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Memo

To: Michelle Kaysen / USEPA

From: Tony Delano

Russ Johnson

cc: Dan Sullivan / NIPSCO

Date: November 21, 2018

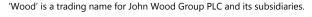
Subject: SWMU 15 ISS Constructability Assessment

NIPSCO Bailly Generating Station

INTRODUCTION

Beginning in 2005, a Resource Conservation and Recovery Act (RCRA) Facility Investigation was implemented at the Bailly Generating Station (BGS), located at 246 Bailly Station Road in Chesterton, IN. The Site is divided into Areas A, B and C. Area C includes Solid Waste Management Unit (SWMU) 15 (see Figure 1), a low-lying area that was backfilled with coal combustion residuals (CCR), primarily fly ash. Placement of CCR at SWMU 15 ceased in 1979, and the area was covered. A Draft Area C Corrective Measures Study (CMS) Report was issued in August 2015, which recommended encapsulation of the CCR at SWMU 15. In response to EPA comments dated December 3, 2015, a Revised Draft Area C CMS Report was filed on March 18, 2016 (Revised Draft CMS Report, Amec Foster Wheeler 2016). The revised report maintained encapsulation as the recommended corrective measure for SWMU 15, comprised of a perimeter slurry wall installed to the underlying confining clay layer where present and an engineered, impermeable cover. To further evaluate the corrective measure options, a geotechnical investigation was completed in July, August and September 2016. Findings from that investigation were documented in a memorandum to EPA dated January 23, 2017 (Amec Foster Wheeler, 2017a). In the conclusions of that memo Northern Indiana Public Service Company (NIPSCO) proposed to revise the conceptual designs and associated cost estimates in a separate memo to EPA for: (1) encapsulation, (2) full excavation for off-site disposal, and (3) partial excavation for off-site disposal with in situ stabilization and solidification (ISS) of CCR left below the water table. Revised costs were presented in a memorandum dated June 2, 2017 (Amec Foster Wheeler, 2017b). As detailed in the revised Recommendation section of that memo, based on the geotechnical investigation findings and the cost re-evaluation, NIPSCO changed its prior recommendation of encapsulation to partial excavation with ISS for SWMU 15.

EPA also recommended that NIPSCO perform ISS feasibility evaluations using both the Synthetic Precipitation Leaching Procedure (SPLP; EPA Method 1312) and the EPA's Method 1315 "Mass Transfer Rates of Constituents in Monolithic or Compacted Granular Materials Using a Semi-Dynamic Tank Leaching



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Procedure" to better evaluate ISS effectiveness and determine the dominant mechanism in leachate retardation (i.e. geochemical stabilization or physical solidification). In a memo dated September 18, 2017 (Amec Foster Wheeler, 2017c), NIPSCO provided responses to each comment, including an agreement that additional bench-scale testing of the unconsolidated and solidified CCR using LEAF methods and durability testing would be performed.

Implementability Evaluation

ISS is a well-established technology that has been in use for decades at a variety of sites (ITRC 2011), including MGP sites, CCR sites, metals, and other organics-contaminated sites. The technology has been applied above and below the water table, and is a commonly accepted remedy within state, RCRA, and Superfund programs. A further review of ISS technology has been provided in the Revised Draft CMS Report and the March 18, 2016 responses to USEPA comments on the Draft CMS Report.

In a September 22, 2017 e-mail, USEPA commented that the implementability of the revised preferred remedy (ISS and excavation) would need to be assessed in more detail (see Attachment A). This memo provides that assessment, including an evaluation of the feasibility of excavation of materials present above the water table and the ISS of materials beneath the water table given site constraints, how the ISS work would be divided into management and mixing cells, how water would be managed, how proper curing would be ensured, how consistent mixing of the reagent would be conducted in the field, and how sufficient mixing of the reagents into the subsurface would be ensured.

Data Sources and Assumptions

This constructability memo has been developed primarily from the following sources of information:

- Revised Draft Area C Correct Measures Study (Amec Foster Wheeler, 2016)
- Treatability Study (Kemron 2018 and Wood 2018)
- Site Walk and Constructability Assessment conducted with Lang Tool Co. (December 2017)

The bench scale ISS treatability study findings (Wood, 2018) showed that 6% Portland cement meets strength requirements and provides the best hydraulic conductivity performance of all the mixtures evaluated with a result of $2x10^{-7}$ cm/sec after 59 days of curing, which is slightly higher than the target of $1x10^{-7}$ cm/sec. It is anticipated that the hydraulic conductivity will continue to decline with additional curing time.

In addition, this amendment reduced boron leachability by a factor of 6 as measured by USEPA Method 1315 (solidified monolith) compared to the unsolidified CCR leachate concentration using EPA Method 1316. The Method 1315 testing also produced interval mass flux values and cumulative mass released for boron. The cumulative mass release plot for boron begins to take on an asymptotic curvature. This indicates that less and less boron is diffusing through the outer surface of the solidified mass into the water bath for each successive time interval. Finally, the sequestering aspect of the formulations tested were evaluated using the SPLP (EPA Method 1312). The solidified CCR molds were crushed to expose fresh, unweathered surfaces and then tested as a granular material. The Method 1312 boron results (crushed monolith) were approximately 5 times lower than the unconsolidated CCR (Method 1316). The 6% Portland cement provided the best overall performance based on EPA method 1315 long-term leachability and contaminant flux analysis, given the overall balance of availability, safety, cost, and contractor experience with Portland cement.

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For purposes of this analysis, an admixture of 6% Portland cement was selected (on a dry reagent weight to wet waste material weight basis) because it is a quantifiable amount based on the treatability study results. The actual amount of Portland cement to be added may be anywhere between 3% and 6% and will be based on targeted additional treatability studies that may be conducted during the pre-design, design, or preconstruction phase of the project to optimize the percentage of Portland cement, or potentially a more favorable formulation.

The ISS technology evaluated was the Lang Tool Co. dual axis blender mixing equipment, although other equipment types would be suitable for the work as well. The dual-axis blender is mounted on an excavator arm, which is capable of rotating along both horizontal and vertical axes, providing superior mixing control and accuracy. In addition, this type of equipment being mounted on an excavator has lower overhead clearance than auger type mixers, which rotate only along a vertical axis. The dual axis blender has been used successfully on other CCR projects, MGP sites, ISCO projects for injection of oxidants, and blending of stabilizing agents for sediments.

Site Walk

A site walk of SWMU15 was conducted in December 2017 with Wood, Lang Tool, and NIPSCO personnel. Based upon the conditions observed at the time of the site walk, SWMU15 is conducive to both excavation via traditional methods and ISS.

Access to SWMU15 is good, being immediately adjacent to the main access road to the BGS. SWMU15 is generally flat and either unvegetated or has only grasses or small shrubs. Clearing work would be minimal and the site is generally dry within the work area. The southern portion of SWMU15 has a layer of steel mill slag which is an excellent working surface for construction equipment particularly for staging areas. Most areas of SWMU15 appear to be easily accessible by traditional construction equipment which will be used for excavation activities. In addition, ISS has the advantage that, when subgrade conditions are wet and/or have low bearing capacity, the ISS mixing equipment can be staged on completed cells, which will have ample bearing capacity following curing of the cement/waste mix. Typically, mixed cells can be accessed within 24 hours, and in some cases within several hours depending on the cement curing process and other factors such as amendment ratios and material types.

Rail Sidings

Two rail sidings run parallel to the western border of SWMU 15 between the proposed area of remediation and the access road to the BGS (Figure 1). A fence separates SWMU15 from the railroad tracks along the entire border. Two at-grade crossings are present to allow access to the site at the southern end and the northwestern corner of SWMU15. The rail sidings are outside of the limits of CCR by approximately 40 feet except for at the northern half of SWMU15, where the CCR limits appear to be much closer to the rails. In this area, the CCR thickness is generally less than 4 feet and above the water table. No ISS is proposed near the rail sidings. Excavation of unsaturated materials in this area can be managed through "slot" excavation techniques – minimizing the open area at any given time followed by immediate backfilling. Allowable setbacks and excavation procedures would be determined as part of design.

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Overhead Clearance

A significant concern for work to be conducted at SWMU15 is the presence of high voltage transmission lines and lower voltage distribution lines. The line heights were surveyed by DLZ (see Attachment B).

Based on the site walk, personnel from Lang Tool Co. felt that there would be no concerns with the height of their proposed equipment relative the height/location of the power lines. Survey information collected in September 2016 by DLZ Industrial, LLC indicates that the very high voltage transmission lines have a minimum clearance of roughly 35 feet, and in most cases the power lines are at least 40 feet above the ground surface for initial excavation work. This clearance is not expected to present any concerns for the equipment likely to be used for either ISS or excavation. The lower voltage distribution lines cross the site with a clearance of 29 feet, which also generally should not present any concerns with the planned equipment, both for initial excavation activities and ISS work. Based on an initial review of the power lines, the minimum clearance for all lines is 15 feet. The high voltage lines are 138 Kv, which allows for a clearance of 15 feet in accordance with OSHA¹ and the NIPSCO Contractor Health and Safety Manual. As part of design, a detailed review of the power lines at SWMU15 will be conducted and allowable setbacks and insulation techniques determined. In addition, it may be possible to turn off or redirect power from one set of power lines to another during work in that vicinity based upon the current output of the power plant. These potential approaches will need to be evaluated during design.

Typical excavation equipment to be used for the excavation and off-site disposal portion of the remedy might include a 300-series or 400-series Komatsu standard reach excavator or similar. In normal digging mode, this equipment will have a maximum boom height of approximately 6 to 7 meters (20 to 23 feet); however, the equipment can be operated with the boom lower. For most of the site this will provide acceptable clearance. Where clearance is less than 15 feet, bulldozers can be used directly under the power lines to push material a safe distance away for loading by an excavator. For the lowest known clearance of 29 feet, equipment directly beneath this portion of the line would need to be no more than 14 feet in height. This work could be accomplished with a bulldozer.

Because ISS work will be conducted after the initial unsaturated CCR material is removed, the work will be conducted at a starting elevation that is generally at least 4 feet lower and as much as 10 feet lower than initial ground surface elevations, increasing available clearances from the electrical lines.

In conclusion, access to SWMU15 is generally good and favorable for the proposed construction equipment. SWMU15 does not present any major concerns related to the presence of water or utilities, despite the presence of high voltage lines. Access does not present any unusual challenges for either excavation or ISS activities; however, timing will be required to accommodate rail traffic.

Remediation Areas, Volumes, Depths, and Thicknesses

The "SWMU 15 Geotechnical Investigation Summary" memo dated January 13, 2017 (Amec Foster Wheeler 2017a) provides the latest volume estimates based on the most recent set of data collected and used in the EVS 3D visualization software. The total estimated volume of material requiring remediation is 178,000 cubic yards (cy), of which 92,000 cy are above the water table (to be excavated and disposed of off-site) and 86,000

¹ https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1408

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cy are below the water table (to be treated via ISS). Some segregation and reuse of the unsaturated soils is anticipated, reducing the amount of material to be taken offsite for disposal.

The key site characteristics that effect construction means and methods include the following:

- thickness of unsaturated material to be disposed of off-site;
- elevation of the working surface at which the ISS equipment would begin working on the saturated CCR: and
- thickness of saturated CCR and terminal elevations for the ISS work (generally slightly below the CCR to ensure complete treatment).

A series of figures was prepared to support this evaluation and visually depict these key characteristic for ISS and excavation work to be conducted. These figures include:

- Figure 2 depicts ground surface elevation contours, site features, CCR limits, and cross-section orientation (see Attachment B for the survey conducted by DLZ, which also includes overhead power line elevations)
- Figure 3 Groundwater elevation contours within SMWU-15, extracted from the EVS model
- Figure 4 Bottom of CCR elevation contours, extracted from the EVS model
- Figures 5, 6, and 7 cross-sections depicting the locations of the ground surface, groundwater table, material to be excavated, and material to be treated vis ISS.
- Figure 8 CCR thickness plan view (note this includes material at the surface which is not CCR and may be segregated and handled separately and potentially reused on the site as fill material).
- Figure 9 CCR/Soil thickness to be removed via excavation (note this includes material at the surface which is not CCR and may be segregated and handled separately and potentially reused on the site as fill material)
- Figure 10 CCR thickness present beneath the water table the targeted material for ISS.

Existing ground surface information was obtained from the DLZ survey (see Attachment B). Both the groundwater contours and the CCR elevation contours were extracted from the EVS model and used to develop thickness of above and below water table CCR.

Pre-Design Investigation

As per the CMS, prior to design, a detailed direct-push boring study will be conducted to more accurately define the limits and depths of the CCR. This information will be used to develop target elevations for excavation and for each cell to be treated via ISS. The direct-push study will be conducted using a grid approximately 25 feet on center and will be used to identify the bottom of the CCR material. This frequency would result in approximately 1,024 borings advanced through CCR into the underlying native material. Samples will be collected and visually inspected to determine the depth of CCR and the terminal elevation for ISS. This approach will minimize the possibility of some CCR material being "missed" by the ISS treatment.

Excavation

In general, excavation will precede ISS to create sufficient space to initiate ISS and will progress slightly ahead of ISS so that large areas are not open for extended periods of time. SWMU15 is large enough to allow simultaneous operations of excavation, ISS, off-site hauling of material, and backfill/restoration of

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completed areas. There are multiple approaches to excavate the CCR safely. Unsaturated material will generally be excavated down to the estimated elevation of the regional groundwater table or to the bottom of the CCR layer, whichever is shallower. However, to ensure safety, the excavation and ISS work will need to be coordinated so that excavation work is always conducted from stable ground and that all CCR slopes are kept to an appropriate maximum (typically 7H:1V for this type of material) Excavation work could be accomplished by first working around the perimeter on stable ground, then working inward thus establishing a ring for ISS work. Future work would then be completed from the strengthened CCR after ISS.

Some materials to be excavated do not contain CCR, and these materials will need to be segregated, stockpiled, and sampled separately for potentially reuse on site as backfill material or as road base material during construction. Within the CCR, the groundwater table is somewhat mounded due to the material's lower hydraulic conductivity as compared with surrounding native materials. Therefore, the final elevation for unsaturated removal will be based on boundary condition groundwater elevations (i.e., elevations of groundwater just outside of the CCR limits) or as limited by safety due to stability of the CCR material. Figures 5, 6, and 7 are cross-sections that depict the amount of material present above the water table. Generally, there is 4 to 6 feet of material above the water table that will require removal, and in the northeastern corner of the site this material is up to 10 to 11 feet in thickness. Because of this mounding effect, some of the excavated CCR material will be saturated and may drain free liquids. For unsaturated CCR cuts that are 5 or more feet above the water table, work can proceed in a larger open cut fashion in advance of the deeper excavation and ISS work. Wet CCR may require stockpiling and drainage, and possibly the addition of a small amount of Portland cement to ensure the material passes the paint the filter test prior to shipment off site. As excavations approach the water table, additional water level monitoring and possibly dewatering of the CCR will need to be conducted to ensure safety. Generally, water levels must be kept at least 2 to 3 feet below the active excavation surface to ensure guick conditions do not develop. Monitoring of water levels during excavation will be an important component for safety considerations. These constraints would all be evaluated in detail in the design phase.

