/L	0.2500	BRL	103	75-125	4	20	
Cobalt	0.256	0.0050	mg/L	0.2500	BRL	102	75-125	4	20	
Copper	0.273	0.010	mg/L	0.2500	BRL	109	75-125	4	20	
Lead	0.255	0.0050	mg/L	0.2500	BRL	102	75-125	3	20	
Manganese	0.283	0.010	mg/L	0.2500	0.0251	103	75-125	4	20	
Nickel	0.254	0.010	mg/L	0.2500	BRL	102	75-125	3	20	
Selenium	0.259	0.020	mg/L	0.2500	0.00905	100	75-125	3	20	
Strontium	0.326	0.010	mg/L	0.2500	0.0944	93	75-125	5	20	
Thallium	0.260	0.010	mg/L	0.2500	BRL	104	75-125	3	20	
Vanadium	0.264	0.0050	mg/L	0.2500	0.000697	105	75-125	4	20	
Zinc	0.272	0.030	mg/L	0.2500	0.0130	104	75-125	4	20	



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Project No: TCH-002

Prism Work Order: 6110118

Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0438 - 7470A**

**Blank (P6K0438-BLK1)** Prepared & Analyzed: 11/18/16

Mercury	BRL	0.00020	mg/L							
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**LCS (P6K0438-BS1)** Prepared & Analyzed: 11/18/16

Mercury	0.00944	0.00020	mg/L	0.009375		101	80-120			
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**Sample Extraction Data**

**Prep Method: 3010A**

Lab Number	Batch	Initial	Final	Date/Time
6110118-01	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-01	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-01	P6K0305	50 mL	50 mL	11/14/16 8:15
6110118-02	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-02	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-02	P6K0305	50 mL	50 mL	11/14/16 8:15
6110118-03	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-03	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-03	P6K0305	50 mL	50 mL	11/14/16 8:15
6110118-04	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-04	P6K0305	50 mL	50 mL	11/14/16 8:15
6110118-04	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-05	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-05	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-05	P6K0305	50 mL	50 mL	11/14/16 8:15
6110118-06	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-06	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-07	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-07	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-08	P6K0305	50 mL	50 mL	11/14/16 8:15
6110118-08	P6K0163	50 mL	50 mL	11/08/16 7:50
6110118-08	P6K0163	50 mL	50 mL	11/08/16 7:50

**Prep Method: 7470A**

Lab Number	Batch	Initial	Final	Date/Time
6110118-01	P6K0438	20 mL	30 mL	11/18/16 8:50
6110118-02	P6K0438	20 mL	30 mL	11/18/16 8:50
6110118-03	P6K0438	20 mL	30 mL	11/18/16 8:50
6110118-04	P6K0438	20 mL	30 mL	11/18/16 8:50
6110118-05	P6K0438	20 mL	30 mL	11/18/16 8:50
6110118-06	P6K0438	20 mL	30 mL	11/18/16 8:50
6110118-07	P6K0438	20 mL	30 mL	11/18/16 8:50
6110118-08	P6K0438	20 mL	30 mL	11/18/16 8:50

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449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
 Phone: 704/529-6364 • Fax: 704/529-0409

Client Company Name: H&A Stevenson

Report To/Contact Name: Patrick Stevens

Reporting Address: 2923 S. Tryon Street Suite 100  
Charlotte, NC 28203

Phone: 704-586-0077 Fax (Yes) (No): \_\_\_\_\_

Email (Yes) (No) Email Address: Dstevens@hastevens.com

EDD Type: PDF  Excel  Other \_\_\_\_\_

Site Location Name: TCAT-002

Site Location Physical Address: Amber Hill Rd

**CHAIN OF CUSTODY RECORD**

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING: TCAT-002

Project Name: TCAT-002

Short Hold Analysis: (Yes) (No) Yes  (No)  **UST Project: (Yes) (No)**

\*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: Account Payable

Address: \_\_\_\_\_

Purchase Order No./Billing Reference: TCAT-002

Requested Due Date:  1 Day  2 Days  3 Days  4 Days  5 Days

"Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved

Samples received after 15:00 will be processed next business day. Turnaround time is based on business days, excluding weekends and holidays. (SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

**LAB USE ONLY**

Samples INTACT upon arrival?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>
Received ON WET ICE? Temp <u>2.0</u>	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>
PROPER PRESERVATIVES indicated?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>
Received WITHIN HOLDING TIMES?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>
CUSTODY SEALS INTACT?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>
VOLATILES rec'd w/OUT HEADSPACE?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>
PROPER CONTAINERS used?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>

**TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL**

Certification: NELAC USACE FL NC

Water Chlorinated: YES  NO  OTHER N/A

Sample Iced Upon Collection: YES  NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
Sw-5	11/31/16	1500	Water	P	1	250ml	N/A	Metals List!	01	
Sw-4		1505						enhancing sensitivity	02	
Sw-3		1510						background (background)	03	
Sw-2		1520						cadmium, chromium	04	
Sw-1		1525						about 1/2 cup level	05	
RB-DPT		1205						very gross piece	06	
RB-HA		1230						seminum, stantium	07	
DUP-Sw								thallium, potassium	08	
								+ zinc		
								Mercury added		

Sampler's Signature: [Signature] Sampled By (Print Name): Patrick Stevens Affiliation: H&A

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Reiniquished By: (Signature) [Signature] Received By: (Signature) Patrick Stevens Date: 11/24/16 Military/Hours: 1050

Reiniquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11-24-16 Military/Hours: 1520

Reiniquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11-7-16 Military/Hours: 0800

Method of Shipment:  Fed Ex  UPS  Hand-delivered  Prism Field Service  Other \_\_\_\_\_

NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

COC Group No.: 6110118

Additional Comments: Mercury added by Patrick on 11/16/16

**PRISM USE ONLY**

Site Arrival Time: \_\_\_\_\_  
 Site Departure Time: \_\_\_\_\_  
 Field Tech Fee: \_\_\_\_\_  
 Mileage: \_\_\_\_\_

**SEE REVERSE FOR TERMS & CONDITIONS**

Hart & Hickman (Raleigh)  
Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Lab Submittal Date: 11/07/2016  
Prism Work Order: 6110120

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



Robbi A. Jones  
President/Project Manager



Reviewed By Robbi A. Jones  
President/Project Manager

**Data Qualifiers Key Reference:**

- A Continuing Calibration Verification standard recovery (82%) is less than the lower control limit (90%). Result has possible low bias.
- BH MB greater than one half of the RL, but the sample concentrations are greater than 10x the MB.
- MC Sample concentration too high for recovery evaluation.
- MI Matrix spike outside of the control limits. Matrix interference suspected.
- BRL Below Reporting Limit
- MDL Method Detection Limit
- RPD Relative Percent Difference
- \* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
MW-7 (0-1)	6110120-01	Solid	11/01/16	11/07/16
MW-6 (0-1)	6110120-02	Solid	11/02/16	11/07/16
MW-5 (0-1)	6110120-03	Solid	11/02/16	11/07/16
MW-5 (6-7)	6110120-04	Solid	11/02/16	11/07/16
HH-4 (0-1)	6110120-05	Solid	11/03/16	11/07/16
HH-4 (4-5)	6110120-06	Solid	11/03/16	11/07/16
HH-5 (0-1)	6110120-07	Solid	11/03/16	11/07/16
HH-5 (3-4)	6110120-08	Solid	11/03/16	11/07/16
HH-3 (0-1)	6110120-09	Solid	11/03/16	11/07/16
HH-1 (0-1)	6110120-10	Solid	11/03/16	11/07/16
HH-3 (2-3)	6110120-11	Solid	11/03/16	11/07/16
HH-1 (7-8)	6110120-12	Solid	11/03/16	11/07/16
HH-2 (2-3)	6110120-13	Solid	11/03/16	11/07/16
HH-2 (0-1)	6110120-14	Solid	11/03/16	11/07/16
BG-1 (0-1)	6110120-15	Solid	11/03/16	11/07/16
BG-1 (2-3)	6110120-16	Solid	11/03/16	11/07/16
BG-2 (0-1)	6110120-17	Solid	11/03/16	11/07/16
BG-2 (2-3)	6110120-18	Solid	11/03/16	11/07/16
BG-3 (0-1)	6110120-19	Solid	11/03/16	11/07/16
BG-3 (2-3)	6110120-20	Solid	11/03/16	11/07/16
BG-4 (0-1)	6110120-21	Solid	11/03/16	11/07/16
BG-4 (2-3)	6110120-22	Solid	11/03/16	11/07/16
Dup	6110120-23	Solid	11/03/16	11/07/16

Samples were received in good condition at 2.6 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result	Units
6110120-01	MW-7 (0-1)	Mercury	*7471B	0.030	mg/kg dry
6110120-01	MW-7 (0-1)	Arsenic	*6010D	2.6	mg/kg dry
6110120-01	MW-7 (0-1)	Barium	*6010D	67	mg/kg dry
6110120-01	MW-7 (0-1)	Beryllium	*6010D	0.87	mg/kg dry
6110120-01	MW-7 (0-1)	Chromium	*6010D	10	mg/kg dry
6110120-01	MW-7 (0-1)	Cobalt	*6010D	3.9	mg/kg dry
6110120-01	MW-7 (0-1)	Copper	*6010D	180	mg/kg dry
6110120-01	MW-7 (0-1)	Lead	*6010D	7.6	mg/kg dry
6110120-01	MW-7 (0-1)	Manganese	*6010D	100	mg/kg dry
6110120-01	MW-7 (0-1)	Nickel	*6010D	2.9	mg/kg dry
6110120-01	MW-7 (0-1)	Strontium	*6010D	6.7	mg/kg dry
6110120-01	MW-7 (0-1)	Vanadium	*6010D	61	mg/kg dry
6110120-01	MW-7 (0-1)	Zinc	*6010D	46	mg/kg dry
6110120-02	MW-6 (0-1)	Mercury	*7471B	0.082	mg/kg dry
6110120-02	MW-6 (0-1)	Arsenic	*6010D	2.9	mg/kg dry
6110120-02	MW-6 (0-1)	Barium	*6010D	38	mg/kg dry
6110120-02	MW-6 (0-1)	Beryllium	*6010D	0.61	mg/kg dry
6110120-02	MW-6 (0-1)	Chromium	*6010D	10	mg/kg dry
6110120-02	MW-6 (0-1)	Cobalt	*6010D	9.5	mg/kg dry
6110120-02	MW-6 (0-1)	Copper	*6010D	23	mg/kg dry
6110120-02	MW-6 (0-1)	Lead	*6010D	12	mg/kg dry
6110120-02	MW-6 (0-1)	Manganese	*6010D	570	mg/kg dry
6110120-02	MW-6 (0-1)	Nickel	*6010D	8.2	mg/kg dry
6110120-02	MW-6 (0-1)	Selenium	*6010D	1.0	mg/kg dry
6110120-02	MW-6 (0-1)	Strontium	*6010D	22	mg/kg dry
6110120-02	MW-6 (0-1)	Thallium	*6010D	0.81	mg/kg dry
6110120-02	MW-6 (0-1)	Vanadium	*6010D	31	mg/kg dry
6110120-02	MW-6 (0-1)	Zinc	*6010D	77	mg/kg dry
6110120-03	MW-5 (0-1)	Arsenic	*6010D	2.1	mg/kg dry
6110120-03	MW-5 (0-1)	Barium	*6010D	76	mg/kg dry
6110120-03	MW-5 (0-1)	Beryllium	*6010D	0.99	mg/kg dry
6110120-03	MW-5 (0-1)	Chromium	*6010D	18	mg/kg dry
6110120-03	MW-5 (0-1)	Cobalt	*6010D	27	mg/kg dry
6110120-03	MW-5 (0-1)	Copper	*6010D	49	mg/kg dry
6110120-03	MW-5 (0-1)	Lead	*6010D	4.0	mg/kg dry
6110120-03	MW-5 (0-1)	Manganese	*6010D	710	mg/kg dry
6110120-03	MW-5 (0-1)	Nickel	*6010D	5.0	mg/kg dry
6110120-03	MW-5 (0-1)	Strontium	*6010D	25	mg/kg dry
6110120-03	MW-5 (0-1)	Vanadium	*6010D	190	mg/kg dry
6110120-03	MW-5 (0-1)	Zinc	*6010D	47	mg/kg dry
6110120-04	MW-5 (6-7)	Arsenic	*6010D	1.4	mg/kg dry
6110120-04	MW-5 (6-7)	Barium	*6010D	61	mg/kg dry
6110120-04	MW-5 (6-7)	Beryllium	*6010D	0.60	mg/kg dry
6110120-04	MW-5 (6-7)	Chromium	*6010D	39	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-04	MW-5 (6-7)	Cobalt	*6010D	19	mg/kg dry
6110120-04	MW-5 (6-7)	Copper	*6010D	18	mg/kg dry
6110120-04	MW-5 (6-7)	Lead	*6010D	0.55	mg/kg dry
6110120-04	MW-5 (6-7)	Manganese	*6010D	940	mg/kg dry
6110120-04	MW-5 (6-7)	Nickel	*6010D	20	mg/kg dry
6110120-04	MW-5 (6-7)	Strontium	*6010D	29	mg/kg dry
6110120-04	MW-5 (6-7)	Thallium	*6010D	2.3	mg/kg dry
6110120-04	MW-5 (6-7)	Vanadium	*6010D	67	mg/kg dry
6110120-04	MW-5 (6-7)	Zinc	*6010D	75	mg/kg dry
6110120-05	HH-4 (0-1)	Arsenic	*6010D	2.4	mg/kg dry
6110120-05	HH-4 (0-1)	Barium	*6010D	72	mg/kg dry
6110120-05	HH-4 (0-1)	Beryllium	*6010D	1.0	mg/kg dry
6110120-05	HH-4 (0-1)	Chromium	*6010D	45	mg/kg dry
6110120-05	HH-4 (0-1)	Cobalt	*6010D	16	mg/kg dry
6110120-05	HH-4 (0-1)	Copper	*6010D	37	mg/kg dry
6110120-05	HH-4 (0-1)	Lead	*6010D	2.3	mg/kg dry
6110120-05	HH-4 (0-1)	Manganese	*6010D	630	mg/kg dry
6110120-05	HH-4 (0-1)	Nickel	*6010D	33	mg/kg dry
6110120-05	HH-4 (0-1)	Strontium	*6010D	42	mg/kg dry
6110120-05	HH-4 (0-1)	Thallium	*6010D	0.60	mg/kg dry
6110120-05	HH-4 (0-1)	Vanadium	*6010D	73	mg/kg dry
6110120-05	HH-4 (0-1)	Zinc	*6010D	70	mg/kg dry
6110120-06	HH-4 (4-5)	Barium	*6010D	0.64	mg/L
6110120-06	HH-4 (4-5)	Strontium	*6010D	0.45	mg/L
6110120-07	HH-5 (0-1)	Arsenic	*6010D	2.4	mg/kg dry
6110120-07	HH-5 (0-1)	Barium	*6010D	73	mg/kg dry
6110120-07	HH-5 (0-1)	Beryllium	*6010D	0.75	mg/kg dry
6110120-07	HH-5 (0-1)	Chromium	*6010D	23	mg/kg dry
6110120-07	HH-5 (0-1)	Cobalt	*6010D	8.4	mg/kg dry
6110120-07	HH-5 (0-1)	Copper	*6010D	19	mg/kg dry
6110120-07	HH-5 (0-1)	Lead	*6010D	9.3	mg/kg dry
6110120-07	HH-5 (0-1)	Manganese	*6010D	410	mg/kg dry
6110120-07	HH-5 (0-1)	Nickel	*6010D	14	mg/kg dry
6110120-07	HH-5 (0-1)	Selenium	*6010D	1.2	mg/kg dry
6110120-07	HH-5 (0-1)	Strontium	*6010D	23	mg/kg dry
6110120-07	HH-5 (0-1)	Vanadium	*6010D	39	mg/kg dry
6110120-07	HH-5 (0-1)	Zinc	*6010D	51	mg/kg dry
6110120-08	HH-5 (3-4)	Barium	*6010D	1.9	mg/L
6110120-08	HH-5 (3-4)	Strontium	*6010D	0.22	mg/L
6110120-09	HH-3 (0-1)	Mercury	*7471B	0.076	mg/kg dry
6110120-09	HH-3 (0-1)	Arsenic	*6010D	9.9	mg/kg dry
6110120-09	HH-3 (0-1)	Barium	*6010D	200	mg/kg dry
6110120-09	HH-3 (0-1)	Beryllium	*6010D	1.3	mg/kg dry
6110120-09	HH-3 (0-1)	Chromium	*6010D	18	mg/kg dry
6110120-09	HH-3 (0-1)	Cobalt	*6010D	7.8	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-09	HH-3 (0-1)	Copper	*6010D	31	mg/kg dry
6110120-09	HH-3 (0-1)	Lead	*6010D	24	mg/kg dry
6110120-09	HH-3 (0-1)	Manganese	*6010D	350	mg/kg dry
6110120-09	HH-3 (0-1)	Nickel	*6010D	8.9	mg/kg dry
6110120-09	HH-3 (0-1)	Selenium	*6010D	2.4	mg/kg dry
6110120-09	HH-3 (0-1)	Strontium	*6010D	36	mg/kg dry
6110120-09	HH-3 (0-1)	Vanadium	*6010D	53	mg/kg dry
6110120-09	HH-3 (0-1)	Zinc	*6010D	100	mg/kg dry
6110120-10	HH-1 (0-1)	Mercury	*7471B	0.052	mg/kg dry
6110120-10	HH-1 (0-1)	Arsenic	*6010D	5.9	mg/kg dry
6110120-10	HH-1 (0-1)	Barium	*6010D	120	mg/kg dry
6110120-10	HH-1 (0-1)	Beryllium	*6010D	1.0	mg/kg dry
6110120-10	HH-1 (0-1)	Chromium	*6010D	21	mg/kg dry
6110120-10	HH-1 (0-1)	Cobalt	*6010D	7.9	mg/kg dry
6110120-10	HH-1 (0-1)	Copper	*6010D	25	mg/kg dry
6110120-10	HH-1 (0-1)	Lead	*6010D	27	mg/kg dry
6110120-10	HH-1 (0-1)	Manganese	*6010D	350	mg/kg dry
6110120-10	HH-1 (0-1)	Nickel	*6010D	8.8	mg/kg dry
6110120-10	HH-1 (0-1)	Selenium	*6010D	0.69	mg/kg dry
6110120-10	HH-1 (0-1)	Strontium	*6010D	31	mg/kg dry
6110120-10	HH-1 (0-1)	Vanadium	*6010D	48	mg/kg dry
6110120-10	HH-1 (0-1)	Zinc	*6010D	50	mg/kg dry
6110120-11	HH-3 (2-3)	Barium	*6010D	0.74	mg/L
6110120-11	HH-3 (2-3)	Lead	*6010D	0.045	mg/L
6110120-11	HH-3 (2-3)	Manganese	*6010D	0.29	mg/L
6110120-11	HH-3 (2-3)	Strontium	*6010D	0.10	mg/L
6110120-12	HH-1 (7-8)	Barium	*6010D	0.55	mg/L
6110120-12	HH-1 (7-8)	Selenium	*6010D	0.13	mg/L
6110120-12	HH-1 (7-8)	Strontium	*6010D	2.5	mg/L
6110120-12	HH-1 (7-8)	Zinc	*6010D	0.31	mg/L
6110120-13	HH-2 (2-3)	Barium	*6010D	0.83	mg/L
6110120-13	HH-2 (2-3)	Strontium	*6010D	0.23	mg/L
6110120-13	HH-2 (2-3)	Zinc	*6010D	0.40	mg/L
6110120-14	HH-2 (0-1)	Mercury	*7471B	0.085	mg/kg dry
6110120-14	HH-2 (0-1)	Arsenic	*6010D	4.9	mg/kg dry
6110120-14	HH-2 (0-1)	Barium	*6010D	140	mg/kg dry
6110120-14	HH-2 (0-1)	Beryllium	*6010D	0.93	mg/kg dry
6110120-14	HH-2 (0-1)	Chromium	*6010D	14	mg/kg dry
6110120-14	HH-2 (0-1)	Cobalt	*6010D	12	mg/kg dry
6110120-14	HH-2 (0-1)	Copper	*6010D	21	mg/kg dry
6110120-14	HH-2 (0-1)	Lead	*6010D	30	mg/kg dry
6110120-14	HH-2 (0-1)	Manganese	*6010D	260	mg/kg dry
6110120-14	HH-2 (0-1)	Nickel	*6010D	5.9	mg/kg dry
6110120-14	HH-2 (0-1)	Selenium	*6010D	1.0	mg/kg dry
6110120-14	HH-2 (0-1)	Strontium	*6010D	25	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-14	HH-2 (0-1)	Vanadium	*6010D	48	mg/kg dry
6110120-14	HH-2 (0-1)	Zinc	*6010D	43	mg/kg dry
6110120-15	BG-1 (0-1)	Mercury	*7471B	0.033	mg/kg dry
6110120-15	BG-1 (0-1)	Arsenic	*6010D	1.9	mg/kg dry
6110120-15	BG-1 (0-1)	Barium	*6010D	36	mg/kg dry
6110120-15	BG-1 (0-1)	Beryllium	*6010D	0.39	mg/kg dry
6110120-15	BG-1 (0-1)	Chromium	*6010D	18	mg/kg dry
6110120-15	BG-1 (0-1)	Cobalt	*6010D	6.3	mg/kg dry
6110120-15	BG-1 (0-1)	Copper	*6010D	16	mg/kg dry
6110120-15	BG-1 (0-1)	Lead	*6010D	25	mg/kg dry
6110120-15	BG-1 (0-1)	Manganese	*6010D	310	mg/kg dry
6110120-15	BG-1 (0-1)	Nickel	*6010D	5.4	mg/kg dry
6110120-15	BG-1 (0-1)	Selenium	*6010D	1.6	mg/kg dry
6110120-15	BG-1 (0-1)	Strontium	*6010D	15	mg/kg dry
6110120-15	BG-1 (0-1)	Vanadium	*6010D	34	mg/kg dry
6110120-15	BG-1 (0-1)	Zinc	*6010D	43	mg/kg dry
6110120-16	BG-1 (2-3)	Mercury	*7471B	0.28	mg/kg dry
6110120-16	BG-1 (2-3)	Arsenic	*6010D	2.3	mg/kg dry
6110120-16	BG-1 (2-3)	Barium	*6010D	45	mg/kg dry
6110120-16	BG-1 (2-3)	Beryllium	*6010D	0.48	mg/kg dry
6110120-16	BG-1 (2-3)	Chromium	*6010D	19	mg/kg dry
6110120-16	BG-1 (2-3)	Cobalt	*6010D	7.3	mg/kg dry
6110120-16	BG-1 (2-3)	Copper	*6010D	18	mg/kg dry
6110120-16	BG-1 (2-3)	Lead	*6010D	43	mg/kg dry
6110120-16	BG-1 (2-3)	Manganese	*6010D	440	mg/kg dry
6110120-16	BG-1 (2-3)	Nickel	*6010D	6.2	mg/kg dry
6110120-16	BG-1 (2-3)	Selenium	*6010D	1.6	mg/kg dry
6110120-16	BG-1 (2-3)	Strontium	*6010D	15	mg/kg dry
6110120-16	BG-1 (2-3)	Vanadium	*6010D	35	mg/kg dry
6110120-16	BG-1 (2-3)	Zinc	*6010D	49	mg/kg dry
6110120-17	BG-2 (0-1)	Mercury	*7471B	0.045	mg/kg dry
6110120-17	BG-2 (0-1)	Arsenic	*6010D	1.9	mg/kg dry
6110120-17	BG-2 (0-1)	Barium	*6010D	45	mg/kg dry
6110120-17	BG-2 (0-1)	Beryllium	*6010D	0.50	mg/kg dry
6110120-17	BG-2 (0-1)	Chromium	*6010D	17	mg/kg dry
6110120-17	BG-2 (0-1)	Cobalt	*6010D	7.4	mg/kg dry
6110120-17	BG-2 (0-1)	Copper	*6010D	18	mg/kg dry
6110120-17	BG-2 (0-1)	Lead	*6010D	32	mg/kg dry
6110120-17	BG-2 (0-1)	Manganese	*6010D	410	mg/kg dry
6110120-17	BG-2 (0-1)	Nickel	*6010D	4.9	mg/kg dry
6110120-17	BG-2 (0-1)	Selenium	*6010D	1.1	mg/kg dry
6110120-17	BG-2 (0-1)	Strontium	*6010D	14	mg/kg dry
6110120-17	BG-2 (0-1)	Vanadium	*6010D	35	mg/kg dry
6110120-17	BG-2 (0-1)	Zinc	*6010D	44	mg/kg dry
6110120-18	BG-2 (2-3)	Mercury	*7471B	0.038	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-18	BG-2 (2-3)	Arsenic	*6010D	1.9	mg/kg dry
6110120-18	BG-2 (2-3)	Barium	*6010D	52	mg/kg dry
6110120-18	BG-2 (2-3)	Beryllium	*6010D	0.53	mg/kg dry
6110120-18	BG-2 (2-3)	Chromium	*6010D	24	mg/kg dry
6110120-18	BG-2 (2-3)	Cobalt	*6010D	7.5	mg/kg dry
6110120-18	BG-2 (2-3)	Copper	*6010D	20	mg/kg dry
6110120-18	BG-2 (2-3)	Lead	*6010D	26	mg/kg dry
6110120-18	BG-2 (2-3)	Manganese	*6010D	450	mg/kg dry
6110120-18	BG-2 (2-3)	Nickel	*6010D	7.9	mg/kg dry
6110120-18	BG-2 (2-3)	Selenium	*6010D	1.7	mg/kg dry
6110120-18	BG-2 (2-3)	Strontium	*6010D	19	mg/kg dry
6110120-18	BG-2 (2-3)	Vanadium	*6010D	37	mg/kg dry
6110120-18	BG-2 (2-3)	Zinc	*6010D	45	mg/kg dry
6110120-19	BG-3 (0-1)	Mercury	*7471B	0.024	mg/kg dry
6110120-19	BG-3 (0-1)	Arsenic	*6010D	1.7	mg/kg dry
6110120-19	BG-3 (0-1)	Barium	*6010D	44	mg/kg dry
6110120-19	BG-3 (0-1)	Beryllium	*6010D	0.43	mg/kg dry
6110120-19	BG-3 (0-1)	Chromium	*6010D	16	mg/kg dry
6110120-19	BG-3 (0-1)	Cobalt	*6010D	7.5	mg/kg dry
6110120-19	BG-3 (0-1)	Copper	*6010D	15	mg/kg dry
6110120-19	BG-3 (0-1)	Lead	*6010D	25	mg/kg dry
6110120-19	BG-3 (0-1)	Manganese	*6010D	410	mg/kg dry
6110120-19	BG-3 (0-1)	Nickel	*6010D	5.1	mg/kg dry
6110120-19	BG-3 (0-1)	Selenium	*6010D	1.4	mg/kg dry
6110120-19	BG-3 (0-1)	Strontium	*6010D	46	mg/kg dry
6110120-19	BG-3 (0-1)	Vanadium	*6010D	37	mg/kg dry
6110120-19	BG-3 (0-1)	Zinc	*6010D	40	mg/kg dry
6110120-20	BG-3 (2-3)	Mercury	*7471B	0.040	mg/kg dry
6110120-20	BG-3 (2-3)	Arsenic	*6010D	2.2	mg/kg dry
6110120-20	BG-3 (2-3)	Barium	*6010D	56	mg/kg dry
6110120-20	BG-3 (2-3)	Beryllium	*6010D	0.54	mg/kg dry
6110120-20	BG-3 (2-3)	Chromium	*6010D	22	mg/kg dry
6110120-20	BG-3 (2-3)	Cobalt	*6010D	7.5	mg/kg dry
6110120-20	BG-3 (2-3)	Copper	*6010D	18	mg/kg dry
6110120-20	BG-3 (2-3)	Lead	*6010D	29	mg/kg dry
6110120-20	BG-3 (2-3)	Manganese	*6010D	410	mg/kg dry
6110120-20	BG-3 (2-3)	Nickel	*6010D	5.2	mg/kg dry
6110120-20	BG-3 (2-3)	Selenium	*6010D	1.2	mg/kg dry
6110120-20	BG-3 (2-3)	Strontium	*6010D	19	mg/kg dry
6110120-20	BG-3 (2-3)	Vanadium	*6010D	40	mg/kg dry
6110120-20	BG-3 (2-3)	Zinc	*6010D	46	mg/kg dry
6110120-21	BG-4 (0-1)	Mercury	*7471B	0.026	mg/kg dry
6110120-21	BG-4 (0-1)	Arsenic	*6010D	1.7	mg/kg dry
6110120-21	BG-4 (0-1)	Barium	*6010D	50	mg/kg dry
6110120-21	BG-4 (0-1)	Beryllium	*6010D	0.50	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6110120-21	BG-4 (0-1)	Chromium	*6010D	19	mg/kg dry
6110120-21	BG-4 (0-1)	Cobalt	*6010D	9.5	mg/kg dry
6110120-21	BG-4 (0-1)	Copper	*6010D	16	mg/kg dry
6110120-21	BG-4 (0-1)	Lead	*6010D	22	mg/kg dry
6110120-21	BG-4 (0-1)	Manganese	*6010D	450	BH mg/kg dry
6110120-21	BG-4 (0-1)	Nickel	*6010D	6.0	mg/kg dry
6110120-21	BG-4 (0-1)	Strontium	*6010D	16	A mg/kg dry
6110120-21	BG-4 (0-1)	Vanadium	*6010D	53	mg/kg dry
6110120-21	BG-4 (0-1)	Zinc	*6010D	50	mg/kg dry
6110120-22	BG-4 (2-3)	Mercury	*7471B	0.054	mg/kg dry
6110120-22	BG-4 (2-3)	Arsenic	*6010D	2.0	mg/kg dry
6110120-22	BG-4 (2-3)	Barium	*6010D	53	mg/kg dry
6110120-22	BG-4 (2-3)	Beryllium	*6010D	0.52	mg/kg dry
6110120-22	BG-4 (2-3)	Cadmium	*6010D	0.38	mg/kg dry
6110120-22	BG-4 (2-3)	Chromium	*6010D	23	mg/kg dry
6110120-22	BG-4 (2-3)	Cobalt	*6010D	11	mg/kg dry
6110120-22	BG-4 (2-3)	Copper	*6010D	23	mg/kg dry
6110120-22	BG-4 (2-3)	Lead	*6010D	21	mg/kg dry
6110120-22	BG-4 (2-3)	Manganese	*6010D	460	BH mg/kg dry
6110120-22	BG-4 (2-3)	Nickel	*6010D	8.5	mg/kg dry
6110120-22	BG-4 (2-3)	Strontium	*6010D	19	mg/kg dry
6110120-22	BG-4 (2-3)	Vanadium	*6010D	51	mg/kg dry
6110120-22	BG-4 (2-3)	Zinc	*6010D	230	mg/kg dry
6110120-23	Dup	Barium	*6010D	1.3	mg/L
6110120-23	Dup	Manganese	*6010D	0.069	mg/L
6110120-23	Dup	Strontium	*6010D	0.17	mg/L
6110120-23	Dup	Zinc	*6010D	0.37	mg/L
6110120-23	Dup	Mercury	*7471B	0.067	mg/kg dry
6110120-23	Dup	Arsenic	*6010D	3.4	mg/kg dry
6110120-23	Dup	Barium	*6010D	110	mg/kg dry
6110120-23	Dup	Beryllium	*6010D	0.79	mg/kg dry
6110120-23	Dup	Chromium	*6010D	20	mg/kg dry
6110120-23	Dup	Cobalt	*6010D	8.4	mg/kg dry
6110120-23	Dup	Copper	*6010D	17	mg/kg dry
6110120-23	Dup	Lead	*6010D	18	mg/kg dry
6110120-23	Dup	Manganese	*6010D	360	BH mg/kg dry
6110120-23	Dup	Nickel	*6010D	12	mg/kg dry
6110120-23	Dup	Strontium	*6010D	30	mg/kg dry
6110120-23	Dup	Vanadium	*6010D	41	mg/kg dry
6110120-23	Dup	Zinc	*6010D	35	mg/kg dry

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: MW-7 (0-1)  
 Prism Sample ID: 6110120-01  
 Prism Work Order: 6110120  
 Time Collected: 11/01/16 11:35  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	83.8	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.030	mg/kg dry	0.025	0.0014	1	*7471B	11/18/16 8:12	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 0:04	bgm	P6K0165
Arsenic	2.6	mg/kg dry	0.30	0.036	1	*6010D	11/11/16 0:04	bgm	P6K0165
Barium	67	mg/kg dry	0.59	0.087	1	*6010D	11/11/16 0:04	bgm	P6K0165
Beryllium	0.87	mg/kg dry	0.30	0.0065	1	*6010D	11/11/16 0:04	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 0:04	bgm	P6K0165
Chromium	10	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 0:04	bgm	P6K0165
Cobalt	3.9	mg/kg dry	0.30	0.0058	1	*6010D	11/11/16 0:04	bgm	P6K0165
Copper	180	mg/kg dry	15	1.3	25	*6010D	11/11/16 20:42	bgm	P6K0165
Lead	7.6	mg/kg dry	0.30	0.055	1	*6010D	11/11/16 0:04	bgm	P6K0165
Manganese	100	mg/kg dry	0.30	0.059	1	*6010D	11/11/16 0:04	bgm	P6K0165
Nickel	2.9	mg/kg dry	0.59	0.021	1	*6010D	11/11/16 0:04	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.59	0.14	1	*6010D	11/11/16 0:04	bgm	P6K0165
Strontium	6.7	mg/kg dry	0.30	0.0063	1	*6010D	11/11/16 0:04	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.59	0.078	1	*6010D	11/11/16 0:04	bgm	P6K0165
Vanadium	61	mg/kg dry	0.30	0.0070	1	*6010D	11/11/16 0:04	bgm	P6K0165
Zinc	46	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 0:04	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Sample Matrix: Solid

Client Sample ID: MW-6 (0-1)  
 Prism Sample ID: 6110120-02  
 Prism Work Order: 6110120  
 Time Collected: 11/02/16 13:50  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	97.3	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.082	mg/kg dry	0.021	0.0011	1	*7471B	11/18/16 8:25	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.26	0.026	1	*6010D	11/11/16 0:32	bgm	P6K0165
Arsenic	2.9	mg/kg dry	0.26	0.031	1	*6010D	11/11/16 0:32	bgm	P6K0165
Barium	38	mg/kg dry	0.51	0.075	1	*6010D	11/11/16 0:32	bgm	P6K0165
Beryllium	0.61	mg/kg dry	0.26	0.0057	1	*6010D	11/11/16 0:32	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.26	0.0069	1	*6010D	11/11/16 0:32	bgm	P6K0165
Chromium	10	mg/kg dry	0.26	0.043	1	*6010D	11/11/16 0:32	bgm	P6K0165
Cobalt	9.5	mg/kg dry	0.26	0.0050	1	*6010D	11/11/16 0:32	bgm	P6K0165
Copper	23	mg/kg dry	0.51	0.046	1	*6010D	11/11/16 0:32	bgm	P6K0165
Lead	12	mg/kg dry	0.26	0.048	1	*6010D	11/11/16 0:32	bgm	P6K0165
Manganese	570	mg/kg dry	6.4	1.3	25	*6010D	11/11/16 20:50	bgm	P6K0165
Nickel	8.2	mg/kg dry	0.51	0.018	1	*6010D	11/11/16 0:32	bgm	P6K0165
Selenium	1.0	mg/kg dry	0.51	0.12	1	*6010D	11/11/16 0:32	bgm	P6K0165
Strontium	22	mg/kg dry	0.26	0.0054	1	*6010D	11/11/16 0:32	bgm	P6K0165
Thallium	0.81	mg/kg dry	0.51	0.067	1	*6010D	11/11/16 0:32	bgm	P6K0165
Vanadium	31	mg/kg dry	0.26	0.0061	1	*6010D	11/11/16 0:32	bgm	P6K0165
Zinc	77	mg/kg dry	2.6	0.092	1	*6010D	11/11/16 0:32	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: MW-5 (0-1)  
 Prism Sample ID: 6110120-03  
 Prism Work Order: 6110120  
 Time Collected: 11/02/16 16:05  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	85.1	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 8:30	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 0:42	bgm	P6K0165
Arsenic	2.1	mg/kg dry	0.30	0.036	1	*6010D	11/11/16 0:42	bgm	P6K0165
Barium	76	mg/kg dry	0.59	0.087	1	*6010D	11/11/16 0:42	bgm	P6K0165
Beryllium	0.99	mg/kg dry	0.30	0.0065	1	*6010D	11/11/16 0:42	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 0:42	bgm	P6K0165
Chromium	18	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 0:42	bgm	P6K0165
Cobalt	27	mg/kg dry	0.30	0.0058	1	*6010D	11/11/16 0:42	bgm	P6K0165
Copper	49	mg/kg dry	0.59	0.054	1	*6010D	11/11/16 0:42	bgm	P6K0165
Lead	4.0	mg/kg dry	0.30	0.055	1	*6010D	11/11/16 0:42	bgm	P6K0165
Manganese	710	mg/kg dry	7.4	1.5	25	*6010D	11/11/16 20:58	bgm	P6K0165
Nickel	5.0	mg/kg dry	0.59	0.021	1	*6010D	11/11/16 0:42	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.59	0.14	1	*6010D	11/11/16 0:42	bgm	P6K0165
Strontium	25	mg/kg dry	0.30	0.0063	1	*6010D	11/11/16 0:42	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.59	0.078	1	*6010D	11/11/16 0:42	bgm	P6K0165
Vanadium	190	mg/kg dry	7.4	0.18	25	*6010D	11/11/16 20:58	bgm	P6K0165
Zinc	47	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 0:42	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: MW-5 (6-7)  
 Prism Sample ID: 6110120-04  
 Prism Work Order: 6110120  
 Time Collected: 11/02/16 16:35  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	94.4	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.020	0.0011	1	*7471B	11/18/16 8:35	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.27	0.027	1	*6010D	11/11/16 0:52	bgm	P6K0165
Arsenic	1.4	mg/kg dry	0.27	0.032	1	*6010D	11/11/16 0:52	bgm	P6K0165
Barium	61	mg/kg dry	0.53	0.078	1	*6010D	11/11/16 0:52	bgm	P6K0165
Beryllium	0.60	mg/kg dry	0.27	0.0059	1	*6010D	11/11/16 0:52	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.27	0.0071	1	*6010D	11/11/16 0:52	bgm	P6K0165
Chromium	39	mg/kg dry	0.27	0.044	1	*6010D	11/11/16 0:52	bgm	P6K0165
Cobalt	19	mg/kg dry	0.27	0.0052	1	*6010D	11/11/16 0:52	bgm	P6K0165
Copper	18	mg/kg dry	0.53	0.048	1	*6010D	11/11/16 0:52	bgm	P6K0165
Lead	0.55	mg/kg dry	0.27	0.049	1	*6010D	11/11/16 0:52	bgm	P6K0165
Manganese	940	mg/kg dry	6.7	1.3	25	*6010D	11/11/16 21:06	bgm	P6K0165
Nickel	20	mg/kg dry	0.53	0.019	1	*6010D	11/11/16 0:52	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.53	0.13	1	*6010D	11/11/16 0:52	bgm	P6K0165
Strontium	29	mg/kg dry	0.27	0.0056	1	*6010D	11/11/16 0:52	bgm	P6K0165
Thallium	2.3	mg/kg dry	0.53	0.070	1	*6010D	11/11/16 0:52	bgm	P6K0165
Vanadium	67	mg/kg dry	0.27	0.0063	1	*6010D	11/11/16 0:52	bgm	P6K0165
Zinc	75	mg/kg dry	2.7	0.095	1	*6010D	11/11/16 0:52	bgm	P6K0165



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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-4 (0-1)  
 Prism Sample ID: 6110120-05  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 08:45  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	87.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 8:39	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.28	0.028	1	*6010D	11/11/16 1:03	bgm	P6K0165
Arsenic	2.4	mg/kg dry	0.28	0.034	1	*6010D	11/11/16 1:03	bgm	P6K0165
Barium	72	mg/kg dry	0.56	0.081	1	*6010D	11/11/16 1:03	bgm	P6K0165
Beryllium	1.0	mg/kg dry	0.28	0.0061	1	*6010D	11/11/16 1:03	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.28	0.0075	1	*6010D	11/11/16 1:03	bgm	P6K0165
Chromium	45	mg/kg dry	0.28	0.047	1	*6010D	11/11/16 1:03	bgm	P6K0165
Cobalt	16	mg/kg dry	0.28	0.0055	1	*6010D	11/11/16 1:03	bgm	P6K0165
Copper	37	mg/kg dry	0.56	0.050	1	*6010D	11/11/16 1:03	bgm	P6K0165
Lead	2.3	mg/kg dry	0.28	0.052	1	*6010D	11/11/16 1:03	bgm	P6K0165
Manganese	630	mg/kg dry	7.0	1.4	25	*6010D	11/11/16 21:14	bgm	P6K0165
Nickel	33	mg/kg dry	0.56	0.020	1	*6010D	11/11/16 1:03	bgm	P6K0165
Selenium	BRL	mg/kg dry	0.56	0.13	1	*6010D	11/11/16 1:03	bgm	P6K0165
Strontium	42	mg/kg dry	0.28	0.0059	1	*6010D	11/11/16 1:03	bgm	P6K0165
Thallium	0.60	mg/kg dry	0.56	0.073	1	*6010D	11/11/16 1:03	bgm	P6K0165
Vanadium	73	mg/kg dry	0.28	0.0066	1	*6010D	11/11/16 1:03	bgm	P6K0165
Zinc	70	mg/kg dry	2.8	0.10	1	*6010D	11/11/16 1:03	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-4 (4-5)  
 Prism Sample ID: 6110120-06  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 09:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	79.1	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/17/16 13:59	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	*6010D	11/10/16 22:42	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 22:42	bgm	P6K0245
<b>Barium</b>	<b>0.64</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	*6010D	11/10/16 22:42	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	*6010D	11/10/16 22:42	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	*6010D	11/10/16 22:42	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	*6010D	11/10/16 22:42	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	*6010D	11/10/16 22:42	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	*6010D	11/10/16 22:42	bgm	P6K0245
Manganese	BRL	mg/L	0.050	0.0085	1	*6010D	11/10/16 22:42	bgm	P6K0245
Nickel	BRL	mg/L	0.050	0.0050	1	*6010D	11/10/16 22:42	bgm	P6K0245
Selenium	BRL	mg/L	0.10	0.022	1	*6010D	11/10/16 22:42	bgm	P6K0245
<b>Strontium</b>	<b>0.45</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 22:42</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 22:42	bgm	P6K0245
Zinc	BRL	mg/L	0.15	0.056	1	*6010D	11/10/16 22:42	bgm	P6K0245
Vanadium	BRL	mg/L	0.025	0.00075	1	*6010D	11/10/16 22:42	bgm	P6K0245

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-5 (0-1)  
 Prism Sample ID: 6110120-07  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 09:25  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	84.3	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.025	0.0014	1	*7471B	11/18/16 8:44	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 1:23	bgm	P6K0165
Arsenic	2.4	mg/kg dry	0.30	0.036	1	*6010D	11/11/16 1:23	bgm	P6K0165
Barium	73	mg/kg dry	0.60	0.087	1	*6010D	11/11/16 1:23	bgm	P6K0165
Beryllium	0.75	mg/kg dry	0.30	0.0066	1	*6010D	11/11/16 1:23	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 1:23	bgm	P6K0165
Chromium	23	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 1:23	bgm	P6K0165
Cobalt	8.4	mg/kg dry	0.30	0.0058	1	*6010D	11/11/16 1:23	bgm	P6K0165
Copper	19	mg/kg dry	0.60	0.054	1	*6010D	11/11/16 1:23	bgm	P6K0165
Lead	9.3	mg/kg dry	0.30	0.055	1	*6010D	11/11/16 1:23	bgm	P6K0165
Manganese	410	mg/kg dry	7.5	1.5	25	*6010D	11/11/16 21:29	bgm	P6K0165
Nickel	14	mg/kg dry	0.60	0.021	1	*6010D	11/11/16 1:23	bgm	P6K0165
Selenium	1.2	mg/kg dry	0.60	0.14	1	*6010D	11/11/16 1:23	bgm	P6K0165
Strontium	23	mg/kg dry	0.30	0.0063	1	*6010D	11/11/16 1:23	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.60	0.078	1	*6010D	11/11/16 1:23	bgm	P6K0165
Vanadium	39	mg/kg dry	0.30	0.0070	1	*6010D	11/11/16 1:23	bgm	P6K0165
Zinc	51	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 1:23	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
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Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-5 (3-4)  
 Prism Sample ID: 6110120-08  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 09:40  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	76.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/17/16 14:10	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	*6010D	11/10/16 23:03	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:03	bgm	P6K0245
<b>Barium</b>	<b>1.9</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	*6010D	11/10/16 23:03	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	*6010D	11/10/16 23:03	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	*6010D	11/10/16 23:03	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	*6010D	11/10/16 23:03	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	*6010D	11/10/16 23:03	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	*6010D	11/10/16 23:03	bgm	P6K0245
Manganese	BRL	mg/L	0.050	0.0085	1	*6010D	11/10/16 23:03	bgm	P6K0245
Nickel	BRL	mg/L	0.050	0.0050	1	*6010D	11/10/16 23:03	bgm	P6K0245
Selenium	BRL	mg/L	0.10	0.022	1	*6010D	11/10/16 23:03	bgm	P6K0245
<b>Strontium</b>	<b>0.22</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:03</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:03	bgm	P6K0245
Zinc	BRL	mg/L	0.15	0.056	1	*6010D	11/10/16 23:03	bgm	P6K0245
Vanadium	BRL	mg/L	0.025	0.00075	1	*6010D	11/10/16 23:03	bgm	P6K0245

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-3 (0-1)  
 Prism Sample ID: 6110120-09  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 10:05  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	77.2	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.076	mg/kg dry	0.027	0.0015	1	*7471B	11/18/16 8:48	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.33	0.033	1	*6010D	11/11/16 1:42	bgm	P6K0165
Arsenic	9.9	mg/kg dry	0.33	0.040	1	*6010D	11/11/16 1:42	bgm	P6K0165
Barium	200	mg/kg dry	16	2.4	25	*6010D	11/11/16 21:45	bgm	P6K0165
Beryllium	1.3	mg/kg dry	0.33	0.0072	1	*6010D	11/11/16 1:42	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.33	0.0087	1	*6010D	11/11/16 1:42	bgm	P6K0165
Chromium	18	mg/kg dry	0.33	0.054	1	*6010D	11/11/16 1:42	bgm	P6K0165
Cobalt	7.8	mg/kg dry	0.33	0.0064	1	*6010D	11/11/16 1:42	bgm	P6K0165
Copper	31	mg/kg dry	0.65	0.059	1	*6010D	11/11/16 1:42	bgm	P6K0165
Lead	24	mg/kg dry	0.33	0.061	1	*6010D	11/11/16 1:42	bgm	P6K0165
Manganese	350	mg/kg dry	8.1	1.6	25	*6010D	11/11/16 21:45	bgm	P6K0165
Nickel	8.9	mg/kg dry	0.65	0.023	1	*6010D	11/11/16 1:42	bgm	P6K0165
Selenium	2.4	mg/kg dry	0.65	0.15	1	*6010D	11/11/16 1:42	bgm	P6K0165
Strontium	36	mg/kg dry	0.33	0.0069	1	*6010D	11/11/16 1:42	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.65	0.085	1	*6010D	11/11/16 1:42	bgm	P6K0165
Vanadium	53	mg/kg dry	0.33	0.0077	1	*6010D	11/11/16 1:42	bgm	P6K0165
Zinc	100	mg/kg dry	3.3	0.12	1	*6010D	11/11/16 1:42	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-1 (0-1)  
 Prism Sample ID: 6110120-10  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 10:30  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	88.1	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.052	mg/kg dry	0.023	0.0012	1	*7471B	11/18/16 8:53	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/11/16 1:52	bgm	P6K0165
Arsenic	5.9	mg/kg dry	0.29	0.035	1	*6010D	11/11/16 1:52	bgm	P6K0165
Barium	120	mg/kg dry	0.58	0.084	1	*6010D	11/11/16 1:52	bgm	P6K0165
Beryllium	1.0	mg/kg dry	0.29	0.0063	1	*6010D	11/11/16 1:52	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.29	0.0077	1	*6010D	11/11/16 1:52	bgm	P6K0165
Chromium	21	mg/kg dry	0.29	0.048	1	*6010D	11/11/16 1:52	bgm	P6K0165
Cobalt	7.9	mg/kg dry	0.29	0.0056	1	*6010D	11/11/16 1:52	bgm	P6K0165
Copper	25	mg/kg dry	0.58	0.052	1	*6010D	11/11/16 1:52	bgm	P6K0165
Lead	27	mg/kg dry	0.29	0.054	1	*6010D	11/11/16 1:52	bgm	P6K0165
Manganese	350	mg/kg dry	7.2	1.4	25	*6010D	11/11/16 21:53	bgm	P6K0165
Nickel	8.8	mg/kg dry	0.58	0.021	1	*6010D	11/11/16 1:52	bgm	P6K0165
Selenium	0.69	mg/kg dry	0.58	0.14	1	*6010D	11/11/16 1:52	bgm	P6K0165
Strontium	31	mg/kg dry	0.29	0.0061	1	*6010D	11/11/16 1:52	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.58	0.075	1	*6010D	11/11/16 1:52	bgm	P6K0165
Vanadium	48	mg/kg dry	0.29	0.0068	1	*6010D	11/11/16 1:52	bgm	P6K0165
Zinc	50	mg/kg dry	2.9	0.10	1	*6010D	11/11/16 1:52	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-3 (2-3)  
 Prism Sample ID: 6110120-11  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:25  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	78.7	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/17/16 14:14	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	*6010D	11/10/16 23:09	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:09	bgm	P6K0245
<b>Barium</b>	<b>0.74</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	*6010D	11/10/16 23:09	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	*6010D	11/10/16 23:09	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	*6010D	11/10/16 23:09	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	*6010D	11/10/16 23:09	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	*6010D	11/10/16 23:09	bgm	P6K0245
<b>Lead</b>	<b>0.045</b>	<b>mg/L</b>	<b>0.025</b>	<b>0.0080</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Manganese</b>	<b>0.29</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	*6010D	11/10/16 23:09	bgm	P6K0245
Selenium	BRL	mg/L	0.10	0.022	1	*6010D	11/10/16 23:09	bgm	P6K0245
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:09</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:09	bgm	P6K0245
Zinc	BRL	mg/L	0.15	0.056	1	*6010D	11/10/16 23:09	bgm	P6K0245
Vanadium	BRL	mg/L	0.025	0.00075	1	*6010D	11/10/16 23:09	bgm	P6K0245

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-1 (7-8)  
 Prism Sample ID: 6110120-12  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:45  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	86.7	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/17/16 14:18	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	*6010D	11/10/16 23:15	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:15	bgm	P6K0245
<b>Barium</b>	<b>0.55</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:15</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	*6010D	11/10/16 23:15	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	*6010D	11/10/16 23:15	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	*6010D	11/10/16 23:15	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	*6010D	11/10/16 23:15	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	*6010D	11/10/16 23:15	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	*6010D	11/10/16 23:15	bgm	P6K0245
Manganese	BRL	mg/L	0.050	0.0085	1	*6010D	11/10/16 23:15	bgm	P6K0245
Nickel	BRL	mg/L	0.050	0.0050	1	*6010D	11/10/16 23:15	bgm	P6K0245
<b>Selenium</b>	<b>0.13</b>	<b>mg/L</b>	<b>0.10</b>	<b>0.022</b>	<b>1</b>	<b>*6010D</b>	<b>11/11/16 23:40</b>	<b>bgm</b>	<b>P6K0245</b>
<b>Strontium</b>	<b>2.5</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:15</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:15	bgm	P6K0245
<b>Zinc</b>	<b>0.31</b>	<b>mg/L</b>	<b>0.15</b>	<b>0.056</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:15</b>	<b>bgm</b>	<b>P6K0245</b>
Vanadium	BRL	mg/L	0.025	0.00075	1	*6010D	11/10/16 23:15	bgm	P6K0245



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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-2 (2-3)  
 Prism Sample ID: 6110120-13  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:45  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	72.8	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/17/16 14:22	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	*6010D	11/10/16 23:23	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:23	bgm	P6K0245
<b>Barium</b>	<b>0.83</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	*6010D	11/10/16 23:23	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	*6010D	11/10/16 23:23	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	*6010D	11/10/16 23:23	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	*6010D	11/10/16 23:23	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	*6010D	11/10/16 23:23	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	*6010D	11/10/16 23:23	bgm	P6K0245
Manganese	BRL	mg/L	0.050	0.0085	1	*6010D	11/10/16 23:23	bgm	P6K0245
Nickel	BRL	mg/L	0.050	0.0050	1	*6010D	11/10/16 23:23	bgm	P6K0245
Selenium	BRL	mg/L	0.10	0.022	1	*6010D	11/10/16 23:23	bgm	P6K0245
<b>Strontium</b>	<b>0.23</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:23	bgm	P6K0245
<b>Zinc</b>	<b>0.40</b>	<b>mg/L</b>	<b>0.15</b>	<b>0.056</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:23</b>	<b>bgm</b>	<b>P6K0245</b>
Vanadium	BRL	mg/L	0.025	0.00075	1	*6010D	11/10/16 23:23	bgm	P6K0245

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: HH-2 (0-1)  
 Prism Sample ID: 6110120-14  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 11:15  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	87.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.085	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 8:57	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/11/16 2:41	bgm	P6K0165
Arsenic	4.9	mg/kg dry	0.29	0.035	1	*6010D	11/11/16 2:41	bgm	P6K0165
Barium	140	mg/kg dry	0.58	0.085	1	*6010D	11/11/16 2:41	bgm	P6K0165
Beryllium	0.93	mg/kg dry	0.29	0.0064	1	*6010D	11/11/16 2:41	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.29	0.0078	1	*6010D	11/11/16 2:41	bgm	P6K0165
Chromium	14	mg/kg dry	0.29	0.049	1	*6010D	11/11/16 2:41	bgm	P6K0165
Cobalt	12	mg/kg dry	0.29	0.0057	1	*6010D	11/11/16 2:41	bgm	P6K0165
Copper	21	mg/kg dry	0.58	0.052	1	*6010D	11/11/16 2:41	bgm	P6K0165
Lead	30	mg/kg dry	0.29	0.054	1	*6010D	11/11/16 2:41	bgm	P6K0165
Manganese	260	mg/kg dry	7.3	1.5	25	*6010D	11/11/16 22:35	bgm	P6K0165
Nickel	5.9	mg/kg dry	0.58	0.021	1	*6010D	11/11/16 2:41	bgm	P6K0165
Selenium	1.0	mg/kg dry	0.58	0.14	1	*6010D	11/11/16 2:41	bgm	P6K0165
Strontium	25	mg/kg dry	0.29	0.0062	1	*6010D	11/11/16 2:41	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.58	0.076	1	*6010D	11/11/16 2:41	bgm	P6K0165
Vanadium	48	mg/kg dry	0.29	0.0068	1	*6010D	11/11/16 2:41	bgm	P6K0165
Zinc	43	mg/kg dry	2.9	0.10	1	*6010D	11/11/16 2:41	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-1 (0-1)  
 Prism Sample ID: 6110120-15  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 13:55  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	88.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.033	mg/kg dry	0.021	0.0012	1	*7471B	11/18/16 9:02	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.28	0.029	1	*6010D	11/11/16 2:51	bgm	P6K0165
Arsenic	1.9	mg/kg dry	0.28	0.035	1	*6010D	11/11/16 2:51	bgm	P6K0165
Barium	36	mg/kg dry	0.57	0.083	1	*6010D	11/11/16 2:51	bgm	P6K0165
Beryllium	0.39	mg/kg dry	0.28	0.0062	1	*6010D	11/11/16 2:51	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.28	0.0076	1	*6010D	11/11/16 2:51	bgm	P6K0165
Chromium	18	mg/kg dry	0.28	0.047	1	*6010D	11/11/16 2:51	bgm	P6K0165
Cobalt	6.3	mg/kg dry	0.28	0.0056	1	*6010D	11/11/16 2:51	bgm	P6K0165
Copper	16	mg/kg dry	0.57	0.051	1	*6010D	11/11/16 2:51	bgm	P6K0165
Lead	25	mg/kg dry	0.28	0.053	1	*6010D	11/11/16 2:51	bgm	P6K0165
Manganese	310	mg/kg dry	7.1	1.4	25	*6010D	11/11/16 22:43	bgm	P6K0165
Nickel	5.4	mg/kg dry	0.57	0.020	1	*6010D	11/11/16 2:51	bgm	P6K0165
Selenium	1.6	mg/kg dry	0.57	0.13	1	*6010D	11/11/16 2:51	bgm	P6K0165
Strontium	15	mg/kg dry	0.28	0.0060	1	*6010D	11/11/16 2:51	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.57	0.074	1	*6010D	11/11/16 2:51	bgm	P6K0165
Vanadium	34	mg/kg dry	0.28	0.0067	1	*6010D	11/11/16 2:51	bgm	P6K0165
Zinc	43	mg/kg dry	2.8	0.10	1	*6010D	11/11/16 2:51	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-1 (2-3)  
 Prism Sample ID: 6110120-16  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:10  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	86.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.28	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:16	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/11/16 3:00	bgm	P6K0165
Arsenic	2.3	mg/kg dry	0.29	0.035	1	*6010D	11/11/16 3:00	bgm	P6K0165
Barium	45	mg/kg dry	0.57	0.083	1	*6010D	11/11/16 3:00	bgm	P6K0165
Beryllium	0.48	mg/kg dry	0.29	0.0063	1	*6010D	11/11/16 3:00	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.29	0.0077	1	*6010D	11/11/16 3:00	bgm	P6K0165
Chromium	19	mg/kg dry	0.29	0.048	1	*6010D	11/11/16 3:00	bgm	P6K0165
Cobalt	7.3	mg/kg dry	0.29	0.0056	1	*6010D	11/11/16 3:00	bgm	P6K0165
Copper	18	mg/kg dry	0.57	0.052	1	*6010D	11/11/16 3:00	bgm	P6K0165
Lead	43	mg/kg dry	0.29	0.053	1	*6010D	11/11/16 3:00	bgm	P6K0165
Manganese	440	mg/kg dry	7.1	1.4	25	*6010D	11/11/16 22:51	bgm	P6K0165
Nickel	6.2	mg/kg dry	0.57	0.021	1	*6010D	11/11/16 3:00	bgm	P6K0165
Selenium	1.6	mg/kg dry	0.57	0.14	1	*6010D	11/11/16 3:00	bgm	P6K0165
Strontium	15	mg/kg dry	0.29	0.0061	1	*6010D	11/11/16 3:00	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.57	0.075	1	*6010D	11/11/16 3:00	bgm	P6K0165
Vanadium	35	mg/kg dry	0.29	0.0067	1	*6010D	11/11/16 3:00	bgm	P6K0165
Zinc	49	mg/kg dry	2.9	0.10	1	*6010D	11/11/16 3:00	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-2 (0-1)  
 Prism Sample ID: 6110120-17  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:15  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	89.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.045	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:20	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.28	0.028	1	*6010D	11/11/16 3:10	bgm	P6K0165
Arsenic	1.9	mg/kg dry	0.28	0.034	1	*6010D	11/11/16 3:10	bgm	P6K0165
Barium	45	mg/kg dry	0.56	0.082	1	*6010D	11/11/16 3:10	bgm	P6K0165
Beryllium	0.50	mg/kg dry	0.28	0.0062	1	*6010D	11/11/16 3:10	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.28	0.0075	1	*6010D	11/11/16 3:10	bgm	P6K0165
Chromium	17	mg/kg dry	0.28	0.047	1	*6010D	11/11/16 3:10	bgm	P6K0165
Cobalt	7.4	mg/kg dry	0.28	0.0055	1	*6010D	11/11/16 3:10	bgm	P6K0165
Copper	18	mg/kg dry	0.56	0.051	1	*6010D	11/11/16 3:10	bgm	P6K0165
Lead	32	mg/kg dry	0.28	0.052	1	*6010D	11/11/16 3:10	bgm	P6K0165
Manganese	410	mg/kg dry	7.0	1.4	25	*6010D	11/11/16 22:58	bgm	P6K0165
Nickel	4.9	mg/kg dry	0.56	0.020	1	*6010D	11/11/16 3:10	bgm	P6K0165
Selenium	1.1	mg/kg dry	0.56	0.13	1	*6010D	11/11/16 3:10	bgm	P6K0165
Strontium	14	mg/kg dry	0.28	0.0059	1	*6010D	11/11/16 3:10	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.56	0.073	1	*6010D	11/11/16 3:10	bgm	P6K0165
Vanadium	35	mg/kg dry	0.28	0.0066	1	*6010D	11/11/16 3:10	bgm	P6K0165
Zinc	44	mg/kg dry	2.8	0.10	1	*6010D	11/11/16 3:10	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-2 (2-3)  
 Prism Sample ID: 6110120-18  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:40  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	90.2	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.038	mg/kg dry	0.023	0.0013	1	*7471B	11/18/16 9:25	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.27	0.028	1	*6010D	11/11/16 3:19	bgm	P6K0165
Arsenic	1.9	mg/kg dry	0.27	0.033	1	*6010D	11/11/16 3:19	bgm	P6K0165
Barium	52	mg/kg dry	0.55	0.080	1	*6010D	11/11/16 3:19	bgm	P6K0165
Beryllium	0.53	mg/kg dry	0.27	0.0060	1	*6010D	11/11/16 3:19	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.27	0.0074	1	*6010D	11/11/16 3:19	bgm	P6K0165
Chromium	24	mg/kg dry	0.27	0.046	1	*6010D	11/11/16 3:19	bgm	P6K0165
Cobalt	7.5	mg/kg dry	0.27	0.0054	1	*6010D	11/11/16 3:19	bgm	P6K0165
Copper	20	mg/kg dry	0.55	0.050	1	*6010D	11/11/16 3:19	bgm	P6K0165
Lead	26	mg/kg dry	0.27	0.051	1	*6010D	11/11/16 3:19	bgm	P6K0165
Manganese	450	mg/kg dry	6.9	1.4	25	*6010D	11/11/16 23:06	bgm	P6K0165
Nickel	7.9	mg/kg dry	0.55	0.020	1	*6010D	11/11/16 3:19	bgm	P6K0165
Selenium	1.7	mg/kg dry	0.55	0.13	1	*6010D	11/11/16 3:19	bgm	P6K0165
Strontium	19	mg/kg dry	0.27	0.0058	1	*6010D	11/11/16 3:19	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.55	0.072	1	*6010D	11/11/16 3:19	bgm	P6K0165
Vanadium	37	mg/kg dry	0.27	0.0065	1	*6010D	11/11/16 3:19	bgm	P6K0165
Zinc	45	mg/kg dry	2.7	0.098	1	*6010D	11/11/16 3:19	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-3 (0-1)  
 Prism Sample ID: 6110120-19  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 14:50  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	83.0	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.024	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:29	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/11/16 3:29	bgm	P6K0165
Arsenic	1.7	mg/kg dry	0.30	0.037	1	*6010D	11/11/16 3:29	bgm	P6K0165
Barium	44	mg/kg dry	0.60	0.087	1	*6010D	11/11/16 3:29	bgm	P6K0165
Beryllium	0.43	mg/kg dry	0.30	0.0066	1	*6010D	11/11/16 3:29	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/11/16 3:29	bgm	P6K0165
Chromium	16	mg/kg dry	0.30	0.050	1	*6010D	11/11/16 3:29	bgm	P6K0165
Cobalt	7.5	mg/kg dry	0.30	0.0059	1	*6010D	11/11/16 3:29	bgm	P6K0165
Copper	15	mg/kg dry	0.60	0.054	1	*6010D	11/11/16 3:29	bgm	P6K0165
Lead	25	mg/kg dry	0.30	0.056	1	*6010D	11/11/16 3:29	bgm	P6K0165
Manganese	410	mg/kg dry	7.5	1.5	25	*6010D	11/11/16 23:14	bgm	P6K0165
Nickel	5.1	mg/kg dry	0.60	0.022	1	*6010D	11/11/16 3:29	bgm	P6K0165
Selenium	1.4	mg/kg dry	0.60	0.14	1	*6010D	11/11/16 3:29	bgm	P6K0165
Strontium	46	mg/kg dry	0.30	0.0064	1	*6010D	11/11/16 3:29	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.60	0.079	1	*6010D	11/11/16 3:29	bgm	P6K0165
Vanadium	37	mg/kg dry	0.30	0.0071	1	*6010D	11/11/16 3:29	bgm	P6K0165
Zinc	40	mg/kg dry	3.0	0.11	1	*6010D	11/11/16 3:29	bgm	P6K0165

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-3 (2-3)  
 Prism Sample ID: 6110120-20  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 15:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	93.3	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.040	mg/kg dry	0.022	0.0012	1	*7471B	11/18/16 9:34	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.27	0.027	1	*6010D	11/11/16 3:38	bgm	P6K0165
Arsenic	2.2	mg/kg dry	0.27	0.033	1	*6010D	11/11/16 3:38	bgm	P6K0165
Barium	56	mg/kg dry	0.53	0.078	1	*6010D	11/11/16 3:38	bgm	P6K0165
Beryllium	0.54	mg/kg dry	0.27	0.0059	1	*6010D	11/11/16 3:38	bgm	P6K0165
Cadmium	BRL	mg/kg dry	0.27	0.0071	1	*6010D	11/11/16 3:38	bgm	P6K0165
Chromium	22	mg/kg dry	0.27	0.045	1	*6010D	11/11/16 3:38	bgm	P6K0165
Cobalt	7.5	mg/kg dry	0.27	0.0052	1	*6010D	11/11/16 3:38	bgm	P6K0165
Copper	18	mg/kg dry	0.53	0.048	1	*6010D	11/11/16 3:38	bgm	P6K0165
Lead	29	mg/kg dry	0.27	0.050	1	*6010D	11/11/16 3:38	bgm	P6K0165
Manganese	410	mg/kg dry	6.7	1.3	25	*6010D	11/11/16 23:21	bgm	P6K0165
Nickel	5.2	mg/kg dry	0.53	0.019	1	*6010D	11/11/16 3:38	bgm	P6K0165
Selenium	1.2	mg/kg dry	0.53	0.13	1	*6010D	11/11/16 3:38	bgm	P6K0165
Strontium	19	mg/kg dry	0.27	0.0057	1	*6010D	11/11/16 3:38	bgm	P6K0165
Thallium	BRL	mg/kg dry	0.53	0.070	1	*6010D	11/11/16 3:38	bgm	P6K0165
Vanadium	40	mg/kg dry	0.27	0.0063	1	*6010D	11/11/16 3:38	bgm	P6K0165
Zinc	46	mg/kg dry	2.7	0.095	1	*6010D	11/11/16 3:38	bgm	P6K0165