The material thicknesses and volumes do not present any unusual challenges for removal, which can be accomplished using any number of standard removal techniques such as excavators, bulldozers, front-end loaders, off-road, and road-worthy hauling trucks. The approximately 92,000 cy of CCR present above the saturated material can be excavated in 4 to 6 months and will generally need to match the schedule of the ISS work. Removals of the unsaturated material must proceed in advance of the ISS work to allow for sufficient work area and increased overhead clearance for the ISS equipment.

Conditions for hauling of material from SWMU15 are also considered favorable. SWMU15 has good access for articulating dump trailers, which can hold up to 30 tons of material. Assuming a density of approximately 1.75 tons/cy, a maximum of 1,750 tons or 58 truckloads would require removal on a daily basis, with most days considerable less than this maximum. Given the favorable access at SWMU15 and good local road system, this number of trucks is considered feasible. In addition, if there were any interruptions in the ability to haul material from the site, including too few trucks provided by the transportation companies or other disruptions at the landfill, excavation could continue by stockpiling material at SWMU15, allowing ISS to continue unimpeded given the large available space at SWMU15.

Waste Disposal Acceptance

In December 2017, Wood personnel met with Waste Management, Inc. personnel at the site to discuss waste disposal analysis parameters that would likely be necessary for the waste acceptance process. Based on that

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discussion and follow-up communications, three samples of the CCR were submitted to TestAmerica and analyzed for the following parameters: Toxic Characteristic Leaching Procedure (TCLP) metals plus boron (Method 1311/6010C/7470A), Waste Management's CCR metals list (Methods 6010C/7471B), reactive sulfide (Method 9034), total sulfur (Method 9038), pH (Method 9045D), sulfate (ASTM D516-90, D2), total organic carbon (Lloyd Kahn), percent moisture, and phosphorous (SM 4500). The TestAmerica Laboratory Report for these analyses is included as Attachment C. Reactive cyanide and ignitability (RCRA characteristics) were not tested because these parameters would not likely be present at concentrations of regulatory concern given the waste type, its age, and exposure to the elements.

Based on a preliminary review, the site CCR can likely be accepted in Waste Management's IL or IN landfills and can be commingled with other waste. Segregation of the CCR is not anticipated based on this initial review. The CCR passes the RCRA criteria for TCLP, corrosivity (pH), and reactive sulfide (reactivity). Total metals concentrations are not at levels of concern for disposal as RCRA Subtitle D waste material.

<u>ISS</u>

Once a portion of the unsaturated material is removed and an appropriately-sized area is available for ISS the necessary equipment would be mobilized and the ISS process would begin. The equipment necessary to complete the work will vary depending on the remedial contractor selected and their means and methods. Mixing equipment can be as simple as an excavator bucket or specialized large diameter auger equipment to achieve deeper mixing. For this project and this analysis, the Lang Tool Co. dual axis blender (DAB) was selected as a representative technology for evaluation (see Attachment D, Figure BS-002). The DAB is mounted on a standard excavator and can reach depths as much as 17 feet bgs. Based on the currently available information, the extent of CCR below the water table is approximately 15 feet maximum; therefore, it is feasible for the evaluated technology to reach the required depths. The estimated volume of CCR material below the water table is estimated at 86,000 cy. Work will proceed in the warmer months of the year to avoid freezing weather, given the use of water for slurry makeup and need to pump slurry to the mixing head. Based on the volumes present, the work can be accomplished in approximately six to eight months, from April 1 through December 1.

The other component of the ISS equipment is the slurry plant, which consists of reagent storage (in this case dry Portland cement), water storage, piping, pumps, and mixers. The slurry plant includes software which monitors and controls the water content of the slurry (for example, 75% water to 100% cement by weight). The work is generally accomplished in cells laid out on a North-South-East-West grid system within an overall management unit system. Figure BS-001 in Attachment D depicts three "zones" or management units and the smaller individual cells (10 x 10 feet or 10 x 15 feet) to be used to manage the delivery and mixing of reagents. For SWMU15, three management units would be appropriate. Management units allow for discrete areas of work to be accomplished at a time, minimizing the amount of open area at any one time and reducing concerns for water and other site management challenges.

The volume of slurry for each cell is calculated by determining the volume of material within each cell and multiplying that volume by the material density and the additive ratio (6% in this case). The volume of slurry is then calculated based upon it's reagent to water ratio for a total slurry volume for the cell. The reagent slurry is injected at the mixing head in a series of "plunges" through the CCR column. A pre-determined amount of slurry is injected into each plunge to ensure even distribution. The process is closely monitored

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and controlled by software integrated with the mixing equipment and at the slurry plant. Using these techniques, the appropriate amount of reagent can be delivered discretely to each cell.

Following injection of the slurry, the CCR is thoroughly mixed within the cell through the vigorous mixing action of the DAB. The control software can maintain a record of where the mixing head has been for quality control and reporting purposes. In addition, a color-coded scheme can be displayed on the system monitors to indicate where the mixing head is relative to target depths. Generally, the mixing head must be advanced into underlying uncontaminated or native materials to ensure complete treatment of the target material. This additional depth is typically six inches.

The system control and monitoring system ensures the right amount of amendments are delivered in a consistent fashion with the ability to output reports document the location of the mixing head and amount of reagents. This control method also ensures proper curing of the mixed materials. Samples of mixed material can be collected from required depths using specialized sampling equipment and submitted for lab analysis of unconfined compressive strength, a key measure of the completeness of mix and curing process. Following mixing and during curing the mixed material may expand or contract, due to the addition of materials (water and Portland cement), and the curing of the mix which may cause net expansion or contraction. Based on treatability study results volumetric expansion may occur; however, based on experience volumetric expansion typically does not match laboratory results and can be variable at the full scale. For this reason, the treated material will need to be graded post-treatment to ensure proper drainage and allow the site to backfilled and graded to the final restoration plan.

Water Management

Management of run-on and run-off during remedial activities will be another important consideration during design. Generally, run-on will need to be diverted around the work area through a series of berms, ditches, check dams, and other appropriate best management practices to ensure that excess water does not enter the work area. Silt fence and other erosion control features will need to be installed around the site to protect natural resources from any sediment carried by runoff. The use of management units will allow for more complete control of water flows on the site. Because the site is generally flat and will first be excavated prior to ISS, all slopes will generally be pitched inward to the excavation, minimizing the potential for release of contaminated runoff.

During excavation down to the water table within the CCR, some water may drain from wet CCR material. Generally, this water will be allowed to re-infiltrate during excavation. Therefore, a carefully implemented water management plan will need to be developed, identifying the sequencing of work (e.g., working from low areas to high areas) that best controls the flow and accumulation of water within the excavation.

Water that accumulates from precipitation events, drains from CCR, or is liberated during the mixing process and that does not re-infiltrate can be reincorporated as makeup water into the amendment slurry, minimizing or eliminating any excess water requiring additional handling. Excess water not useable on site can alternatively be recharge to groundwater on the site at a location downgradient of the work area. The amount of open area at any given time will need to be kept to a minimum to avoid accumulation of water. Following ISS, the site will be backfilled and graded to promote positive drainage that is consistent with the desired final restoration of the site.

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REFERENCES

- Amec Foster Wheeler, 2016. Revised Draft Area C Corrective Measures Study, NIPSCO Bailly Generating Station, RCRA Corrective Action Program, EPA ID# 000718114. March 18, 2016.
- Amec Foster Wheeler, 2017a. Memo to Michelle Kaysen (USEPA) from Peter Guerra and Russ Johnson, Subject: SWMU 15 Geotechnical Investigation Summary, Corrective Measures Study for Area C, NIPSCO Bailly Generating Station. January 13, 2017.
- Amec Foster Wheeler, 2017b. Memo to Michelle Kaysen (USEPA) from Peter Guerra and Russ Johnson, Subject: Revised Costs for SWMU 15, Corrective Measures Study for Area C, NIPSCO Bailly Generating Station. June 2, 2017.
- Amec Foster Wheeler, 2017c. Memo to Michelle Kaysen (USEPA) from Peter Guerra and Russ Johnson, Subject: Response to EPA Comments, Revised Costs for SWMU 15, Corrective Measures Study for Area C, NIPSCO Bailly Generating Station. September 18, 2017.
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- KEMRON, 2018. NIPSCO Bailly Corrective Measure Study, Final Report. Kemron Project No. SH0549. August 28, 2018.
- Wood, 2018. SMWU-15 Treatability Study, NIPSCO Bailly Generating Station. Memorandum from Russ Johnson and Tim Glover to Michelle Kaysen, USEPA. November 9, 2018

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List of Attachments

Attachment A – Kaysen email dated 9/22/17

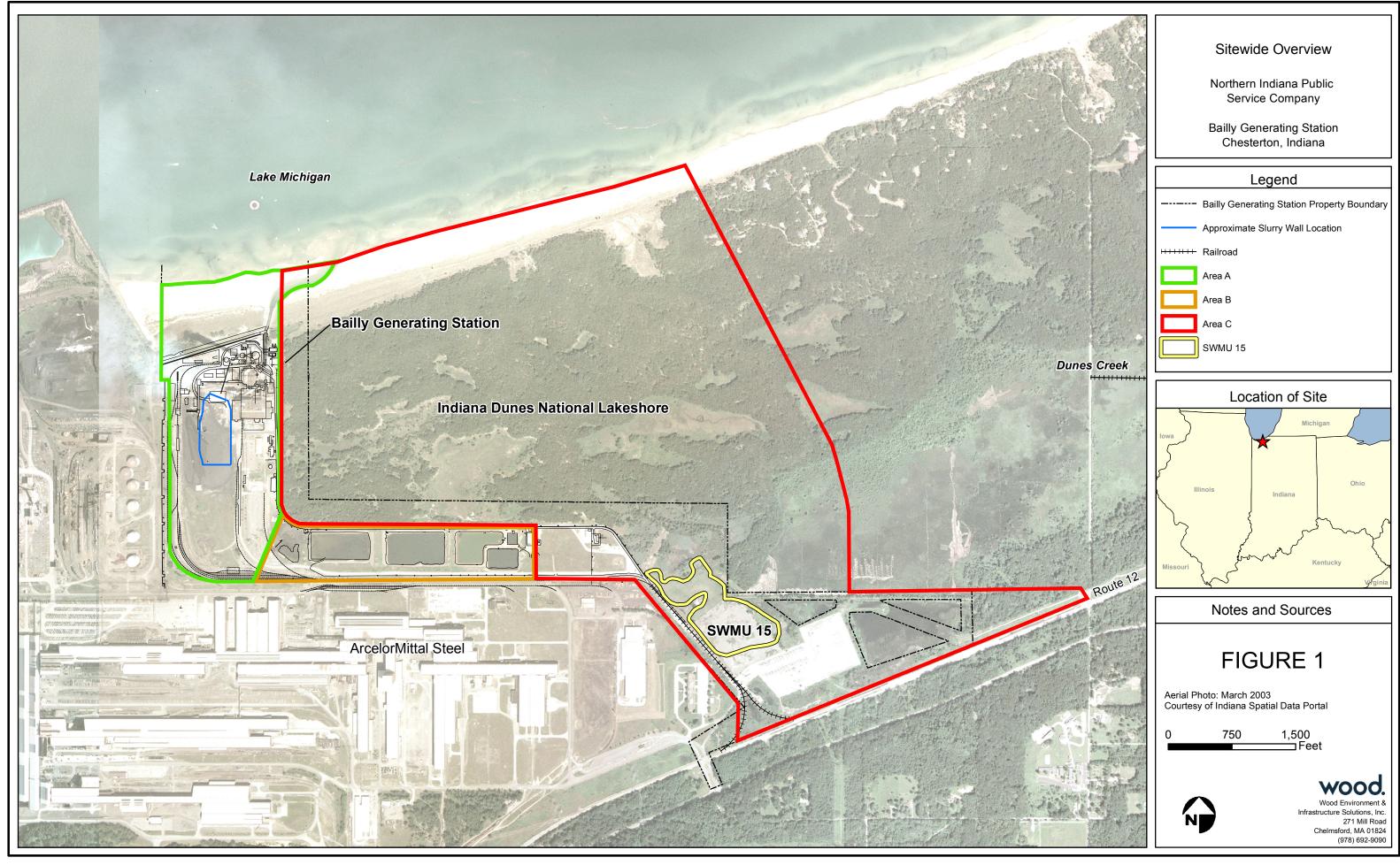
Attachment B – Existing Conditions/Topographic Survey by DLZ Industrial

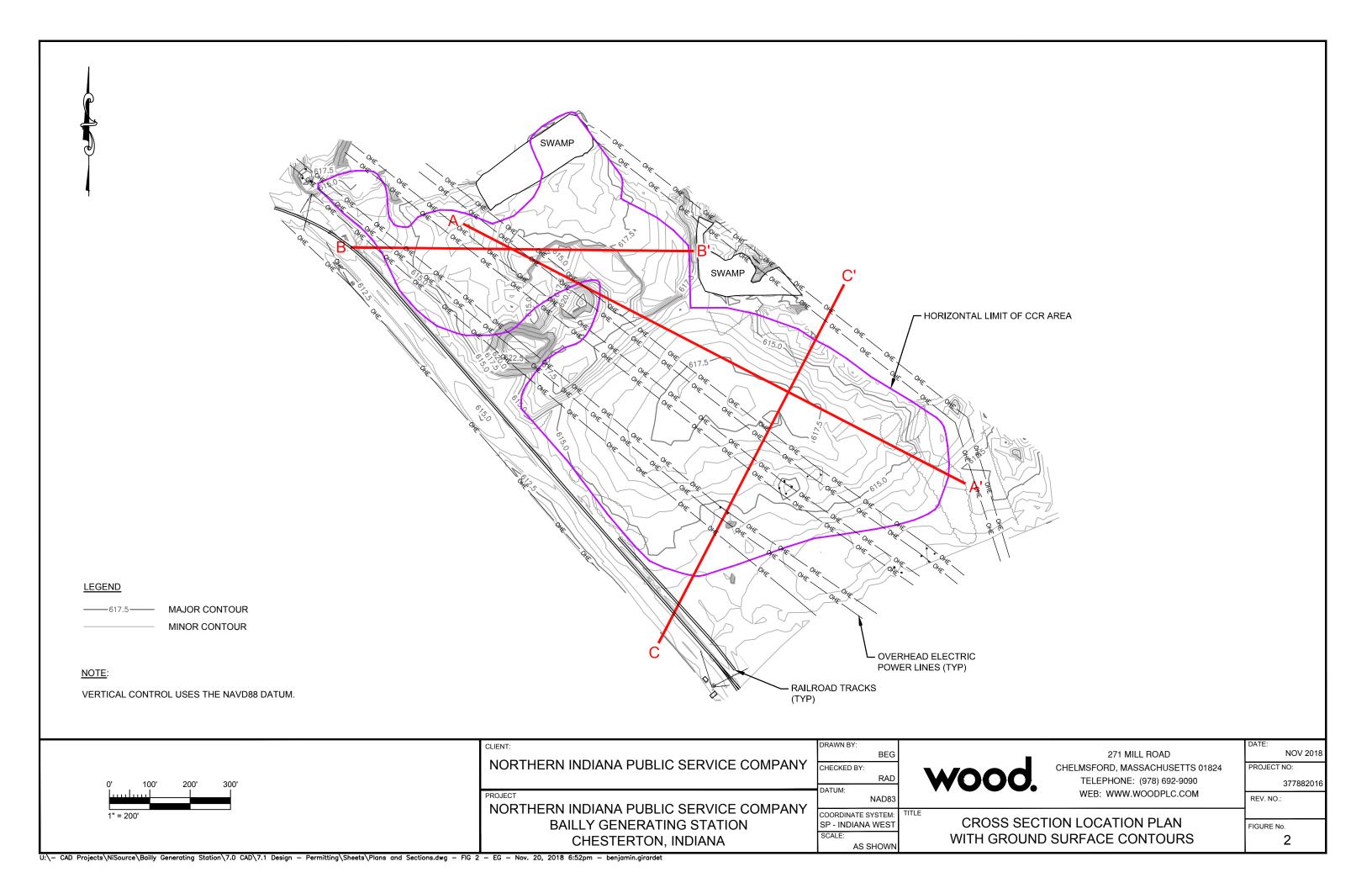
Attachment C – Landfill Waste Characterization Lab Report

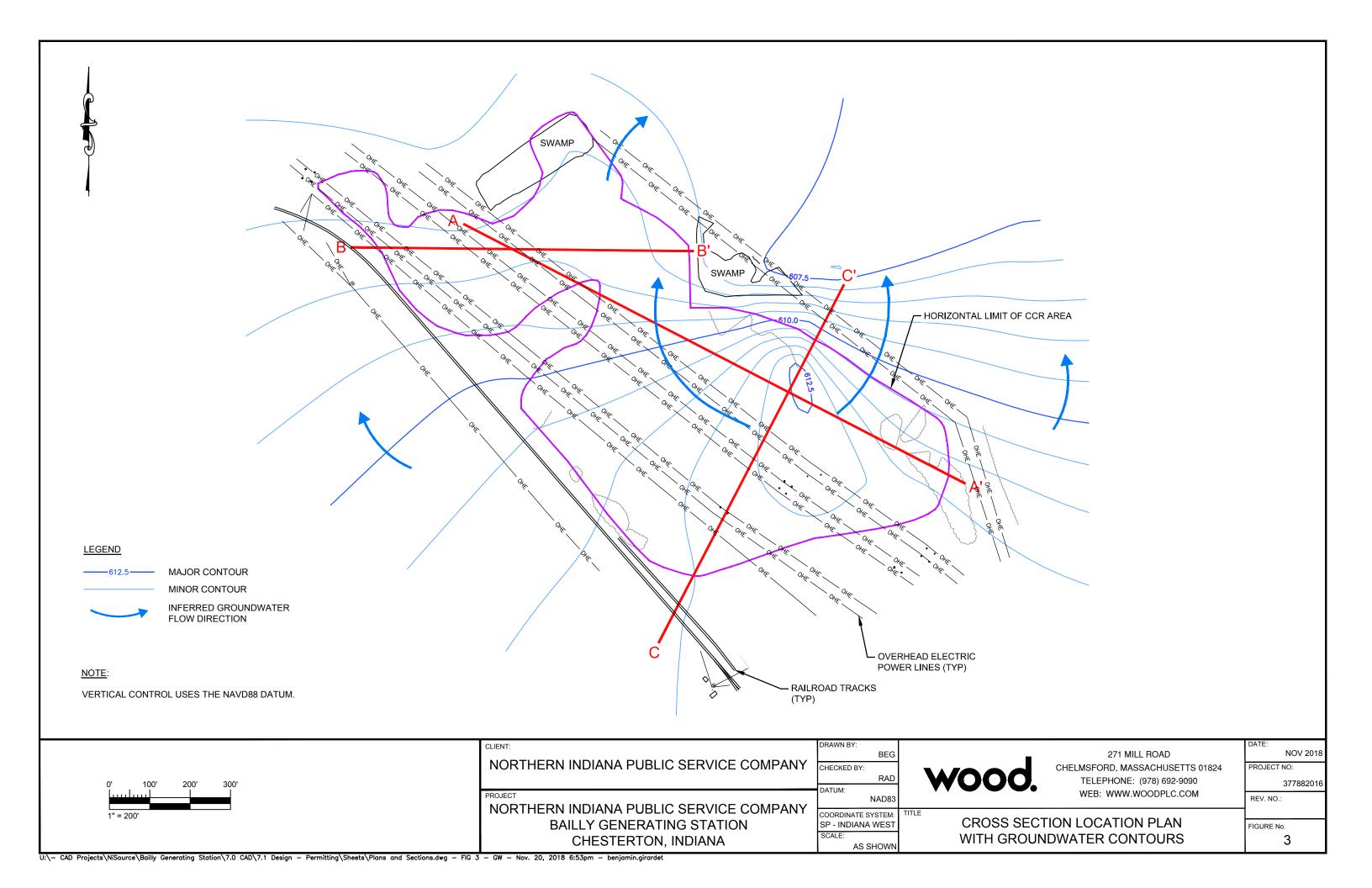
Attachment D - Lang Tool Excavation Cell and DAB Figures

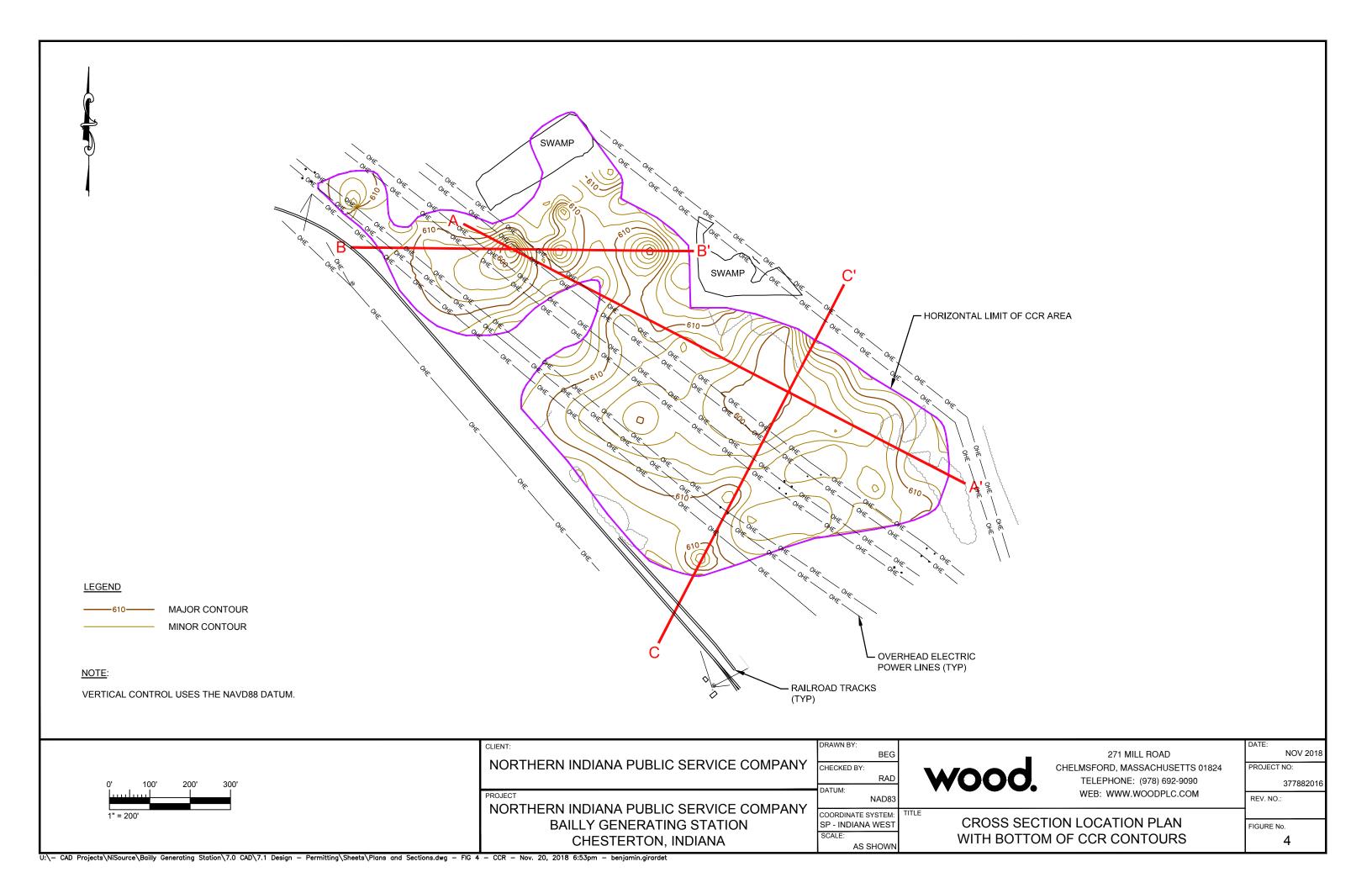
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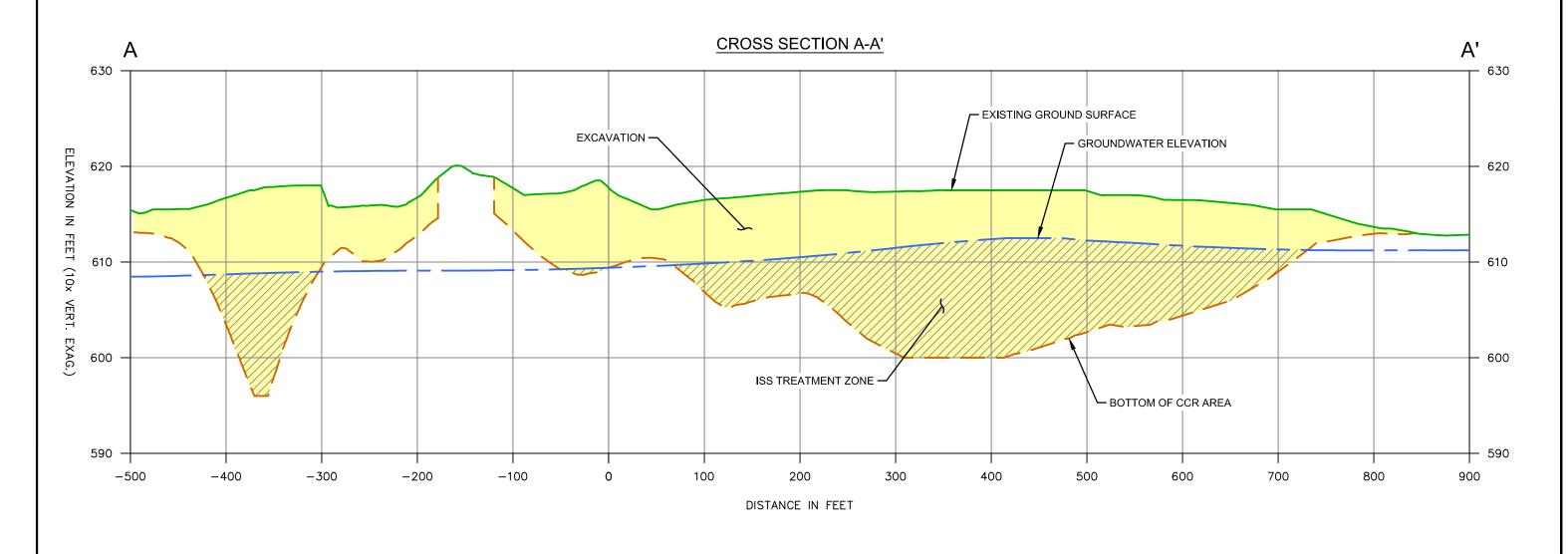
Figures











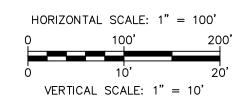
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CCR

ISS TREATMENT ZONE

- 1. VERTICAL CONTROL USES THE NAVD88 DATUM.
- 2. SURFICIAL LAYERS NOTED AS CCR CONTAIN OTHER UNCONTAMINATED MATERIALS SUCH AS TOP SOIL, BLAST FURNACE SLAG, AND OTHER SOILS THAT DO NOT REQUIRE OFF-SITE DISPOSAL. THIS MATERIAL WILL BE SEGREGATED, SAMPLED, AND POTENTIALLY REUSED.



NORTHERN INDIANA PUBLIC SERVICE COMPANY CHECKED BY: NORTHERN INDIANA PUBLIC SERVICE COMPANY COORDINATE SYSTEM: **BAILLY GENERATING STATION**

CHESTERTON, INDIANA

Wood. RAD NONE

NONE

AS SHOWN

271 MILL ROAD CHELMSFORD, MASSACHUSETTS 01824 TELEPHONE: (978) 692-9090

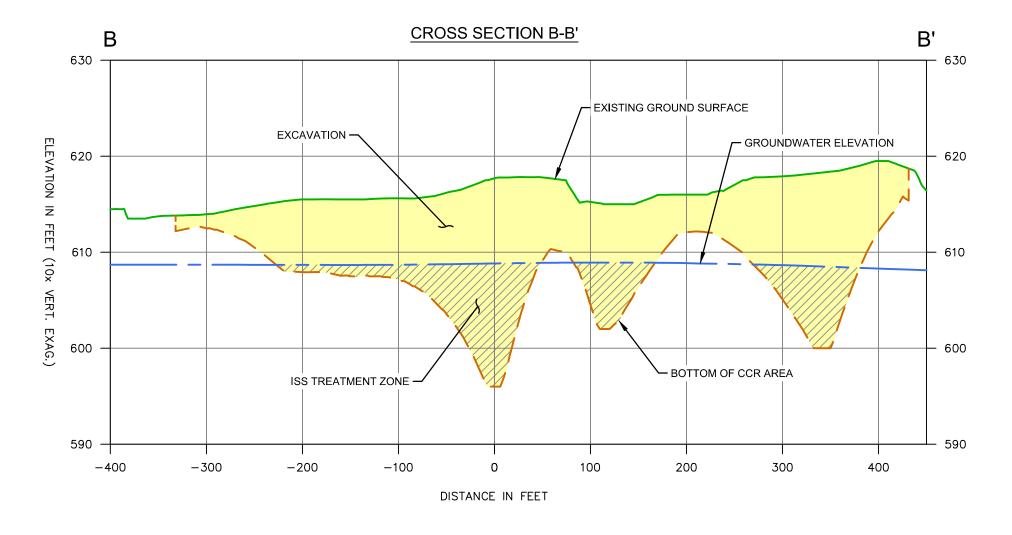
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FIGURE No. **CROSS SECTION A-A'** 5

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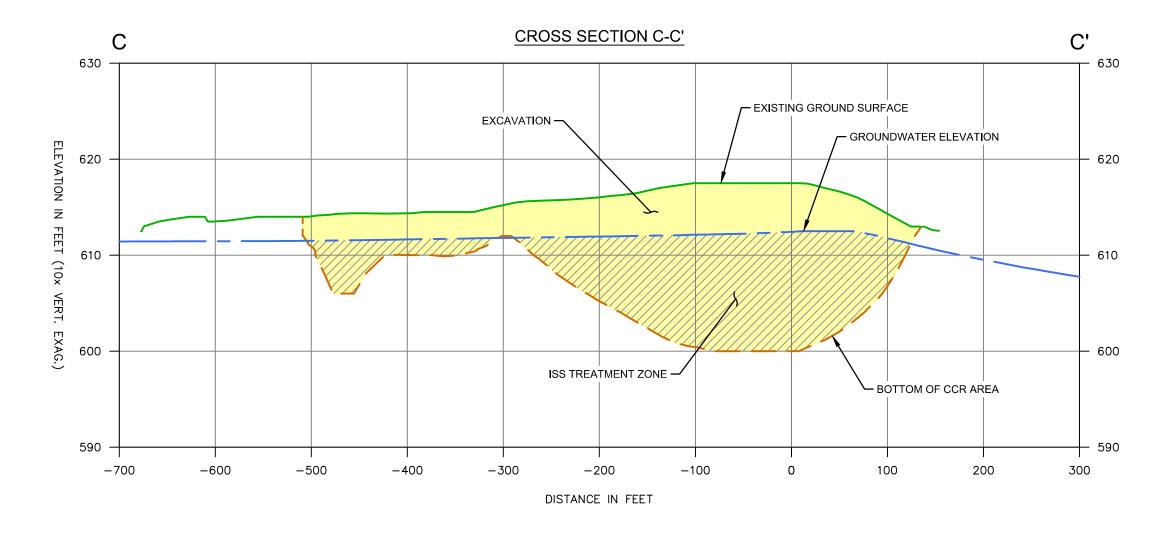
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CCR