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: BG-4 (0-1)  
 Prism Sample ID: 6110120-21  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 15:10  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	85.6	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.026	mg/kg dry	0.025	0.0014	1	*7471B	11/18/16 9:38	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.29	0.029	1	*6010D	11/12/16 1:25	bgm	P6K0167
Arsenic	1.7	mg/kg dry	0.29	0.036	1	*6010D	11/12/16 1:25	bgm	P6K0167
Barium	50	mg/kg dry	0.59	0.086	1	*6010D	11/12/16 1:25	bgm	P6K0167
Beryllium	0.50	mg/kg dry	0.29	0.0065	1	*6010D	11/12/16 1:25	bgm	P6K0167
Cadmium	BRL	mg/kg dry	0.29	0.0079	1	*6010D	11/12/16 1:25	bgm	P6K0167
Chromium	19	mg/kg dry	0.29	0.049	1	*6010D	11/12/16 1:25	bgm	P6K0167
Cobalt	9.5	mg/kg dry	0.29	0.0058	1	*6010D	11/12/16 1:25	bgm	P6K0167
Copper	16	mg/kg dry	0.59	0.053	1	*6010D	11/12/16 1:25	bgm	P6K0167
Lead	22	mg/kg dry	0.29	0.055	1	*6010D	11/12/16 1:25	bgm	P6K0167
Manganese	450 BH	mg/kg dry	5.9	1.2	20	*6010D	11/14/16 21:37	bgm	P6K0167
Nickel	6.0	mg/kg dry	0.59	0.021	1	*6010D	11/12/16 1:25	bgm	P6K0167
Selenium	BRL	mg/kg dry	0.59	0.14	1	*6010D	11/12/16 1:25	bgm	P6K0167
Strontium	16 A	mg/kg dry	0.29	0.0062	1	*6010D	11/12/16 1:54	bgm	P6K0167
Thallium	BRL	mg/kg dry	0.59	0.077	1	*6010D	11/12/16 1:25	bgm	P6K0167
Vanadium	53	mg/kg dry	0.29	0.0069	1	*6010D	11/12/16 1:25	bgm	P6K0167
Zinc	50	mg/kg dry	2.9	0.11	1	*6010D	11/12/16 1:25	bgm	P6K0167

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Sample Matrix: Solid

Client Sample ID: BG-4 (2-3)  
 Prism Sample ID: 6110120-22  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 15:20  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	74.9	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>Total Metals</b>									
Mercury	0.054	mg/kg dry	0.026	0.0014	1	*7471B	11/18/16 9:43	JAB	P6K0421
Antimony	BRL	mg/kg dry	0.33	0.033	1	*6010D	11/12/16 1:55	bgm	P6K0167
Arsenic	2.0	mg/kg dry	0.33	0.040	1	*6010D	11/12/16 1:55	bgm	P6K0167
Barium	53	mg/kg dry	0.65	0.095	1	*6010D	11/12/16 1:55	bgm	P6K0167
Beryllium	0.52	mg/kg dry	0.33	0.0072	1	*6010D	11/12/16 1:55	bgm	P6K0167
Cadmium	0.38	mg/kg dry	0.33	0.0087	1	*6010D	11/12/16 1:55	bgm	P6K0167
Chromium	23	mg/kg dry	0.33	0.054	1	*6010D	11/12/16 1:55	bgm	P6K0167
Cobalt	11	mg/kg dry	0.33	0.0064	1	*6010D	11/12/16 1:55	bgm	P6K0167
Copper	23	mg/kg dry	0.65	0.059	1	*6010D	11/12/16 1:55	bgm	P6K0167
Lead	21	mg/kg dry	0.33	0.061	1	*6010D	11/12/16 1:55	bgm	P6K0167
Manganese	460 BH	mg/kg dry	6.5	1.3	20	*6010D	11/14/16 22:04	bgm	P6K0167
Nickel	8.5	mg/kg dry	0.65	0.023	1	*6010D	11/12/16 1:55	bgm	P6K0167
Selenium	BRL	mg/kg dry	0.65	0.15	1	*6010D	11/12/16 1:55	bgm	P6K0167
Strontium	19	mg/kg dry	0.33	0.0069	1	*6010D	11/21/16 18:34	bgm	P6K0167
Thallium	BRL	mg/kg dry	0.65	0.085	1	*6010D	11/12/16 1:55	bgm	P6K0167
Vanadium	51	mg/kg dry	0.33	0.0077	1	*6010D	11/12/16 1:55	bgm	P6K0167
Zinc	230	mg/kg dry	65	2.3	20	*6010D	11/14/16 22:04	bgm	P6K0167

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Sample Matrix: Solid

Client Sample ID: Dup  
 Prism Sample ID: 6110120-23  
 Prism Work Order: 6110120  
 Time Collected: 11/03/16 00:00  
 Time Submitted: 11/07/16 08:00

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	70.9	% by Weight	0.100	0.100	1	*SM2540 G	11/10/16 15:09	JLB	P6K0270
<b>SPLP Extraction by EPA 1312</b>									
SPLP Extraction	Complete	N/A			1	*1312	11/10/16 7:30	JAB	P6K0226
<b>SPLP Metals</b>									
Mercury	BRL	mg/L	0.00020	0.000030	1	*7470A	11/17/16 14:26	JAB	P6K0397
Antimony	BRL	mg/L	0.025	0.0025	1	*6010D	11/10/16 23:28	bgm	P6K0245
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:28	bgm	P6K0245
<b>Barium</b>	<b>1.3</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0065</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
Beryllium	BRL	mg/L	0.050	0.00050	1	*6010D	11/10/16 23:28	bgm	P6K0245
Cadmium	BRL	mg/L	0.0050	0.00065	1	*6010D	11/10/16 23:28	bgm	P6K0245
Chromium	BRL	mg/L	0.025	0.0038	1	*6010D	11/10/16 23:28	bgm	P6K0245
Cobalt	BRL	mg/L	0.025	0.00055	1	*6010D	11/10/16 23:28	bgm	P6K0245
Copper	BRL	mg/L	0.050	0.0080	1	*6010D	11/10/16 23:28	bgm	P6K0245
Lead	BRL	mg/L	0.025	0.0080	1	*6010D	11/10/16 23:28	bgm	P6K0245
<b>Manganese</b>	<b>0.069</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0085</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
Nickel	BRL	mg/L	0.050	0.0050	1	*6010D	11/10/16 23:28	bgm	P6K0245
Selenium	BRL	mg/L	0.10	0.022	1	*6010D	11/10/16 23:28	bgm	P6K0245
<b>Strontium</b>	<b>0.17</b>	<b>mg/L</b>	<b>0.050</b>	<b>0.0028</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
Thallium	BRL	mg/L	0.050	0.012	1	*6010D	11/10/16 23:28	bgm	P6K0245
<b>Zinc</b>	<b>0.37</b>	<b>mg/L</b>	<b>0.15</b>	<b>0.056</b>	<b>1</b>	<b>*6010D</b>	<b>11/10/16 23:28</b>	<b>bgm</b>	<b>P6K0245</b>
Vanadium	BRL	mg/L	0.025	0.00075	1	*6010D	11/10/16 23:28	bgm	P6K0245
<b>Total Metals</b>									
<b>Mercury</b>	<b>0.067</b>	<b>mg/kg dry</b>	<b>0.028</b>	<b>0.0015</b>	<b>1</b>	<b>*7471B</b>	<b>11/18/16 10:28</b>	<b>JAB</b>	<b>P6K0422</b>
Antimony	BRL	mg/kg dry	0.35	0.035	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Arsenic</b>	<b>3.4</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.043</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Barium</b>	<b>110</b>	<b>mg/kg dry</b>	<b>0.71</b>	<b>0.10</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Beryllium</b>	<b>0.79</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0078</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
Cadmium	BRL	mg/kg dry	0.35	0.0095	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Chromium</b>	<b>20</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.059</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Cobalt</b>	<b>8.4</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0069</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Copper</b>	<b>17</b>	<b>mg/kg dry</b>	<b>0.71</b>	<b>0.064</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Lead</b>	<b>18</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.066</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Manganese</b>	<b>360 BH</b>	<b>mg/kg dry</b>	<b>7.1</b>	<b>1.4</b>	<b>20</b>	<b>*6010D</b>	<b>11/14/16 22:12</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Nickel</b>	<b>12</b>	<b>mg/kg dry</b>	<b>0.71</b>	<b>0.025</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
Selenium	BRL	mg/kg dry	0.71	0.17	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Strontium</b>	<b>30</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0075</b>	<b>1</b>	<b>*6010D</b>	<b>11/21/16 18:44</b>	<b>bgm</b>	<b>P6K0167</b>
Thallium	BRL	mg/kg dry	0.71	0.092	1	*6010D	11/12/16 2:05	bgm	P6K0167
<b>Vanadium</b>	<b>41</b>	<b>mg/kg dry</b>	<b>0.35</b>	<b>0.0083</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>
<b>Zinc</b>	<b>35</b>	<b>mg/kg dry</b>	<b>3.5</b>	<b>0.13</b>	<b>1</b>	<b>*6010D</b>	<b>11/12/16 2:05</b>	<b>bgm</b>	<b>P6K0167</b>

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Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0165 - 3050B**

**Blank (P6K0165-BLK1)**

Prepared: 11/08/16 Analyzed: 11/10/16

Antimony	BRL	0.25	mg/kg wet							
Arsenic	BRL	0.25	mg/kg wet							
Barium	BRL	0.50	mg/kg wet							
Beryllium	BRL	0.25	mg/kg wet							
Cadmium	BRL	0.25	mg/kg wet							
Chromium	BRL	0.25	mg/kg wet							
Cobalt	BRL	0.25	mg/kg wet							
Copper	BRL	0.50	mg/kg wet							
Lead	BRL	0.25	mg/kg wet							
Manganese	BRL	0.25	mg/kg wet							
Nickel	BRL	0.50	mg/kg wet							
Selenium	BRL	0.50	mg/kg wet							
Strontium	BRL	0.25	mg/kg wet							
Thallium	BRL	0.50	mg/kg wet							
Vanadium	BRL	0.25	mg/kg wet							
Zinc	BRL	2.5	mg/kg wet							

**LCS (P6K0165-BS1)**

Prepared: 11/08/16 Analyzed: 11/10/16

Antimony	23.4	0.25	mg/kg wet	25.00		94	80-120			
Arsenic	23.3	0.25	mg/kg wet	25.00		93	80-120			
Barium	24.4	0.50	mg/kg wet	25.00		98	80-120			
Beryllium	25.1	0.25	mg/kg wet	25.00		100	80-120			
Cadmium	23.4	0.25	mg/kg wet	25.00		94	80-120			
Chromium	24.2	0.25	mg/kg wet	25.00		97	80-120			
Cobalt	23.9	0.25	mg/kg wet	25.00		96	80-120			
Copper	25.6	0.50	mg/kg wet	25.00		103	80-120			
Lead	23.3	0.25	mg/kg wet	25.00		93	80-120			
Manganese	24.4	0.25	mg/kg wet	25.00		97	80-120			
Nickel	23.3	0.50	mg/kg wet	25.00		93	80-120			
Selenium	22.3	0.50	mg/kg wet	25.00		89	80-120			
Strontium	24.0	0.25	mg/kg wet	25.00		96	80-120			
Thallium	23.8	0.50	mg/kg wet	25.00		95	80-120			
Vanadium	24.7	0.25	mg/kg wet	25.00		99	80-120			
Zinc	23.4	2.5	mg/kg wet	25.00		94	80-120			

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
 Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0165 - 3050B**

Matrix Spike (P6K0165-MS1)	Source: 6110120-01			Prepared: 11/08/16		Analyzed: 11/11/16				
Antimony	5.50	0.30	mg/kg dry	30.12	BRL	18	75-125			MI
Arsenic	24.5	0.30	mg/kg dry	30.12	2.58	73	75-125			MI
Barium	94.6	0.60	mg/kg dry	30.12	67.3	91	75-125			
Beryllium	28.7	0.30	mg/kg dry	30.12	0.865	92	75-125			
Cadmium	25.1	0.30	mg/kg dry	30.12	BRL	83	75-125			
Chromium	37.3	0.30	mg/kg dry	30.12	9.97	91	75-125			
Cobalt	29.0	0.30	mg/kg dry	30.12	3.87	83	75-125			
Copper	3.01E10	0.60	mg/kg dry	30.12	182	NR	75-125			MC
Lead	32.8	0.30	mg/kg dry	30.12	7.63	84	75-125			
Manganese	130	0.30	mg/kg dry	30.12	104	87	75-125			
Nickel	27.8	0.60	mg/kg dry	30.12	2.92	83	75-125			
Selenium	21.9	0.60	mg/kg dry	30.12	BRL	73	75-125			MI
Strontium	32.1	0.30	mg/kg dry	30.12	6.71	84	75-125			
Thallium	23.7	0.60	mg/kg dry	30.12	BRL	79	75-125			
Vanadium	87.1	0.30	mg/kg dry	30.12	60.5	88	75-125			
Zinc	79.1	3.0	mg/kg dry	30.12	46.4	109	75-125			

Matrix Spike Dup (P6K0165-MSD1)	Source: 6110120-01			Prepared: 11/08/16		Analyzed: 11/11/16				
Antimony	3.29	0.30	mg/kg dry	29.96	BRL	11	75-125	50	20	MI
Arsenic	22.6	0.30	mg/kg dry	29.96	2.58	67	75-125	8	20	MI
Barium	94.4	0.60	mg/kg dry	29.96	67.3	90	75-125	0.2	20	
Beryllium	28.6	0.30	mg/kg dry	29.96	0.865	93	75-125	0.05	20	
Cadmium	24.7	0.30	mg/kg dry	29.96	BRL	83	75-125	1	20	
Chromium	36.1	0.30	mg/kg dry	29.96	9.97	87	75-125	3	20	
Cobalt	28.5	0.30	mg/kg dry	29.96	3.87	82	75-125	2	20	
Copper	3.00E10	0.60	mg/kg dry	29.96	182	NR	75-125	0.5	20	MC
Lead	31.9	0.30	mg/kg dry	29.96	7.63	81	75-125	3	20	
Manganese	130	0.30	mg/kg dry	29.96	104	89	75-125	0.3	20	
Nickel	27.2	0.60	mg/kg dry	29.96	2.92	81	75-125	2	20	
Selenium	21.1	0.60	mg/kg dry	29.96	BRL	70	75-125	4	20	MI
Strontium	31.7	0.30	mg/kg dry	29.96	6.71	83	75-125	1	20	
Thallium	23.1	0.60	mg/kg dry	29.96	BRL	77	75-125	2	20	
Vanadium	85.5	0.30	mg/kg dry	29.96	60.5	83	75-125	2	20	
Zinc	77.7	3.0	mg/kg dry	29.96	46.4	104	75-125	2	20	

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Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0167 - 3050B</b>										
<b>Blank (P6K0167-BLK1)</b>										
Prepared: 11/08/16 Analyzed: 11/12/16										
Antimony	BRL	0.25	mg/kg wet							
Arsenic	BRL	0.25	mg/kg wet							
Barium	BRL	0.50	mg/kg wet							
Beryllium	BRL	0.25	mg/kg wet							
Cadmium	BRL	0.25	mg/kg wet							
Chromium	BRL	0.25	mg/kg wet							
Cobalt	BRL	0.25	mg/kg wet							
Copper	BRL	0.50	mg/kg wet							
Lead	BRL	0.25	mg/kg wet							
Manganese	BRL	0.25	mg/kg wet							BH
Nickel	BRL	0.50	mg/kg wet							
Selenium	BRL	0.50	mg/kg wet							
Strontium	BRL	0.25	mg/kg wet							A
Thallium	BRL	0.50	mg/kg wet							
Vanadium	BRL	0.25	mg/kg wet							
Zinc	BRL	2.5	mg/kg wet							
<b>LCS (P6K0167-BS1)</b>										
Prepared: 11/08/16 Analyzed: 11/12/16										
Antimony	24.2	0.25	mg/kg wet	25.00		97	80-120			
Arsenic	24.1	0.25	mg/kg wet	25.00		96	80-120			
Barium	24.9	0.50	mg/kg wet	25.00		100	80-120			
Beryllium	24.9	0.25	mg/kg wet	25.00		100	80-120			
Cadmium	23.5	0.25	mg/kg wet	25.00		94	80-120			
Chromium	24.9	0.25	mg/kg wet	25.00		100	80-120			
Cobalt	24.5	0.25	mg/kg wet	25.00		98	80-120			
Copper	25.1	0.50	mg/kg wet	25.00		100	80-120			
Lead	23.4	0.25	mg/kg wet	25.00		94	80-120			
Manganese	24.3	0.25	mg/kg wet	25.00		97	80-120			
Nickel	24.2	0.50	mg/kg wet	25.00		97	80-120			
Selenium	23.8	0.50	mg/kg wet	25.00		95	80-120			
Strontium	20.9	0.25	mg/kg wet	25.00		84	80-120			A
Thallium	24.4	0.50	mg/kg wet	25.00		97	80-120			
Vanadium	25.6	0.25	mg/kg wet	25.00		102	80-120			
Zinc	24.1	2.5	mg/kg wet	25.00		96	80-120			

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
 Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0167 - 3050B</b>										
<b>Matrix Spike (P6K0167-MS1)</b>										
			<b>Source: 6110120-21</b>		<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/12/16</b>			
Antimony	5.28	0.29	mg/kg dry	29.06	0.0314	18	75-125			MI
Arsenic	23.5	0.29	mg/kg dry	29.06	1.72	75	75-125			
Barium	80.2	0.58	mg/kg dry	29.06	50.2	103	75-125			
Beryllium	25.4	0.29	mg/kg dry	29.06	0.500	86	75-125			
Cadmium	22.3	0.29	mg/kg dry	29.06	0.0938	76	75-125			
Chromium	47.2	0.29	mg/kg dry	29.06	19.4	96	75-125			
Cobalt	32.6	0.29	mg/kg dry	29.06	9.54	79	75-125			
Copper	45.8	0.58	mg/kg dry	29.06	16.3	102	75-125			
Lead	43.8	0.29	mg/kg dry	29.06	21.9	75	75-125			
Manganese	2.91E10	0.29	mg/kg dry	29.06	452	NR	75-125			MI
Nickel	30.0	0.58	mg/kg dry	29.06	6.01	82	75-125			
Selenium	22.8	0.58	mg/kg dry	29.06	BRL	79	75-125			
Strontium	47.9	0.29	mg/kg dry	29.06	15.9	110	75-125			A
Thallium	23.1	0.58	mg/kg dry	29.06	BRL	79	75-125			
Vanadium	80.3	0.29	mg/kg dry	29.06	53.1	93	75-125			
Zinc	78.2	2.9	mg/kg dry	29.06	50.2	96	75-125			
<b>Matrix Spike Dup (P6K0167-MSD1)</b>										
			<b>Source: 6110120-21</b>		<b>Prepared: 11/08/16</b>		<b>Analyzed: 11/12/16</b>			
Antimony	6.70	0.29	mg/kg dry	29.35	0.0314	23	75-125	24	20	MI
Arsenic	24.8	0.29	mg/kg dry	29.35	1.72	79	75-125	5	20	
Barium	79.9	0.59	mg/kg dry	29.35	50.2	101	75-125	0.3	20	
Beryllium	26.7	0.29	mg/kg dry	29.35	0.500	89	75-125	5	20	
Cadmium	23.4	0.29	mg/kg dry	29.35	0.0938	79	75-125	5	20	
Chromium	46.5	0.29	mg/kg dry	29.35	19.4	92	75-125	2	20	
Cobalt	34.1	0.29	mg/kg dry	29.35	9.54	84	75-125	5	20	
Copper	47.2	0.59	mg/kg dry	29.35	16.3	105	75-125	3	20	
Lead	41.8	0.29	mg/kg dry	29.35	21.9	68	75-125	5	20	MI
Manganese	2.94E10	0.29	mg/kg dry	29.35	452	NR	75-125	1	20	MI
Nickel	30.3	0.59	mg/kg dry	29.35	6.01	83	75-125	1	20	
Selenium	23.6	0.59	mg/kg dry	29.35	BRL	80	75-125	3	20	
Strontium	47.8	0.29	mg/kg dry	29.35	15.9	108	75-125	0.2	20	A
Thallium	24.2	0.59	mg/kg dry	29.35	BRL	82	75-125	5	20	
Vanadium	81.3	0.29	mg/kg dry	29.35	53.1	96	75-125	1	20	
Zinc	80.8	2.9	mg/kg dry	29.35	50.2	104	75-125	3	20	

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
 Time Submitted: 11/7/2016 8:00:00AM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0167 - 3050B</b>										
<b>Post Spike (P6K0167-PS1)</b>										
			<b>Source: 6110120-21</b>		Prepared: 11/08/16		Analyzed: 11/12/16			
Antimony	0.830		mg/L	1.000	0.00108	83	80-120			
Arsenic	0.902		mg/L	1.000	0.0588	84	80-120			
Barium	2.49		mg/L	1.000	1.72	76	80-120			MI
Beryllium	0.855		mg/L	1.000	0.0171	84	80-120			
Cadmium	0.771		mg/L	1.000	0.00321	77	80-120			MI
Chromium	1.47		mg/L	1.000	0.664	80	80-120			
Cobalt	1.12		mg/L	1.000	0.327	80	80-120			
Copper	1.45		mg/L	1.000	0.557	90	80-120			
Lead	1.48		mg/L	1.000	0.749	74	80-120			MI
Manganese	1.00E9		mg/L	1.000	15.5	NR	80-120			MC
Nickel	0.992		mg/L	1.000	0.206	79	80-120			MI
Selenium	0.840		mg/L	1.000	-0.00217	84	80-120			
Strontium	1.22		mg/L	1.000	0.546	67	80-120			A, MI
Thallium	0.784		mg/L	1.000	0.000655	78	80-120			MI
Vanadium	2.62		mg/L	1.000	1.82	80	80-120			
Zinc	2.50		mg/L	1.000	1.72	78	80-120			MI

**Batch P6K0421 - 7471B**

<b>Blank (P6K0421-BLK1)</b>										
					Prepared: 11/17/16		Analyzed: 11/18/16			
Mercury	BRL	0.020	mg/kg wet							
<b>LCS (P6K0421-BS1)</b>										
					Prepared: 11/17/16		Analyzed: 11/18/16			
Mercury	0.426	0.020	mg/kg wet	0.4167		102	80-120			
<b>Matrix Spike (P6K0421-MS1)</b>										
			<b>Source: 6110120-01</b>		Prepared: 11/17/16		Analyzed: 11/18/16			
Mercury	0.488	0.023	mg/kg dry	0.4733	0.0296	97	80-120			





Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
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**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0421 - 7471B</b>										
<b>Matrix Spike Dup (P6K0421-MSD1)</b>		<b>Source: 6110120-01</b>		Prepared: 11/17/16		Analyzed: 11/18/16				
Mercury	0.520	0.022	mg/kg dry	0.4659	0.0296	105	80-120	6	20	
<b>Batch P6K0422 - 7471B</b>										
<b>Blank (P6K0422-BLK1)</b>				Prepared: 11/17/16		Analyzed: 11/18/16				
Mercury	BRL	0.020	mg/kg wet							
<b>LCS (P6K0422-BS1)</b>				Prepared: 11/17/16		Analyzed: 11/18/16				
Mercury	0.485	0.020	mg/kg wet	0.4167		116	80-120			
<b>Matrix Spike (P6K0422-MS1)</b>		<b>Source: 6110120-23</b>		Prepared: 11/17/16		Analyzed: 11/18/16				
Mercury	0.722	0.029	mg/kg dry	0.5977	0.0667	110	80-120			
<b>Matrix Spike Dup (P6K0422-MSD1)</b>		<b>Source: 6110120-23</b>		Prepared: 11/17/16		Analyzed: 11/18/16				
Mercury	0.745	0.031	mg/kg dry	0.6412	0.0667	106	80-120	3	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

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**SPLP Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0245 - 3010A</b>										
<b>Blank (P6K0245-BLK1)</b>										
Prepared & Analyzed: 11/10/16										
Antimony	BRL	0.025	mg/L							
Arsenic	BRL	0.050	mg/L							
Barium	BRL	0.050	mg/L							
Beryllium	BRL	0.010	mg/L							
Cadmium	BRL	0.0050	mg/L							
Chromium	BRL	0.025	mg/L							
Cobalt	BRL	0.025	mg/L							
Copper	BRL	0.050	mg/L							
Lead	BRL	0.025	mg/L							
Manganese	BRL	0.050	mg/L							
Nickel	BRL	0.050	mg/L							
Selenium	BRL	0.10	mg/L							
Strontium	BRL	0.050	mg/L							
Thallium	BRL	0.050	mg/L							
Zinc	BRL	0.15	mg/L							
Vanadium	BRL	0.025	mg/L							
<b>LCS (P6K0245-BS1)</b>										
Prepared & Analyzed: 11/10/16										
Antimony	1.23	0.025	mg/L	1.250		98	80-120			
Arsenic	1.23	0.050	mg/L	1.250		99	80-120			
Barium	1.25	0.050	mg/L	1.250		100	80-120			
Beryllium	1.24	0.010	mg/L	1.250		99	80-120			
Cadmium	1.25	0.0050	mg/L	1.250		100	80-120			
Chromium	1.24	0.025	mg/L	1.250		99	80-120			
Cobalt	1.25	0.025	mg/L	1.250		100	80-120			
Copper	1.23	0.050	mg/L	1.250		98	80-120			
Lead	1.25	0.025	mg/L	1.250		100	80-120			
Manganese	1.25	0.050	mg/L	1.250		100	80-120			
Nickel	1.24	0.050	mg/L	1.250		99	80-120			
Selenium	1.20	0.10	mg/L	1.250		96	80-120			
Strontium	1.19	0.050	mg/L	1.250		95	80-120			
Thallium	1.28	0.050	mg/L	1.250		102	80-120			
Zinc	1.20	0.15	mg/L	1.250		96	85-115			
Vanadium	1.25	0.025	mg/L	1.250		100	80-120			

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120  
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**SPLP Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0245 - 3010A**

Matrix Spike (P6K0245-MS1)	Source: 6110120-06			Prepared & Analyzed: 11/10/16						
Antimony	1.23	0.025	mg/L	1.250	0.00513	98	75-125			
Arsenic	1.23	0.050	mg/L	1.250	BRL	99	75-125			
Barium	1.90	0.050	mg/L	1.250	0.637	101	75-125			
Beryllium	1.24	0.010	mg/L	1.250	BRL	99	75-125			
Cadmium	1.24	0.0050	mg/L	1.250	BRL	99	75-125			
Chromium	1.24	0.025	mg/L	1.250	BRL	99	75-125			
Cobalt	1.25	0.025	mg/L	1.250	BRL	100	75-125			
Copper	1.24	0.050	mg/L	1.250	BRL	99	75-125			
Lead	1.26	0.025	mg/L	1.250	0.0113	100	75-125			
Manganese	1.25	0.050	mg/L	1.250	0.0126	99	75-125			
Nickel	1.23	0.050	mg/L	1.250	BRL	99	75-125			
Selenium	1.24	0.10	mg/L	1.250	0.0306	97	75-125			
Strontium	1.64	0.050	mg/L	1.250	0.454	95	75-125			
Thallium	1.27	0.050	mg/L	1.250	BRL	101	75-125			
Zinc	1.29	0.15	mg/L	1.250	BRL	104	70-130			
Vanadium	1.24	0.025	mg/L	1.250	0.00511	99	75-125			

Matrix Spike Dup (P6K0245-MSD1)	Source: 6110120-06			Prepared & Analyzed: 11/10/16						
Antimony	1.24	0.025	mg/L	1.250	0.00513	99	75-125	0.9	20	
Arsenic	1.25	0.050	mg/L	1.250	BRL	100	75-125	2	20	
Barium	1.93	0.050	mg/L	1.250	0.637	104	75-125	2	20	
Beryllium	1.26	0.010	mg/L	1.250	BRL	101	75-125	2	20	
Cadmium	1.26	0.0050	mg/L	1.250	BRL	101	75-125	2	20	
Chromium	1.26	0.025	mg/L	1.250	BRL	101	75-125	2	20	
Cobalt	1.27	0.025	mg/L	1.250	BRL	102	75-125	2	20	
Copper	1.26	0.050	mg/L	1.250	BRL	101	75-125	2	20	
Lead	1.27	0.025	mg/L	1.250	0.0113	101	75-125	1	20	
Manganese	1.28	0.050	mg/L	1.250	0.0126	101	75-125	2	20	
Nickel	1.26	0.050	mg/L	1.250	BRL	101	75-125	2	20	
Selenium	1.25	0.10	mg/L	1.250	0.0306	98	75-125	0.5	20	
Strontium	1.65	0.050	mg/L	1.250	0.454	95	75-125	0.5	20	
Thallium	1.29	0.050	mg/L	1.250	BRL	103	75-125	2	20	
Zinc	1.30	0.15	mg/L	1.250	BRL	104	70-130	0.06	20	
Vanadium	1.27	0.025	mg/L	1.250	0.00511	101	75-125	2	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

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Prism Work Order: 6110120

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**SPLP Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0397 - 7470A</b>										
<b>Blank (P6K0397-BLK1)</b>				Prepared & Analyzed: 11/17/16						
Mercury	BRL	0.00020	mg/L							
<b>LCS (P6K0397-BS1)</b>				Prepared & Analyzed: 11/17/16						
Mercury	0.00910	0.00020	mg/L	0.009375		97	80-120			
<b>Matrix Spike (P6K0397-MS1)</b>				Source: 6110120-06			Prepared & Analyzed: 11/17/16			
Mercury	0.00896	0.00020	mg/L	0.009375	BRL	96	80-120			
<b>Matrix Spike Dup (P6K0397-MSD1)</b>				Source: 6110120-06			Prepared & Analyzed: 11/17/16			
Mercury	0.00883	0.00020	mg/L	0.009375	BRL	94	80-120	1	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120

Time Submitted: 11/7/2016 8:00:00AM

**General Chemistry Parameters - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0270 - Solids, Dry Weight</b>										
<b>Duplicate (P6K0270-DUP1)</b>		<b>Source: 6110120-02</b>			<b>Prepared &amp; Analyzed: 11/10/16</b>					
% Solids	97.2	0.100	% by Weight		97.3			0.05	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110120

Time Submitted: 11/7/2016 8:00:00AM

**SPLP Extraction by EPA 1312 - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0226 - 1312</b>										
<b>Blank (P6K0226-BLK1)</b>										
					Prepared: 11/09/16 Analyzed: 11/10/16					
SPLP Extraction	Complete		N/A							

## Sample Extraction Data

### Prep Method: Solids, Dry Weight

Lab Number	Batch	Initial	Final	Date/Time
6110120-01	P6K0270	30 g	30 g	11/10/16 15:09
6110120-02	P6K0270	30 g	30 g	11/10/16 15:09
6110120-03	P6K0270	30 g	30 g	11/10/16 15:09
6110120-04	P6K0270	30 g	30 g	11/10/16 15:09
6110120-05	P6K0270	30 g	30 g	11/10/16 15:09
6110120-06	P6K0270	30 g	30 g	11/10/16 15:09
6110120-07	P6K0270	30 g	30 g	11/10/16 15:09
6110120-08	P6K0270	30 g	30 g	11/10/16 15:09
6110120-09	P6K0270	30 g	30 g	11/10/16 15:09
6110120-10	P6K0270	30 g	30 g	11/10/16 15:09
6110120-11	P6K0270	30 g	30 g	11/10/16 15:09
6110120-12	P6K0270	30 g	30 g	11/10/16 15:09
6110120-13	P6K0270	30 g	30 g	11/10/16 15:09
6110120-14	P6K0270	30 g	30 g	11/10/16 15:09
6110120-15	P6K0270	30 g	30 g	11/10/16 15:09
6110120-16	P6K0270	30 g	30 g	11/10/16 15:09
6110120-17	P6K0270	30 g	30 g	11/10/16 15:09
6110120-18	P6K0270	30 g	30 g	11/10/16 15:09
6110120-19	P6K0270	30 g	30 g	11/10/16 15:09
6110120-20	P6K0270	30 g	30 g	11/10/16 15:09
6110120-21	P6K0270	30 g	30 g	11/10/16 15:09
6110120-22	P6K0270	30 g	30 g	11/10/16 15:09
6110120-23	P6K0270	30 g	30 g	11/10/16 15:09

### Prep Method: 1312

Lab Number	Batch	Initial	Final	Date/Time
6110120-06	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-08	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-11	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-12	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-13	P6K0226	100 g	2000 mL	11/09/16 14:05
6110120-23	P6K0226	100 g	2000 mL	11/09/16 14:05

### Prep Method: 3010A

Lab Number	Batch	Initial	Final	Date/Time
6110120-06	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-08	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-11	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-12	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-12	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-13	P6K0245	10 mL	50 mL	11/10/16 13:30
6110120-23	P6K0245	10 mL	50 mL	11/10/16 13:30

### Prep Method: 7470A

Lab Number	Batch	Initial	Final	Date/Time
6110120-06	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-08	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-11	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-12	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-13	P6K0397	20 mL	30 mL	11/17/16 8:50
6110120-23	P6K0397	20 mL	30 mL	11/17/16 8:50

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### Sample Extraction Data

Prep Method: 3050B

Lab Number	Batch	Initial	Final	Date/Time
6110120-01	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-01	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-02	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-02	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-03	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-03	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-04	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-04	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-05	P6K0165	2.05 g	50 mL	11/08/16 8:30
6110120-05	P6K0165	2.05 g	50 mL	11/08/16 8:30
6110120-07	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-07	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-09	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-09	P6K0165	1.99 g	50 mL	11/08/16 8:30
6110120-10	P6K0165	1.97 g	50 mL	11/08/16 8:30
6110120-10	P6K0165	1.97 g	50 mL	11/08/16 8:30
6110120-14	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-14	P6K0165	1.98 g	50 mL	11/08/16 8:30
6110120-15	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-15	P6K0165	2 g	50 mL	11/08/16 8:30
6110120-16	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-16	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-17	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-17	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-18	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-18	P6K0165	2.02 g	50 mL	11/08/16 8:30
6110120-19	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-19	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-20	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-20	P6K0165	2.01 g	50 mL	11/08/16 8:30
6110120-21	P6K0167	1.99 g	50 mL	11/08/16 8:30
6110120-21	P6K0167	1.99 g	50 mL	11/08/16 8:30
6110120-21	P6K0167	1.99 g	50 mL	11/08/16 8:30
6110120-22	P6K0167	2.05 g	50 mL	11/08/16 8:30
6110120-22	P6K0167	2.05 g	50 mL	11/08/16 8:30
6110120-22	P6K0167	2.05 g	50 mL	11/08/16 8:30
6110120-23	P6K0167	2 g	50 mL	11/08/16 8:30
6110120-23	P6K0167	2 g	50 mL	11/08/16 8:30
6110120-23	P6K0167	2 g	50 mL	11/08/16 8:30

Prep Method: 7471B

Lab Number	Batch	Initial	Final	Date/Time
6110120-01	P6K0421	0.57 g	50 mL	11/17/16 13:50
6110120-02	P6K0421	0.59 g	50 mL	11/17/16 13:50
6110120-03	P6K0421	0.61 g	50 mL	11/17/16 13:50
6110120-04	P6K0421	0.65 g	50 mL	11/17/16 13:50
6110120-05	P6K0421	0.59 g	50 mL	11/17/16 13:50
6110120-07	P6K0421	0.58 g	50 mL	11/17/16 13:50
6110120-09	P6K0421	0.57 g	50 mL	11/17/16 13:50
6110120-10	P6K0421	0.6 g	50 mL	11/17/16 13:50
6110120-14	P6K0421	0.59 g	50 mL	11/17/16 13:50
6110120-15	P6K0421	0.64 g	50 mL	11/17/16 13:50
6110120-16	P6K0421	0.63 g	50 mL	11/17/16 13:50
6110120-17	P6K0421	0.6 g	50 mL	11/17/16 13:50
6110120-18	P6K0421	0.58 g	50 mL	11/17/16 13:50
6110120-19	P6K0421	0.65 g	50 mL	11/17/16 13:50

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## Sample Extraction Data

Prep Method: 7471B

Lab Number	Batch	Initial	Final	Date/Time
6110120-20	P6K0421	0.58 g	50 mL	11/17/16 13:50
6110120-21	P6K0421	0.57 g	50 mL	11/17/16 13:50
6110120-22	P6K0421	0.62 g	50 mL	11/17/16 13:50
6110120-23	P6K0422	0.61 g	50 mL	11/17/16 13:50

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449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543  
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

**CHAIN OF CUSTODY RECORD**

LAB USE ONLY

YES NO N/A

Client Company Name: Howe & Hickman  
 Report To/Contact Name: Patrick Stevens  
 Reporting Address: 2023 S. Taylor Street  
Suite 100 Charlotte NC 28203  
 Phone: 704-516-6474 Fax (Yes) (No):  
 Email Address: ps@howehickman.com  
 EDD Type: PDF  Excel  Other  
 Site Location Name: TC14-002  
 Site Location Physical Address: Craper Hill Rd

PAGE 1 OF 3 QUOTE # TO ENSURE PROPER BILLING: TC14-002  
 Project Name: TC14-002 Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)  
 \*Please ATTACH any project specific reporting (QC LEVEL I III IIII IV) provisions and/or QC Requirements  
 Invoice To: Account Payable Address:  
 Purchase Order No./Billing Reference: TC14-002  
 Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days  
 'Working Days'  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved  
 Samples received after 14:00 will be processed next business day.  
 Turnaround time is based on business days, excluding weekends and holidays.  
 (SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

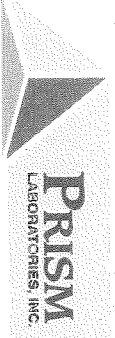
TO BE FILLED IN BY CLIENTS/SAMPLING PERSONNEL  
 Certification: MELAC SC DOD OTHER FL N/A NC  
 Water Chlorinated: YES NO  
 Sample Iced Upon Collection: YES NO

Samples INTACT upon arrival?   
 Received ON WET ICE?   
 PROPER PRESERVATIVES indicated?   
 Received WITHIN HOLDING TIMES?   
 CUSTODY SEALS INTACT?   
 VOLATILES iced w/OUT HEADSPACE?   
 PROPER CONTAINERS used?   
 TEMP. Therm ID: 1RT-11 Observed: 3.0 °C / Corr: 2.6 °C

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
MW-7 (0-1)	11/11/16	1135	Soil	G	1	4oz	NA		* Metals list: antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, magnesium, nickel, selenium, silver, thallium, uranium, & zinc	01
MW-6 (0-1)	11/21/16	1350			1					02
MW-5 (0-1)	11/21/16	1605			1					03
MW-5 (0-1)	11/21/16	1635			1					04
MW-4 (0-1)	11/31/16	845			1					05
MW-4 (4-5)	11/31/16	900			1					06
MW-5 (0-1)		925			1					07
MW-5 (3-4)		940			1					08
MW-3 (0-1)		1005			1					09
MW-1 (0-1)		1030			1					10

Sampler's Signature: [Signature] Sampled By (Print Name): Patrick Stevens Affiliation: Howe  
 Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.  
 Releasable By (Signature): [Signature] Received By (Signature): [Signature] Date: 11/4/16 Military/Hours: 1650  
 Releasable By (Signature): [Signature] Received By (Signature): [Signature] Date: 11/4/16 Military/Hours: 1500  
 Releasable By (Signature): [Signature] Received By (Signature): [Signature] Date: 11-7-16 Military/Hours: 0800  
 Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.  
 Method of Shipment:  Fed Ex  UPS  Hand-delivered  Prism Field Service  Other  
 NPDES:  NC  SC  GROUNDWATER:  NC  SC  DRINKING WATER:  NC  SC  SOLID WASTE:  NC  SC  RCRA:  NC  SC  CERCLA:  NC  SC  LANDFILL:  NC  SC  OTHER:  NC  SC  
 \*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)  
 SEE REVERSE FOR TERMS & CONDITIONS  
 ORIGINAL





Full Service Analytical & Environmental Solutions

440 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543  
 Phone: 704/529-6364 • Fax: 704/523-0409

Client Company Name: HAT HICKMAN

Report To/Contact Name: Patrick Stevens

Reporting Address: 2035 Teton Street Suite 100

Charlotte NC 28203

Phone: 704-529-6364 Fax (Yes) (No):

Email (Yes) (No) Email Address: Patrick.Stevens@hickman.com

EDD Type: PDF  Excel  Other

Site Location Name: TCH-002

Site Location Physical Address: Orange Hill Rd

# CHAIN OF CUSTODY RECORD

PAGE 3 OF 3 QUOTE # TO ENSURE PROPER BILLING: TCH-002

Project Name: TCH-002 USR Project: (Yes) (No)

Short Hold Analysis: (Yes) (No)

\*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: Archie Pascale

Address: 11 11

Purchase Order No./Billing Reference: TCH-002

Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days

"Working Days"  6-9 Days  Standard 10 days  Pre-Approved

Samples received after 15:00 will be processed next business day.

Turnaround time is based on business days, excluding weekends and holidays.

(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

## LAB USE ONLY

Samples INTACT upon arrival?	YES	NO	N/A
Received ON WET ICE? Temp <u>2.6</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER PRESERVATIVES indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOLATILES rec'd W/OUT HEADSPACE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER CONTAINERS used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC  USACE  FL  NC

Water Chlorinated: YES  NO

Sample Iced Upon Collection: YES  NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
B6-4(6-1)	11/3/16	1510	Soil	G	1	402	N/A	X		21
B6-4(2-3)	11/3/16	1520	Soil	G	1	402	N/A	X		22
DUP								X		23

Sampler's Signature: [Signature] Sampled By (Print Name): Patrick Stevens Affiliation: HAT

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relequished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11/4/16 Military/Hours: 1050

Relequished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 11/4/16 Military/Hours: 1520

Relequished By: (Signature) [Signature] Received For Prism Laboratories By: [Signature] Date: 11-7-16 Military/Hours: 0800

Method of Shipment: UPS NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

Additional Comments: 0110120

PRISM USE ONLY

Site Arrival Time: \_\_\_\_\_ Site Departure Time: \_\_\_\_\_

Field Tech Fee: \_\_\_\_\_ Mileage: \_\_\_\_\_

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

Hart & Hickman (Raleigh)  
Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No.: TCH-002  
Lab Submittal Date: 10/28/2016  
Prism Work Order: 6100562

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



Robbi A. Jones  
President/Project Manager



Reviewed By Terri W. Cole For Robbi A. Jones  
Project Manager

**Data Qualifiers Key Reference:**

BRL Below Reporting Limit  
MDL Method Detection Limit  
RPD Relative Percent Difference  
\* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
HH-8	6100562-01	Solid	10/27/16	10/28/16
HH-7	6100562-02	Solid	10/27/16	10/28/16
HH-6	6100562-03	Solid	10/27/16	10/28/16
SW-5	6100562-04	Water	10/27/16	10/28/16
SED-5	6100562-05	Solid	10/27/16	10/28/16
SW-4	6100562-06	Water	10/27/16	10/28/16
SED-4	6100562-07	Solid	10/27/16	10/28/16
SW-3	6100562-08	Water	10/27/16	10/28/16
SED-3	6100562-09	Solid	10/27/16	10/28/16
SW-2	6100562-10	Water	10/27/16	10/28/16
SED-2	6100562-11	Solid	10/27/16	10/28/16
SW-1	6100562-12	Water	10/27/16	10/28/16
SED-1	6100562-13	Solid	10/27/16	10/28/16
Dup-SW	6100562-14	Water	10/27/16	10/28/16
Dup-SED	6100562-15	Solid	10/27/16	10/28/16
RB-SED	6100562-16	Water	10/27/16	10/28/16

Samples were received in good condition at 3.0 degrees C unless otherwise noted.



# Summary of Detections

11/10/2016

Prism Work Order: 6100562

Prism ID	Client ID	Parameter	Method	Result	Units
6100562-01	HH-8	Mercury	*7471B	0.036	mg/kg dry
6100562-01	HH-8	Arsenic	*6010D	3.6	mg/kg dry
6100562-01	HH-8	Barium	*6010D	100	mg/kg dry
6100562-01	HH-8	Beryllium	*6010D	1.0	mg/kg dry
6100562-01	HH-8	Chromium	*6010D	19	mg/kg dry
6100562-01	HH-8	Cobalt	*6010D	12	mg/kg dry
6100562-01	HH-8	Copper	*6010D	29	mg/kg dry
6100562-01	HH-8	Lead	*6010D	18	mg/kg dry
6100562-01	HH-8	Manganese	*6010D	570	mg/kg dry
6100562-01	HH-8	Nickel	*6010D	9.0	mg/kg dry
6100562-01	HH-8	Strontium	*6010D	28	mg/kg dry
6100562-01	HH-8	Vanadium	*6010D	52	mg/kg dry
6100562-01	HH-8	Zinc	*6010D	54	mg/kg dry
6100562-02	HH-7	Chromium	*6010D	22	mg/kg dry
6100562-03	HH-6	Chromium	*6010D	20	mg/kg dry
6100562-04	SW-5	Barium	*6010D	0.025	mg/L
6100562-04	SW-5	Manganese	*6010D	0.025	mg/L
6100562-04	SW-5	Strontium	*6010D	0.11	mg/L
6100562-05	SED-5	Arsenic	*6010D	1.4	mg/kg dry
6100562-05	SED-5	Barium	*6010D	44	mg/kg dry
6100562-05	SED-5	Beryllium	*6010D	0.41	mg/kg dry
6100562-05	SED-5	Chromium	*6010D	51	mg/kg dry
6100562-05	SED-5	Cobalt	*6010D	9.5	mg/kg dry
6100562-05	SED-5	Copper	*6010D	8.6	mg/kg dry
6100562-05	SED-5	Lead	*6010D	22	mg/kg dry
6100562-05	SED-5	Manganese	*6010D	860	mg/kg dry
6100562-05	SED-5	Nickel	*6010D	5.3	mg/kg dry
6100562-05	SED-5	Strontium	*6010D	13	mg/kg dry
6100562-05	SED-5	Vanadium	*6010D	35	mg/kg dry
6100562-05	SED-5	Zinc	*6010D	32	mg/kg dry
6100562-06	SW-4	Barium	*6010D	0.025	mg/L
6100562-06	SW-4	Manganese	*6010D	0.028	mg/L
6100562-06	SW-4	Strontium	*6010D	0.11	mg/L
6100562-07	SED-4	Arsenic	*6010D	1.2	mg/kg dry
6100562-07	SED-4	Barium	*6010D	8.4	mg/kg dry
6100562-07	SED-4	Chromium	*6010D	34	mg/kg dry
6100562-07	SED-4	Cobalt	*6010D	3.5	mg/kg dry
6100562-07	SED-4	Copper	*6010D	5.2	mg/kg dry
6100562-07	SED-4	Lead	*6010D	3.5	mg/kg dry
6100562-07	SED-4	Manganese	*6010D	130	mg/kg dry
6100562-07	SED-4	Nickel	*6010D	5.0	mg/kg dry
6100562-07	SED-4	Strontium	*6010D	6.4	mg/kg dry
6100562-07	SED-4	Vanadium	*6010D	16	mg/kg dry
6100562-07	SED-4	Zinc	*6010D	20	mg/kg dry

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Prism ID	Client ID	Parameter	Method	Result	Units
6100562-08	SW-3	Barium	*6010D	0.025	mg/L
6100562-08	SW-3	Manganese	*6010D	0.033	mg/L
6100562-08	SW-3	Strontium	*6010D	0.11	mg/L
6100562-09	SED-3	Arsenic	*6010D	1.6	mg/kg dry
6100562-09	SED-3	Barium	*6010D	21	mg/kg dry
6100562-09	SED-3	Beryllium	*6010D	0.37	mg/kg dry
6100562-09	SED-3	Chromium	*6010D	30	mg/kg dry
6100562-09	SED-3	Cobalt	*6010D	6.2	mg/kg dry
6100562-09	SED-3	Copper	*6010D	7.4	mg/kg dry
6100562-09	SED-3	Lead	*6010D	6.9	mg/kg dry
6100562-09	SED-3	Manganese	*6010D	220	mg/kg dry
6100562-09	SED-3	Nickel	*6010D	6.8	mg/kg dry
6100562-09	SED-3	Strontium	*6010D	12	mg/kg dry
6100562-09	SED-3	Vanadium	*6010D	29	mg/kg dry
6100562-09	SED-3	Zinc	*6010D	35	mg/kg dry
6100562-10	SW-2	Barium	*6010D	0.025	mg/L
6100562-10	SW-2	Manganese	*6010D	0.013	mg/L
6100562-10	SW-2	Strontium	*6010D	0.10	mg/L
6100562-11	SED-2	Arsenic	*6010D	2.1	mg/kg dry
6100562-11	SED-2	Barium	*6010D	20	mg/kg dry
6100562-11	SED-2	Beryllium	*6010D	0.48	mg/kg dry
6100562-11	SED-2	Chromium	*6010D	36	mg/kg dry
6100562-11	SED-2	Cobalt	*6010D	7.8	mg/kg dry
6100562-11	SED-2	Copper	*6010D	8.0	mg/kg dry
6100562-11	SED-2	Lead	*6010D	7.1	mg/kg dry
6100562-11	SED-2	Manganese	*6010D	330	mg/kg dry
6100562-11	SED-2	Nickel	*6010D	7.2	mg/kg dry
6100562-11	SED-2	Strontium	*6010D	11	mg/kg dry
6100562-11	SED-2	Vanadium	*6010D	37	mg/kg dry
6100562-11	SED-2	Zinc	*6010D	34	mg/kg dry
6100562-12	SW-1	Barium	*6010D	0.026	mg/L
6100562-12	SW-1	Manganese	*6010D	0.016	mg/L
6100562-12	SW-1	Strontium	*6010D	0.10	mg/L
6100562-13	SED-1	Arsenic	*6010D	1.2	mg/kg dry
6100562-13	SED-1	Barium	*6010D	12	mg/kg dry
6100562-13	SED-1	Chromium	*6010D	23	mg/kg dry
6100562-13	SED-1	Cobalt	*6010D	3.9	mg/kg dry
6100562-13	SED-1	Copper	*6010D	4.2	mg/kg dry
6100562-13	SED-1	Lead	*6010D	4.0	mg/kg dry
6100562-13	SED-1	Manganese	*6010D	180	mg/kg dry
6100562-13	SED-1	Nickel	*6010D	3.8	mg/kg dry
6100562-13	SED-1	Strontium	*6010D	6.9	mg/kg dry
6100562-13	SED-1	Vanadium	*6010D	19	mg/kg dry
6100562-13	SED-1	Zinc	*6010D	19	mg/kg dry
6100562-14	Dup-SW	Barium	*6010D	0.025	mg/L

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Prism ID	Client ID	Parameter	Method	Result	Units
6100562-14	Dup-SW	Manganese	*6010D	0.031	mg/L
6100562-14	Dup-SW	Strontium	*6010D	0.11	mg/L
6100562-15	Dup-SED	Arsenic	*6010D	2.5	mg/kg dry
6100562-15	Dup-SED	Barium	*6010D	17	mg/kg dry
6100562-15	Dup-SED	Beryllium	*6010D	0.45	mg/kg dry
6100562-15	Dup-SED	Chromium	*6010D	49	mg/kg dry
6100562-15	Dup-SED	Cobalt	*6010D	6.5	mg/kg dry
6100562-15	Dup-SED	Copper	*6010D	9.1	mg/kg dry
6100562-15	Dup-SED	Lead	*6010D	6.7	mg/kg dry
6100562-15	Dup-SED	Manganese	*6010D	290	mg/kg dry
6100562-15	Dup-SED	Nickel	*6010D	6.0	mg/kg dry
6100562-15	Dup-SED	Strontium	*6010D	12	mg/kg dry
6100562-15	Dup-SED	Vanadium	*6010D	35	mg/kg dry
6100562-15	Dup-SED	Zinc	*6010D	31	mg/kg dry

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: HH-8  
 Prism Sample ID: 6100562-01  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 11:45  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	84.9	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Mercury	0.036	mg/kg dry	0.025	0.0014	1	*7471B	11/4/16 11:45	JAB	P6K0100
Antimony	BRL	mg/kg dry	0.30	0.030	1	*6010D	11/8/16 2:01	bgm	P6K0017
Arsenic	3.6	mg/kg dry	0.30	0.037	1	*6010D	11/8/16 2:01	bgm	P6K0017
Barium	100	mg/kg dry	0.60	0.088	1	*6010D	11/8/16 2:01	bgm	P6K0017
Beryllium	1.0	mg/kg dry	0.30	0.0066	1	*6010D	11/8/16 2:01	bgm	P6K0017
Cadmium	BRL	mg/kg dry	0.30	0.0080	1	*6010D	11/8/16 2:01	bgm	P6K0017
Chromium	19	mg/kg dry	0.30	0.050	1	*6010D	11/9/16 3:45	bgm	P6K0017
Cobalt	12	mg/kg dry	0.30	0.0059	1	*6010D	11/8/16 2:01	bgm	P6K0017
Copper	29	mg/kg dry	0.60	0.054	1	*6010D	11/8/16 2:01	bgm	P6K0017
Lead	18	mg/kg dry	0.30	0.056	1	*6010D	11/8/16 2:01	bgm	P6K0017
Manganese	570	mg/kg dry	3.0	0.60	10	*6010D	11/9/16 21:55	bgm	P6K0017
Nickel	9.0	mg/kg dry	0.60	0.022	1	*6010D	11/8/16 2:01	bgm	P6K0017
Selenium	BRL	mg/kg dry	0.60	0.14	1	*6010D	11/8/16 2:01	bgm	P6K0017
Strontium	28	mg/kg dry	0.30	0.0064	1	*6010D	11/8/16 2:01	bgm	P6K0017
Thallium	BRL	mg/kg dry	0.60	0.079	1	*6010D	11/8/16 2:01	bgm	P6K0017
Vanadium	52	mg/kg dry	0.30	0.0071	1	*6010D	11/8/16 2:01	bgm	P6K0017
Zinc	54	mg/kg dry	3.0	0.11	1	*6010D	11/8/16 2:01	bgm	P6K0017

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: HH-7  
 Prism Sample ID: 6100562-02  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 11:55  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	73.5	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Chromium	22	mg/kg dry	0.34	0.057	1	*6010D	11/9/16 3:54	bgm	P6K0017

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Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No.: TCH-002  
Sample Matrix: Solid

Client Sample ID: HH-6  
Prism Sample ID: 6100562-03  
Prism Work Order: 6100562  
Time Collected: 10/27/16 12:10  
Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	90.8	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Chromium	20	mg/kg dry	0.28	0.047	1	*6010D	11/9/16 4:05	bgm	P6K0017

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-5  
 Prism Sample ID: 6100562-04  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:00  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/1/16 16:46	bgm	P6K0014
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/1/16 16:46	bgm	P6K0014
<b>Barium</b>	<b>0.025</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 16:46</b>	<b>bgm</b>	<b>P6K0014</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	*6010D	11/1/16 16:46	bgm	P6K0014
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/1/16 16:46	bgm	P6K0014
Chromium	BRL	mg/L	0.0050	0.00076	1	*6010D	11/1/16 16:46	bgm	P6K0014
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/1/16 16:46	bgm	P6K0014
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/1/16 16:46	bgm	P6K0014
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/1/16 16:46	bgm	P6K0014
<b>Manganese</b>	<b>0.025</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 16:46</b>	<b>bgm</b>	<b>P6K0014</b>
Nickel	BRL	mg/L	0.010	0.0010	1	*6010D	11/1/16 16:46	bgm	P6K0014
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/1/16 16:46	bgm	P6K0014
<b>Strontium</b>	<b>0.11</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 16:46</b>	<b>bgm</b>	<b>P6K0014</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/1/16 16:46	bgm	P6K0014
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/1/16 16:46	bgm	P6K0014
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/1/16 16:46	bgm	P6K0014

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: SED-5  
 Prism Sample ID: 6100562-05  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:05  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	80.1	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.025	0.0014	1	*7471B	11/4/16 11:59	JAB	P6K0100
Antimony	BRL	mg/kg dry	0.31	0.031	1	*6010D	11/8/16 2:29	bgm	P6K0017
Arsenic	1.4	mg/kg dry	0.31	0.038	1	*6010D	11/8/16 2:29	bgm	P6K0017
Barium	44	mg/kg dry	0.62	0.090	1	*6010D	11/8/16 2:29	bgm	P6K0017
Beryllium	0.41	mg/kg dry	0.31	0.0068	1	*6010D	11/8/16 2:29	bgm	P6K0017
Cadmium	BRL	mg/kg dry	0.31	0.0083	1	*6010D	11/8/16 2:29	bgm	P6K0017
Chromium	51	mg/kg dry	0.31	0.052	1	*6010D	11/9/16 4:14	bgm	P6K0017
Cobalt	9.5	mg/kg dry	0.31	0.0061	1	*6010D	11/8/16 2:29	bgm	P6K0017
Copper	8.6	mg/kg dry	0.62	0.056	1	*6010D	11/8/16 2:29	bgm	P6K0017
Lead	22	mg/kg dry	0.31	0.058	1	*6010D	11/8/16 2:29	bgm	P6K0017
Manganese	860	mg/kg dry	3.1	0.62	10	*6010D	11/9/16 22:03	bgm	P6K0017
Nickel	5.3	mg/kg dry	0.62	0.022	1	*6010D	11/8/16 2:29	bgm	P6K0017
Selenium	BRL	mg/kg dry	0.62	0.15	1	*6010D	11/8/16 2:29	bgm	P6K0017
Strontium	13	mg/kg dry	0.31	0.0066	1	*6010D	11/8/16 2:29	bgm	P6K0017
Thallium	BRL	mg/kg dry	0.62	0.081	1	*6010D	11/8/16 2:29	bgm	P6K0017
Vanadium	35	mg/kg dry	0.31	0.0073	1	*6010D	11/8/16 2:29	bgm	P6K0017
Zinc	32	mg/kg dry	3.1	0.11	1	*6010D	11/8/16 2:29	bgm	P6K0017

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-4  
 Prism Sample ID: 6100562-06  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:15  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/1/16 17:10	bgm	P6K0014
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/1/16 17:10	bgm	P6K0014
<b>Barium</b>	<b>0.025</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:10</b>	<b>bgm</b>	<b>P6K0014</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	*6010D	11/1/16 17:10	bgm	P6K0014
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/1/16 17:10	bgm	P6K0014
Chromium	BRL	mg/L	0.0050	0.00076	1	*6010D	11/1/16 17:10	bgm	P6K0014
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/1/16 17:10	bgm	P6K0014
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/1/16 17:10	bgm	P6K0014
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/1/16 17:10	bgm	P6K0014
<b>Manganese</b>	<b>0.028</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:10</b>	<b>bgm</b>	<b>P6K0014</b>
Nickel	BRL	mg/L	0.010	0.0010	1	*6010D	11/1/16 17:10	bgm	P6K0014
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/1/16 17:10	bgm	P6K0014
<b>Strontium</b>	<b>0.11</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:10</b>	<b>bgm</b>	<b>P6K0014</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/1/16 17:10	bgm	P6K0014
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/1/16 17:10	bgm	P6K0014
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/1/16 17:10	bgm	P6K0014

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: SED-4  
 Prism Sample ID: 6100562-07  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:20  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	78.5	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.027	0.0015	1	*7471B	11/4/16 12:03	JAB	P6K0100
Antimony	BRL	mg/kg dry	0.33	0.033	1	*6010D	11/8/16 2:39	bgm	P6K0017
Arsenic	1.2	mg/kg dry	0.33	0.040	1	*6010D	11/8/16 2:39	bgm	P6K0017
Barium	8.4	mg/kg dry	0.65	0.095	1	*6010D	11/8/16 2:39	bgm	P6K0017
Beryllium	BRL	mg/kg dry	0.33	0.0072	1	*6010D	11/8/16 2:39	bgm	P6K0017
Cadmium	BRL	mg/kg dry	0.33	0.0088	1	*6010D	11/8/16 2:39	bgm	P6K0017
Chromium	34	mg/kg dry	0.33	0.055	1	*6010D	11/9/16 4:24	bgm	P6K0017
Cobalt	3.5	mg/kg dry	0.33	0.0064	1	*6010D	11/8/16 2:39	bgm	P6K0017
Copper	5.2	mg/kg dry	0.65	0.059	1	*6010D	11/8/16 2:39	bgm	P6K0017
Lead	3.5	mg/kg dry	0.33	0.061	1	*6010D	11/8/16 2:39	bgm	P6K0017
Manganese	130	mg/kg dry	0.33	0.065	1	*6010D	11/8/16 2:39	bgm	P6K0017
Nickel	5.0	mg/kg dry	0.65	0.024	1	*6010D	11/8/16 2:39	bgm	P6K0017
Selenium	BRL	mg/kg dry	0.65	0.16	1	*6010D	11/8/16 2:39	bgm	P6K0017
Strontium	6.4	mg/kg dry	0.33	0.0069	1	*6010D	11/8/16 2:39	bgm	P6K0017
Thallium	BRL	mg/kg dry	0.65	0.086	1	*6010D	11/8/16 2:39	bgm	P6K0017
Vanadium	16	mg/kg dry	0.33	0.0077	1	*6010D	11/8/16 2:39	bgm	P6K0017
Zinc	20	mg/kg dry	3.3	0.12	1	*6010D	11/8/16 2:39	bgm	P6K0017



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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-3  
 Prism Sample ID: 6100562-08  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:30  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/1/16 17:18	bgm	P6K0014
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/1/16 17:18	bgm	P6K0014
<b>Barium</b>	<b>0.025</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:18</b>	<b>bgm</b>	<b>P6K0014</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	*6010D	11/1/16 17:18	bgm	P6K0014
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/1/16 17:18	bgm	P6K0014
Chromium	BRL	mg/L	0.0050	0.00076	1	*6010D	11/1/16 17:18	bgm	P6K0014
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/1/16 17:18	bgm	P6K0014
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/1/16 17:18	bgm	P6K0014
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/1/16 17:18	bgm	P6K0014
<b>Manganese</b>	<b>0.033</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:18</b>	<b>bgm</b>	<b>P6K0014</b>
Nickel	BRL	mg/L	0.010	0.0010	1	*6010D	11/1/16 17:18	bgm	P6K0014
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/1/16 17:18	bgm	P6K0014
<b>Strontium</b>	<b>0.11</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:18</b>	<b>bgm</b>	<b>P6K0014</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/1/16 17:18	bgm	P6K0014
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/1/16 17:18	bgm	P6K0014
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/1/16 17:18	bgm	P6K0014

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: SED-3  
 Prism Sample ID: 6100562-09  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:35  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	80.2	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.026	0.0014	1	*7471B	11/4/16 12:08	JAB	P6K0100
Antimony	BRL	mg/kg dry	0.32	0.032	1	*6010D	11/8/16 2:58	bgm	P6K0017
Arsenic	1.6	mg/kg dry	0.32	0.039	1	*6010D	11/8/16 2:58	bgm	P6K0017
Barium	21	mg/kg dry	0.64	0.093	1	*6010D	11/8/16 2:58	bgm	P6K0017
Beryllium	0.37	mg/kg dry	0.32	0.0070	1	*6010D	11/8/16 2:58	bgm	P6K0017
Cadmium	BRL	mg/kg dry	0.32	0.0085	1	*6010D	11/8/16 2:58	bgm	P6K0017
Chromium	30	mg/kg dry	0.32	0.053	1	*6010D	11/9/16 4:32	bgm	P6K0017
Cobalt	6.2	mg/kg dry	0.32	0.0062	1	*6010D	11/8/16 2:58	bgm	P6K0017
Copper	7.4	mg/kg dry	0.64	0.058	1	*6010D	11/8/16 2:58	bgm	P6K0017
Lead	6.9	mg/kg dry	0.32	0.059	1	*6010D	11/8/16 2:58	bgm	P6K0017
Manganese	220	mg/kg dry	3.2	0.64	10	*6010D	11/9/16 22:11	bgm	P6K0017
Nickel	6.8	mg/kg dry	0.64	0.023	1	*6010D	11/8/16 2:58	bgm	P6K0017
Selenium	BRL	mg/kg dry	0.64	0.15	1	*6010D	11/8/16 2:58	bgm	P6K0017
Strontium	12	mg/kg dry	0.32	0.0067	1	*6010D	11/8/16 2:58	bgm	P6K0017
Thallium	BRL	mg/kg dry	0.64	0.083	1	*6010D	11/8/16 2:58	bgm	P6K0017
Vanadium	29	mg/kg dry	0.32	0.0075	1	*6010D	11/8/16 2:58	bgm	P6K0017
Zinc	35	mg/kg dry	3.2	0.11	1	*6010D	11/8/16 2:58	bgm	P6K0017

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-2  
 Prism Sample ID: 6100562-10  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:50  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/1/16 17:25	bgm	P6K0014
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/1/16 17:25	bgm	P6K0014
<b>Barium</b>	<b>0.025</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:25</b>	<b>bgm</b>	<b>P6K0014</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	*6010D	11/1/16 17:25	bgm	P6K0014
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/1/16 17:25	bgm	P6K0014
Chromium	BRL	mg/L	0.0050	0.00076	1	*6010D	11/1/16 17:25	bgm	P6K0014
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/1/16 17:25	bgm	P6K0014
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/1/16 17:25	bgm	P6K0014
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/1/16 17:25	bgm	P6K0014
<b>Manganese</b>	<b>0.013</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:25</b>	<b>bgm</b>	<b>P6K0014</b>
Nickel	BRL	mg/L	0.010	0.0010	1	*6010D	11/1/16 17:25	bgm	P6K0014
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/1/16 17:25	bgm	P6K0014
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:25</b>	<b>bgm</b>	<b>P6K0014</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/1/16 17:25	bgm	P6K0014
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/1/16 17:25	bgm	P6K0014
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/1/16 17:25	bgm	P6K0014