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NOV 2018 271 MILL ROAD NORTHERN INDIANA PUBLIC SERVICE COMPANY HORIZONTAL SCALE: 1" = 100' CHECKED BY: CHELMSFORD, MASSACHUSETTS 01824 PROJECT NO: Wood. RAD TELEPHONE: (978) 692-9090 377882016 WEB: WWW.WOODPLC.COM REV. NO.: NONE NORTHERN INDIANA PUBLIC SERVICE COMPANY COORDINATE SYSTEM: **BAILLY GENERATING STATION** VERTICAL SCALE: 1" = 10' NONE FIGURE No. **CROSS SECTION B-B'** 6 CHESTERTON, INDIANA AS SHOWN



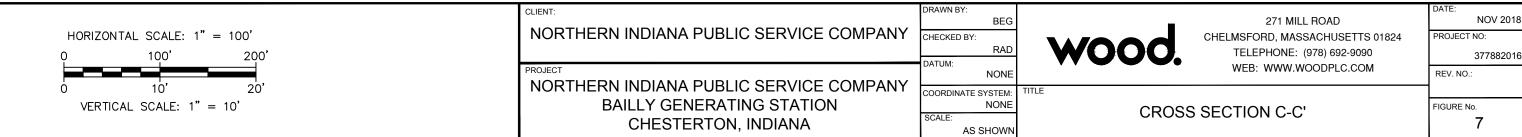
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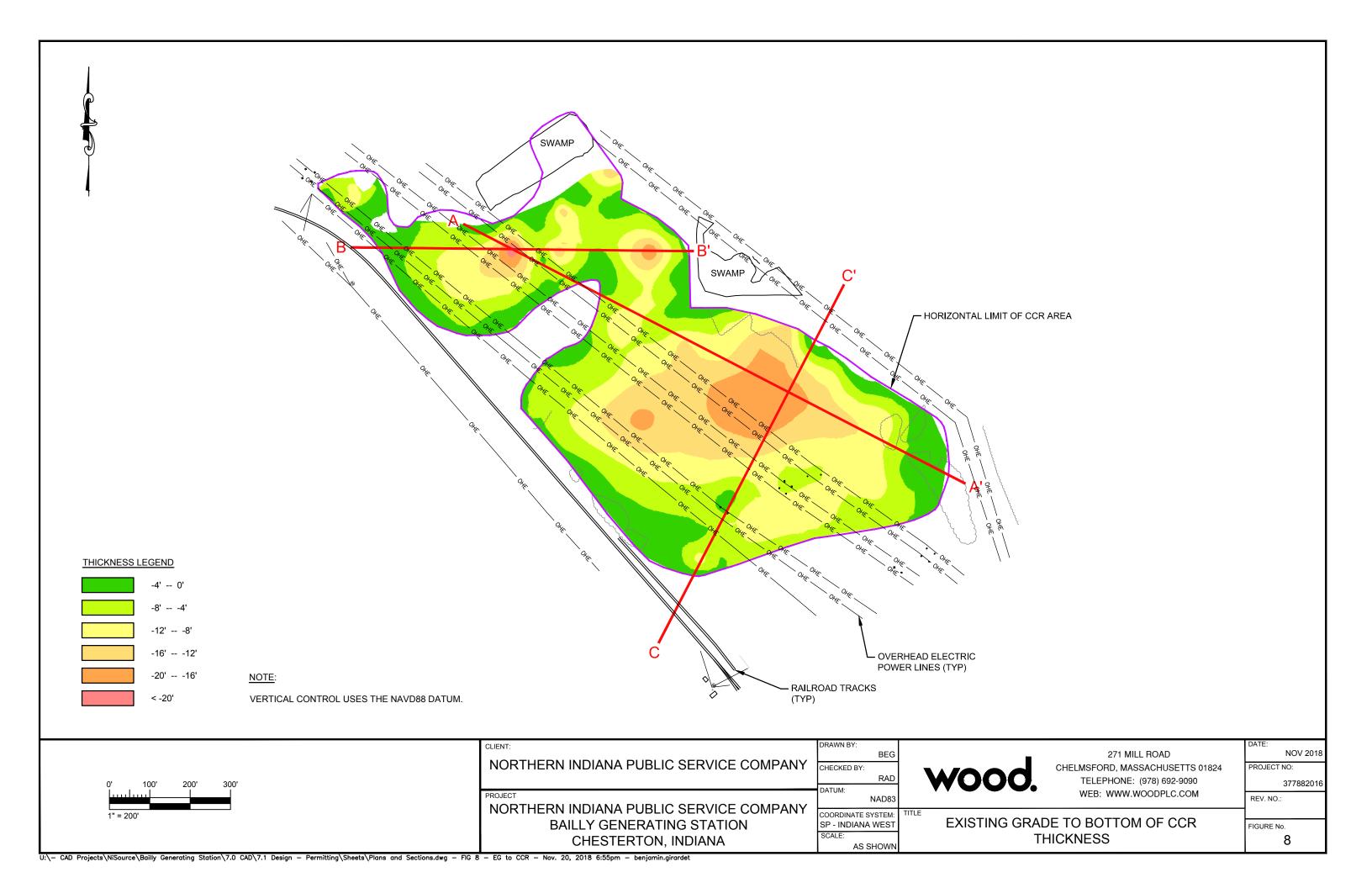
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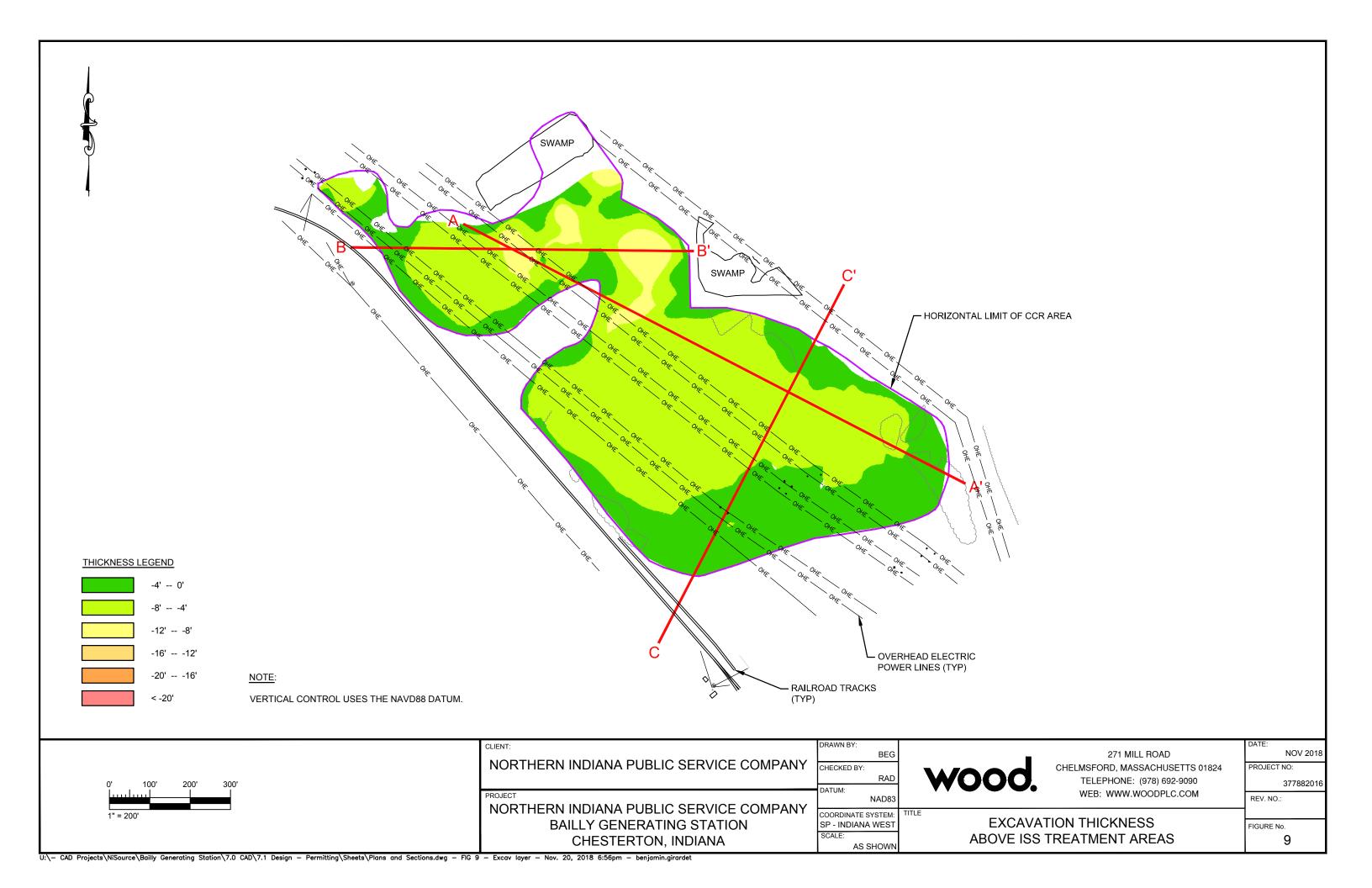
CCR

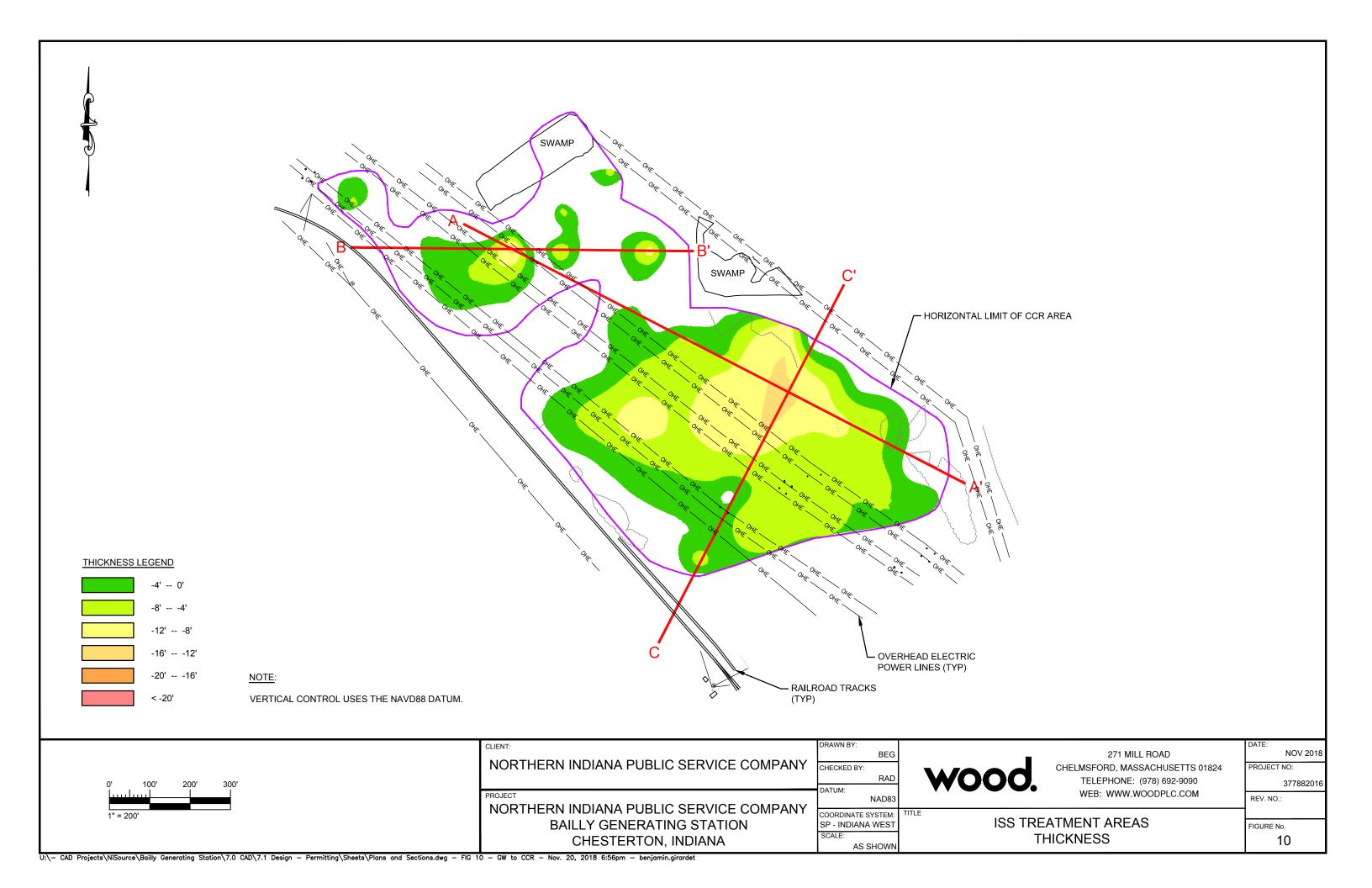
ISS TREATMENT ZONE

- 1. VERTICAL CONTROL USES THE NAVD88 DATUM.
- 2. SURFICIAL LAYERS NOTED AS CCR CONTAIN OTHER UNCONTAMINATED MATERIALS SUCH AS TOP SOIL, BLAST FURNACE SLAG, AND OTHER SOILS THAT DO NOT REQUIRE OFF-SITE DISPOSAL. THIS MATERIAL WILL BE SEGREGATED, SAMPLED, AND POTENTIALLY REUSED.









wood.

Attachment A

USEPA e-mail September 22, 1017

Johnson, Russell A

From: Kaysen, Michelle <kaysen.michelle@epa.gov>

Sent: Friday, September 22, 2017 5:00 PM

To: Johnson, Russell A

Cc: DSullivan@NiSource.com; Charles Morris; Gia Wagner; Dodds, Jennifer Subject: Re: BGS - Availability of Response to EPA Comments dated 8/18/17

Thanks, Russ. I happen to be reviewing a CMS for another site proposing in-situ SS and see an opportunity to gain some efficiencies here. I would request NIPSCO include an appendix in the revised CMS with information that might otherwise be in a CMI work plan. I believe the additional information is going to assist the Agency in making its recommendation for the Statement of Basis. This would save us the step of another deliverable after the CMS and before the SB.

Some of the information that should be included:

Implementability:

Though this is usually touched on in the CMS, include more specific information on how NIPSCO might conduct the work.

Dividing the area into management cells?

Water management?

Method to ensure proper curing?

Ensuring consistent preparation of reagent in the field?

Ensuring sufficient mixing with the native material?

Remedial endpoints versus efficacy of SS-treated area per performance criteria:

Decision logic should be established upfront that connects the required endpoints with performance criteria. Performance criteria might include unconfined compressive strength, hydraulic conductivity, and leachability (tolerance intervals may be considered).