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 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: SED-2  
 Prism Sample ID: 6100562-11  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 14:55  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	78.3	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.025	0.0014	1	*7471B	11/4/16 12:12	JAB	P6K0100
Antimony	BRL	mg/kg dry	0.33	0.033	1	*6010D	11/8/16 3:08	bgm	P6K0017
Arsenic	2.1	mg/kg dry	0.33	0.040	1	*6010D	11/8/16 3:08	bgm	P6K0017
Barium	20	mg/kg dry	0.65	0.095	1	*6010D	11/8/16 3:08	bgm	P6K0017
Beryllium	0.48	mg/kg dry	0.33	0.0072	1	*6010D	11/8/16 3:08	bgm	P6K0017
Cadmium	BRL	mg/kg dry	0.33	0.0087	1	*6010D	11/8/16 3:08	bgm	P6K0017
Chromium	36	mg/kg dry	0.33	0.054	1	*6010D	11/9/16 4:41	bgm	P6K0017
Cobalt	7.8	mg/kg dry	0.33	0.0064	1	*6010D	11/8/16 3:08	bgm	P6K0017
Copper	8.0	mg/kg dry	0.65	0.059	1	*6010D	11/8/16 3:08	bgm	P6K0017
Lead	7.1	mg/kg dry	0.33	0.061	1	*6010D	11/8/16 3:08	bgm	P6K0017
Manganese	330	mg/kg dry	3.3	0.65	10	*6010D	11/9/16 22:19	bgm	P6K0017
Nickel	7.2	mg/kg dry	0.65	0.023	1	*6010D	11/8/16 3:08	bgm	P6K0017
Selenium	BRL	mg/kg dry	0.65	0.15	1	*6010D	11/8/16 3:08	bgm	P6K0017
Strontium	11	mg/kg dry	0.33	0.0069	1	*6010D	11/8/16 3:08	bgm	P6K0017
Thallium	BRL	mg/kg dry	0.65	0.085	1	*6010D	11/8/16 3:08	bgm	P6K0017
Vanadium	37	mg/kg dry	0.33	0.0077	1	*6010D	11/8/16 3:08	bgm	P6K0017
Zinc	34	mg/kg dry	3.3	0.12	1	*6010D	11/8/16 3:08	bgm	P6K0017

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: SW-1  
 Prism Sample ID: 6100562-12  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 15:10  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/1/16 17:33	bgm	P6K0014
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/1/16 17:33	bgm	P6K0014
<b>Barium</b>	<b>0.026</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:33</b>	<b>bgm</b>	<b>P6K0014</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	*6010D	11/1/16 17:33	bgm	P6K0014
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/1/16 17:33	bgm	P6K0014
Chromium	BRL	mg/L	0.0050	0.00076	1	*6010D	11/1/16 17:33	bgm	P6K0014
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/1/16 17:33	bgm	P6K0014
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/1/16 17:33	bgm	P6K0014
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/1/16 17:33	bgm	P6K0014
<b>Manganese</b>	<b>0.016</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:33</b>	<b>bgm</b>	<b>P6K0014</b>
Nickel	BRL	mg/L	0.010	0.0010	1	*6010D	11/1/16 17:33	bgm	P6K0014
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/1/16 17:33	bgm	P6K0014
<b>Strontium</b>	<b>0.10</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:33</b>	<b>bgm</b>	<b>P6K0014</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/1/16 17:33	bgm	P6K0014
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/1/16 17:33	bgm	P6K0014
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/1/16 17:33	bgm	P6K0014

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: SED-1  
 Prism Sample ID: 6100562-13  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 15:15  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	77.3	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.026	0.0014	1	*7471B	11/4/16 12:17	JAB	P6K0100
Antimony	BRL	mg/kg dry	0.32	0.032	1	*6010D	11/8/16 3:17	bgm	P6K0017
Arsenic	1.2	mg/kg dry	0.32	0.039	1	*6010D	11/8/16 3:17	bgm	P6K0017
Barium	12	mg/kg dry	0.64	0.093	1	*6010D	11/8/16 3:17	bgm	P6K0017
Beryllium	BRL	mg/kg dry	0.32	0.0070	1	*6010D	11/8/16 3:17	bgm	P6K0017
Cadmium	BRL	mg/kg dry	0.32	0.0086	1	*6010D	11/8/16 3:17	bgm	P6K0017
Chromium	23	mg/kg dry	0.32	0.054	1	*6010D	11/9/16 4:51	bgm	P6K0017
Cobalt	3.9	mg/kg dry	0.32	0.0063	1	*6010D	11/8/16 3:17	bgm	P6K0017
Copper	4.2	mg/kg dry	0.64	0.058	1	*6010D	11/8/16 3:17	bgm	P6K0017
Lead	4.0	mg/kg dry	0.32	0.060	1	*6010D	11/8/16 3:17	bgm	P6K0017
Manganese	180	mg/kg dry	3.2	0.64	10	*6010D	11/9/16 22:27	bgm	P6K0017
Nickel	3.8	mg/kg dry	0.64	0.023	1	*6010D	11/8/16 3:17	bgm	P6K0017
Selenium	BRL	mg/kg dry	0.64	0.15	1	*6010D	11/8/16 3:17	bgm	P6K0017
Strontium	6.9	mg/kg dry	0.32	0.0068	1	*6010D	11/8/16 3:17	bgm	P6K0017
Thallium	BRL	mg/kg dry	0.64	0.084	1	*6010D	11/8/16 3:17	bgm	P6K0017
Vanadium	19	mg/kg dry	0.32	0.0076	1	*6010D	11/8/16 3:17	bgm	P6K0017
Zinc	19	mg/kg dry	3.2	0.11	1	*6010D	11/8/16 3:17	bgm	P6K0017

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: Dup-SW  
 Prism Sample ID: 6100562-14  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 00:00  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/1/16 17:41	bgm	P6K0014
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/1/16 17:41	bgm	P6K0014
<b>Barium</b>	<b>0.025</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0013</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:41</b>	<b>bgm</b>	<b>P6K0014</b>
Beryllium	BRL	mg/L	0.0020	0.00010	1	*6010D	11/1/16 17:41	bgm	P6K0014
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/1/16 17:41	bgm	P6K0014
Chromium	BRL	mg/L	0.0050	0.00076	1	*6010D	11/1/16 17:41	bgm	P6K0014
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/1/16 17:41	bgm	P6K0014
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/1/16 17:41	bgm	P6K0014
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/1/16 17:41	bgm	P6K0014
<b>Manganese</b>	<b>0.031</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.0017</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:41</b>	<b>bgm</b>	<b>P6K0014</b>
Nickel	BRL	mg/L	0.010	0.0010	1	*6010D	11/1/16 17:41	bgm	P6K0014
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/1/16 17:41	bgm	P6K0014
<b>Strontium</b>	<b>0.11</b>	<b>mg/L</b>	<b>0.010</b>	<b>0.00057</b>	<b>1</b>	<b>*6010D</b>	<b>11/1/16 17:41</b>	<b>bgm</b>	<b>P6K0014</b>
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/1/16 17:41	bgm	P6K0014
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/1/16 17:41	bgm	P6K0014
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/1/16 17:41	bgm	P6K0014

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Solid

Client Sample ID: Dup-SED  
 Prism Sample ID: 6100562-15  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 00:00  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>General Chemistry Parameters</b>									
% Solids	81.0	% by Weight	0.100	0.100	1	*SM2540 G	11/2/16 14:40	JLB	P6K0083
<b>Total Metals</b>									
Mercury	BRL	mg/kg dry	0.026	0.0014	1	*7471B	11/4/16 12:21	JAB	P6K0100
Antimony	BRL	mg/kg dry	0.32	0.032	1	*6010D	11/8/16 3:26	bgm	P6K0017
Arsenic	2.5	mg/kg dry	0.32	0.039	1	*6010D	11/8/16 3:26	bgm	P6K0017
Barium	17	mg/kg dry	0.63	0.092	1	*6010D	11/8/16 3:26	bgm	P6K0017
Beryllium	0.45	mg/kg dry	0.32	0.0070	1	*6010D	11/8/16 3:26	bgm	P6K0017
Cadmium	BRL	mg/kg dry	0.32	0.0085	1	*6010D	11/8/16 3:26	bgm	P6K0017
Chromium	49	mg/kg dry	0.32	0.053	1	*6010D	11/9/16 4:59	bgm	P6K0017
Cobalt	6.5	mg/kg dry	0.32	0.0062	1	*6010D	11/8/16 3:26	bgm	P6K0017
Copper	9.1	mg/kg dry	0.63	0.057	1	*6010D	11/8/16 3:26	bgm	P6K0017
Lead	6.7	mg/kg dry	0.32	0.059	1	*6010D	11/8/16 3:26	bgm	P6K0017
Manganese	290	mg/kg dry	3.2	0.63	10	*6010D	11/9/16 22:35	bgm	P6K0017
Nickel	6.0	mg/kg dry	0.63	0.023	1	*6010D	11/8/16 3:26	bgm	P6K0017
Selenium	BRL	mg/kg dry	0.63	0.15	1	*6010D	11/8/16 3:26	bgm	P6K0017
Strontium	12	mg/kg dry	0.32	0.0067	1	*6010D	11/8/16 3:26	bgm	P6K0017
Thallium	BRL	mg/kg dry	0.63	0.083	1	*6010D	11/8/16 3:26	bgm	P6K0017
Vanadium	35	mg/kg dry	0.32	0.0075	1	*6010D	11/8/16 3:26	bgm	P6K0017
Zinc	31	mg/kg dry	3.2	0.11	1	*6010D	11/8/16 3:26	bgm	P6K0017



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
 Project No.: TCH-002  
 Sample Matrix: Water

Client Sample ID: RB-SED  
 Prism Sample ID: 6100562-16  
 Prism Work Order: 6100562  
 Time Collected: 10/27/16 17:45  
 Time Submitted: 10/28/16 17:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>Total Metals</b>									
Antimony	BRL	mg/L	0.0050	0.00050	1	*6010D	11/1/16 17:49	bgm	P6K0014
Arsenic	BRL	mg/L	0.010	0.0024	1	*6010D	11/1/16 17:49	bgm	P6K0014
Barium	BRL	mg/L	0.010	0.0013	1	*6010D	11/1/16 17:49	bgm	P6K0014
Beryllium	BRL	mg/L	0.0020	0.00010	1	*6010D	11/1/16 17:49	bgm	P6K0014
Cadmium	BRL	mg/L	0.0010	0.00013	1	*6010D	11/1/16 17:49	bgm	P6K0014
Chromium	BRL	mg/L	0.0050	0.00076	1	*6010D	11/1/16 17:49	bgm	P6K0014
Cobalt	BRL	mg/L	0.0050	0.00011	1	*6010D	11/1/16 17:49	bgm	P6K0014
Copper	BRL	mg/L	0.010	0.0016	1	*6010D	11/1/16 17:49	bgm	P6K0014
Lead	BRL	mg/L	0.0050	0.0016	1	*6010D	11/1/16 17:49	bgm	P6K0014
Manganese	BRL	mg/L	0.010	0.0017	1	*6010D	11/1/16 17:49	bgm	P6K0014
Nickel	BRL	mg/L	0.010	0.0010	1	*6010D	11/1/16 17:49	bgm	P6K0014
Selenium	BRL	mg/L	0.020	0.0044	1	*6010D	11/1/16 17:49	bgm	P6K0014
Strontium	BRL	mg/L	0.010	0.00057	1	*6010D	11/1/16 17:49	bgm	P6K0014
Thallium	BRL	mg/L	0.010	0.0025	1	*6010D	11/1/16 17:49	bgm	P6K0014
Vanadium	BRL	mg/L	0.0050	0.00015	1	*6010D	11/1/16 17:49	bgm	P6K0014
Zinc	BRL	mg/L	0.030	0.011	1	*6010D	11/1/16 17:49	bgm	P6K0014

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6100562  
Time Submitted: 10/28/2016 5:35:00PM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0014 - 3010A**

**Blank (P6K0014-BLK1)**

Prepared & Analyzed: 11/01/16

Antimony	BRL	0.0050	mg/L							
Arsenic	BRL	0.010	mg/L							
Barium	BRL	0.010	mg/L							
Beryllium	BRL	0.0020	mg/L							
Cadmium	BRL	0.0010	mg/L							
Chromium	BRL	0.0050	mg/L							
Cobalt	BRL	0.0050	mg/L							
Copper	BRL	0.010	mg/L							
Lead	BRL	0.0050	mg/L							
Manganese	BRL	0.010	mg/L							
Nickel	BRL	0.010	mg/L							
Selenium	BRL	0.020	mg/L							
Strontium	BRL	0.010	mg/L							
Thallium	BRL	0.010	mg/L							
Vanadium	BRL	0.0050	mg/L							
Zinc	BRL	0.030	mg/L							

**LCS (P6K0014-BS1)**

Prepared & Analyzed: 11/01/16

Antimony	0.245	0.0050	mg/L	0.2500		98	80-120			
Arsenic	0.246	0.010	mg/L	0.2500		99	80-120			
Barium	0.250	0.010	mg/L	0.2500		100	80-120			
Beryllium	0.248	0.0020	mg/L	0.2500		99	80-120			
Cadmium	0.250	0.0010	mg/L	0.2500		100	80-120			
Chromium	0.254	0.0050	mg/L	0.2500		102	80-120			
Cobalt	0.256	0.0050	mg/L	0.2500		102	80-120			
Copper	0.245	0.010	mg/L	0.2500		98	80-120			
Lead	0.251	0.0050	mg/L	0.2500		100	80-120			
Manganese	0.251	0.010	mg/L	0.2500		101	80-120			
Nickel	0.250	0.010	mg/L	0.2500		100	80-120			
Selenium	0.245	0.020	mg/L	0.2500		98	80-120			
Strontium	0.246	0.010	mg/L	0.2500		98	80-120			
Thallium	0.249	0.010	mg/L	0.2500		100	80-120			
Vanadium	0.251	0.0050	mg/L	0.2500		100	80-120			
Zinc	0.242	0.030	mg/L	0.2500		97	80-120			



Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002

Project No: TCH-002

Prism Work Order: 6100562

Time Submitted: 10/28/2016 5:35:00PM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0014 - 3010A**

Matrix Spike (P6K0014-MS1)	Source: 6100562-04			Prepared & Analyzed: 11/01/16						
Antimony	0.252	0.0050	mg/L	0.2500	BRL	101	75-125			
Arsenic	0.252	0.010	mg/L	0.2500	BRL	101	75-125			
Barium	0.279	0.010	mg/L	0.2500	0.0251	102	75-125			
Beryllium	0.253	0.0020	mg/L	0.2500	BRL	101	75-125			
Cadmium	0.254	0.0010	mg/L	0.2500	BRL	102	75-125			
Chromium	0.256	0.0050	mg/L	0.2500	BRL	102	75-125			
Cobalt	0.254	0.0050	mg/L	0.2500	BRL	102	75-125			
Copper	0.248	0.010	mg/L	0.2500	BRL	99	75-125			
Lead	0.253	0.0050	mg/L	0.2500	BRL	101	75-125			
Manganese	0.280	0.010	mg/L	0.2500	0.0252	102	75-125			
Nickel	0.249	0.010	mg/L	0.2500	BRL	100	75-125			
Selenium	0.262	0.020	mg/L	0.2500	0.00922	101	75-125			
Strontium	0.367	0.010	mg/L	0.2500	0.111	102	75-125			
Thallium	0.252	0.010	mg/L	0.2500	BRL	101	75-125			
Vanadium	0.256	0.0050	mg/L	0.2500	0.000744	102	75-125			
Zinc	0.250	0.030	mg/L	0.2500	BRL	100	75-125			

Matrix Spike Dup (P6K0014-MSD1)	Source: 6100562-04			Prepared & Analyzed: 11/01/16						
Antimony	0.252	0.0050	mg/L	0.2500	BRL	101	75-125	0.3	20	
Arsenic	0.253	0.010	mg/L	0.2500	BRL	101	75-125	0.2	20	
Barium	0.281	0.010	mg/L	0.2500	0.0251	102	75-125	0.6	20	
Beryllium	0.255	0.0020	mg/L	0.2500	BRL	102	75-125	0.6	20	
Cadmium	0.256	0.0010	mg/L	0.2500	BRL	102	75-125	0.5	20	
Chromium	0.258	0.0050	mg/L	0.2500	BRL	103	75-125	0.8	20	
Cobalt	0.255	0.0050	mg/L	0.2500	BRL	102	75-125	0.4	20	
Copper	0.250	0.010	mg/L	0.2500	BRL	100	75-125	0.7	20	
Lead	0.254	0.0050	mg/L	0.2500	BRL	102	75-125	0.6	20	
Manganese	0.278	0.010	mg/L	0.2500	0.0252	101	75-125	0.7	20	
Nickel	0.250	0.010	mg/L	0.2500	BRL	100	75-125	0.6	20	
Selenium	0.254	0.020	mg/L	0.2500	0.00922	98	75-125	3	20	
Strontium	0.365	0.010	mg/L	0.2500	0.111	102	75-125	0.5	20	
Thallium	0.251	0.010	mg/L	0.2500	BRL	101	75-125	0.3	20	
Vanadium	0.259	0.0050	mg/L	0.2500	0.000744	103	75-125	1	20	
Zinc	0.247	0.030	mg/L	0.2500	BRL	99	75-125	0.8	20	

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Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6100562  
Time Submitted: 10/28/2016 5:35:00PM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P6K0017 - 3050B**

**Blank (P6K0017-BLK1)**

Prepared: 11/01/16 Analyzed: 11/08/16

Antimony	BRL	0.25	mg/kg wet							
Arsenic	BRL	0.25	mg/kg wet							
Barium	BRL	0.50	mg/kg wet							
Beryllium	BRL	0.25	mg/kg wet							
Cadmium	BRL	0.25	mg/kg wet							
Chromium	BRL	0.25	mg/kg wet							
Cobalt	BRL	0.25	mg/kg wet							
Copper	BRL	0.50	mg/kg wet							
Lead	BRL	0.25	mg/kg wet							
Manganese	BRL	0.25	mg/kg wet							
Nickel	BRL	0.50	mg/kg wet							
Selenium	BRL	0.50	mg/kg wet							
Strontium	BRL	0.25	mg/kg wet							
Thallium	BRL	0.50	mg/kg wet							
Vanadium	BRL	0.25	mg/kg wet							
Zinc	BRL	2.5	mg/kg wet							

**LCS (P6K0017-BS1)**

Prepared: 11/01/16 Analyzed: 11/08/16

Antimony	25.8	0.25	mg/kg wet	25.00		103	80-120			
Arsenic	25.8	0.25	mg/kg wet	25.00		103	80-120			
Barium	25.2	0.50	mg/kg wet	25.00		101	80-120			
Beryllium	24.9	0.25	mg/kg wet	25.00		100	80-120			
Cadmium	25.8	0.25	mg/kg wet	25.00		103	80-120			
Chromium	25.7	0.25	mg/kg wet	25.00		103	80-120			
Cobalt	25.3	0.25	mg/kg wet	25.00		101	80-120			
Copper	25.7	0.50	mg/kg wet	25.00		103	80-120			
Lead	25.0	0.25	mg/kg wet	25.00		100	80-120			
Manganese	24.6	0.25	mg/kg wet	25.00		98	80-120			
Nickel	24.4	0.50	mg/kg wet	25.00		97	80-120			
Selenium	24.9	0.50	mg/kg wet	25.00		99	80-120			
Strontium	24.9	0.25	mg/kg wet	25.00		100	80-120			
Thallium	26.3	0.50	mg/kg wet	25.00		105	80-120			
Vanadium	25.1	0.25	mg/kg wet	25.00		101	80-120			
Zinc	25.7	2.5	mg/kg wet	25.00		103	80-120			



Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6100562  
Time Submitted: 10/28/2016 5:35:00PM

**Total Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0100 - 7471B</b>										
<b>Blank (P6K0100-BLK1)</b>										
Prepared & Analyzed: 11/04/16										
Mercury	BRL	0.020	mg/kg wet							
<b>LCS (P6K0100-BS1)</b>										
Prepared & Analyzed: 11/04/16										
Mercury	0.420	0.020	mg/kg wet	0.4167		101	80-120			
<b>Matrix Spike (P6K0100-MS1)</b>										
Source: 6100562-01 Prepared & Analyzed: 11/04/16										
Mercury	0.579	0.025	mg/kg dry	0.5164	0.0359	105	80-120			
<b>Matrix Spike Dup (P6K0100-MSD1)</b>										
Source: 6100562-01 Prepared & Analyzed: 11/04/16										
Mercury	0.526	0.024	mg/kg dry	0.4905	0.0359	100	80-120	10	20	

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002  
Project No: TCH-002

Prism Work Order: 6100562  
Time Submitted: 10/28/2016 5:35:00PM

**General Chemistry Parameters - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0083 - Solids, Dry Weight</b>										
<b>Duplicate (P6K0083-DUP1)</b>		<b>Source: 6100562-02</b>			<b>Prepared &amp; Analyzed: 11/02/16</b>					
% Solids	90.2	0.100	% by Weight		73.5			20	20	

## Sample Extraction Data

**Prep Method: Solids, Dry Weight**

Lab Number	Batch	Initial	Final	Date/Time
6100562-01	P6K0083	30 g	30 g	11/02/16 14:40
6100562-02	P6K0083	30 g	30 g	11/02/16 14:40
6100562-03	P6K0083	30 g	30 g	11/02/16 14:40
6100562-05	P6K0083	30 g	30 g	11/02/16 14:40
6100562-07	P6K0083	30 g	30 g	11/02/16 14:40
6100562-09	P6K0083	30 g	30 g	11/02/16 14:40
6100562-11	P6K0083	30 g	30 g	11/02/16 14:40
6100562-13	P6K0083	30 g	30 g	11/02/16 14:40
6100562-15	P6K0083	30 g	30 g	11/02/16 14:40

**Prep Method: 3010A**

Lab Number	Batch	Initial	Final	Date/Time
6100562-04	P6K0014	50 mL	50 mL	11/01/16 8:25
6100562-06	P6K0014	50 mL	50 mL	11/01/16 8:25
6100562-08	P6K0014	50 mL	50 mL	11/01/16 8:25
6100562-10	P6K0014	50 mL	50 mL	11/01/16 8:25
6100562-12	P6K0014	50 mL	50 mL	11/01/16 8:25
6100562-14	P6K0014	50 mL	50 mL	11/01/16 8:25
6100562-16	P6K0014	50 mL	50 mL	11/01/16 8:25

**Prep Method: 3050B**

Lab Number	Batch	Initial	Final	Date/Time
6100562-01	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-01	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-01	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-02	P6K0017	1.98 g	50 mL	11/01/16 9:00
6100562-03	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-05	P6K0017	2.02 g	50 mL	11/01/16 9:00
6100562-05	P6K0017	2.02 g	50 mL	11/01/16 9:00
6100562-05	P6K0017	2.02 g	50 mL	11/01/16 9:00
6100562-07	P6K0017	1.95 g	50 mL	11/01/16 9:00
6100562-07	P6K0017	1.95 g	50 mL	11/01/16 9:00
6100562-09	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-09	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-09	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-11	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-11	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-11	P6K0017	1.96 g	50 mL	11/01/16 9:00
6100562-13	P6K0017	2.02 g	50 mL	11/01/16 9:00
6100562-13	P6K0017	2.02 g	50 mL	11/01/16 9:00
6100562-13	P6K0017	2.02 g	50 mL	11/01/16 9:00
6100562-15	P6K0017	1.95 g	50 mL	11/01/16 9:00
6100562-15	P6K0017	1.95 g	50 mL	11/01/16 9:00
6100562-15	P6K0017	1.95 g	50 mL	11/01/16 9:00

**Prep Method: 7471B**

Lab Number	Batch	Initial	Final	Date/Time
6100562-01	P6K0100	0.57 g	50 mL	11/04/16 9:10
6100562-05	P6K0100	0.59 g	50 mL	11/04/16 9:10
6100562-07	P6K0100	0.57 g	50 mL	11/04/16 9:10
6100562-09	P6K0100	0.57 g	50 mL	11/04/16 9:10
6100562-11	P6K0100	0.61 g	50 mL	11/04/16 9:10
6100562-13	P6K0100	0.59 g	50 mL	11/04/16 9:10
6100562-15	P6K0100	0.58 g	50 mL	11/04/16 9:10

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# CHAIN OF CUSTODY RECORD

PAGE 1 OF 2 QUOTE # TO ENSURE PROPER BILLING: \_\_\_\_\_

Client Company Name: Hart & Hickman  
Report To/Contact Name: Patrick Stevens, Steve Hart  
Reporting Address: 3334 Hillsborough St  
Raleigh NC 27602

Project Name: TCH-002  
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)  
\*Please ATTACH any project specific reporting (QC LEVEL I III IV)  
provisions and/or QC Requirements  
Invoice To: accounts payable@hart-hickman.com  
Address: 2423 South Taylor St Suite 100  
Charlotte NC 28203

LAB USE ONLY	
Sampled, IN CONTACT upon arrival?	YES NO N/A
Repacked (DO NOT REUSE)	YES NO N/A
PROPER PRESERVATIVES indicated?	YES NO N/A
Repacked WITHIN HOLDING TIME?	YES NO N/A
CUSTODY SEALS INTACT?	YES NO N/A
VIOLATES REQUIRED W/OUT HEADSPACE?	YES NO N/A
PROPER CONTAINERS used?	YES NO N/A
TEMP. Therm ID: <u>19711</u> Operator: <u>J.H. [unclear]</u> Date: <u>3.4.09</u>	Temp: <u>3.4</u> (C) / <u>3.0</u> (F)

Phone: 704-586-0000 Fax (Yes) (No): \_\_\_\_\_  
Email Address: shart@hart-hickman.com, pstevens@hart-hickman.com  
EDD Type: PDF  Excel  Other \_\_\_\_\_  
Site Location Name: Chapel Hill Police Department Property  
Site Location Physical Address: Chapel Hill, NC

Purchase Order No./Billing Reference: TCH-002  
Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days  
"Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved  
Samples received after 14:00 will be processed next business day.  
Turnaround time is based on business days, excluding weekends and holidays.  
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL  
Certification: NELAC  DOD  FL  NC   
SC  OTHER  M/A   
Water Chlorinated: YES  NO   
Sample Iced Upon Collection: YES  NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER		PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO. SIZE				
HH-8	10/27/16	1445	Soil	G	1 4oz	NA			01
HH-7		1155	Soil	G	1 4oz	NA			02
HH-C		1210	Soil	G	1 4oz	NA			03
SW-5		1400	Water	P	1 250mL	HNO3			04
SED-5		1405	Soil	G	1 4oz	NA			05
SW-4		1415	Water	P	1 250mL	HNO3			06
SED-4		1420	Soil	G	1 4oz	NA			07
SW-3		1430	Water	P	1 250mL	HNO3			08
SED-3		1435	Soil	G	1 4oz	NA			09
SW-2		1450	Water	P	1 250mL	HNO3			10

Sampler's Signature: [Signature] Sampled By (Print Name): Lisa Nickels Affiliation: Hart & Hickman

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 10/28/16 Military/Hours: 1045

Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature] Date: 10/28/16 Military/Hours: 1330

Relinquished By: (Signature) [Signature] Received For Prism Laboratories By: [Signature] Date: 10/28/16 Military/Hours: 1735

Method of Shipment:  Fed Ex  UPS  Hand-delivered  Prism Field Service  Other \_\_\_\_\_

NPDES:  NC  SC  GROUNDWATER:  NC  SC  DRINKING WATER:  NC  SC  SOLID WASTE:  NC  SC  RCRA:  NC  SC  CERCLA:  NC  SC  LANDFILL:  NC  SC  OTHER:  NC  SC

\*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = PTFE Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS ORIGINAL



# CHAIN OF CUSTODY RECORD

PAGE 2 OF 2 QUOTE # TO ENSURE PROPER BILLING: \_\_\_\_\_

Client Company Name: Hart & Hickman  
 Report To/Contact Name: Steve Hart, Patrick Strakas  
 Reporting Address: 5334 Hillsborough St  
Raleigh NC 27607

Project Name: TCR-002  
 Short Hold Analysis: (Yes) (No) UST Project: (Yes) (NO)  
 \*Please ATTACH any project specific reporting (QC LEVEL I II III IV)  
 provisions and/or QC Requirements  
 Invoice To: accounts payable@charthickman.com  
 Address: 2923 South Tabor St Suite 100  
Charlotte NC 28203

Phone: 704-536-0007 Fax (Yes)(No): \_\_\_\_\_  
 Email Address: Steve.Hart@charthickman.com, pstrakas@charthickman.com  
 EDD Type: PDF  Excel  Other hickman.com

Purchase Order No./Billing Reference: TCR-002  
 Requested Due Date  1 Day  2 Days  3 Days  4 Days  5 Days  
 "Working Days"  6-9 Days  Standard 10 days  Rush Work Must Be Pre-Approved  
 Samples received after 14:00 will be processed next business day.  
 Turnaround time is based on business days, excluding weekends and holidays.  
 (SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

Site Location Name: Chapel Hill Police Department Property  
 Site Location Physical Address: Chapel Hill NC

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL  
 Certification: NELAC      DOD      FL      NC X  
 SC      OTHER      N/A       
 Water Chlorinated: YES      NO X  
 Sample Iced Upon Collection: YES X NO     

**LAB USE ONLY**

Sampled IN CONTACT upon arrival?  YES  NO  N/A

Received ON METAL?  YES  NO  N/A

PROPER PRESERVATIVES included?  YES  NO  N/A

Received WITHIN HOLDING TIME?  YES  NO  N/A

CUSTODY SEALS INTACT?  YES  NO  N/A

VOLATILES AND WOOD HEADSPACE?  YES  NO  N/A

PROPER CONTAINERS used?  YES  NO  N/A

TEMP: Therm ID: 16711 (Optional) 34.90/30.30 °C

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
SED-Z	10/27/16	1455	Soil	G	1	4oz	NA			11
SW-1		1516	Water	P	1	250mL	HNO3		*metals list: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, strontium, thallium, vanadium, and zinc	12
SED-1		1515	Soil	G	1	4oz	NA			13
DUP-SW			Water	P	1	250mL	HNO3			14
DUP-SED			Soil	G	1	4oz	NA			15
RB-SED	10/27/16	1745	Water	P	1	250mL	NA			16

Sampler's Signature: LE ENZ Sampled By (Print Name) Lisa Nickels Affiliation Hart & Hickman  
 Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) LE ENZ Received By: (Signature) Lisa Nickels Date 10/28/16 Military/Hours 1045  
 Relinquished By: (Signature) LE ENZ Received By: (Signature) Lisa Nickels Date 10-28-16 Military/Hours 1330  
 Relinquished By: (Signature) LE ENZ Received By: (Signature) Lisa Nickels Date 10-28-16 Military/Hours 1735

Method of Shipment: Prism Field Service NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.  
 \*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

**PRISM USE ONLY**

Site Arrival Time: \_\_\_\_\_  
 Site Departure Time: \_\_\_\_\_  
 Field Tech Name: \_\_\_\_\_  
 Mileage: \_\_\_\_\_

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

11/29/2016

Hart & Hickman (Raleigh)  
Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Lab Submittal Date: 11/16/2016  
Prism Work Order: 6110312

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

**PRISM LABORATORIES, INC.**



Robbi A. Jones  
President/Project Manager



Reviewed By Robbi A. Jones  
President/Project Manager

**Data Qualifiers Key Reference:**

BRL	Below Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
*	Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

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Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
IDW-Water	6110312-01	Water	11/14/16	11/16/16
IDW-Soil	6110312-02	Solid	11/14/16	11/16/16

Samples were received in good condition at 1.7 degrees C unless otherwise noted.

Prism Work Order:

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Prism ID	Client ID	Parameter	Method	Result	Units
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**There were no detections reported.**

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Sample Matrix: Water

Client Sample ID: IDW-Water  
Prism Sample ID: 6110312-01  
Prism Work Order: 6110312  
Time Collected: 11/14/16 16:05  
Time Submitted: 11/16/16 08:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b>TCLP Extraction by EPA 1311</b>									
TCLP Extraction	Complete	N/A			1	*1311	11/22/16 8:00	JAB	P6K0504
<b>TCLP Metals</b>									
Mercury	BRL	mg/L	0.010	0.000030	1	*7470A	11/22/16 16:03	JAB	P6K0531
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/23/16 18:36	bgm	P6K0532
Barium	BRL	mg/L	5.0	0.0065	1	*6010D	11/23/16 18:36	bgm	P6K0532
Cadmium	BRL	mg/L	0.025	0.00065	1	*6010D	11/23/16 18:36	bgm	P6K0532
Chromium	BRL	mg/L	0.25	0.0038	1	*6010D	11/23/16 18:36	bgm	P6K0532
Lead	BRL	mg/L	0.050	0.0080	1	*6010D	11/23/16 18:36	bgm	P6K0532
Selenium	BRL	mg/L	0.10	0.022	1	*6010D	11/28/16 16:13	bgm	P6K0532
Silver	BRL	mg/L	0.25	0.00050	1	*6010D	11/23/16 18:36	bgm	P6K0532

Hart & Hickman (Raleigh)  
 Attn: Patrick Stevens  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project: TCH-002  
  
 Sample Matrix: Solid

Client Sample ID: IDW-Soil  
 Prism Sample ID: 6110312-02  
 Prism Work Order: 6110312  
 Time Collected: 11/14/16 17:00  
 Time Submitted: 11/16/16 08:35

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**TCLP Extraction by EPA 1311**

TCLP Extraction	Complete	N/A			1	*1311	11/22/16 8:00	JAB	P6K0504
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**TCLP Metals**

Mercury	BRL	mg/L	0.010	0.000030	1	*7470A	11/22/16 15:52	JAB	P6K0531
Arsenic	BRL	mg/L	0.050	0.012	1	*6010D	11/23/16 18:44	bgm	P6K0532
Barium	BRL	mg/L	5.0	0.0065	1	*6010D	11/23/16 18:44	bgm	P6K0532
Cadmium	BRL	mg/L	0.025	0.00065	1	*6010D	11/23/16 18:44	bgm	P6K0532
Chromium	BRL	mg/L	0.25	0.0038	1	*6010D	11/23/16 18:44	bgm	P6K0532
Lead	BRL	mg/L	0.050	0.0080	1	*6010D	11/23/16 18:44	bgm	P6K0532
Selenium	BRL	mg/L	0.10	0.022	1	*6010D	11/28/16 16:21	bgm	P6K0532
Silver	BRL	mg/L	0.25	0.00050	1	*6010D	11/23/16 18:44	bgm	P6K0532

Hart & Hickman (Raleigh)  
Attn: Patrick Stevens  
3334 Hillsborough St.  
Raleigh, NC 27607

Project: TCH-002

Prism Work Order: 6110312

Time Submitted: 11/16/2016 8:35:00AM

**TCLP Metals - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P6K0531 - 7470A</b>										
<b>Blank (P6K0531-BLK1)</b>				Prepared & Analyzed: 11/22/16						
Mercury	BRL	0.010	mg/L							
<b>LCS (P6K0531-BS1)</b>				Prepared & Analyzed: 11/22/16						
Mercury	0.00965	0.010	mg/L	0.009375		103	80-120			
<b>Matrix Spike (P6K0531-MS1)</b>				Source: 6110312-02 Prepared & Analyzed: 11/22/16						
Mercury	0.00900	0.010	mg/L	0.009375	BRL	96	80-120			
<b>Matrix Spike Dup (P6K0531-MSD1)</b>				Source: 6110312-02 Prepared & Analyzed: 11/22/16						
Mercury	0.00934	0.010	mg/L	0.009375	BRL	100	80-120	4	20	
<b>Batch P6K0532 - 3010A</b>										
<b>Blank (P6K0532-BLK1)</b>				Prepared: 11/22/16 Analyzed: 11/23/16						
Arsenic	BRL	0.050	mg/L							
Barium	BRL	5.0	mg/L							
Cadmium	BRL	0.025	mg/L							
Chromium	BRL	0.25	mg/L							
Lead	BRL	0.050	mg/L							
Selenium	BRL	0.050	mg/L							
Silver	BRL	0.25	mg/L							
<b>LCS (P6K0532-BS1)</b>				Prepared: 11/22/16 Analyzed: 11/23/16						
Arsenic	0.251	0.050	mg/L	0.2500		100	80-120			
Barium	0.254	5.0	mg/L	0.2500		101	80-120			
Cadmium	0.253	0.025	mg/L	0.2500		101	80-120			
Chromium	0.254	0.25	mg/L	0.2500		102	80-120			
Lead	0.252	0.050	mg/L	0.2500		101	80-120			
Selenium	0.263	0.050	mg/L	0.2500		105	80-120			
Silver	0.0974	0.25	mg/L	0.1000		97	80-120			

### Sample Extraction Data

**Prep Method: 1311**

Lab Number	Batch	Initial	Final	Date/Time
6110312-01	P6K0504	100 g	2000 mL	11/21/16 15:00
6110312-02	P6K0504	100 g	2000 mL	11/21/16 15:00

**Prep Method: 3010A**

Lab Number	Batch	Initial	Final	Date/Time
6110312-01	P6K0532	10 mL	50 mL	11/22/16 11:35
6110312-01	P6K0532	10 mL	50 mL	11/22/16 11:35
6110312-02	P6K0532	10 mL	50 mL	11/22/16 11:35
6110312-02	P6K0532	10 mL	50 mL	11/22/16 11:35

**Prep Method: 7470A**

Lab Number	Batch	Initial	Final	Date/Time
6110312-01	P6K0531	20 mL	30 mL	11/22/16 10:50
6110312-02	P6K0531	20 mL	30 mL	11/22/16 10:50





### Technical Report for

Hart & Hickman

TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

TCH-002

SGS Accutest Job Number: JC40274

Sampling Date: 04/03/17

Report to:

Hart & Hickman  
2923 South Tryon Street Suite 100  
Charlotte, NC 28203  
pstevens@harthickman.com; lnickels@harthickman.com  
  
ATTN: Lisa Nickels

Total number of pages in report: 27



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole  
Laboratory Director

Client Service contact: Kelly Patterson 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS Accutest.  
Test results relate only to samples analyzed.

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## Sample Summary

Hart & Hickman

Job No: JC40274

TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC  
Project No: TCH-002

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC40274-1	04/03/17	20:20 JCN	04/04/17	AQ	Ground Water	MW-5
JC40274-2	04/03/17	17:40 JCN	04/04/17	AQ	Ground Water	MW-6

## Summary of Hits

**Job Number:** JC40274

**Account:** Hart & Hickman

**Project:** TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

**Collected:** 04/03/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

JC40274-1      MW-5

No hits reported in this sample.

JC40274-2      MW-6

No hits reported in this sample.

Sample Results

---

Report of Analysis

---

## Report of Analysis

<b>Client Sample ID:</b> MW-5	<b>Date Sampled:</b> 04/03/17
<b>Lab Sample ID:</b> JC40274-1	<b>Date Received:</b> 04/04/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	04/04/17	04/10/17 GT	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA41757

(2) Prep QC Batch: MP99697

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-5	<b>Date Sampled:</b> 04/03/17
<b>Lab Sample ID:</b> JC40274-1	<b>Date Received:</b> 04/04/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.0048 U	0.0055	0.0048	mg/l	1	04/04/17 14:02 YR	SW846	7199

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL



## Report of Analysis

<b>Client Sample ID:</b> MW-6	<b>Date Sampled:</b> 04/03/17
<b>Lab Sample ID:</b> JC40274-2	<b>Date Received:</b> 04/04/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Chromium	< 10	10	ug/l	1	04/04/17	04/10/17 GT	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA41757

(2) Prep QC Batch: MP99697

---

RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> MW-6	<b>Date Sampled:</b> 04/03/17
<b>Lab Sample ID:</b> JC40274-2	<b>Date Received:</b> 04/04/17
<b>Matrix:</b> AQ - Ground Water	<b>Percent Solids:</b> n/a
<b>Project:</b> TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC	

### General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	0.0048 U	0.0055	0.0048	mg/l	1	04/04/17 14:18 YR	SW846	7199

RL = Reporting Limit  
MDL = Method Detection Limit

U = Indicates a result < MDL  
B = Indicates a result > = MDL but < RL

Misc. Forms

---

Custody Documents and Other Forms

---

Includes the following where applicable:

- Chain of Custody



Accutest Laboratories Southeast

Chain of Custody

4405 Vineyard Road, Suite C-15 Orlando, FL 32811  
 TEL: 407-425-6700 • FAX: 407-425-0787  
 www.accutest.com

Accutest Job # 3070274

PAGE 1 OF 1

Accutest Quote #

SKIF#

Client Reporting Information		Project Information										Analytical Information										Matrix Codes
Company Name: <u>Hart &amp; Hickman</u>		Project Name: <u>Chapel Hill Police Department</u>																				DW - Drinking Water SW - Storm Water WW - Wastewater SW - Surface Water SD - Soil S - Sludge CS - Gas LC - Other Liquid AR - Air EDU - Other Body AP - Waste
Address: <u>3334 Hillsborough St</u>		City: <u>Chapel Hill</u> State: <u>NC</u>																				
City: <u>Raleigh</u> State: <u>NC</u> Zip: <u>27511</u>		Project Code: <u>TCH-002</u>																				
Project Contact: <u>Lisa Nickels</u> Email: <u>lnickels@hartandhickman.com</u>		Client Purchase Order #: <u>TCH-002</u>																				
Phone: <u>919-847-4241</u>																						
Sample Name(s) / Project: <u>Lisa Nickels</u>																						
Accutest Sample #	Field ID	Point of Collection	DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF SAMPLES	TEST #	TEST NAME	TEST UNIT	TEST RESULT	TEST METHOD	TEST RANGE	TEST STATUS	TEST COMMENTS	LAB USE ONLY						
1	MW-5		4/18/2020		JEN	GW	2		X		X					CU						
2	MW-6		4/18/2020		JEN	GW	2		X		X					AY						

TURNAROUND TIME (Business Days)		Data Describable Information										Comments / Remarks									
<input type="checkbox"/> 10 Days Standard <input type="checkbox"/> 7 Day RUSH <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> OTHER		Approved By: <u>Rush Code</u> <input type="checkbox"/> COMMERCIAL AT RESULTS ONLY <input type="checkbox"/> COMMERCIAL IS RESULTS PLUS CCI <input type="checkbox"/> REDUCED LEVEL 3 <input type="checkbox"/> REDUCED LEVEL 4 <input type="checkbox"/> EDDS INITIAL ASSESSMENT <u>JS</u> LABEL VERIFICATION										FedEx # <u>7861 2398 3878</u> <b>Accutest Laboratories</b> Raleigh, North Carolina Service Center									

Sample Custody must be documented below each time sample change possession. (How to capture CE vary)

Received by: <u>Nickels</u>	Date/Time: <u>4/18/2020</u>	Received By: <u>2 Fedex</u>	Received by: <u>Fedex</u>	Date/Time: <u>4/17/2020</u>	Received By: <u>4</u>
Received by: <u>E</u>	Date/Time: <u>E</u>	Received By: <u>E</u>	Received by: <u>7</u>	Date/Time: <u>5</u>	Received By: <u>5</u>

Lab Use Only: Custody Seal in Place: Y/N Temp Blank Provided: Y/N Preserved where Applicable: Y/N Total # of Coolers: 2 Cooler Temperature (s): Celsius 0.9.8

4.1  
4

JC40274: Chain of Custody

Page 1 of 2

## SGS Accutest Sample Receipt Summary

Job Number: JC40274

Client: \_\_\_\_\_

Project: \_\_\_\_\_

Date / Time Received: 4/4/2017 9:25:00 AM

Delivery Method: \_\_\_\_\_

Airbill #s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (0.9);

Cooler Temps (Corrected) °C: Cooler 1: (2.3);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

SM089-02  
Rev. Date 12/1/16

JC40274: Chain of Custody

Page 2 of 2

4.1  
4

**Metals Analysis**

**QC Data Summaries**

---

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JC40274  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
Matrix Type: AQUEOUS

Methods: SW846 6010C  
Units: ug/l

Prep Date: 04/04/17

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	10	21		
Antimony	6.0	1.2	3.3		
Arsenic	3.0	1.3	2.2		
Barium	200	.2	.44		
Beryllium	1.0	.05	.25		
Bismuth	20	1.8	2.9		
Boron	100	1.2	3.9		
Cadmium	3.0	.3	.4		
Calcium	5000	14	33		
Chromium	10	.6	.81	0.40	<10
Cobalt	50	.3	.69		
Copper	10	.7	2.4		
Iron	100	3.6	12		
Lead	3.0	1.1	2.3		
Lithium	20	1.4	4		
Magnesium	5000	19	85		
Manganese	15	.1	.39		
Molybdenum	20	.5	.88		
Nickel	10	.6	.76		
Palladium	50	2.2	3.7		
Phosphorus	50	2	3.7		
Potassium	10000	23	120		
Selenium	10	3.5	4.1		
Silicon	200	1.6	29		
Silver	10	.9	.88		
Sodium	10000	12	24		
Sulfur	50	3.8	6.9		
Strontium	10	.1	.22		
Thallium	2.0	1.6	1.9		
Tin	10	.7	2.3		
Titanium	10	.7	.99		
Tungsten	50	.9	3.2		
Vanadium	50	.5	.66		

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: JC40274  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
Matrix Type: AQUEOUS

Methods: SW846 6010C  
Units: ug/l

Prep Date: 04/04/17

Metal	RL	IDL	MDL	MB raw	final
-------	----	-----	-----	-----------	-------

Zinc 20 1.8 1.3

Zirconium 10 .3 .94

Associated samples MP99697: JC40274-1, JC40274-2

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

5.1.1  
5



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC40274  
 Account: HAHNCC - Hart & Hickman  
 Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 04/04/17

Metal	JC40246-3 Original MS	SpikeLot MPSPK2		% Rec	QC Limits
Aluminum					
Antimony	anr				
Arsenic	anr				
Barium					
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	0.70	2010	2000	100.5	75-125
Cobalt					
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Palladium					
Phosphorus					
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Strontium					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc	anr				
Zirconium					

5.1.2  
5

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC40274  
 Account: HAHNCC - Hart & Hickman  
 Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 04/04/17

Metal	JC40246-3 Original MS	Spikelet MPSPK2	% Rec	QC Limits
-------	--------------------------	--------------------	-------	--------------

Associated samples MP99697: JC40274-1, JC40274-2

Results < IDL are shown as zero for calculation purposes

- (\*) Outside of QC limits
- (N) Matrix Spike Rec. outside of QC limits
- (anr) Analyte not requested

5.1.2  
5

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC40274  
 Account: HAHNCC - Hart & Hickman  
 Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 04/04/17

Metal	JC40246-3 Original MSD	SpikeLot MPSPK2 % Rec		MSD RPD	QC Limit	
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium						
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	0.70	2020	2000	101.0	0.5	20
Cobalt						
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Palladium						
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Strontium						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc	anr					
Zirconium						

5.1.2  
5

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JC40274  
 Account: HAHNCC - Hart & Hickman  
 Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 04/04/17

Metal	JC40246-3 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
-------	---------------------------	--------------------	-------	------------	-------------

Associated samples MP99697: JC40274-1, JC40274-2

Results < IDL are shown as zero for calculation purposes  
 (\*) Outside of QC limits  
 (N) Matrix Spike Rec. outside of QC limits  
 (anr) Analyte not requested

5.1.2  
5

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC40274  
 Account: HAHNCC - Hart & Hickman  
 Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 04/04/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium				
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	2040	2000	102.0	80-120
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Palladium				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Sulfur				
Strontium				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium				

5.1.3  
5

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JC40274  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
Matrix Type: AQUEOUS

Methods: SW846 6010C  
Units: ug/l

Prep Date: 04/04/17

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
-------	---------------	--------------------	-------	--------------

Zinc anr

Zirconium

Associated samples MP99697: JC40274-1, JC40274-2

Results < IDL are shown as zero for calculation purposes  
(\* ) Outside of QC limits  
(anr) Analyte not requested

5.1.3  
5

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC40274  
 Account: HAHNCC - Hart & Hickman  
 Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 04/04/17

Metal	JC40246-3 Original SDL 1:5	%DIF	QC Limits
Aluminum			
Antimony	anr		
Arsenic	anr		
Barium			
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium			
Chromium	0.700	0.00	100.0(a) 0-10
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Palladium			
Phosphorus			
Potassium			
Selenium	anr		
Silicon			
Silver	anr		
Sodium			
Strontium			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium			
Zinc	anr		

5.1.4  
5

SERIAL DILUTION RESULTS SUMMARY

Login Number: JC40274  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

QC Batch ID: MP99697  
Matrix Type: AQUEOUS

Methods: SW846 6010C  
Units: ug/l

Prep Date: 04/04/17

Metal	JC40246-3	QC
	Original SDL 1:5	%DIF Limits

Zirconium

Associated samples MP99697: JC40274-1, JC40274-2

Results < IDL are shown as zero for calculation purposes

(\*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

5.1.4  
5



General Chemistry

QC Data Summaries

---

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC40274  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP4363/GN61843	0.0055	0.0	mg/l	0.0501	0.0497	99.3	90-110%
Chromium, Hexavalent	GP4363/GN61843	0.0055	0.0	mg/l	0.0501	0.0489	97.7	90-110%
Chromium, Hexavalent	GP4363/GN61843			mg/l	0.0501	0.0498	99.5	90-110%
Chromium, Hexavalent	GP4363/GN61843			mg/l	0.0501	0.0489	97.7	90-110%
Chromium, Hexavalent	GP4363/GN61843			mg/l	0.0501	0.0498	99.5	90-110%

Associated Samples:

Batch GP4363: JC40274-1, JC40274-2

(\* ) Outside of QC limits

6.1  
6

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC40274  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP4363/GN61843	JC40274-1	mg/l	0.0048 U	0.0	0.0	0-20%

Associated Samples:

Batch GP4363: JC40274-1, JC40274-2

(\*) Outside of QC limits

6.2  
6

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: JC40274  
Account: HAHNCC - Hart & Hickman  
Project: TCH-002, 828 Martin Luther King Junior Boulevard, Chapel Hill, NC

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP4363/GN61843	JC40274-1	mg/l	0.0048 U	0.0501	0.040	79.9N(a)	85-115%

Associated Samples:

Batch GP4363: JC40274-1, JC40274-2

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(a) Spike recovery indicates possible matrix interference.

6.3

6

**Appendix F**  
**Monitoring Well Construction Records**

# WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

## 1. Well Contractor Information:

**KENNY SARGENT**

Well Contractor Name

**A - 4226**

NC Well Contractor Certification Number

**GEOLOGIC EXPLORATION, INC**

Company Name

## 2. Well Construction Permit #:

List all applicable well construction permits (i.e. County, State, Variance, etc.)

## 3. Well Use (check well use):

### Water Supply Well:

- |  |  |
|--|--|
| <input type="checkbox"/> Agricultural                        | <input type="checkbox"/> Municipal/Public                  |
| <input type="checkbox"/> Geothermal (Heating/Cooling Supply) | <input type="checkbox"/> Residential Water Supply (single) |
| <input type="checkbox"/> Industrial/Commercial               | <input type="checkbox"/> Residential Water Supply (shared) |
| <input type="checkbox"/> Irrigation                          |  |

### Non-Water Supply Well:

- Monitoring  Recovery

### Injection Well:

- |  |  |
|--|--|
| <input type="checkbox"/> Aquifer Recharge                    | <input type="checkbox"/> Groundwater Remediation           |
| <input type="checkbox"/> Aquifer Storage and Recovery        | <input type="checkbox"/> Salinity Barrier                  |
| <input type="checkbox"/> Aquifer Test                        | <input type="checkbox"/> Stormwater Drainage               |
| <input type="checkbox"/> Experimental Technology             | <input type="checkbox"/> Subsidence Control                |
| <input type="checkbox"/> Geothermal (Closed Loop)            | <input type="checkbox"/> Tracer                            |
| <input type="checkbox"/> Geothermal (Heating/Cooling Return) | <input type="checkbox"/> Other (explain under #21 Remarks) |

4. Date Well(s) Completed: 11/02/16 Well ID# MW-5

### 5a. Well Location:

**TOWN OF CHAPEL HILL**

Facility/Owner Name

Facility ID# (if applicable)

**828 MARTIN KING LUTHER JR BLVD CHAPEL HILL 27514**

Physical Address, City, and Zip

**ORANGE**

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees:  
(if well field, one lat/long is sufficient)

35° 55' 33.25" N 79° 03' 12.26" W

6. Is (are) the well(s):  Permanent or  Temporary

7. Is this a repair to an existing well:  Yes or  No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 28.0 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 16.0 (ft.)

If water level is above casing, use "+"

11. Borehole diameter: 6.0 (in.)

12. Well construction method: AIR

(i.e. auger, rotary, cable, direct push, etc.)

### FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) \_\_\_\_\_ Method of test: \_\_\_\_\_

13b. Disinfection type: \_\_\_\_\_ Amount: \_\_\_\_\_

For Internal Use ONLY:

### 14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

### 15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

### 16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	18.0 ft.	2.0 in.	SCH 40	PVC
ft.	ft.	in.		

### 17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
18.0 ft.	28.0 ft.	2.0 in.	.010	SCH 40	PVC
ft.	ft.	in.			

### 18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	13.0 ft.	PORTLAND BENTONITE	SLURRY
ft.	ft.		
ft.	ft.		

### 19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
16.0 ft.	28.0 ft.	20-40	FINE SILICA SAND
ft.	ft.		


### 20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	1.0 ft.	GRASS/BACKFILL
1.0 ft.	4.0 ft.	BROWN SILT
4.0 ft.	15.0 ft.	BROWN SILTY PWR
15.0 ft.	28.5 ft.	GRAY ROCK
ft.	ft.	
ft.	ft.	
ft.	ft.	

### 21. REMARKS

**BENTONITE SEAL FROM 13.0 TO 16.0 FEET**

### 22. Certification:

 11/17/16  
Signature of Certified Well Contractor Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

### 23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

### SUBMITTAL INSTRUCTIONS

24a. **For All Wells:** Submit this form within 30 days of completion of well construction to the following:

Division of Water Quality, Information Processing Unit,  
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. **For Injection Wells:** In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Quality, Underground Injection Control Program,  
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. **For Water Supply & Injection Wells:** In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed

# WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

## 1. Well Contractor Information:

**KENNY SARGENT**

Well Contractor Name

**A - 4226**

NC Well Contractor Certification Number

**GEOLOGIC EXPLORATION, INC**

Company Name

## 2. Well Construction Permit #:

List all applicable well construction permits (i.e. County, State, Variance, etc.)

## 3. Well Use (check well use):

### Water Supply Well:

- Agricultural  Municipal/Public  
 Geothermal (Heating/Cooling Supply)  Residential Water Supply (single)  
 Industrial/Commercial  Residential Water Supply (shared)  
 Irrigation

### Non-Water Supply Well:

- Monitoring  Recovery

### Injection Well:

- Aquifer Recharge  Groundwater Remediation  
 Aquifer Storage and Recovery  Salinity Barrier  
 Aquifer Test  Stormwater Drainage  
 Experimental Technology  Subsidence Control  
 Geothermal (Closed Loop)  Tracer  
 Geothermal (Heating/Cooling Return)  Other (explain under #21 Remarks)

4. Date Well(s) Completed: 11/02/16 Well ID# MW-6

### 5a. Well Location:

**TOWN OF CHAPEL HILL**

Facility/Owner Name

Facility ID# (if applicable)

**828 MARTIN KING LUTHER JR BLVD CHAPEL HILL 27514**

Physical Address, City, and Zip

**ORANGE**

County

Parcel Identification No. (PIN)

### 5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees: (if well field, one lat/long is sufficient)

35° 55' 33.25" N 79° 03' 12.26" W

6. Is (are) the well(s):  Permanent or  Temporary

7. Is this a repair to an existing well:  Yes or  No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 17.5 (ft.)  
For multiple wells list all depths if different (example- 3@200' and 2@100')

10. Static water level below top of casing: 9.0 (ft.)  
If water level is above casing, use "+"

11. Borehole diameter: 8.0 (in.)

12. Well construction method: AUGER

(i.e. auger, rotary, cable, direct push, etc.)

### FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) \_\_\_\_\_ Method of test: \_\_\_\_\_

13b. Disinfection type: \_\_\_\_\_ Amount: \_\_\_\_\_

For Internal Use ONLY:

### 14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

### 15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

### 16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	7.5 ft.	2.0 in.	SCH 40	PVC*
ft.	ft.	in.		

### 17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
7.5 ft.	17.5 ft.	2.0 in.	.010	SCH 40	PVC
ft.	ft.	in.			

### 18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	3.0 ft.	PORTLAND BENTONITE	SLURRY
ft.	ft.		
ft.	ft.		

### 19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
5.5 ft.	17.5 ft.	20-40	FINE SILICA SAND
ft.	ft.		

### 20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	2.0 ft.	GRASS/BACKFILL
2.0 ft.	4.0 ft.	GRAVEL
4.0 ft.	18.0 ft.	BLACK ASH/ROCKS
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

### 21. REMARKS

BENTONITE SEAL FROM 3.0 TO 5.5 FEET

\*PREPACK SCREEN

### 22. Certification:



Signature of Certified Well Contractor

11/17/16

Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

### 23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

### SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Quality, Information Processing Unit,  
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Quality, Underground Injection Control Program,  
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

# WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

## 1. Well Contractor Information:

**KENNY SARGENT**

Well Contractor Name

**A - 4226**

NC Well Contractor Certification Number

**GEOLOGIC EXPLORATION, INC**

Company Name

## 2. Well Construction Permit #:

List all applicable well construction permits (i.e. County, State, Variance, etc.)

## 3. Well Use (check well use):

### Water Supply Well:

- Agricultural  Municipal/Public  
 Geothermal (Heating/Cooling Supply)  Residential Water Supply (single)  
 Industrial/Commercial  Residential Water Supply (shared)  
 Irrigation

### Non-Water Supply Well:

- Monitoring  Recovery

### Injection Well:

- Aquifer Recharge  Groundwater Remediation  
 Aquifer Storage and Recovery  Salinity Barrier  
 Aquifer Test  Stormwater Drainage  
 Experimental Technology  Subsidence Control  
 Geothermal (Closed Loop)  Tracer  
 Geothermal (Heating/Cooling Return)  Other (explain under #21 Remarks)

4. Date Well(s) Completed: 11/02/16 Well ID# MW-7

## 5a. Well Location:

**TOWN OF CHAPEL HILL**

Facility/Owner Name

Facility ID# (if applicable)

**828 MARTIN KING LUTHER JR BLVD CHAPEL HILL 27514**

Physical Address, City, and Zip

**ORANGE**

County

Parcel Identification No. (PIN)

## 5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees: (if well field, one lat/long is sufficient)

35° 55' 33.25" N 79° 03' 12.26" W

## 6. Is (are) the well(s): Permanent or Temporary

## 7. Is this a repair to an existing well: Yes or No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

## 8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

## 9. Total well depth below land surface: 69.5 (ft.)

For multiple wells list all depths if different (example- 3@200' and 2@100')

## 10. Static water level below top of casing: 58.0 (ft.)

If water level is above casing, use "+ "

## 11. Borehole diameter: 8.0/6.0 (in.)

## 12. Well construction method: AUGER/AIR

(i.e. auger, rotary, cable, direct push, etc.)

## FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) \_\_\_\_\_ Method of test: \_\_\_\_\_

13b. Disinfection type: \_\_\_\_\_ Amount: \_\_\_\_\_

For Internal Use ONLY:

14. WATER ZONES		
FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)				
FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)				
FROM	TO	DIAMETER	THICKNESS	MATERIAL
0.0 ft.	59.5 ft.	2.0 in.	SCH 40	PVC*
ft.	ft.	in.		

17. SCREEN					
FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
59.5 ft.	69.5 ft.	2.0 in.	.010	SCH 40	PVC
ft.	ft.	in.			

18. GROUT			
FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
0.0 ft.	54.0 ft.	PORTLAND BENTONITE	SLURRY
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)			
FROM	TO	MATERIAL	EMPLACEMENT METHOD
57.5 ft.	69.5 ft.	20-40	FINE SILICA SAND
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)		
FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	1.0 ft.	GRASS/BACKFILL
1.0 ft.	12.0 ft.	BROWN SILT
12.0 ft.	14.0 ft.	BROWN SILTY PWR
14.0 ft.	70.0 ft.	GRAY ROCK
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS  
 BENTONITE SEAL FROM 54.0 TO 57.5 FEET  
 \*PREPACK SCREEN

## 22. Certification:

  
 Signature of Certified Well Contractor Date 11/17/16

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

## 23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

## SUBMITTAL INSTRUCTIONS

24a. For All Wells: Submit this form within 30 days of completion of well construction to the following:

Division of Water Quality, Information Processing Unit,  
 1617 Mail Service Center, Raleigh, NC 27699-1617

24b. For Injection Wells: In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Quality, Underground Injection Control Program,  
 1636 Mail Service Center, Raleigh, NC 27699-1636

24c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.



## **Appendix G**

### **Background Soil Upper Confidence Level Documentation**

	A	B	C	D	E	F	G	H	I	J	K	L	
1	<b>UCL Statistics for Uncensored Full Data Sets</b>												
2													
3	User Selected Options												
4	Date/Time of Computation		ProUCL 5.112/14/2016 8:54:59 AM										
5	From File		BG data.xls										
6	Full Precision		OFF										
7	Confidence Coefficient		95%										
8	Number of Bootstrap Operations		2000										
9													
10													
11	<b>As</b>												
12													
13	<b>General Statistics</b>												
14	Total Number of Observations				10		Number of Distinct Observations				7		
15									Number of Missing Observations				0
16	Minimum				1.4		Mean				1.91		
17	Maximum				2.3		Median				1.9		
18	SD				0.264		Std. Error of Mean				0.0836		
19	Coefficient of Variation				0.138		Skewness				-0.45		
20													
21	<b>Normal GOF Test</b>												
22	Shapiro Wilk Test Statistic				0.965		<b>Shapiro Wilk GOF Test</b>						
23	5% Shapiro Wilk Critical Value				0.842		Data appear Normal at 5% Significance Level						
24	Lilliefors Test Statistic				0.185		<b>Lilliefors GOF Test</b>						
25	5% Lilliefors Critical Value				0.262		Data appear Normal at 5% Significance Level						
26	<b>Data appear Normal at 5% Significance Level</b>												
27													
28	<b>Assuming Normal Distribution</b>												
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>						
30	95% Student's-t UCL				2.063		95% Adjusted-CLT UCL (Chen-1995)				2.035		
31							95% Modified-t UCL (Johnson-1978)				2.061		
32													
33	<b>Gamma GOF Test</b>												
34	A-D Test Statistic				0.285		<b>Anderson-Darling Gamma GOF Test</b>						
35	5% A-D Critical Value				0.724		Detected data appear Gamma Distributed at 5% Significance Level						
36	K-S Test Statistic				0.202		<b>Kolmogorov-Smirnov Gamma GOF Test</b>						
37	5% K-S Critical Value				0.266		Detected data appear Gamma Distributed at 5% Significance Level						
38	<b>Detected data appear Gamma Distributed at 5% Significance Level</b>												
39													
40	<b>Gamma Statistics</b>												
41	k hat (MLE)				54.94		k star (bias corrected MLE)				38.52		
42	Theta hat (MLE)				0.0348		Theta star (bias corrected MLE)				0.0496		
43	nu hat (MLE)				1099		nu star (bias corrected)				770.4		
44	MLE Mean (bias corrected)				1.91		MLE Sd (bias corrected)				0.308		
45							Approximate Chi Square Value (0.05)				707		
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				696.5		
47													
48	<b>Assuming Gamma Distribution</b>												
49	95% Approximate Gamma UCL (use when n>=50)				2.081		95% Adjusted Gamma UCL (use when n<50)				2.113		
50													

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.942		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data appear Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.211		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data appear Lognormal at 5% Significance Level					
56	<b>Data appear Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				0.336		Mean of logged Data				0.638	
60	Maximum of Logged Data				0.833		SD of logged Data				0.145	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				2.09		90% Chebyshev (MVUE) UCL				2.173	
64	95% Chebyshev (MVUE) UCL				2.292		97.5% Chebyshev (MVUE) UCL				2.458	
65	99% Chebyshev (MVUE) UCL				2.782							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				2.048		95% Jackknife UCL				2.063	
72	95% Standard Bootstrap UCL				2.036		95% Bootstrap-t UCL				2.051	
73	95% Hall's Bootstrap UCL				2.047		95% Percentile Bootstrap UCL				2.04	
74	95% BCA Bootstrap UCL				2.02							
75	90% Chebyshev(Mean, Sd) UCL				2.161		95% Chebyshev(Mean, Sd) UCL				2.274	
76	97.5% Chebyshev(Mean, Sd) UCL				2.432		99% Chebyshev(Mean, Sd) UCL				2.742	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				2.063							
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	<b>Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be</b>											
87	<b>reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.</b>											
88												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:13:07 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Barium</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				9	
15							Number of Missing Observations				0	
16	Minimum				36		Mean				51.8	
17	Maximum				76		Median				51	
18	SD				11.03		Std. Error of Mean				3.489	
19	Coefficient of Variation				0.213		Skewness				1.031	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.933		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data appear Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.157		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data appear Normal at 5% Significance Level					
26	<b>Data appear Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				58.2		95% Adjusted-CLT UCL (Chen-1995)				58.75	
31							95% Modified-t UCL (Johnson-1978)				58.39	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				0.258		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.725		Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.138		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.266		Detected data appear Gamma Distributed at 5% Significance Level					
38	<b>Detected data appear Gamma Distributed at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				26.16		k star (bias corrected MLE)				18.38	
42	Theta hat (MLE)				1.98		Theta star (bias corrected MLE)				2.819	
43	nu hat (MLE)				523.2		nu star (bias corrected)				367.6	
44	MLE Mean (bias corrected)				51.8		MLE Sd (bias corrected)				12.08	
45							Approximate Chi Square Value (0.05)				324.1	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				317	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				58.74		95% Adjusted Gamma UCL (use when n<50)				60.06	
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.971		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data appear Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.141		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data appear Lognormal at 5% Significance Level					
56	<b>Data appear Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				3.584		Mean of logged Data				3.928	
60	Maximum of Logged Data				4.331		SD of logged Data				0.205	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				59		90% Chebyshev (MVUE) UCL				61.86	
64	95% Chebyshev (MVUE) UCL				66.42		97.5% Chebyshev (MVUE) UCL				72.76	
65	99% Chebyshev (MVUE) UCL				85.21							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				57.54		95% Jackknife UCL				58.2	
72	95% Standard Bootstrap UCL				57.23		95% Bootstrap-t UCL				60.32	
73	95% Hall's Bootstrap UCL				65.56		95% Percentile Bootstrap UCL				57.1	
74	95% BCA Bootstrap UCL				58							
75	90% Chebyshev(Mean, Sd) UCL				62.27		95% Chebyshev(Mean, Sd) UCL				67.01	
76	97.5% Chebyshev(Mean, Sd) UCL				73.59		99% Chebyshev(Mean, Sd) UCL				86.52	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				58.2							
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L	
1	<b>UCL Statistics for Uncensored Full Data Sets</b>												
2													
3	User Selected Options												
4	Date/Time of Computation		ProUCL 5.112/14/2016 9:01:23 AM										
5	From File		BG data.xls										
6	Full Precision		OFF										
7	Confidence Coefficient		95%										
8	Number of Bootstrap Operations		2000										
9													
10													
11	<b>Be</b>												
12													
13	<b>General Statistics</b>												
14	Total Number of Observations				10		Number of Distinct Observations				9		
15									Number of Missing Observations				0
16	Minimum				0.39		Mean				0.548		
17	Maximum				0.99		Median				0.51		
18	SD				0.166		Std. Error of Mean				0.0524		
19	Coefficient of Variation				0.303		Skewness				2.449		
20													
21	<b>Normal GOF Test</b>												
22	Shapiro Wilk Test Statistic				0.705		<b>Shapiro Wilk GOF Test</b>						
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level						
24	Lilliefors Test Statistic				0.319		<b>Lilliefors GOF Test</b>						
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level						
26	<b>Data Not Normal at 5% Significance Level</b>												
27													
28	<b>Assuming Normal Distribution</b>												
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>						
30	95% Student's-t UCL				0.644		95% Adjusted-CLT UCL (Chen-1995)				0.678		
31							95% Modified-t UCL (Johnson-1978)				0.651		
32													
33	<b>Gamma GOF Test</b>												
34	A-D Test Statistic				0.933		<b>Anderson-Darling Gamma GOF Test</b>						
35	5% A-D Critical Value				0.725		Data Not Gamma Distributed at 5% Significance Level						
36	K-S Test Statistic				0.29		<b>Kolmogorov-Smirnov Gamma GOF Test</b>						
37	5% K-S Critical Value				0.266		Data Not Gamma Distributed at 5% Significance Level						
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>												
39													
40	<b>Gamma Statistics</b>												
41	k hat (MLE)				15.94		k star (bias corrected MLE)				11.23		
42	Theta hat (MLE)				0.0344		Theta star (bias corrected MLE)				0.0488		
43	nu hat (MLE)				318.8		nu star (bias corrected)				224.5		
44	MLE Mean (bias corrected)				0.548		MLE Sd (bias corrected)				0.164		
45							Approximate Chi Square Value (0.05)				190.8		
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				185.4		
47													
48	<b>Assuming Gamma Distribution</b>												
49	95% Approximate Gamma UCL (use when n>=50)				0.645		95% Adjusted Gamma UCL (use when n<50)				0.663		
50													