It's recommended that NIPSCO demonstrate UCS from the perspective of long-term durability, but future redevelopment might also be a consideration. Durability associated with water table interactions should also be included, such as: ASTM D4843 Wetting and Drying Test; ASTM C1262 Freeze-Thaw; and, leachability (LEAF, as discussed).

Since the leachate tests can be an imperfect representation of actual field conditions, multiple lines of evidence is requested. For example, it's recommended relative hydraulic conductivity of the SS material and the surrounding native soils be compared and used as a line of evidence (in addition to leaching). Combined within a fate and transport model, the lines of evidence should demonstrate percent reduction in mass flux and acceptable attenuation to the POC in support of remedial endpoints.

It's unclear how realistic it is to assume sufficient attenuation between the treated material and the POC given the location of the CCR relative to the property boundary, so these lines of evidence will be important.

Long-term Stewardship:

The nature of a SS remedy leaving waste in place, neither destroying nor degrading COCs, presents unique challenges immediately adjacent to a national park. The long-term stewardship of this remedy will require thought. Some of the issues to consider are:

-groundwater monitoring, frequency and duration

- -potential changes in flow regime induced by the monolith, implications on monitoring locations and effects to downgradient wetlands
- -time of travel and anticipated attenuation to POC
- -institutional controls
- -financial assurance
- -5 year remedy reviews

I recognize the realities of on-boarding subcontractors might make it difficult to address certain details in the revised CMS quickly; however, I see this level of detail being required for the Agency to make a final remedy proposal. Hopefully providing this to you now will save us a little time on the CMS, so we can discuss timing and scheduling of that submittal. Please let me know if you have any questions.

Thanks Michelle

From: Johnson, Russell A < russell.johnson2@amecfw.com>

Sent: Friday, September 22, 2017 9:52 AM

To: Kaysen, Michelle

Cc: DSullivan@NiSource.com

Subject: RE: BGS - Availability of Response to EPA Comments dated 8/18/17

Hi Michelle – a field pilot study as part of the Corrective Measures Study is not contemplated at this time. Let's see what we get for results from the LEAF bench-scale pilot study. I'll be working on the schedule/submittals with Dan next week.

Thank you.

Russell A. Johnson, LEP

Program Manager, Environment & Infrastructure, Amec Foster Wheeler 271 Mill Road, 3rd Floor, Chelmsford, MA USA T +1 978-692-9090 D +1 978-392-5336 M +1 508-954-2518 russell.johnson@amecfw.com amecfw.com



From: Kaysen, Michelle [mailto:kaysen.michelle@epa.gov]

Sent: Tuesday, September 19, 2017 11:36 AM

To: Johnson, Russell A < russell.johnson2@amecfw.com>

Cc: DSullivan@NiSource.com

Subject: RE: BGS - Availability of Response to EPA Comments dated 8/18/17

Russ,

Thanks for the response to comments. EPA concurs with the path forward on the bench scale studies followed by the revised CMS. Is it contemplated that a field pilot study might be necessary?

Please provide a schedule of the various activities and submittals.

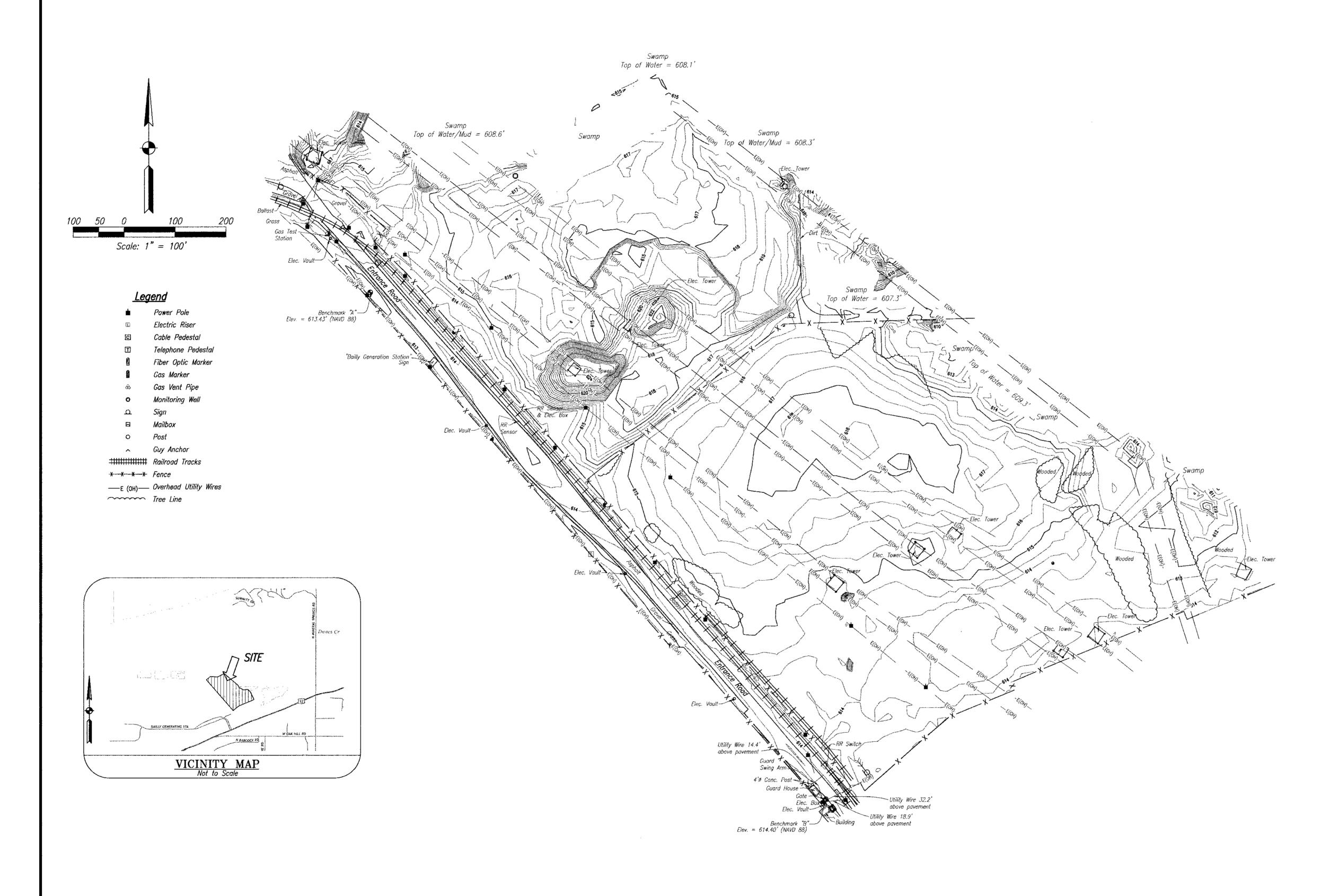
Thanks, Michelle

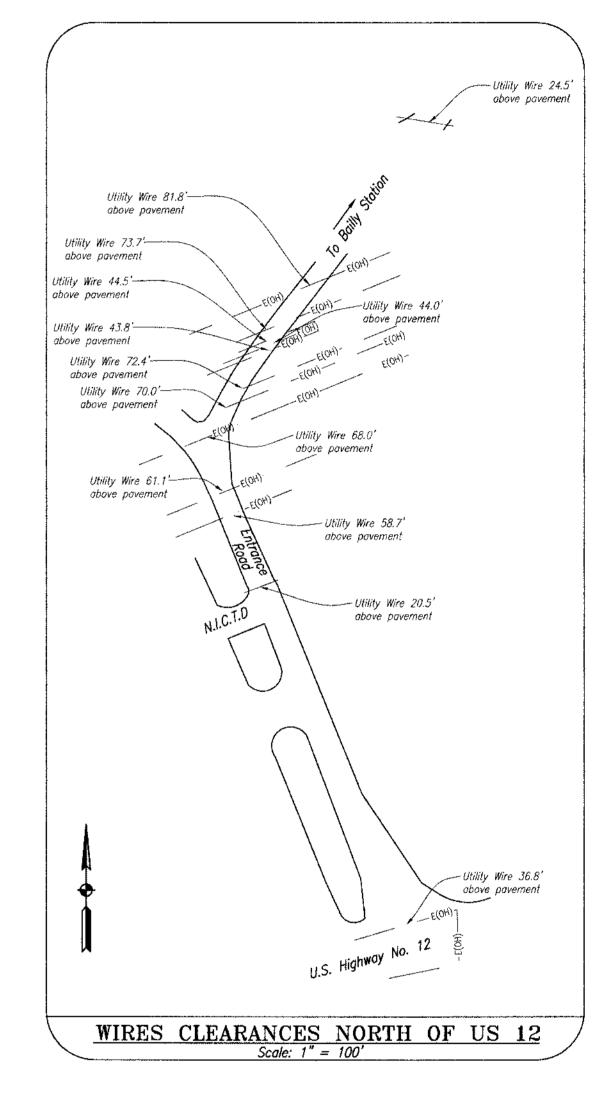
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Attachment B

Existing Conditions Survey

TOPOGRAPHIC SURVEY





General Notes:

1. This drawing is not intended to be represented as a retracement or original boundary survey, a route survey, or a Surveyor Location Report.

2. The contours shown hereon are based on a ground survey and are referenced to the North American Vertical Datum of 1988 (NAVD88) based on GPS measurements from the Indiana Department of Transportation Continuously Operating Reference Network (INDOT CORS). Ellipsoid heights were converted to elevations using Geoid 12A.

Site Benchmarks:

Benchmark 'A' — Benchtie in the road side face of N.I.P.S.Co Utility Pole No. 956/838 located on the west side of the entrance road +/- 1300 feet northwest of the Guard House. Elevation: 613.43'

Benchmark 'B' — Benchtie in the road side face of N.I.P.S.Co Utility Pole No. 956/845 located on the west side of the entrance road on the southeast side of the Guard House. Elevation: 614.40'



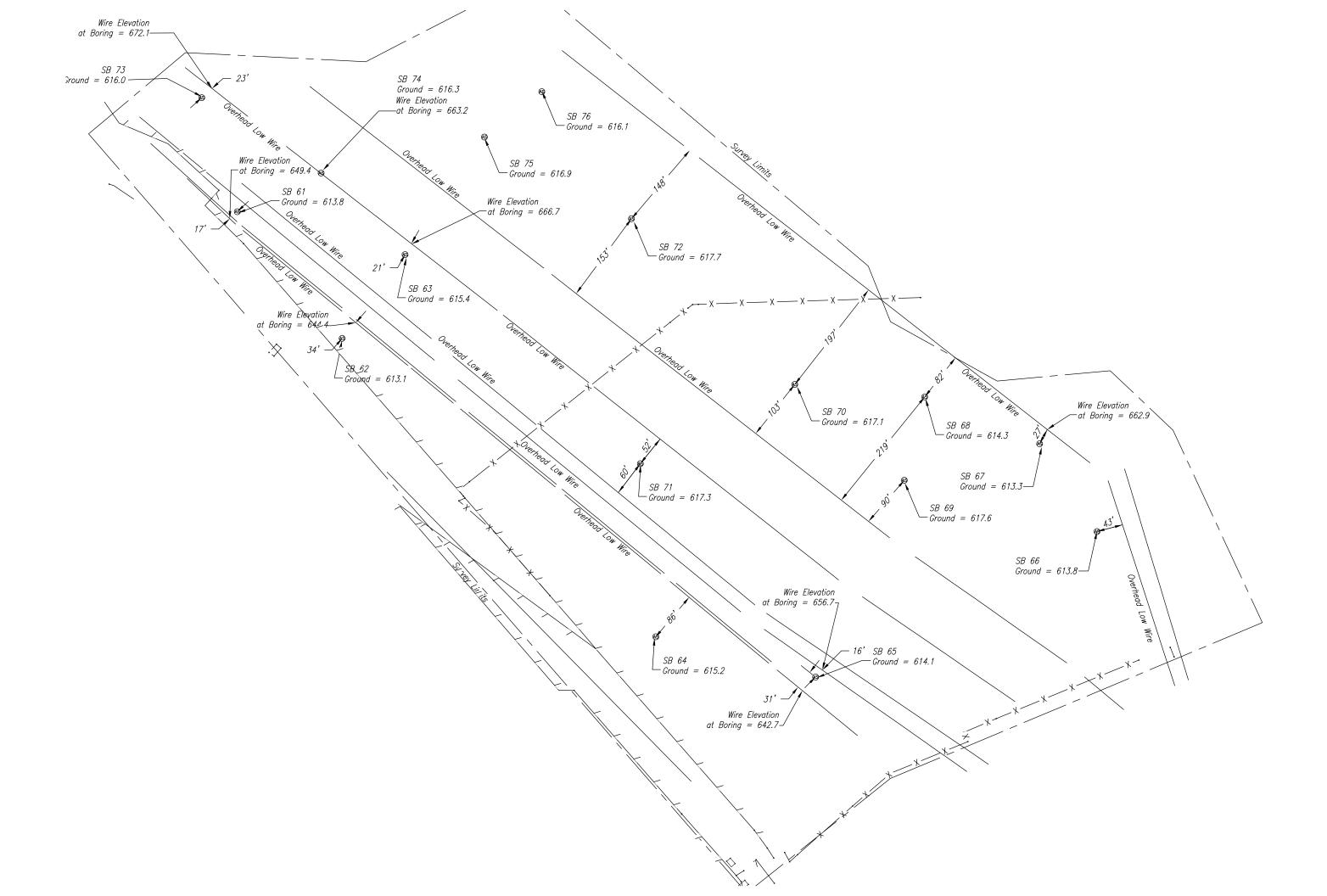
Indiana Professional Surveyor No. LS20600010 Date of Plat: September 19, 2016 Last Date of Fieldwork: Setember 16, 2016

PORTAGE	TOPOGRAPHIC SURVEY WITHIN THE SWMU 15 AREA	DRAWN DESIGN DATE: SCALE
	AT BAILLY STATION	PROJE

FOR: AMEC ENVIRONMENTAL & INFRASTRUCTURE, INC.

Α	DRAWN: KLK CHK'D. RHK	NO.	REVISION	BY	DATE
-	DESIGNED: APPRV'D: AJT		•		
	DATE: 9/20/16	\triangle			
	SCALE: 1" = 100'	\triangle			
		\triangle			
	PROJECT NUMBER	\triangle			
	1650-8093-90	\triangle			
	1000-0030-30	\wedge			

DRAWING NUMBER



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Attachment C

Landfill Waste Characterization Laboratory Report



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo 10 Hazelwood Drive Amherst, NY 14228-2298 Tel: (716)691-2600

TestAmerica Job ID: 480-128745-1

Client Project/Site: Bailly Generating Station

For:

AMEC Foster Wheeler E & I, Inc 271 Mill Road Chelmsford, Massachusetts 01824

Attn: Ms. Denise King

Authorized for release by: 1/9/2018 10:47:56 AM

John Schove, Project Manager II (716)504-9838

john.schove@testamericainc.com

·····LINKS ·······

Review your project results through

Total Access

Have a Question?



Visit us at: 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

Matrix

Solid

Solid

Solid

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Client Sample ID

COMP SB777879

COMP SB808182

COMP SB838485

Lab Sample ID

480-128745-1

480-128745-2

480-128745-3

TestAmerica Job ID: 480-128745-1

12/06/17 10:10 12/09/17 09:00

Collected	Received
12/06/17 11:45	12/09/17 09:00
12/06/17 12:55	12/09/17 09:00

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Method Summary

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Method	Method Description	Protocol	Laboratory
6010C	TCLP Metals (ICP)	SW846	TAL BUF
6010C	Metals (ICP)	SW846	TAL CAN
7470A	TCLP Mercury	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL CAN
9034	Sulfide, Reactive	SW846	TAL BUF
9038	Sulfur, Total	SW846	TAL SAV
0045D	рН	SW846	TAL BUF
0516-90, 02	Sulfate	ASTM	TAL BUF
loyd Kahn	Organic Carbon, Total (TOC)	EPA	TAL BUR
Moisture	Percent Moisture	EPA	TAL BUF
SM 4500 P E	Phosphorus	SM	TAL BUF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Buffalo

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Definitions/Glossary

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Qualifiers

Metals

Qualifier	Qualifier Description					
F1	MS and/or MSD Recovery is outside acceptance limits.					
F2	MS/MSD RPD exceeds control limits					
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.					
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.					
General C	hemistry					

Qualifier Description					
Sample was prepped or analyzed beyond the specified holding time					
Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.					
HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.					
Compound was found in the blank and sample.					
MS and/or MSD Recovery is outside acceptance limits.					
Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.					

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	Detection Limit (DoD/DOE)				
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample				
DLC	Decision Level Concentration (Radiochemistry)				
EDL	Estimated Detection Limit (Dioxin)				
LOD	Limit of Detection (DoD/DOE)				
LOQ	Limit of Quantitation (DoD/DOE)				
MDA	Minimum Detectable Activity (Radiochemistry)				
MDC	Minimum Detectable Concentration (Radiochemistry)				
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 (Radiochemistry)				
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)				

TestAmerica Buffalo

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Case Narrative

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Job ID: 480-128745-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-128745-1

Comments

No additional comments.

Receipt

The samples were received on 12/9/2017 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

Metals

Method(s) 6010C: The recovery of Post Spike, (480-128745-A-3-D PDS), in batch 480-392921 and 480-393125 exhibited results outside the quality control limits for TCLP Boron. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

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

General Chemistry

Method(s) Lloyd Kahn: The following samples were analyzed outside of analytical holding time due to system outages. COMP SB777879 (480-128745-1), COMP SB808182 (480-128745-2) and COMP SB838485 (480-128745-3)

Method(s) 9045D: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: COMP SB777879 (480-128745-1), COMP SB808182 (480-128745-2) and COMP SB838485 (480-128745-3).

Method(s) 9038: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 680-508540 and analytical batch 680-508563 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9038: The sample duplicate (DUP) precision for preparation batch 680-508540 and analytical batch 680-508563 was outside control limits. Sample matrix interference is suspected.

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

Organic Prep

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

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TestAmerica Job ID: 480-128745-1

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Lab Sample ID: 480-128745-1

Client Sample ID: COMP SB777879

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	14000		23	6.8	mg/Kg	1	₩	6010C	Total/NA
Arsenic	110		1.8	0.48	mg/Kg	1	₩	6010C	Total/NA
Barium	190	F1	23	0.48	mg/Kg	1	₩	6010C	Total/NA
Boron	140		23	0.56	mg/Kg	1	₩	6010C	Total/NA
Cadmium	3.8		0.58	0.025	mg/Kg	1	₩	6010C	Total/NA
Calcium	31000		580	27	mg/Kg	1	₩	6010C	Total/NA
Chromium	58		1.2	0.088	mg/Kg	1	₩	6010C	Total/NA
Copper	39		2.9	0.27	mg/Kg	1	₩	6010C	Total/NA
Iron	38000		23	3.7	mg/Kg	1	₩	6010C	Total/NA
Lead	49		1.2	0.23	mg/Kg	1	₩	6010C	Total/NA
Magnesium	13000	F1	580	6.1	mg/Kg	1	₩	6010C	Total/NA
Manganese	1100		1.8	0.098	mg/Kg	1	₩	6010C	Total/NA
Molybdenum	40	F1	4.7	0.069	mg/Kg	1	₩	6010C	Total/NA
Potassium	2100		580	7.2	mg/Kg	1	₩	6010C	Total/NA
Selenium	7.5		2.3	0.40	mg/Kg	1	₩	6010C	Total/NA
SiO2, Silica	940	F1 F2	130	4.8	mg/Kg	1	₽	6010C	Total/NA
Sodium	470	J	580	22	mg/Kg	1	₩	6010C	Total/NA
Strontium	87	F1	5.8	1.1	mg/Kg	1	₩	6010C	Total/NA
Titanium	570		5.8	0.14	mg/Kg	1	₩	6010C	Total/NA
Zinc	300		5.8	0.65	mg/Kg	1	₩	6010C	Total/NA
Arsenic	0.052		0.015	0.0056	mg/L	1		6010C	TCLP
Barium	1.6		1.0	0.10	mg/L	1		6010C	TCLP
Boron	1.5		0.50	0.10	mg/L	1		6010C	TCLP
Cadmium	0.031		0.0020	0.00050	mg/L	1		6010C	TCLP
Lead	0.0091	J	0.020	0.0030	mg/L	1		6010C	TCLP
Selenium	0.0097	J	0.025	0.0087	mg/L	1		6010C	TCLP
Total Organic Carbon	14000	Н	1000	380	mg/Kg	1		Lloyd Kahn	Total/NA
Phosphorus	360	В	9.0	3.6	mg/Kg	20	₩	SM 4500 P E	Total/NA
Sulfate	49	J	63	31	mg/Kg	1	₩	D516-90, 02	Soluble
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac		Method	Prep Type
Total Sulfur	350	F1	230	230	mg/Kg	1	₩	9038	Total/NA
рН	8.5	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	19.3	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

Client Sample ID: COMP SB808182

Lab Sample ID: 480-128745-2

Analyte	Result Qualifie	r RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	11000		5.7	mg/Kg		₩	6010C	Total/NA
Arsenic	220	1.5	0.40	mg/Kg	1	₩	6010C	Total/NA
Barium	99	20	0.40	mg/Kg	1	₩	6010C	Total/NA
Boron	210	20	0.47	mg/Kg	1	₩	6010C	Total/NA
Cadmium	4.1	0.49	0.021	mg/Kg	1	₩	6010C	Total/NA
Calcium	4500	490	23	mg/Kg	1	₩	6010C	Total/NA
Chromium	83	0.98	0.074	mg/Kg	1	₩	6010C	Total/NA
Copper	53	2.5	0.23	mg/Kg	1	₩	6010C	Total/NA
Iron	38000	20	3.2	mg/Kg	1	₩	6010C	Total/NA
Lead	130	0.98	0.20	mg/Kg	1	₩	6010C	Total/NA
Magnesium	1500	490	5.1	mg/Kg	1	₩	6010C	Total/NA
Manganese	70	1.5	0.083	mg/Kg	1	₩	6010C	Total/NA
Molybdenum	31	3.9	0.058	mg/Kg	1	₽	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

1/9/2018

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TestAmerica Job ID: 480-128745-1

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Client Sample ID: COMP SB838485

2

Client Sample ID: COMP SB808182 (Continued)

Lab Sam	ple ID:	480-128745-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Potassium	2000		490	6.1	mg/Kg	1	₩	6010C	Total/NA
Selenium	5.6		2.0	0.33	mg/Kg	1	₩	6010C	Total/NA
SiO2, Silica	2200		110	4.0	mg/Kg	1	₩	6010C	Total/NA
Sodium	380	J	490	19	mg/Kg	1	₩	6010C	Total/NA
Strontium	66		4.9	0.92	mg/Kg	1	₩	6010C	Total/NA
Titanium	680		4.9	0.12	mg/Kg	1	₩	6010C	Total/NA
Zinc	430		4.9	0.55	mg/Kg	1	₩	6010C	Total/NA
Arsenic	0.16		0.015	0.0056	mg/L	1		6010C	TCLP
Barium	0.87	J	1.0	0.10	mg/L	1		6010C	TCLP
Boron	1.9		0.50	0.10	mg/L	1		6010C	TCLP
Cadmium	0.016		0.0020	0.00050	mg/L	1		6010C	TCLP
Chromium	0.011	J	0.020	0.010	mg/L	1		6010C	TCLP
Lead	0.015	J	0.020	0.0030	mg/L	1		6010C	TCLP
Total Organic Carbon	18000	Н	1000	380	mg/Kg	1		Lloyd Kahn	Total/NA
Phosphorus	580	В	8.4	3.4	mg/Kg	20	₩	SM 4500 P E	Total/NA
Sulfate	57	J	64	32	mg/Kg	1	₩	D516-90, 02	Soluble
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Sulfur	380		210	210	mg/Kg	1	₩	9038	Total/NA
pH	8.3	HF	0.1	0.1	SU	1		9045D	Total/NA
Temperature	19.3	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

Lab Sample ID: 480-128745-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	7000		23	6.6	mg/Kg	1	₩	6010C	Total/NA
Arsenic	92		1.7	0.47	mg/Kg	1	₩	6010C	Total/NA
Barium	76		23	0.47	mg/Kg	1	₩	6010C	Total/NA
Boron	110		23	0.55	mg/Kg	1	₩	6010C	Total/NA
Cadmium	3.9		0.57	0.024	mg/Kg	1	₩	6010C	Total/NA
Calcium	8600		570	26	mg/Kg	1	₩	6010C	Total/NA
Chromium	54		1.1	0.086	mg/Kg	1	₩.	6010C	Total/NA
Copper	41		2.9	0.26	mg/Kg	1	₩	6010C	Total/NA
Iron	30000		23	3.7	mg/Kg	1	₩	6010C	Total/NA
Lead	44		1.1	0.23	mg/Kg	1	₩.	6010C	Total/NA
Magnesium	1700		570	6.0	mg/Kg	1	₩	6010C	Total/NA
Manganese	110		1.7	0.096	mg/Kg	1	₩	6010C	Total/NA
Molybdenum	73		4.6	0.068	mg/Kg	1	₩.	6010C	Total/NA
Potassium	1200		570	7.1	mg/Kg	1	₩	6010C	Total/NA
Selenium	6.1		2.3	0.39	mg/Kg	1	₩	6010C	Total/NA
SiO2, Silica	2300		120	4.7	mg/Kg	1	ф.	6010C	Total/NA
Sodium	180	J	570	22	mg/Kg	1	₩	6010C	Total/NA
Strontium	40		5.7	1.1	mg/Kg	1	☼	6010C	Total/NA
Titanium	450		5.7	0.14	mg/Kg	1	₩.	6010C	Total/NA
Zinc	250		5.7	0.64	mg/Kg	1	☼	6010C	Total/NA
Arsenic	0.15		0.015	0.0056	mg/L	1		6010C	TCLP
Barium	1.0		1.0		mg/L	1		6010C	TCLP
Boron	1.3		0.50		mg/L	1		6010C	TCLP
Cadmium	0.023		0.0020	0.00050	-	1		6010C	TCLP
Lead	0.016		0.020	0.0030	mg/L	1		6010C	TCLP
Selenium	0.0097	J	0.025	0.0087	-	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

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1/9/2018

Detection Summary

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Lab Sample ID: 480-128745-3

Client Sample ID: COMP SB838485 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	9100	H	1000	380	mg/Kg	1	_	Lloyd Kahn	Total/NA
Phosphorus	370	В	8.2	3.3	mg/Kg	20	₩	SM 4500 P E	Total/NA
Sulfate	120		56	28	mg/Kg	1	₩	D516-90, 02	Soluble
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	9.3	HF	0.1	0.1	SU	1	_	9045D	Total/NA
Temperature	19.4	HF	0.001	0.001	Degrees C	1		9045D	Total/NA

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Analyzed

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Method: 6010C - Metals (ICP)

Analyte

Temperature

Client Sample ID: COMP SB777879

Lab Sample ID: 480-128745-1 Date Collected: 12/06/17 11:45 **Matrix: Solid** Date Received: 12/09/17 09:00 Percent Solids: 75.0

Result Qualifier

8.5 HF

19.3 HF

RL

MDL Unit

D

Prepared

Aluminum	14000		23	6.8	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Arsenic	110		1.8	0.48	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Barium	190	F1	23	0.48	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Boron	140		23	0.56	mg/Kg		12/29/17 14:00	01/02/18 11:52	1
Cadmium	3.8		0.58	0.025	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Calcium	31000		580	27	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Chromium	58		1.2	0.088	mg/Kg		12/29/17 14:00	01/02/18 11:52	1
Copper	39		2.9	0.27	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Iron	38000		23	3.7	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Lead	49		1.2	0.23	mg/Kg	₽	12/29/17 14:00	01/02/18 11:52	1
Magnesium	13000	F1	580	6.1	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Manganese	1100		1.8	0.098	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Molybdenum	40	F1	4.7	0.069	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Potassium	2100		580	7.2	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Selenium	7.5		2.3	0.40	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Silver	ND		1.2	0.074	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
SiO2, Silica	940	F1 F2	130	4.8	mg/Kg	☼	12/29/17 14:00	01/02/18 11:52	1
Sodium	470	J	580	22	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Strontium	87	F1	5.8	1.1	mg/Kg	₽	12/29/17 14:00	01/02/18 11:52	1
Titanium	570		5.8	0.14	mg/Kg	₩	12/29/17 14:00	01/02/18 11:52	1
Zinc	300		5.8	0.65	mg/Kg	₽	12/29/17 14:00	01/02/18 11:52	1
Method: 6010C - TCLP Metals	s (ICP) - TCL	.P							
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.052		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 23:11	1
Barium	1.6		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 23:11	1
Boron	1.5		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 23:11	1
Cadmium	0.031		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 23:11	1
Chromium	ND		0.020	0.010	-		12/21/17 10:54	12/26/17 23:11	1
Lead	0.0091	J	0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 23:11	1
Selenium	0.0097	J	0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 23:11	1
Silver -	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 23:11	1
Method: 7470A - TCLP Mercu	ıry - TCLP								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L	<u></u>	12/21/17 14:15	12/21/17 19:21	1
- Method: 7471B - Mercury (C\	/AA)								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.12	0.021	mg/Kg		12/29/17 16:00	01/02/18 11:17	1
General Chemistry									
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	14000	H	1000	380	mg/Kg			01/06/18 11:27	1
Phosphorus	360	В	9.0	3.6	mg/Kg	₩	12/21/17 20:30	12/21/17 20:30	20
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		9.9		mg/Kg		12/20/17 03:20	12/20/17 15:30	1
Total Sulfur	350	F1	230	230	mg/Kg	₩	01/05/18 10:17	01/05/18 12:53	1

TestAmerica Buffalo

1/9/2018

12/20/17 10:15

12/20/17 10:15

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0.1

0.001

0.1 SU

0.001 Degrees C

Dil Fac

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry - Soluble	D !!	0	Б.	MDI		_	B	A I	D!! E
Analyte	Result	Qualifier	RL	MDL	Unit		Prepared	Analyzed	Dil Fac
Sulfate	49	J	63	31	mg/Kg	₩		12/20/17 15:29	1

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Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Client Sample ID: COMP SB808182