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.82		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.273		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level					
56	<b>Data Not Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				-0.942		Mean of logged Data				-0.633	
60	Maximum of Logged Data				-0.0101		SD of logged Data				0.25	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				0.643		90% Chebyshev (MVUE) UCL				0.676	
64	95% Chebyshev (MVUE) UCL				0.735		97.5% Chebyshev (MVUE) UCL				0.816	
65	99% Chebyshev (MVUE) UCL				0.977							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data do not follow a Discernible Distribution (0.05)</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				0.634		95% Jackknife UCL				0.644	
72	95% Standard Bootstrap UCL				0.631		95% Bootstrap-t UCL				0.758	
73	95% Hall's Bootstrap UCL				1.053		95% Percentile Bootstrap UCL				0.639	
74	95% BCA Bootstrap UCL				0.678							
75	90% Chebyshev(Mean, Sd) UCL				0.705		95% Chebyshev(Mean, Sd) UCL				0.777	
76	97.5% Chebyshev(Mean, Sd) UCL				0.875		99% Chebyshev(Mean, Sd) UCL				1.07	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				0.644		or 95% Modified-t UCL				0.651	
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.112/14/2016 9:04:13 AM									
5	From File		BG data.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Co</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				8	
15							Number of Missing Observations				0	
16	Minimum				6.3		Mean				11	
17	Maximum				27		Median				7.5	
18	SD				6.731		Std. Error of Mean				2.128	
19	Coefficient of Variation				0.612		Skewness				1.947	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.688		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.3		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level					
26	<b>Data Not Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				14.9		95% Adjusted-CLT UCL (Chen-1995)				15.9	
31							95% Modified-t UCL (Johnson-1978)				15.12	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				1.237		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.729		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.318		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.268		Data Not Gamma Distributed at 5% Significance Level					
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				4.275		k star (bias corrected MLE)				3.059	
42	Theta hat (MLE)				2.573		Theta star (bias corrected MLE)				3.596	
43	nu hat (MLE)				85.5		nu star (bias corrected)				61.19	
44	MLE Mean (bias corrected)				11		MLE Sd (bias corrected)				6.289	
45							Approximate Chi Square Value (0.05)				44.2	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				41.7	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				15.23		95% Adjusted Gamma UCL (use when n<50)				16.14	
50												



	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.777		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.308		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level					
56	<b>Data Not Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				1.841		Mean of logged Data				2.276	
60	Maximum of Logged Data				3.296		SD of logged Data				0.478	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				15.48		90% Chebyshev (MVUE) UCL				15.76	
64	95% Chebyshev (MVUE) UCL				18.01		97.5% Chebyshev (MVUE) UCL				21.13	
65	99% Chebyshev (MVUE) UCL				27.27							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data do not follow a Discernible Distribution (0.05)</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				14.5		95% Jackknife UCL				14.9	
72	95% Standard Bootstrap UCL				14.33		95% Bootstrap-t UCL				25.49	
73	95% Hall's Bootstrap UCL				31.54		95% Percentile Bootstrap UCL				14.59	
74	95% BCA Bootstrap UCL				15.75							
75	90% Chebyshev(Mean, Sd) UCL				17.39		95% Chebyshev(Mean, Sd) UCL				20.28	
76	97.5% Chebyshev(Mean, Sd) UCL				24.29		99% Chebyshev(Mean, Sd) UCL				32.18	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				14.9		or 95% Modified-t UCL				15.12	
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:15:42 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Copper</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				6	
15							Number of Missing Observations				0	
16	Minimum				15		Mean				21.1	
17	Maximum				49		Median				18	
18	SD				10.06		Std. Error of Mean				3.181	
19	Coefficient of Variation				0.477		Skewness				2.88	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.564		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.344		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level					
26	<b>Data Not Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				26.93		95% Adjusted-CLT UCL (Chen-1995)				29.43	
31							95% Modified-t UCL (Johnson-1978)				27.41	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				1.55		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.727		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.322		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.267		Data Not Gamma Distributed at 5% Significance Level					
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				7.797		k star (bias corrected MLE)				5.524	
42	Theta hat (MLE)				2.706		Theta star (bias corrected MLE)				3.819	
43	nu hat (MLE)				155.9		nu star (bias corrected)				110.5	
44	MLE Mean (bias corrected)				21.1		MLE Sd (bias corrected)				8.977	
45							Approximate Chi Square Value (0.05)				87.23	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				83.64	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				26.73		95% Adjusted Gamma UCL (use when n<50)				27.87	
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.684		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.308		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level					
56	<b>Data Not Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				2.708		Mean of logged Data				2.984	
60	Maximum of Logged Data				3.892		SD of logged Data				0.341	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				26.36		90% Chebyshev (MVUE) UCL				27.62	
64	95% Chebyshev (MVUE) UCL				30.7		97.5% Chebyshev (MVUE) UCL				34.98	
65	99% Chebyshev (MVUE) UCL				43.37							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data do not follow a Discernible Distribution (0.05)</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				26.33		95% Jackknife UCL				26.93	
72	95% Standard Bootstrap UCL				25.91		95% Bootstrap-t UCL				46.68	
73	95% Hall's Bootstrap UCL				50.55		95% Percentile Bootstrap UCL				27.1	
74	95% BCA Bootstrap UCL				29.9							
75	90% Chebyshev(Mean, Sd) UCL				30.64		95% Chebyshev(Mean, Sd) UCL				34.97	
76	97.5% Chebyshev(Mean, Sd) UCL				40.97		99% Chebyshev(Mean, Sd) UCL				52.75	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				26.93		or 95% Modified-t UCL				27.41	
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Data Sets with Non-Detects</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.112/14/2016 2:53:37 PM									
5	From File		BG data.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10	<b>Cr6</b>											
11												
12	<b>General Statistics</b>											
13	Total Number of Observations				10		Number of Distinct Observations				10	
14	Number of Detects				8		Number of Non-Detects				2	
15	Number of Distinct Detects				8		Number of Distinct Non-Detects				2	
16	Minimum Detect				0.21		Minimum Non-Detect				0.12	
17	Maximum Detect				0.88		Maximum Non-Detect				0.13	
18	Variance Detects				0.0614		Percent Non-Detects				20%	
19	Mean Detects				0.655		SD Detects				0.248	
20	Median Detects				0.755		CV Detects				0.378	
21	Skewness Detects				-0.898		Kurtosis Detects				-0.461	
22	Mean of Logged Detects				-0.513		SD of Logged Detects				0.501	
23												
24	<b>Normal GOF Test on Detects Only</b>											
25	Shapiro Wilk Test Statistic				0.866		<b>Shapiro Wilk GOF Test</b>					
26	5% Shapiro Wilk Critical Value				0.818		Detected Data appear Normal at 5% Significance Level					
27	Lilliefors Test Statistic				0.234		<b>Lilliefors GOF Test</b>					
28	5% Lilliefors Critical Value				0.283		Detected Data appear Normal at 5% Significance Level					
29	<b>Detected Data appear Normal at 5% Significance Level</b>											
30												
31	<b>Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs</b>											
32	KM Mean				0.548		KM Standard Error of Mean				0.101	
33	KM SD				0.298		95% KM (BCA) UCL				0.705	
34	95% KM (t) UCL				0.733		95% KM (Percentile Bootstrap) UCL				0.706	
35	95% KM (z) UCL				0.714		95% KM Bootstrap t UCL				0.712	
36	90% KM Chebyshev UCL				0.85		95% KM Chebyshev UCL				0.987	
37	97.5% KM Chebyshev UCL				1.177		99% KM Chebyshev UCL				1.55	
38												
39	<b>Gamma GOF Tests on Detected Observations Only</b>											
40	A-D Test Statistic				0.642		<b>Anderson-Darling GOF Test</b>					
41	5% A-D Critical Value				0.718		Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic				0.246		<b>Kolmogorov-Smirnov GOF</b>					
43	5% K-S Critical Value				0.295		Detected data appear Gamma Distributed at 5% Significance Level					
44	<b>Detected data appear Gamma Distributed at 5% Significance Level</b>											
45												
46	<b>Gamma Statistics on Detected Data Only</b>											
47	k hat (MLE)				5.704		k star (bias corrected MLE)				3.649	
48	Theta hat (MLE)				0.115		Theta star (bias corrected MLE)				0.18	
49	nu hat (MLE)				91.27		nu star (bias corrected)				58.38	
50	Mean (detects)				0.655							



	A	B	C	D	E	F	G	H	I	J	K	L
101												
102	<b>DL/2 Statistics</b>											
103	<b>DL/2 Normal</b>						<b>DL/2 Log-Transformed</b>					
104	Mean in Original Scale					0.537	Mean in Log Scale					-0.965
105	SD in Original Scale					0.332	SD in Log Scale					1.051
106	95% t UCL (Assumes normality)					0.729	95% H-Stat UCL					2.034
107	<b>DL/2 is not a recommended method, provided for comparisons and historical reasons</b>											
108												
109	<b>Nonparametric Distribution Free UCL Statistics</b>											
110	<b>Detected Data appear Normal Distributed at 5% Significance Level</b>											
111												
112	<b>Suggested UCL to Use</b>											
113	95% KM (t) UCL					0.733						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L	
1	<b>UCL Statistics for Uncensored Full Data Sets</b>												
2													
3	User Selected Options												
4	Date/Time of Computation		ProUCL 5.112/14/2016 9:04:42 AM										
5	From File		BG data.xls										
6	Full Precision		OFF										
7	Confidence Coefficient		95%										
8	Number of Bootstrap Operations		2000										
9													
10													
11	<b>Pb</b>												
12													
13	<b>General Statistics</b>												
14	Total Number of Observations				10		Number of Distinct Observations				9		
15									Number of Missing Observations				0
16	Minimum				0.55		Mean				22.76		
17	Maximum				43		Median				25		
18	SD				12.49		Std. Error of Mean				3.949		
19	Coefficient of Variation				0.549		Skewness				-0.582		
20													
21	<b>Normal GOF Test</b>												
22	Shapiro Wilk Test Statistic				0.912		<b>Shapiro Wilk GOF Test</b>						
23	5% Shapiro Wilk Critical Value				0.842		Data appear Normal at 5% Significance Level						
24	Lilliefors Test Statistic				0.244		<b>Lilliefors GOF Test</b>						
25	5% Lilliefors Critical Value				0.262		Data appear Normal at 5% Significance Level						
26	<b>Data appear Normal at 5% Significance Level</b>												
27													
28	<b>Assuming Normal Distribution</b>												
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>						
30	95% Student's-t UCL				29.99		95% Adjusted-CLT UCL (Chen-1995)				28.47		
31							95% Modified-t UCL (Johnson-1978)				29.87		
32													
33	<b>Gamma GOF Test</b>												
34	A-D Test Statistic				1.256		<b>Anderson-Darling Gamma GOF Test</b>						
35	5% A-D Critical Value				0.741		Data Not Gamma Distributed at 5% Significance Level						
36	K-S Test Statistic				0.377		<b>Kolmogorov-Smirnov Gamma GOF Test</b>						
37	5% K-S Critical Value				0.272		Data Not Gamma Distributed at 5% Significance Level						
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>												
39													
40	<b>Gamma Statistics</b>												
41	k hat (MLE)				1.383		k star (bias corrected MLE)				1.034		
42	Theta hat (MLE)				16.46		Theta star (bias corrected MLE)				22		
43	nu hat (MLE)				27.65		nu star (bias corrected)				20.69		
44	MLE Mean (bias corrected)				22.76		MLE Sd (bias corrected)				22.37		
45							Approximate Chi Square Value (0.05)				11.36		
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				10.18		
47													
48	<b>Assuming Gamma Distribution</b>												
49	95% Approximate Gamma UCL (use when n>=50)				41.44		95% Adjusted Gamma UCL (use when n<50)				46.25		
50													

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.676		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.396		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level					
56	<b>Data Not Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				-0.598		Mean of logged Data				2.721	
60	Maximum of Logged Data				3.761		SD of logged Data				1.328	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				198.7		90% Chebyshev (MVUE) UCL				74.63	
64	95% Chebyshev (MVUE) UCL				93.94		97.5% Chebyshev (MVUE) UCL				120.7	
65	99% Chebyshev (MVUE) UCL				173.4							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				29.25		95% Jackknife UCL				29.99	
72	95% Standard Bootstrap UCL				28.91		95% Bootstrap-t UCL				29.18	
73	95% Hall's Bootstrap UCL				28.94		95% Percentile Bootstrap UCL				28.86	
74	95% BCA Bootstrap UCL				28.3							
75	90% Chebyshev(Mean, Sd) UCL				34.6		95% Chebyshev(Mean, Sd) UCL				39.97	
76	97.5% Chebyshev(Mean, Sd) UCL				47.42		99% Chebyshev(Mean, Sd) UCL				62.05	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				29.99							
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	<b>Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be</b>											
87	<b>reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.</b>											
88												



	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:16:31 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Manganese</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				7	
15							Number of Missing Observations				0	
16	Minimum				310		Mean				499	
17	Maximum				940		Median				445	
18	SD				185.1		Std. Error of Mean				58.53	
19	Coefficient of Variation				0.371		Skewness				1.88	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.736		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.383		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level					
26	<b>Data Not Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				606.3		95% Adjusted-CLT UCL (Chen-1995)				632.4	
31							95% Modified-t UCL (Johnson-1978)				612.1	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				1.103		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.725		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.361		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.267		Data Not Gamma Distributed at 5% Significance Level					
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				10.3		k star (bias corrected MLE)				7.275	
42	Theta hat (MLE)				48.46		Theta star (bias corrected MLE)				68.59	
43	nu hat (MLE)				206		nu star (bias corrected)				145.5	
44	MLE Mean (bias corrected)				499		MLE Sd (bias corrected)				185	
45							Approximate Chi Square Value (0.05)				118.6	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				114.4	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50))				612.1		95% Adjusted Gamma UCL (use when n<50)				634.6	
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.822		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.341		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level					
56	<b>Data Not Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				5.737		Mean of logged Data				6.163	
60	Maximum of Logged Data				6.846		SD of logged Data				0.314	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				614.6		90% Chebyshev (MVUE) UCL				645.4	
64	95% Chebyshev (MVUE) UCL				712.9		97.5% Chebyshev (MVUE) UCL				806.6	
65	99% Chebyshev (MVUE) UCL				990.6							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data do not follow a Discernible Distribution (0.05)</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				595.3		95% Jackknife UCL				606.3	
72	95% Standard Bootstrap UCL				591.1		95% Bootstrap-t UCL				845.5	
73	95% Hall's Bootstrap UCL				1367		95% Percentile Bootstrap UCL				599	
74	95% BCA Bootstrap UCL				618							
75	90% Chebyshev(Mean, Sd) UCL				674.6		95% Chebyshev(Mean, Sd) UCL				754.1	
76	97.5% Chebyshev(Mean, Sd) UCL				864.5		99% Chebyshev(Mean, Sd) UCL				1081	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				606.3		or 95% Modified-t UCL				612.1	
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Data Sets with Non-Detects</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.112/14/2016 2:54:12 PM									
5	From File		BG data.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10	<b>Hg</b>											
11												
12	<b>General Statistics</b>											
13	Total Number of Observations				10		Number of Distinct Observations				10	
14	Number of Detects				8		Number of Non-Detects				2	
15	Number of Distinct Detects				8		Number of Distinct Non-Detects				2	
16	Minimum Detect				0.024		Minimum Non-Detect				0.02	
17	Maximum Detect				0.28		Maximum Non-Detect				0.023	
18	Variance Detects				0.00747		Percent Non-Detects				20%	
19	Mean Detects				0.0675		SD Detects				0.0864	
20	Median Detects				0.039		CV Detects				1.28	
21	Skewness Detects				2.757		Kurtosis Detects				7.694	
22	Mean of Logged Detects				-3.072		SD of Logged Detects				0.775	
23												
24	<b>Normal GOF Test on Detects Only</b>											
25	Shapiro Wilk Test Statistic				0.527		<b>Shapiro Wilk GOF Test</b>					
26	5% Shapiro Wilk Critical Value				0.818		Detected Data Not Normal at 5% Significance Level					
27	Lilliefors Test Statistic				0.437		<b>Lilliefors GOF Test</b>					
28	5% Lilliefors Critical Value				0.283		Detected Data Not Normal at 5% Significance Level					
29	<b>Detected Data Not Normal at 5% Significance Level</b>											
30												
31	<b>Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs</b>											
32	KM Mean		0.058		KM Standard Error of Mean				0.0253			
33	KM SD		0.0748		95% KM (BCA) UCL				0.108			
34	95% KM (t) UCL		0.104		95% KM (Percentile Bootstrap) UCL				0.106			
35	95% KM (z) UCL		0.0996		95% KM Bootstrap t UCL				0.296			
36	90% KM Chebyshev UCL		0.134		95% KM Chebyshev UCL				0.168			
37	97.5% KM Chebyshev UCL		0.216		99% KM Chebyshev UCL				0.309			
38												
39	<b>Gamma GOF Tests on Detected Observations Only</b>											
40	A-D Test Statistic		1.294		<b>Anderson-Darling GOF Test</b>							
41	5% A-D Critical Value		0.729		Detected Data Not Gamma Distributed at 5% Significance Level							
42	K-S Test Statistic		0.367		<b>Kolmogorov-Smirnov GOF</b>							
43	5% K-S Critical Value		0.299		Detected Data Not Gamma Distributed at 5% Significance Level							
44	<b>Detected Data Not Gamma Distributed at 5% Significance Level</b>											
45												
46	<b>Gamma Statistics on Detected Data Only</b>											
47	k hat (MLE)		1.475		k star (bias corrected MLE)				1.005			
48	Theta hat (MLE)		0.0458		Theta star (bias corrected MLE)				0.0672			
49	nu hat (MLE)		23.59		nu star (bias corrected)				16.08			
50	Mean (detects)		0.0675									



	A	B	C	D	E	F	G	H	I	J	K	L
101												
102	<b>DL/2 Statistics</b>											
103	<b>DL/2 Normal</b>						<b>DL/2 Log-Transformed</b>					
104	Mean in Original Scale					0.0562	Mean in Log Scale					-3.364
105	SD in Original Scale					0.0799	SD in Log Scale					0.921
106	95% t UCL (Assumes normality)					0.102	95% H-Stat UCL					0.131
107	<b>DL/2 is not a recommended method, provided for comparisons and historical reasons</b>											
108												
109	<b>Nonparametric Distribution Free UCL Statistics</b>											
110	<b>Data do not follow a Discernible Distribution at 5% Significance Level</b>											
111												
112	<b>Suggested UCL to Use</b>											
113	95% KM (Chebyshev) UCL					0.168						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:17:49 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Nickel</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				10	
15							Number of Missing Observations				0	
16	Minimum				4.9		Mean				7.42	
17	Maximum				20		Median				5.7	
18	SD				4.592		Std. Error of Mean				1.452	
19	Coefficient of Variation				0.619		Skewness				2.763	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.588		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.307		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level					
26	<b>Data Not Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				10.08		95% Adjusted-CLT UCL (Chen-1995)				11.16	
31							95% Modified-t UCL (Johnson-1978)				10.29	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				1.314		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.729		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.292		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.267		Data Not Gamma Distributed at 5% Significance Level					
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				4.878		k star (bias corrected MLE)				3.481	
42	Theta hat (MLE)				1.521		Theta star (bias corrected MLE)				2.131	
43	nu hat (MLE)				97.56		nu star (bias corrected)				69.63	
44	MLE Mean (bias corrected)				7.42		MLE Sd (bias corrected)				3.977	
45							Approximate Chi Square Value (0.05)				51.42	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				48.71	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				10.05		95% Adjusted Gamma UCL (use when n<50)				10.61	
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.728		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.268		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level					
56	<b>Data Not Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				1.589		Mean of logged Data				1.898	
60	Maximum of Logged Data				2.996		SD of logged Data				0.43	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				9.933		90% Chebyshev (MVUE) UCL				10.25	
64	95% Chebyshev (MVUE) UCL				11.61		97.5% Chebyshev (MVUE) UCL				13.49	
65	99% Chebyshev (MVUE) UCL				17.2							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data do not follow a Discernible Distribution (0.05)</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				9.808		95% Jackknife UCL				10.08	
72	95% Standard Bootstrap UCL				9.671		95% Bootstrap-t UCL				16.28	
73	95% Hall's Bootstrap UCL				17.6		95% Percentile Bootstrap UCL				9.95	
74	95% BCA Bootstrap UCL				10.99							
75	90% Chebyshev(Mean, Sd) UCL				11.78		95% Chebyshev(Mean, Sd) UCL				13.75	
76	97.5% Chebyshev(Mean, Sd) UCL				16.49		99% Chebyshev(Mean, Sd) UCL				21.87	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				10.08		or 95% Modified-t UCL				10.29	
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Data Sets with Non-Detects</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.112/14/2016 2:55:06 PM									
5	From File		BG data.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10	<b>Se</b>											
11												
12	<b>General Statistics</b>											
13	Total Number of Observations				10		Number of Distinct Observations				8	
14	Number of Detects				6		Number of Non-Detects				4	
15	Number of Distinct Detects				5		Number of Distinct Non-Detects				3	
16	Minimum Detect				1.1		Minimum Non-Detect				0.53	
17	Maximum Detect				1.7		Maximum Non-Detect				0.65	
18	Variance Detects				0.0587		Percent Non-Detects				40%	
19	Mean Detects				1.433		SD Detects				0.242	
20	Median Detects				1.5		CV Detects				0.169	
21	Skewness Detects				-0.455		Kurtosis Detects				-1.794	
22	Mean of Logged Detects				0.347		SD of Logged Detects				0.176	
23												
24	<b>Normal GOF Test on Detects Only</b>											
25	Shapiro Wilk Test Statistic				0.906		<b>Shapiro Wilk GOF Test</b>					
26	5% Shapiro Wilk Critical Value				0.788		Detected Data appear Normal at 5% Significance Level					
27	Lilliefors Test Statistic				0.254		<b>Lilliefors GOF Test</b>					
28	5% Lilliefors Critical Value				0.325		Detected Data appear Normal at 5% Significance Level					
29	<b>Detected Data appear Normal at 5% Significance Level</b>											
30												
31	<b>Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs</b>											
32	KM Mean				1.072		KM Standard Error of Mean				0.164	
33	KM SD				0.475		95% KM (BCA) UCL				1.346	
34	95% KM (t) UCL				1.373		95% KM (Percentile Bootstrap) UCL				1.32	
35	95% KM (z) UCL				1.342		95% KM Bootstrap t UCL				1.279	
36	90% KM Chebyshev UCL				1.565		95% KM Chebyshev UCL				1.789	
37	97.5% KM Chebyshev UCL				2.099		99% KM Chebyshev UCL				2.708	
38												
39	<b>Gamma GOF Tests on Detected Observations Only</b>											
40	A-D Test Statistic				0.404		<b>Anderson-Darling GOF Test</b>					
41	5% A-D Critical Value				0.697		Detected data appear Gamma Distributed at 5% Significance Level					
42	K-S Test Statistic				0.277		<b>Kolmogorov-Smirnov GOF</b>					
43	5% K-S Critical Value				0.332		Detected data appear Gamma Distributed at 5% Significance Level					
44	<b>Detected data appear Gamma Distributed at 5% Significance Level</b>											
45												
46	<b>Gamma Statistics on Detected Data Only</b>											
47	k hat (MLE)				40.02		k star (bias corrected MLE)				20.12	
48	Theta hat (MLE)				0.0358		Theta star (bias corrected MLE)				0.0712	
49	nu hat (MLE)				480.2		nu star (bias corrected)				241.4	
50	Mean (detects)				1.433							





	A	B	C	D	E	F	G	H	I	J	K	L
101												
102	<b>DL/2 Statistics</b>											
103	<b>DL/2 Normal</b>						<b>DL/2 Log-Transformed</b>					
104	Mean in Original Scale					0.978	Mean in Log Scale					-0.281
105	SD in Original Scale					0.615	SD in Log Scale					0.823
106	95% t UCL (Assumes normality)					1.335	95% H-Stat UCL					2.255
107	<b>DL/2 is not a recommended method, provided for comparisons and historical reasons</b>											
108												
109	<b>Nonparametric Distribution Free UCL Statistics</b>											
110	<b>Detected Data appear Normal Distributed at 5% Significance Level</b>											
111												
112	<b>Suggested UCL to Use</b>											
113	95% KM (t) UCL					1.373						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:18:14 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Strontium</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				7	
15							Number of Missing Observations				0	
16	Minimum				14		Mean				21.7	
17	Maximum				46		Median				19	
18	SD				9.764		Std. Error of Mean				3.088	
19	Coefficient of Variation				0.45		Skewness				2.01	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.757		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.309		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level					
26	<b>Data Not Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				27.36		95% Adjusted-CLT UCL (Chen-1995)				28.88	
31							95% Modified-t UCL (Johnson-1978)				27.69	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				0.722		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.727		Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.29		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.267		Data Not Gamma Distributed at 5% Significance Level					
38	<b>Detected data follow Appr. Gamma Distribution at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				7.334		k star (bias corrected MLE)				5.2	
42	Theta hat (MLE)				2.959		Theta star (bias corrected MLE)				4.173	
43	nu hat (MLE)				146.7		nu star (bias corrected)				104	
44	MLE Mean (bias corrected)				21.7		MLE Sd (bias corrected)				9.516	
45							Approximate Chi Square Value (0.05)				81.47	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				78.01	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				27.7		95% Adjusted Gamma UCL (use when n<50)				28.93	
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.862		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data appear Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.268		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level					
56	<b>Data appear Approximate Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				2.639		Mean of logged Data				3.008	
60	Maximum of Logged Data				3.829		SD of logged Data				0.37	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				27.91		90% Chebyshev (MVUE) UCL				29.14	
64	95% Chebyshev (MVUE) UCL				32.6		97.5% Chebyshev (MVUE) UCL				37.39	
65	99% Chebyshev (MVUE) UCL				46.81							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				26.78		95% Jackknife UCL				27.36	
72	95% Standard Bootstrap UCL				26.44		95% Bootstrap-t UCL				33.85	
73	95% Hall's Bootstrap UCL				46.85		95% Percentile Bootstrap UCL				26.9	
74	95% BCA Bootstrap UCL				28.6							
75	90% Chebyshev(Mean, Sd) UCL				30.96		95% Chebyshev(Mean, Sd) UCL				35.16	
76	97.5% Chebyshev(Mean, Sd) UCL				40.98		99% Chebyshev(Mean, Sd) UCL				52.42	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Adjusted Gamma UCL				28.93							
80												
81	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
82	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
83												
84	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
85	Recommendations are based upon data size, data distribution, and skewness.											
86	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
87	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
88												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:14:44 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Chromium</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				8	
15							Number of Missing Observations				0	
16	Minimum				16		Mean				21.5	
17	Maximum				39		Median				19	
18	SD				6.687		Std. Error of Mean				2.115	
19	Coefficient of Variation				0.311		Skewness				2.324	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.723		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.254		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data appear Normal at 5% Significance Level					
26	<b>Data appear Approximate Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				25.38		95% Adjusted-CLT UCL (Chen-1995)				26.64	
31							95% Modified-t UCL (Johnson-1978)				25.64	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				0.822		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.725		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.249		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.266		Detected data appear Gamma Distributed at 5% Significance Level					
38	<b>Detected data follow Appr. Gamma Distribution at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				15		k star (bias corrected MLE)				10.57	
42	Theta hat (MLE)				1.433		Theta star (bias corrected MLE)				2.034	
43	nu hat (MLE)				300.1		nu star (bias corrected)				211.4	
44	MLE Mean (bias corrected)				21.5		MLE Sd (bias corrected)				6.613	
45							Approximate Chi Square Value (0.05)				178.7	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				173.5	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				25.43		95% Adjusted Gamma UCL (use when n<50)				26.19	
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.826		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.237		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data appear Lognormal at 5% Significance Level					
56	<b>Data appear Approximate Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				2.773		Mean of logged Data				3.034	
60	Maximum of Logged Data				3.664		SD of logged Data				0.257	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				25.37		90% Chebyshev (MVUE) UCL				26.67	
64	95% Chebyshev (MVUE) UCL				29.06		97.5% Chebyshev (MVUE) UCL				32.36	
65	99% Chebyshev (MVUE) UCL				38.85							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				24.98		95% Jackknife UCL				25.38	
72	95% Standard Bootstrap UCL				24.77		95% Bootstrap-t UCL				29.7	
73	95% Hall's Bootstrap UCL				38.16		95% Percentile Bootstrap UCL				24.9	
74	95% BCA Bootstrap UCL				27							
75	90% Chebyshev(Mean, Sd) UCL				27.84		95% Chebyshev(Mean, Sd) UCL				30.72	
76	97.5% Chebyshev(Mean, Sd) UCL				34.71		99% Chebyshev(Mean, Sd) UCL				42.54	
77												
78	<b>Suggested UCL to Use</b>											
79	95% Student's-t UCL				25.38							
80												
81	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
82	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
83												
84	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
85	Recommendations are based upon data size, data distribution, and skewness.											
86	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
87	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
88												

	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:18:59 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Vanadium</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				8	
15							Number of Missing Observations				0	
16	Minimum				34		Mean				57.9	
17	Maximum				190		Median				38.5	
18	SD				47.63		Std. Error of Mean				15.06	
19	Coefficient of Variation				0.823		Skewness				2.884	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.548		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.341		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level					
26	<b>Data Not Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				85.51		95% Adjusted-CLT UCL (Chen-1995)				97.35	
31							95% Modified-t UCL (Johnson-1978)				87.8	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				1.459		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.732		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.285		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.268		Data Not Gamma Distributed at 5% Significance Level					
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				3.123		k star (bias corrected MLE)				2.253	
42	Theta hat (MLE)				18.54		Theta star (bias corrected MLE)				25.7	
43	nu hat (MLE)				62.46		nu star (bias corrected)				45.06	
44	MLE Mean (bias corrected)				57.9		MLE Sd (bias corrected)				38.58	
45							Approximate Chi Square Value (0.05)				30.66	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				28.61	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				85.09		95% Adjusted Gamma UCL (use when n<50)				91.19	
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	<b>Lognormal GOF Test</b>											
52	Shapiro Wilk Test Statistic				0.71		<b>Shapiro Wilk Lognormal GOF Test</b>					
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic				0.249		<b>Lilliefors Lognormal GOF Test</b>					
55	5% Lilliefors Critical Value				0.262		Data appear Lognormal at 5% Significance Level					
56	<b>Data appear Approximate Lognormal at 5% Significance Level</b>											
57												
58	<b>Lognormal Statistics</b>											
59	Minimum of Logged Data				3.526		Mean of logged Data				3.89	
60	Maximum of Logged Data				5.247		SD of logged Data				0.527	
61												
62	<b>Assuming Lognormal Distribution</b>											
63	95% H-UCL				83.6		90% Chebyshev (MVUE) UCL				83.59	
64	95% Chebyshev (MVUE) UCL				96.37		97.5% Chebyshev (MVUE) UCL				114.1	
65	99% Chebyshev (MVUE) UCL				149							
66												
67	<b>Nonparametric Distribution Free UCL Statistics</b>											
68	<b>Data appear to follow a Discernible Distribution at 5% Significance Level</b>											
69												
70	<b>Nonparametric Distribution Free UCLs</b>											
71	95% CLT UCL				82.68		95% Jackknife UCL				85.51	
72	95% Standard Bootstrap UCL				81.33		95% Bootstrap-t UCL				176.3	
73	95% Hall's Bootstrap UCL				176.6		95% Percentile Bootstrap UCL				85.2	
74	95% BCA Bootstrap UCL				104.3							
75	90% Chebyshev(Mean, Sd) UCL				103.1		95% Chebyshev(Mean, Sd) UCL				123.6	
76	97.5% Chebyshev(Mean, Sd) UCL				152		99% Chebyshev(Mean, Sd) UCL				207.8	
77												
78	<b>Suggested UCL to Use</b>											
79	95% H-UCL				83.6							
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	<b>ProUCL computes and outputs H-statistic based UCLs for historical reasons only.</b>											
87	<b>H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.</b>											
88	<b>It is therefore recommended to avoid the use of H-statistic based 95% UCLs.</b>											
89	<b>Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.</b>											
90												