Date Collected: 12/06/17 12:55
Date Received: 12/09/17 09:00

Lab Sample ID: 480-128745-2

Matrix: Solid Percent Solids: 78.1

Method: 6010C - Metals (ICP) Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	11000		20	5.7	mg/Kg	<u> </u>	12/29/17 14:00	01/02/18 12:15	1
Arsenic	220		1.5	0.40	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Barium	99		20	0.40	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Boron	210		20	0.47	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Cadmium	4.1		0.49	0.021	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Calcium	4500		490	23	mg/Kg	₩	12/29/17 14:00	01/02/18 12:15	1
Chromium	83		0.98	0.074	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Copper	53		2.5	0.23	mg/Kg	₩	12/29/17 14:00	01/02/18 12:15	1
Iron	38000		20	3.2	mg/Kg	₩	12/29/17 14:00	01/02/18 12:15	1
Lead	130		0.98	0.20	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Magnesium	1500		490	5.1	mg/Kg	₩	12/29/17 14:00	01/02/18 12:15	1
Manganese	70		1.5	0.083	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Molybdenum	31		3.9	0.058	mg/Kg		12/29/17 14:00	01/02/18 12:15	1
Potassium	2000		490	6.1	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Selenium	5.6		2.0	0.33	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Silver	ND		0.98	0.062	mg/Kg	₩.	12/29/17 14:00	01/02/18 12:15	1
SiO2, Silica	2200		110	4.0	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Sodium	380	J	490	19	mg/Kg	₩	12/29/17 14:00	01/02/18 12:15	1
Strontium	66		4.9	0.92	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Titanium	680		4.9	0.12	mg/Kg	₽	12/29/17 14:00	01/02/18 12:15	1
Zinc	430		4.9	0.55	mg/Kg	☼	12/29/17 14:00	01/02/18 12:15	1
Method: 6010C - TCLP Metals (I	CP) - TCLI	P							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.16		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 23:15	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.16		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 23:15	1
Barium	0.87	J	1.0	0.10	mg/L		12/21/17 10:54	12/26/17 23:15	1
Boron	1.9		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 23:15	1
Cadmium	0.016		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 23:15	1
Chromium	0.011	J	0.020	0.010	mg/L		12/21/17 10:54	12/26/17 23:15	1
Lead	0.015	J	0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 23:15	1
Selenium	ND		0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 23:15	1
Silver	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 23:15	1

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	0.00020	0.00012 mg/L		12/21/17 14:15	12/21/17 19:23	1
_ _							

Method: 7471B - Mercury (CVAA) Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.13	0.023	mg/Kg	□	12/29/17 16:00	01/02/18 11:23	1

General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	18000	H	1000	380	mg/Kg			01/06/18 11:33	1
Phosphorus	580	В	8.4	3.4	mg/Kg	₩	12/21/17 20:30	12/21/17 20:30	20
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND		9.9	9.9	mg/Kg		12/20/17 03:20	12/20/17 15:30	1
Total Sulfur	380		210	210	mg/Kg	₩	01/05/18 10:17	01/05/18 12:53	1
pH	8.3	HF	0.1	0.1	SU			12/20/17 10:15	1
Temperature	19.3	HF	0.001	0.001	Degrees C			12/20/17 10:15	1

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1/9/2018

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry - Soluble Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	57	J	64	32	mg/Kg	\		12/20/17 15:53	1

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Client: AMEC Foster Wheeler E & I, Inc

Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Result Qualifier

7000

Method: 6010C - Metals (ICP)

Analyte

Aluminum

Temperature

Client Sample ID: COMP SB838485 Lab Sample ID: 480-128745-3

RL

23

MDL Unit

6.6 mg/Kg

D

₩

Prepared

12/29/17 14:00 01/02/18 12:19

Date Collected: 12/06/17 10:10

Matrix: Solid
Date Received: 12/09/17 09:00

Percent Solids: 82.4

					0 0				
Arsenic	92		1.7	0.47	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Barium	76		23	0.47	mg/Kg	₽	12/29/17 14:00	01/02/18 12:19	1
Boron	110		23	0.55	mg/Kg	\$	12/29/17 14:00	01/02/18 12:19	1
Cadmium	3.9		0.57	0.024	mg/Kg	☼	12/29/17 14:00	01/02/18 12:19	1
Calcium	8600		570	26	mg/Kg	₽	12/29/17 14:00	01/02/18 12:19	1
Chromium	54		1.1	0.086	mg/Kg	ф.	12/29/17 14:00	01/02/18 12:19	1
Copper	41		2.9		mg/Kg	≎	12/29/17 14:00	01/02/18 12:19	1
Iron	30000		23		mg/Kg	₽	12/29/17 14:00	01/02/18 12:19	1
Lead	44		1.1		mg/Kg	 \$		01/02/18 12:19	1
Magnesium	1700		570		mg/Kg	☼		01/02/18 12:19	1
Manganese	110		1.7		mg/Kg	☼		01/02/18 12:19	1
Molybdenum	73		4.6		mg/Kg			01/02/18 12:19	
Potassium	1200		570		mg/Kg	₩		01/02/18 12:19	1
Selenium	6.1		2.3		mg/Kg	₩		01/02/18 12:19	1
Silver	ND		1.1		mg/Kg			01/02/18 12:19	
	2300		120		mg/Kg	☆		01/02/18 12:19	1
SiO2, Silica			570			☆		01/02/18 12:19	1
Sodium	180	J			mg/Kg			01/02/18 12:19	 1
Strontium	40		5.7		mg/Kg	☆			
Titanium	450		5.7		mg/Kg	₩		01/02/18 12:19	1
Zinc	250		5.7	0.64	mg/Kg	*	12/29/17 14:00	01/02/18 12:19	1
Method: 6010C - TCLP Met	als (ICP) - TCL	P							
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.15		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 23:18	1
Barium	1.0		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 23:18	1
Boron	1.3		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 23:18	1
Cadmium	0.023		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 23:18	1
Chromium	ND		0.020	0.010	mg/L		12/21/17 10:54	12/26/17 23:18	1
Lead	0.016	J	0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 23:18	1
Selenium	0.0097		0.025	0.0087			12/21/17 10:54	12/26/17 23:18	1
Silver	ND		0.0060	0.0017	•		12/21/17 10:54	12/26/17 23:18	1
- -					· ·				
Method: 7470A - TCLP Mer	cury - TCLP								
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/21/17 14:15	12/21/17 19:24	1
Mathadi 7474D Maraum (CVAA								
Method: 7471B - Mercury (Analyte		Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
	ND	Qualifier	0.14		mg/Kg		•	01/02/18 11:25	DII Fac
Hg	ND		0.14	0.025	mg/rkg	7	12/29/17 10:00	01/02/10 11.25	'
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9100	H	1000	380	mg/Kg			01/06/18 11:39	1
Phosphorus	370		8.2		mg/Kg	☆	12/21/17 20:30	12/21/17 20:30	20
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	ND	- Guaintei	9.9		mg/Kg		•	12/20/17 15:30	1
Total Sulfur	ND ND		190		mg/Kg	₩		01/05/18 12:53	1
		ue				4	01/03/10 10.17	12/20/17 10:15	
pH	9.3	HF	0.1	0.1	SU			12/20/1/ 10:15	1

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19.4 HF

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12/20/17 10:15

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0.001 Degrees C

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Dil Fac

Analyzed

8

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11

Client Sample Results

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry - Soluble Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	120	56	28 mg/Kg	\		12/20/17 15:32	1

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Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 240-309610/1-A

Matrix: Solid

Analysis Batch: 309787

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 309610

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		20	5.8	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Arsenic	ND		1.5	0.41	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Barium	ND		20	0.41	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Boron	ND		20	0.48	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Cadmium	ND		0.50	0.021	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Calcium	ND		500	23	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Chromium	ND		1.0	0.075	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Copper	ND		2.5	0.23	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Iron	ND		20	3.2	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Lead	ND		1.0	0.20	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Magnesium	ND		500	5.2	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Manganese	ND		1.5	0.084	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Molybdenum	ND		4.0	0.059	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Potassium	ND		500	6.2	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Selenium	ND		2.0	0.34	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Silver	ND		1.0	0.063	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
SiO2, Silica	ND		110	4.1	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Sodium	ND		500	19	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Strontium	ND		5.0	0.93	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Titanium	ND		5.0	0.12	mg/Kg		12/29/17 14:00	01/02/18 11:43	1
Zinc	ND		5.0	0.56	mg/Kg		12/29/17 14:00	01/02/18 11:43	1

Lab Sample ID: LCS 240-309610/2-A

Matrix: Solid

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Analysis Batch: 309787	Spike	LCS	LCS				Prep Batch: 309610 %Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Aluminum	200	190		mg/Kg		95	80 - 120
Arsenic	200	198		mg/Kg		99	80 - 120
Barium	200	196		mg/Kg		98	80 - 120
Boron	100	98.7		mg/Kg		99	80 - 120
Cadmium	5.00	4.98		mg/Kg		100	80 - 120
Calcium	5000	4870		mg/Kg		97	80 - 120
Chromium	20.0	19.5		mg/Kg		97	80 - 120
Copper	25.0	24.6		mg/Kg		98	80 - 120
Iron	100	102		mg/Kg		102	80 - 120
Lead	50.0	48.2		mg/Kg		96	80 - 120
Magnesium	5000	4880		mg/Kg		98	80 - 120
Manganese	50.0	49.1		mg/Kg		98	80 - 120
Molybdenum	100	97.8		mg/Kg		98	80 - 120
Potassium	5000	4790		mg/Kg		96	80 - 120
Selenium	200	198		mg/Kg		99	80 - 120
Silver	5.00	4.99		mg/Kg		100	80 - 120
SiO2, Silica	214	231		mg/Kg		108	80 - 120
Sodium	5000	4860		mg/Kg		97	80 - 120
Strontium	100	97.0		mg/Kg		97	80 - 120
Titanium	100	97.2		mg/Kg		97	80 - 120
Zinc	50.0	49.5		mg/Kg		99	80 - 120

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Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 480-128745-1 MS Client Sample ID: COMP SB777879 **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 309787** Prep Batch: 309610 Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits ₩ -708 Aluminum 14000 238 12500 4 75 - 125 mg/Kg Arsenic 110 238 317 ₩ 86 75 - 125 mg/Kg ☼ Barium 190 238 348 F1 mg/Kg 67 75 - 125 Boron 140 119 266 ₩ 103 75 - 125 mg/Kg ₩ Cadmium 3.8 5.95 9.58 mg/Kg 97 75 - 125 Calcium 31000 5950 10400 4 mg/Kg Ö -344 75 - 125 58 23.8 87.6 123 75 - 125 Chromium mg/Kg ₩ Copper 39 29.7 71.9 mg/Kg 112 75 - 125 38000 119 43300 4 4195 75 - 125 Iron mg/Kg Ö Lead 49 59.5 114 mg/Kg 109 75 - 125 ₩ 13000 5950 7640 F1 -91 75 - 125 Magnesium F1 mg/Kg Manganese 1100 59.5 137 4 mg/Kg ₩ -1589 75 - 125 Molybdenum 40 F1 119 122 F1 mg/Kg ₩ 69 75 - 125 Potassium 5950 7090 ₩ 84 2100 mg/Kg 75 - 125 ₩ Selenium 7.5 238 202 mg/Kg 82 75 - 125 ₩ 75 - 125 Silver ND 5.95 5.08 85 mg/Kg SiO2, Silica 940 F1 F2 255 6020 F1 ☼ 1991 75 - 125 mg/Kg 5950 ₩ 5320 Sodium 470 J mg/Kg 81 75 - 125 ₩ Strontium 87 F1 119 143 F1 mg/Kg 47 75 - 125 ☼ Titanium 570 119 783 4 mg/Kg 175 75 - 125

59.5

438 4

mg/Kg

₩

227

75 - 125

Client Sample ID: COMP SB777879

Lab Sample ID: 480-128745-1 MSD

300

Zinc

										al/NA
0	0	0	MOD	MOD					itch: 30	
•	•	-	_	_		_	0/ 🗖		DDD	RPD
	Qualifier									Limit
14000		238	11900	4	mg/Kg	æ	-952	75 - 125	5	20
110		238	296		mg/Kg	₩	77	75 ₋ 125	7	20
190	F1	238	329	F1	mg/Kg	₩	59	75 - 125	6	20
140		119	247		mg/Kg	₩	87	75 - 125	7	20
3.8		5.95	9.08		mg/Kg	₩	89	75 - 125	5	20
31000		5950	9270	4	mg/Kg	₩	-363	75 - 125	11	20
58		23.8	83.9		mg/Kg	\	108	75 - 125	4	20
39		29.7	67.6		mg/Kg	₩	97	75 - 125	6	20
38000		119	41700	4	mg/Kg	₩	2877	75 - 125	4	20
49		59.5	105		mg/Kg	.	95	75 - 125	7	20
13000	F1	5950	6970	F1	mg/Kg	₩	-102	75 - 125	9	20
1100		59.5	133	4	mg/Kg	₩	-1597	75 - 125	3	20
40	F1	119	114	F1	mg/Kg	₩.	63	75 - 125	7	20
2100		5950	6680		mg/Kg	₩	77	75 - 125	6	20
7.5		238	191		mg/Kg	₩	77	75 - 125	6	20
ND		5.95	4.84		mg/Kg	₩.	81	75 - 125	5	20
940	F1 F2	255	3360	F1 F2	mg/Kg	₩	949	75 - 125	57	20
470	J	5950	4950		mg/Kg	₩	75	75 - 125	7	20
87	F1	119	131	F1	mg/Kg		37	75 - 125	9	20
570		119	738	4	mg/Kg	₩	138	75 - 125	6	20
300		59.5	422	4	mg/Kg	₩	200	75 - 125	4	20
	Result 14000 110 190 140 3.8 31000 58 39 38000 49 13000 1100 40 2100 7.5 ND 940 470 87 570	110 190 F1 140 3.8 31000 58 39 38000 49 13000 F1 1100 40 F1 2100 7.5 ND 940 F1 F2 470 J 87 F1 570	Result Qualifier Added 14000 238 110 238 190 F1 238 140 119 3.8 5.95 31000 5950 58 23.8 39 29.7 38000 119 49 59.5 13000 F1 5950 1100 59.5 40 F1 119 2100 5950 7.5 238 ND 5.95 940 F1 F2 255 470 J 5950 87 F1 119 570 119	Result Qualifier Added Result 14000 238 11900 110 238 296 190 F1 238 329 140 119 247 3.8 5.95 9.08 31000 5950 9270 58 23.8 83.9 39 29.7 67.6 38000 119 41700 49 59.5 105 13000 F1 5950 6970 1100 59.5 133 40 F1 119 114 2100 5950 6680 7.5 238 191 ND 5.95 4.84 940 F1 F2 255 3360 470 J 5950 4950 87 F1 119 131 570 119 738	Result 14000 Qualifier Added 238 Result 240 Qualifier 14000 238 11900 4 110 238 296 196 190 F1 238 329 F1 140 119 247 38 329 F1 38 5.95 9.08 31000 5950 9270 4 58 23.8 83.9 39 29.7 67.6 3800 119 41700 4 49 59.5 105 105 13000 F1 5950 6970 F1 1100 59.5 133 4 4 F1 119 114 F1 2100 5950 6680 680 7.5 238 191 ND 5.95 4.84 940 F1 F2 255 3360 F1 F2 470 J 5950 4950 4950 87 F1 119 131 F1 570 119 738	Result Qualifier Added Result Qualifier Unit 14000 238 11900 4 mg/Kg 110 238 296 mg/Kg 190 F1 238 329 F1 mg/Kg 140 119 247 mg/Kg 3.8 5.95 9.08 mg/Kg 31000 5950 9270 4 mg/Kg 58 23.8 83.9 mg/Kg 39 29.7 67.6 mg/Kg 38000 119 41700 4 mg/Kg 49 59.5 105 mg/Kg 13000 F1 5950 6970 F1 mg/Kg 1100 59.5 133 4 mg/Kg 40 F1 119 114 F1 mg/Kg 7.5 238 191 mg/Kg ND 5.95 4.84 mg/Kg ND 5.95 4.84	Result Qualifier Added Result Qualifier Unit D 14000 238 11900 4 mg/Kg 5 110 238 296 mg/Kg 5 190 F1 238 329 F1 mg/Kg 5 140 119 247 mg/Kg 5 3.8 5.95 9.08 mg/Kg 5 31000 5950 9270 4 mg/Kg 5 58 23.8 83.9 mg/Kg 5 38000 119 41700 4 mg/Kg 5 49 59.5 105 mg/Kg 5 13000 F1 5950 6970 F1 mg/Kg 5 1100 59.5 133 4 mg/Kg 5 2100 5950 6680 mg/Kg 5 ND 5.95 4.84 mg/Kg 5 ND 5.95 4.8	Result Qualifier Added Result Qualifier Unit D %Rec 14000 238 11900 4 mg/Kg	Sample Result Sample Qualifier Added Added Result Result Qualifier Qualifier Unit D WRec Units %Rec. Limits 14000 238 11900 4 mg/Kg 3 -952 75-125 110 238 296 mg/Kg 5 77 75-125 190 F1 238 329 F1 mg/Kg 5 99 75-125 140 119 247 mg/Kg 87 75-125 75-125 3.8 5.95 9.08 mg/Kg 89 75-125 75-125 31000 5950 9270 4 mg/Kg 89 75-125	Result Qualifier Added Added Result 11900 Qualifier 4 Unit mg/Kg D %Rec 952 Limits 75-125 RPD 14000 238 11900 4 mg/Kg 29-52 75-125 5 110 238 296 mg/Kg 277 75-125 7 190 F1 238 329 F1 mg/Kg 259 75-125 6 140 119 247 mg/Kg 287 75-125 7 3.8 5.95 9.08 mg/Kg 289 75-125 5 31000 5950 9270 4 mg/Kg 29-363 75-125 11 58 23.8 83.9 mg/Kg 29-363 75-125 4 39 29.7 67.6 mg/Kg 297 75-125 6 38000 119 41700 4 mg/Kg 2877 75-125 7 13000 F1 5950 6970 F1 mg/Kg