	A	B	C	D	E	F	G	H	I	J	K	L
1	<b>UCL Statistics for Uncensored Full Data Sets</b>											
2												
3	User Selected Options											
4	Date/Time of Computation		ProUCL 5.111/23/2016 2:19:26 PM									
5	From File		WorkSheet.xls									
6	Full Precision		OFF									
7	Confidence Coefficient		95%									
8	Number of Bootstrap Operations		2000									
9												
10												
11	<b>Zinc</b>											
12												
13	<b>General Statistics</b>											
14	Total Number of Observations				10		Number of Distinct Observations				10	
15							Number of Missing Observations				0	
16	Minimum				40		Mean				66.9	
17	Maximum				230		Median				46.5	
18	SD				58.12		Std. Error of Mean				18.38	
19	Coefficient of Variation				0.869		Skewness				3.01	
20												
21	<b>Normal GOF Test</b>											
22	Shapiro Wilk Test Statistic				0.485		<b>Shapiro Wilk GOF Test</b>					
23	5% Shapiro Wilk Critical Value				0.842		Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic				0.414		<b>Lilliefors GOF Test</b>					
25	5% Lilliefors Critical Value				0.262		Data Not Normal at 5% Significance Level					
26	<b>Data Not Normal at 5% Significance Level</b>											
27												
28	<b>Assuming Normal Distribution</b>											
29	<b>95% Normal UCL</b>						<b>95% UCLs (Adjusted for Skewness)</b>					
30	95% Student's-t UCL				100.6		95% Adjusted-CLT UCL (Chen-1995)				115.8	
31							95% Modified-t UCL (Johnson-1978)				103.5	
32												
33	<b>Gamma GOF Test</b>											
34	A-D Test Statistic				2.033		<b>Anderson-Darling Gamma GOF Test</b>					
35	5% A-D Critical Value				0.732		Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.412		<b>Kolmogorov-Smirnov Gamma GOF Test</b>					
37	5% K-S Critical Value				0.268		Data Not Gamma Distributed at 5% Significance Level					
38	<b>Data Not Gamma Distributed at 5% Significance Level</b>											
39												
40	<b>Gamma Statistics</b>											
41	k hat (MLE)				3.009		k star (bias corrected MLE)				2.173	
42	Theta hat (MLE)				22.23		Theta star (bias corrected MLE)				30.79	
43	nu hat (MLE)				60.18		nu star (bias corrected)				43.46	
44	MLE Mean (bias corrected)				66.9		MLE Sd (bias corrected)				45.38	
45							Approximate Chi Square Value (0.05)				29.34	
46	Adjusted Level of Significance				0.0267		Adjusted Chi Square Value				27.34	
47												
48	<b>Assuming Gamma Distribution</b>											
49	95% Approximate Gamma UCL (use when n>=50)				99.09		95% Adjusted Gamma UCL (use when n<50)				106.3	
50												

	A	B	C	D	E	F	G	H	I	J	K	L		
51	<b>Lognormal GOF Test</b>													
52	Shapiro Wilk Test Statistic				0.608		<b>Shapiro Wilk Lognormal GOF Test</b>							
53	5% Shapiro Wilk Critical Value				0.842		Data Not Lognormal at 5% Significance Level							
54	Lilliefors Test Statistic				0.388		<b>Lilliefors Lognormal GOF Test</b>							
55	5% Lilliefors Critical Value				0.262		Data Not Lognormal at 5% Significance Level							
56	<b>Data Not Lognormal at 5% Significance Level</b>													
57														
58	<b>Lognormal Statistics</b>													
59	Minimum of Logged Data				3.689		Mean of logged Data				4.028			
60	Maximum of Logged Data				5.438		SD of logged Data				0.524			
61														
62	<b>Assuming Lognormal Distribution</b>													
63	95% H-UCL				95.46		90% Chebyshev (MVUE) UCL				95.58			
64	95% Chebyshev (MVUE) UCL				110.1		97.5% Chebyshev (MVUE) UCL				130.3			
65	99% Chebyshev (MVUE) UCL				170									
66														
67	<b>Nonparametric Distribution Free UCL Statistics</b>													
68	<b>Data do not follow a Discernible Distribution (0.05)</b>													
69														
70	<b>Nonparametric Distribution Free UCLs</b>													
71	95% CLT UCL				97.13		95% Jackknife UCL				100.6			
72	95% Standard Bootstrap UCL				95.42		95% Bootstrap-t UCL				473			
73	95% Hall's Bootstrap UCL				313.9		95% Percentile Bootstrap UCL				101.2			
74	95% BCA Bootstrap UCL				122									
75	90% Chebyshev(Mean, Sd) UCL				122		95% Chebyshev(Mean, Sd) UCL				147			
76	97.5% Chebyshev(Mean, Sd) UCL				181.7		99% Chebyshev(Mean, Sd) UCL				249.8			
77														
78	<b>Suggested UCL to Use</b>													
79	95% Chebyshev (Mean, Sd) UCL				147									
80														
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
82	Recommendations are based upon data size, data distribution, and skewness.													
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).													
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
85														

## **Appendix H**

### **Groundwater Sampling Logs**

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

**Stabilization Criteria**

Turb +/- 10% (<10 NTUs)  
S Cond. +/- 5%  
pH +/- 0.1 unit

Job No: TCH-002

Well ID: MW-1

Well Location: Chapel Hill NC

Date: 11/10/16

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 40 Depth to Water (ft): 35.48 Well Diameter: 2"

Sampling Personnel: L. Nickels

Type of Pump: Bladder Tubing Material: 1/4" OD Poly Pump/Tubing set at: 38 ft.

Weather Conditions: Sunny, 41°F NOTES: \*Turbidity exceeds upper limit of meter calibration

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
920	36.55	NM	+125 ml/min	3.76	16.56	770	6.59	40.7	>1000
925	36.61			4.01	16.54	770	6.57	74.4	7100
930	36.61			4.87	16.58	767	6.68	75.9	7100
935	36.61			5.54	16.70	768	6.73	83.3	7100
940	36.70			6.04	16.87	769	6.72	87.4	7100
945	36.69			5.74	16.89	769	6.78	86.8	7100
950	36.70			5.72	16.96	768	6.73	91.6	817
955	36.69			6.12	16.99	769	6.90	86.9	740
1000	36.72			5.72	16.99	768	6.85	85.9	728
1005	36.72			6.27	17.07	765	6.86	81.5	600
1010	36.74			5.84	17.09	769	6.87	79.5	585
1015	36.74			6.52	16.98	768	6.87	78.6	497

Other Sample Parameters: None

Sampled at: 1045 Parameters taken with: YSI-556 + Hanna Turbidity Meter

Sample Delivered to: Pison by \_\_\_\_\_ at \_\_\_\_\_

Field Filtration:  Yes  No If yes, which sample parameters were field filtered: metals

Sample Parameter Containers (Types, Number of Containers, Preservatives): 2 250-ml plastic bottle with HNO3 for metals

**Stabilization Criteria**

DO +/- 0.3 mg/l  
Turb. +/- 10% (<10 NTUs)  
S. Cond. +/- 3%  
ORP +/- 10 mV  
pH +/- 0.1 unit

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

Job No: TCH-002

Well ID: MW-1

Well Location: Chapel Hill, NC

Date: 11/10/16

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 40 Depth to Water (ft): 35.48 Well Diameter: 2"

Sampling Personnel: L. Nickels

Type of Pump: Bladder Tubing Material: 1/4" OD Poly Pump/Tubing set at: 38 ft.

Weather Conditions: Sunny, 49°F NOTES: \_\_\_\_\_

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
1020	36.73		~125ml/min	6.68	16.97	768	6.93	75.5	527
1025	36.73		↓	6.73	16.90	768	6.90	79.7	502
1030	36.70		↓	7.09	18.00	768	6.90	79.8	513
1035	36.67		↓	6.54	17.09	766	6.90	81.3	499
1040	36.67		↓	6.58	17.16	766	6.90	77.0	477
1045	36.67		↓	6.87	17.13	767	6.89	79.0	475

Other Sample Parameters: None

Sampled at: 1045 Parameters taken with: YSC-55C + Hanna Turbidity Meter

Sample Delivered to: Prism by \_\_\_\_\_ at \_\_\_\_\_

Field Filtration:  Yes  No If yes, which sample parameters were field filtered: metals

Sample Parameter Containers (Types, Number of Containers, Preservatives): 2 250-ml plastic bottle with HNO<sub>3</sub> for metals

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

**Stabilization Criteria**

Turb. +/- 10% (<10 NTUs)  
S. Cond. +/- 5%  
pH +/- 0.1 unit

Job No: TZH-002

Well ID: MW-3A

Well Location: Chapel Hill, Nc

Date: 11/9/16

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 16 Depth to Water (ft): 5.91 Well Diameter: 2"

Sampling Personnel: L. Nickels

Type of Pump: Peristaltic Tubing Material: 1/4" OD Poly Pump/Tubing set at: 12 ft.

Weather Conditions: Overcast, 57F NOTES: \_\_\_\_\_

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
<u>1105</u>	<u>5.98</u>	<u>NM</u>	<u>150 mL/min</u>	<u>3.35</u>	<u>17.73</u>	<u>1217</u>	<u>6.60</u>	<u>256.4</u>	<u>2.82</u>
<u>1110</u>	<u>6.00</u>	<u>↓</u>	<u>↓</u>	<u>2.71</u>	<u>17.81</u>	<u>1220</u>	<u>6.61</u>	<u>267.7</u>	<u>1.90</u>
<u>1115</u>	<u>6.01</u>	<u>↓</u>	<u>↓</u>	<u>2.56</u>	<u>17.95</u>	<u>1225</u>	<u>6.63</u>	<u>286.8</u>	<u>1.59</u>
<u>1120</u>	<u>6.01</u>	<u>↓</u>	<u>↓</u>	<u>2.51</u>	<u>18.05</u>	<u>1230</u>	<u>6.63</u>	<u>287.1</u>	<u>1.43</u>
<u>1125</u>	<u>6.03</u>	<u>↓</u>	<u>↓</u>	<u>2.</u>	<u>18.14</u>	<u>1231</u>	<u>6.63</u>	<u>288.7</u>	<u>1.24</u>

Other Sample Parameters: None

Sampled at: 1125 Parameters taken with: YSI-55C + Hanna Turbidity Meter

Sample Delivered to: Prism by \_\_\_\_\_ at \_\_\_\_\_

Field Filtration: ( ) Yes ( X ) No If yes, which sample parameters were field filtered: \_\_\_\_\_

Sample Parameter Containers (Types, Number of Containers, Preservatives): 1 250-ml Bottle (plastic) with HNO3 for metals

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

**Stabilization Criteria**

Turb. +/- 10% (<10 NTUs)  
S Cond. +/- 5%  
pH +/- 0.1 unit

Job No: TCH-002

Well ID: MW-4A

Well Location: Chapel Hill, Nc

Date: 11/9/16

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 19 Depth to Water (ft): 6.72 Well Diameter: 2"

Sampling Personnel: L. Nickels

Type of Pump: Peristaltic Tubing Material: 1/4" OD Poly Pump/Tubing set at: 15 ft.

Weather Conditions: overcast, 52°F NOTES: \_\_\_\_\_

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
950	6.93	NA	150 mL/min	2.20	16.52	247	5.45	253.5	123
955	7.01			1.51	16.52	245	5.44	263.9	97.0
1000	7.13			1.52	16.51	245	5.44	269.6	68.0
1005	7.22			1.37	16.51	243	5.44	275.2	25.9
1010	7.30			1.41	16.45	242	5.44	279.6	15.3
1015	7.36			1.32	16.55	241	5.44	284.2	21.6
1020	7.44			1.36	16.61	241	5.44	287.5	14.7
1025	7.48			1.42	16.75	240	5.43	290.9	6.99
1030	7.52			1.40	16.84	241	5.43	293.6	5.62
1035	7.57			1.37	16.89	241	5.43	296.8	5.39
1040	7.60			1.41	16.91	241	5.43	300.5	5.50 4.83

Other Sample Parameters: None

Sampled at: 1040 Parameters taken with: YSI-SSC + Hanna Turbidity Meter

Sample Delivered to: Prism by \_\_\_\_\_ at \_\_\_\_\_

Field Filtration: ( ) Yes (X) No If yes, which sample parameters were field filtered: \_\_\_\_\_

Sample Parameter Containers (Types, Number of Containers, Preservatives): 1 250mL bottle with HNO<sub>3</sub> for metals

**Stabilization Criteria**

Turb. +/- 10% (<10 NTUs)  
S. Cond. +/- 5%  
pH +/- 0.1 unit

Job No: TCH-002

Well ID: MW-5

Well Location: Chapel Hill, NC

Date: 11/9/16

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 27.5 Depth to Water (ft): 9.27 Well Diameter: 2"

Sampling Personnel: L Nickels

Type of Pump: Peristaltic Tubing Material: 1/4" OD Poly Pump/Tubing set at: 24 ft.

Weather Conditions: Sunny, 66°F NOTES: \_\_\_\_\_

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
1320	9.48	NM ↓	150 ml/min ↓	0.92	20.73	567	6.97	62.6	10.9
1325	9.54			0.44	20.30	570	6.97	53.5	7.69
1330	9.59			0.32	20.13	569	6.96	44.2	3.85
1335	9.61			0.25	20.09	569	6.96	39.8	4.52
1340	9.59			0.25	20.00	569	6.95	57.3	4.78
1345	9.59			0.27	20.30	569	6.96	39.2	3.76

Other Sample Parameters: None

Sampled at: 1345 Parameters taken with: \_\_\_\_\_

Sample Delivered to: Pisum by \_\_\_\_\_ at \_\_\_\_\_

Field Filtration: ( ) Yes ( X ) No If yes, which sample parameters were field filtered: \_\_\_\_\_

Sample Parameter Containers (Types, Number of Containers, Preservatives): 1 250-ml plastic bottle with HNO3 for Metals



**LOW-FLOW GROUNDWATER SAMPLING RECORD**

**Stabilization Criteria**

Turb +/- 10% (<10 NTUs)  
S. Cond. +/- 5%  
pH +/- 0.1 unit

Job No: TCH-002

Well ID: MW-6

Well Location: Chapel Hill

Date: 11/9/16

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 17.5 Depth to Water (ft): 9.92 Well Diameter: 2"

Sampling Personnel: L. Nickels

Type of Pump: Peristaltic Tubing Material: 1/4" OD Poly Pump/Tubing set at: 14 ft.

Weather Conditions: Overcast, 62°F NOTES: \_\_\_\_\_

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
1225	9.94	NM	150 ml/min	0.65	20.44	618	6.22	29.8	3.96
1230	9.94	↓	↓	0.74	20.56	614	6.21	5.4	3.57
1235	9.95	↓	↓	0.64	20.51	608	6.21 <del>6.15</del>	24.3	3.56
1240	9.95	↓	↓	0.58	20.58	607	6.20	16.1	3.17
1245	9.95	↓	↓	0.61	20.51	607	6.19	12.2	2.54

Other Sample Parameters: None

Sampled at: 1245 Parameters taken with: \_\_\_\_\_

Sample Delivered to: Prism by \_\_\_\_\_ at \_\_\_\_\_

Field Filtration: ( ) Yes (X) No If yes, which sample parameters were field filtered: \_\_\_\_\_

Sample Parameter Containers (Types, Number of Containers, Preservatives): 1 250 mL plastic bottle with HNO<sub>3</sub> for metals

## LOW-FLOW GROUNDWATER SAMPLING RECORD

### Stabilization Criteria

Turb +/- 10% (<10 NTUs)  
S. Cond. +/- 5%  
pH +/- 0.1 unit  
Max Drawdown: 10% static

Job No: TCH-002

Well ID: MW-7

Well Location: Police Department

Date: 11/14/16

Facility Name: TCH-002 Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 69.5 Depth to Water (ft): 47.14 Well Diameter: 2"

Sampling Personnel: P. Stevens

Type of Pump: Geosub SS Tubing Material: Poly Pump/Tubing set at: 66.5' ft.

Weather Conditions: Light Rain, 58°F NOTES: \_\_\_\_\_

### GROUNDWATER SAMPLING PARAMETERS

Time	Water Level	Volume Pumped <sup>pms</sup>	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
1245	48.37	<del>2450</del>	200 ml/min	4.04	14.47	118	5.67	17.7	355.6
1250	48.28		150 ml/min	2.97	13.19	112	5.20	82.7	335.5
1255	48.29			2.64	13.50	113	4.88	90.7	292.7
1300	48.30			2.70	13.72	113	4.45	105.5	204.0
1305	48.30			2.59	13.92	110	4.43	107.9	168.9
1310	48.32			2.39	14.12	110	4.53	102.7	135.7
1315	48.32			2.45	14.43	110	4.60	95.8	156.1
1320	48.33			2.68	14.33	110	4.70	90.7	208.1
1325	48.33			2.40	15.07	111	4.85	81.8	350.4
1330	48.33			2.29	15.35	110	4.96	79.8	274.0
1335	48.34			2.13	15.15	110	5.04	77.0	313.5
1340	48.34			2.15	15.69	111	5.06	71.0	361.0
1345	48.34			2.05	15.56	111	5.08	69.4	

Other Sample Parameters: None

Sampled at: 1335 Parameters taken with: YSI-SS6 + MicroTPE turbidimeter

Sample Delivered to: Prism Labs by Carrion at \_\_\_\_\_

Field Filtration: ( ) Yes (X) No If yes, which sample parameters were field filtered: \_\_\_\_\_

Sample Parameter Containers (Types, Number of Containers, Preservatives): Metals by 6010 (1x250mL, H2O2 preserved)

**Stabilization Criteria**

Turb. +/- 10% (<10 NTUs)  
S. Cond. +/- 5%  
pH +/- 0.1 unit  
Max Drawdown: 10% static

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

Job No: TC14-002

Well ID: mw-7 (cont)

Well Location: \_\_\_\_\_

Date: 11/14/16

Facility Name: TC14-002 Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 69.5' Depth to Water (ft): 47.14 Well Diameter: 2"

Sampling Personnel: P. Stevens

Type of Pump: Geosub SS Tubing Material: Poly Pump/Tubing set at: 66.5' ft.

Weather Conditions: Light Rainy 58°F NOTES: \_\_\_\_\_

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
1350	48.34			2.12	15.52	113	5.19	65.7	477.9
1355	48.35			2.18	15.50	112	5.21	65.7	407.6
1400	48.35			2.22	15.53	112	5.22	65.5	326.7
1405	48.35			2.17	15.51	112	5.23	65.3	275.6
1410	48.35			2.15	15.51	112	5.23	64.4	327.8
1415	48.35			2.09	15.71	111	5.22	64.6	276.3
1420	48.35			2.00	15.54	112	5.23	62.1	200.6
1430	48.35			2.02	15.37	112	5.24	62.9	154.8
1435	48.56			1.98	15.54	112	5.24	63.7	106.6
1440	48.56			1.83	15.53	112	5.25	63.4	61.25
1445	48.37			1.88	15.61	112	5.26	62.4	40.90
1450	48.37			1.92	15.64	112	5.26	62.0	30.83

Other Sample Parameters: None

Sampled at: 1535 Parameters taken with: YSI-556 & Micro TPI turbidimeter

Sample Delivered to: Prism Labs by Courier at \_\_\_\_\_

Field Filtration: ( ) Yes ( X ) No If yes, which sample parameters were field filtered: \_\_\_\_\_

Sample Parameter Containers (Types, Number of Containers, Preservatives): Metals by 6010 (1x250mL, HNO<sub>3</sub> preserved)

## LOW-FLOW GROUNDWATER SAMPLING RECORD

### Stabilization Criteria

Turb. +/- 10% (<10 NTUs)  
 S. Cond. +/- 5%  
 pH +/- 0.1 unit  
 Max Drawdown: 10% static

Job No: TCIT-002

Well ID: mw-7 (cont)

Well Location: woods

Date: 11/14/16

Facility Name: TCIT-002 Police Department

Top of Casing Elevation (ft msl): \_\_\_\_\_ Casing Material: PVC Volume of Water Per Well Volume: \_\_\_\_\_

Total Well Depth (ft): 69.5' Depth to Water (ft): 47.14 Well Diameter: 2"

Sampling Personnel: P. Stevens

Type of Pump: Geosub SS Tubing Material: Poly Pump/Tubing set at: 66.5' ft.

Weather Conditions: Light Rain 58°F NOTES: \_\_\_\_\_

### GROUNDWATER SAMPLING PARAMETERS

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
1500	48.37		~120 mL/min	1.85	15.67	112	5.27	61.3	27.51
1505	48.37			1.81	15.68	112	5.28	61.3	20.33
1510	48.37			1.80	15.67	112	5.28	61.1	18.50
1515	48.37			1.78	15.67	112	5.28	61.1	13.75
1520	48.37			1.78	15.64	112	5.29	61.1	12.86
1525	48.37			1.79	15.65	112	5.29	61.3	11.59
1530	48.37			1.78	15.65	112	5.28	61.2	9.76
1535	48.37			1.79	15.66	112	5.28	61.2	8.92

Other Sample Parameters: None

Sampled at: 1535 Parameters taken with: TSI-556 & microTPI turbidimeter

Sample Delivered to: Prism @ Labs by Counter at \_\_\_\_\_

Field Filtration: ( ) Yes (X) No If yes, which sample parameters were field filtered: \_\_\_\_\_

Sample Parameter Containers (Types, Number of Containers, Preservatives): Metals by 6010 (1x250mL, H2O2 preserved)

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

**Stabilization Criteria**

DO +/- 0.3 mg/l  
 Turb. +/- 10% (<10 NTUs)  
 S. Cond. +/- 3%  
 ORP +/- 10 mV  
 pH +/- 0.1 unit

Job No: TCH-002

Well ID: MW-5

Well Location: Chapel Hill, NC

Date: 4/3/17

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): 389.33 Casing Material: PVC Volume of Water Per Well Volume:

Total Well Depth (ft): 27.50 Depth to Water (ft): 9.19 Well Diameter: 2-inch

Sampling Personnel: L. Nickels

Type of Pump: Peristaltic Tubing Material: 1/4" OD Poly Pump/Tubing set at: 22.50 ft.

Weather Conditions: Cloudy, 70 F NOTES: Parameters stable at 15:35, will continue  
 Pumping until turbidity <10 ntu

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
14:50	9.43	0 ml	150 ml/min	0.79	18.8	788.0	8.73	-110.7	1,000.00
14:55	9.45	750	150	0.41	18.8	787.0	8.51	-115.9	1,000.00
15:00	9.49	1500	150	0.32	18.4	786.0	8.64	-125.5	655.00
15:05	9.53	2250	150	0.27	18.4	781.0	8.89	-128.2	445.00
15:10	9.56	3000	100	0.31	18.4	784.0	8.82	-119.4	433.00
15:15	9.58	3900	100	0.29	18.5	782.0	8.87	-132.0	386.00
15:20	9.60	4600	100	0.22	18.3	787.0	8.88	-153.7	329.00
15:25	9.63	4500	100	0.19	18.2	788.0	8.88	-130.8	234.00
15:30	9.65	5000	100	0.19	18.2	755.0	8.91	-138.3	235.00
15:35	9.68	5500	100	0.21	18.3	786.0	8.94	-112.1	287.00

Other Sample Parameters: none

Sampled at: Parameters taken with: Y30 Pro Plus and Hanna TurbidityStar

Sample Delivered to: Accutest by FedEx at

Field Filtration:  Yes  No If yes, which sample parameters were field filtered:

Sample Parameter Containers (Types, Number of Containers, Preservatives): 1 250-mL unpreserved plastic bottle for hexavalent chromium and 1 250-mL plastic bottle with HNO3 for total chromium

**Stabilization Criteria**

DO +/- 0.3 mg/l  
 Turb. +/- 10% (<10 NTUs)  
 S. Cond. +/- 3%  
 ORP +/- 10 mV  
 pH +/- 0.1 unit

Job No: TCH-002

Well ID: MW-5

Well Location: Chapel Hill, NC

Date: 4/3/17

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft. msl): 369.33 Casing Material: PVC

Volume of Water Per Well Volume:

Total Well Depth (ft): 27.50 Depth to Water (ft): 9.19

Well Diameter: 2-inch

Sampling Personnel: L. Nickels

Type of Pump: Peristaltic

Tubing Material:

1/4" OD Poly

Pump/Tubing set at: 22.50 ft.

Weather Conditions: Cloudy, 70 F

NOTES: Parameters stable at 18:25, will continue

Pumping until turbidity <10 ntu

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
18:00	9.55	0 ml	150 ml/min	1.94	17.7	740.0	8.81	-230.4	74.50
18:05	9.55	750	150	0.50	17.7	752.0	8.91	-262.7	84.00
18:10	9.58	1500	150	0.58	17.7	751.0	8.95	-275.7	47.40
18:15	9.65	2250	150	0.27	17.8	751.0	8.96	-258.0	41.00
18:20	9.68	3000	150	0.23	17.7	751.0	8.97	-285.7	33.60
18:25	9.71	3500	150	0.21	17.8	750.0	8.98	-280.1	37.80
20:20									8.19

Other Sample Parameters: none

Sampled at: 20:20

Parameters taken with:

YSI Pro Plus and Hanna Turbiditymeter

Sample Delivered to: Accutest

by

FedEx

at

Field Filtration:  Yes  No

If yes, which sample parameters were field filtered:

Sample Parameter Containers (Types, Number of Containers, Preservatives): 1 250-mL unpreserved plastic bottle for hexavalent chromium and 1

250-mL plastic bottle with HNO3 for total chromium

**Stabilization Criteria**

DO +/- 0.3 mg/l  
 Turb. +/- 10% (<10 NTUs)  
 S. Cond. +/- 3%  
 ORP +/- 10 mV  
 pH +/- 0.1 unit

Job No: TCH-002

Well ID: MW-6

Well Location: Chapel Hill, NC

Date: 4/3/17

**LOW-FLOW GROUNDWATER SAMPLING RECORD**

Facility Name: Chapel Hill Police Department

Top of Casing Elevation (ft msl): 315.39 Casing Material: PVC Volume of Water Per Well Volume:

Total Well Depth (ft): 17.50 Depth to Water (ft): 8.98 Well Diameter: 2-inch

Sampling Personnel: L. Nickels

Type of Pump: Peristaltic Tubing Material: 1/4" OD Poly Pump/Tubing set at: 12.50 ft

Weather Conditions: Raining, 70 F

NOTES:

**GROUNDWATER SAMPLING PARAMETERS**

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
17:00	7.01	0 ml	150 ml/min	0.88	18.3	454.2	8.99	-122.2	73.90
17:05	7.03	750	150	0.49	18.2	453.0	8.90	-154.2	28.40
17:10	7.03	1500	150	0.28	18.0	452.2	8.93	-253.3	18.40
17:15	7.03	2250	150	0.29	18.0	451.8	8.01	-267.8	12.20
17:20	7.03	3000	150	0.28	18.0	452.5	8.07	-188.9	12.30
17:25	7.04	3750	150	0.20	18.0	451.1	8.05	-274.8	11.80
17:30	7.04	4500	150	0.18	15.9	451.8	8.08	-271.2	9.17
17:35	7.04	4750	150	0.21	15.9	451.2	8.08	-270.8	7.38
17:40	7.04	5500	150	0.23	18.0	451.7	8.10	-270.0	7.84

Other Sample Parameters: none

Sampled at: 17:40 Parameters taken with: YSI Pro Plus and Hanna Turbiditymeter

Sample Delivered to: Accutest by FedEx at

Field Filtration:  Yes  No If yes, which sample parameters were field filtered:

Sample Parameter Containers (Types, Number of Containers, Preservatives): 1 250-mL unpreserved plastic bottle for hexavalent chromium and 1 250-mL plastic bottle with HNO3 for total chromium

**Appendix I**

**IDW Disposal Manifest**





# A&D Environmental Services

# Bill of Lading / Material Manifest

A&D Job No: <b>380470</b>	Generator ID Number CESQG	Page 1 of 1	Emergency Response Phone 800-255-3924-MIS0007951	Tracking Number <b>19977</b>
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Generator's Name and Mailing Address Chapel Hill Police Dept. 825 MLK Jr, Drive Chapel Hill, NC 27514 USA 919-847-4241	Generator's site address (if different from mailing address)
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Transporter 1 <input type="checkbox"/> 2 <input type="checkbox"/> Company Name <b>A&amp;D Environmental Services, Inc.</b>	US EPA ID No. NCD986232221
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Transporter 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> Company Name <b>A&amp;D Environmental Services (SC), LLC</b>	US EPA ID No. SCD987598331
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<input checked="" type="checkbox"/> Designated Facility A&D Environmental Services, Inc. 2718 Uwharrie Road Archdale, NC 27263 336-434-7750 NCD986232221	<input type="checkbox"/> Designated Facility A&D Environmental Services, Inc. 3149 Lear Drive Burlington, NC 27215 336-229-0058 NCR000138628	<input type="checkbox"/> Designated Facility A&D Environmental Services (SC), LLC 1741 Calks Ferry Road Lexington, SC 29073 803-957-9175 SCD987598331	<input type="checkbox"/> Designated Facility A&D Environmental Services (SC), LLC 1321 White Horse Road, Suite C Greenville, SC 29605 864-234-6055
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HM	Hazardous Materials Shipping Name and Description (if applicable)	No.	Type	QTY	Wt/Vol	Profile Number
	Non-Regulated Material (IDW-Liquids)	006	DM	2400	P	
	Non-Regulated Material (IDW-Solids)	005	DM	2500	P	
	Non-Regulated Material (IDW-PPE)	001	DM	100	P	

Petroleum Products for Recycle		No.	Type	QTY	Wt/Vol	Profile Number
X	NA1993, Diesel fuel, 3, III ERG# 128					
X	NA1993, Fuel oil (No. 1,2,4,5 or 6), 3, III ERG# 128					
X	UN1203, Gasoline, 3, II ERG# 128					
	USED OIL (Not a USDOT Hazardous Material)					
	Petroleum Contact Water (Not a USDOT Hazardous Material)					

Universal Waste Lamps, Batteries, Ballasts, and Electronics for Recycle							
HM	No.	Type	Est. Wt.	Count	Shipping Name and Description (if applicable)	Common Name	Discrepancy
X					RO, UN2809, Mercury contained in manufactured articles, 8, III ERG# 172	Mercury Containing Articles	
X					RO, UN3432, Polychlorinated biphenyls, solid, 9, II ERG# 171	TSCA Exempt PCB Lamp Ballasts	
X					UN2800, Batteries, wet, nonspillable, 8, III ERG# 154	Sealed Lead Acid Batteries	
X					UN2794, Batteries, wet, filled with acid, 8, III ERG# 154	Lead Acid Batteries	
X					UN2795, Batteries, wet, filled with alkali, 8, III ERG# 154	Wet NiCad Batteries	
X					UN3090, Lithium batteries, 8, II ERG# 138	Lithium Batteries	
X					UN3028, Batteries, dry, containing potassium hydroxide solid, 8, II ERG# 154	Alkaline Batteries	
X					UN3028, Batteries, dry, containing potassium hydroxide solid, 8, III ERG# 154	NiCad Batteries	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e))	Fluorescent lamps 4' or <	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e))	Fluorescent lamps 4'	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e))	Circular/U-tube lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e))	Compact Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e))	Shattershield	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e))	HID/MVJ/V Lamps	
					Universal Waste Lamps (Not DOT-Regulated per 49 CFR 173.164(e))	Incandescent Lamps	
					Non-PCB Light Ballasts for Recycle (Not DOT-Regulated)	Non-PCB Light Ballasts	
					Electronic Equipment for Recycle (Not DOT-Regulated)	Electronics	

Generator's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40CFR Part 261 or any applicable state law, and unless specifically identified above the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Generator's/Officer's Printed/Typed Name <b>CURTIS BROOKS</b>	Signature <i>Curtis Brooks</i>	Month 12	Day 14	Year 16
Transporter 1 Printed/Typed Name <b>MATT WRAY</b>	Signature <i>Matt Wray</i>	Month 12	Day 15	Year 16
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

Discrepancy Indication / Additional Information:

Designated Facility Certification: I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy indicated above.

Printed/Typed Name	Signature	Month	Day	Year
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DESIGNATED FACILITY TO GENERATOR

9000-000 (REV) 03/01