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Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Method: 6010C - TCLP Metals (ICP)

Lab Sample ID: MB 480-393125/2-A

Matrix: Solid

Analysis Batch: 393669

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 393125

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 22:57	1
Barium	ND		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 22:57	1
Boron	ND		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 22:57	1
Cadmium	ND		0.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 22:57	1
Chromium	ND		0.020	0.010	mg/L		12/21/17 10:54	12/26/17 22:57	1
Lead	ND		0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 22:57	1
Selenium	ND		0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 22:57	1
Silver	ND		0.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 22:57	1
_									

Lab Sample ID: LCS 480-393125/3-A

Matrix: Solid

Analysis Batch: 393669

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 393125

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Arsenic	1.20	1.27		mg/L		106	80 - 120	
Barium	1.20	1.15		mg/L		96	80 - 120	
Boron	0.200	0.224	J	mg/L		112	80 - 120	
Cadmium	1.20	1.22		mg/L		102	80 - 120	
Chromium	1.20	1.20		mg/L		100	80 - 120	
Lead	1.20	1.24		mg/L		103	80 - 120	
Selenium	1.20	1.28		mg/L		106	80 - 120	
Silver	1.05	1.10		mg/L		105	80 - 120	

Lab Sample ID: LB 480-392921/1-B

Matrix: Solid

Analysis Batch: 393669

Client Sample ID: Method Blank

Prep Type: TCLP Prep Batch: 393125

LB LB

Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		12/21/17 10:54	12/26/17 22:53	1
Barium	ND		1.0	0.10	mg/L		12/21/17 10:54	12/26/17 22:53	1
Boron	ND		0.50	0.10	mg/L		12/21/17 10:54	12/26/17 22:53	1
Cadmium	ND	0	.0020	0.00050	mg/L		12/21/17 10:54	12/26/17 22:53	1
Chromium	ND		0.020	0.010	mg/L		12/21/17 10:54	12/26/17 22:53	1
Lead	ND		0.020	0.0030	mg/L		12/21/17 10:54	12/26/17 22:53	1
Selenium	ND		0.025	0.0087	mg/L		12/21/17 10:54	12/26/17 22:53	1
Silver	ND	0	.0060	0.0017	mg/L		12/21/17 10:54	12/26/17 22:53	1

Lab Sample ID: 480-128745-3 MS

Matrix: Solid

Analysis Batch: 393669

Client Sample ID: COMP SB838485

Prep Type: TCLP Prep Batch: 393125

7 , 0.0 0.000	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Arsenic	0.15		1.20	1.35		mg/L		100	75 - 125
Barium	1.0		1.20	2.07		mg/L		86	75 - 125
Boron	1.3		0.200	1.45	4	mg/L		57	75 - 125
Cadmium	0.023		1.20	1.21		mg/L		99	75 - 125
Chromium	ND		1.20	1.12		mg/L		93	75 - 125
Lead	0.016	J	1.20	1.22		mg/L		100	75 - 125
Selenium	0.0097	J	1.20	1.21		mg/L		100	75 - 125

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Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Method: 6010C - TCLP Metals (ICP) (Continued)

Lab Sample ID: 480-128745-3	MS			Client Sample ID: COMP SB838485
Matrix: Solid				Prep Type: TCLP
Analysis Batch: 393669				Prep Batch: 393125
_	Sample Sample	Spike	MS MS	%Rec.

Result Qualifier Added Analyte Result Qualifier Unit D %Rec Limits Silver ND 1.05 1.07 mg/L 102 75 - 125

Lab Sample ID: 480-128745-3 MSD Client Sample ID: COMP SB838485 **Prep Type: TCLP**

Matrix: Solid

Analysis Batch: 393669									Prep Ba	aten: 38	<i>5</i> 3125
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.15		1.20	1.39		mg/L		103	75 - 125	3	20
Barium	1.0		1.20	2.12		mg/L		90	75 - 125	2	20
Boron	1.3		0.200	1.49	4	mg/L		73	75 - 125	2	20
Cadmium	0.023		1.20	1.23		mg/L		101	75 - 125	2	20
Chromium	ND		1.20	1.13		mg/L		94	75 - 125	1	20
Lead	0.016	J	1.20	1.25		mg/L		103	75 - 125	2	20
Selenium	0.0097	J	1.20	1.25		mg/L		104	75 - 125	3	20
Silver	ND		1.05	1.08		mg/L		103	75 - 125	1	20

Method: 7470A - TCLP Mercury

Lab Sample ID: MB 480-393199/2-A Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 393379

MB MB Analyte Result Qualifier RL **MDL** Unit **Prepared** Analyzed Mercury $\overline{\mathsf{ND}}$ 0.00020 0.00012 mg/L <u>12/21/17 14:15</u> <u>12/21/17 19:16</u>

Lab Sample ID: LCS 480-393199/3-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 393379 Prep Batch: 393199** LCS LCS Spike %Rec.

Analyte Added Result Qualifier Limits Mercury 0.00668 0.00642 96 80 - 120 mg/L

Lab Sample ID: LB 480-392921/1-C Client Sample ID: Method Blank **Matrix: Solid Prep Type: TCLP**

Analysis Batch: 393379

LB LB Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac <u>12/21/17 14:15</u> <u>12/21/17 19:14</u> ND 0.00020 0.00012 mg/L Mercury

Lab Sample ID: 480-128745-3 MS Client Sample ID: COMP SB838485

Matrix: Solid

Prep Type: TCLP **Analysis Batch: 393379 Prep Batch: 393199** Sample Sample Spike MS MS %Rec.

Analyte Result Qualifier Added Result Qualifier Limits Unit D %Rec $\overline{\mathsf{ND}}$ 0.00668 0.00638 96 80 - 120 Mercury mg/L

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Prep Batch: 393199

Prep Batch: 393199

Spike

Added

MSD MSD

Result Qualifier

Unit

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Lab Sample ID: 480-128745-3 MSD

Matrix: Solid

Matrix: Solid

Sulfide, Reactive

Analyte

Analysis Batch: 393221

Analyte

Analysis Batch: 393379

Method: 7470A - TCLP Mercury (Continued)

Sample Sample

Result Qualifier

TestAmerica Job ID: 480-128745-1

Client Sample ID: COMP SB838485

%Rec.

Limits

D %Rec

Prep Type: TCLP

RPD Limit

Prep Batch: 393199

D nit 20

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	ט	%Rec	Limits	KPD	Limi
Mercury	ND		0.00668	0.00640		mg/L		96	80 - 120	0	20
Method: 7471B - Mercui	ry (CVAA	\)									
Lab Sample ID: MB 240-309	9619/1-Δ						Cli	ent Sam	ple ID: M	ethod	Blank
Matrix: Solid	0010/1-74						0	ciit Guii	Prep Ty		
Analysis Batch: 309788									Prep Ba	•	
Analysis Batch. 309700		мв мв							riep Da	attern. 5	09013
Analyte	R	esult Qualifier		RL	MDL Unit		D I	Prepared	Analyz	zod	Dil Fac
Hg		ND Qualifier			0.018 mg/K	<u> </u>		•	01/02/18		1
-		ND		0.10	7.010 Ilig/IX	9	12/	23/17 10.0	0 01/02/10	11.15	'
Lab Sample ID: LCS 240-30	9619/2-Δ					Cli	ent Sa	mple ID	: Lab Con	atrol S	ample
Matrix: Solid	0010/2 / (J.11. OC	inplo ib	Prep Ty		
Analysis Batch: 309788									Prep Ba		
Analysis Batch. 500760			Spike	LCS	LCS				%Rec.	Atom. o	00010
Analyte			Added	_	Qualifier	Unit	D	%Rec	Limits		
Hg			0.833	0.868	- Guumioi	mg/Kg		104	80 - 120		
-			0.000	0.000		mg/rtg		101	00-120		
Lab Sample ID: 480-128745	i-1 MS						Client	Sample	ID: COM	P SB7	77879
Matrix: Solid									Prep Ty		
Analysis Batch: 309788									Prep Ba		
7 maryolo Batom 000700	Sample	Sample	Spike	MS	MS				%Rec.		00010
Analyte	•	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Hg	ND		0.238	0.250		mg/Kg	<u></u>		80 - 120		
I ah Campia ID: 400 420745	4 MCD						Client	Comple	ID: COM	D CD7	77076
Lab Sample ID: 480-128745	1 M2D						Cilent	Sample	ID: COM		
Matrix: Solid									Prep Typ		
Analysis Batch: 309788	0	0	Omiles	MOD	MOD				Prep Ba %Rec.	atcn: 3	
		Sample	Spike	_	MSD		_	۰			RPD
Analyte		Qualifier	Added		Qualifier	Unit	D	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Limits	RPD	Limi
Hg	ND		0.238	0.245		mg/Kg	λt	103	80 - 120	2	20
Method: 9034 - Sulfide,	Reactive	•									
Lab Sample ID: MB 480-392	2925/1-Δ						Cli	ent Sam	ple ID: M	ethod	Rlank
Matrix: Solid								J Oull	Prep Ty		
Analysis Batch: 393221									Prep Ba	-	
Analysis Batoli. 000221		мв мв							. Top De		J_J_C
Analyte	Re	esult Qualifier		RL	RL Unit		D I	Prepared	Analyz	zed	Dil Fac
Sulfide, Reactive		ND Guarrier		10	10 mg/K	g		•	$\frac{710192}{0}$		1
				-		•					•
Lab Sample ID: LCS 480-39	2925/2-A					Cli	ent Sa	mple ID	: Lab Con	ntrol S	ample

Prep Type: Total/NA

Prep Batch: 392925

%Rec.

Limits

10 - 100

D %Rec

100

LCS LCS

741

Result Qualifier

Unit

mg/Kg

Spike

Added

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Method: 9038 - Sulfur, Total

Lab Sample ID: MB 680-508540/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 508563 Prep Batch: 508540

MB MB

Analyte Result Qualifier RL RL Unit Analyzed Dil Fac Prepared Total Sulfur 170 01/05/18 10:17 01/05/18 12:53 ND 170 mg/Kg

Lab Sample ID: LCS 680-508540/2-A Client Sample ID: Lab Control Sample **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 508563 Prep Batch: 508540 Spike LCS LCS %Rec. Added Limits Analyte Result Qualifier Unit D %Rec Total Sulfur 79 50 - 120 2000 1590 mg/Kg

Lab Sample ID: 480-128745-1 MS Client Sample ID: COMP SB777879 **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 508563 Prep Batch: 508540 Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec ₩ Total Sulfur 350 F1 681 569 F1 mg/Kg 33 50 - 120

Client Sample ID: COMP SB777879 Lab Sample ID: 480-128745-1 MSD **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 508563** Prep Batch: 508540 Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Total Sulfur 350 F1 627 491 F1 23 50 - 120 mg/Kg

Lab Sample ID: 480-128745-2 DU Client Sample ID: COMP SB808182 **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 508563** Prep Batch: 508540 DU DU Sample Sample RPD Analyte Result Qualifier Result Qualifier Unit D Limit Total Sulfur 380 279 F5 mg/Kg 10

Method: 9045D - pH

Analysis Batch: 393230

Lab Sample ID: LCS 480-393230/1 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA **Matrix: Solid Analysis Batch: 393230** Spike LCS LCS %Rec.

Added Result Qualifier Unit Analyte D %Rec Limits SU 7.00 7.0 100 99 - 101 Hq

Lab Sample ID: LCS 480-393230/23 **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA

LCS LCS Spike %Rec. Added Analyte Result Qualifier Unit D %Rec Limits рН 7.00 7.0 SU 100 99 - 101

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Method: D516-90, 02 - Sulfate

Lab Sample ID: MB 480-393011/166 Client Sample ID: Method Blank **Matrix: Solid Prep Type: Total/NA**

Analysis Batch: 393011

MB MB Analyte Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 5.0 Sulfate $\overline{\mathsf{ND}}$ 2.5 mg/Kg 12/20/17 15:17

Lab Sample ID: MB 480-393011/197 Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 393011

MB MB Analyte Result Qualifier RL MDL Unit Analyzed Dil Fac Prepared 5.0 Sulfate $\overline{\mathsf{ND}}$ 2.5 mg/Kg 12/20/17 15:47

Lab Sample ID: LCS 480-393011/165 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 393011

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec Sulfate 30.0 28.4 mg/Kg 95

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 480-393011/196 Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 393011

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Sulfate 30.0 28.4 95 90 - 110 mg/Kg

Lab Sample ID: MB 480-392972/1-A Client Sample ID: Method Blank **Prep Type: Soluble**

Matrix: Solid

Analysis Batch: 393011

MR MR

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Sulfate ND 50 12/20/17 15:29 25 mg/Kg

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 200-125233/6 **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 125233

MB MB RL **MDL** Unit Analyte Result Qualifier Analyzed Dil Fac Prepared 1000 380 mg/Kg **Total Organic Carbon** 01/06/18 10:48 ND

Lab Sample ID: LCS 200-125233/7 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Solid

Analysis Batch: 125233

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits **Total Organic Carbon** 9260 9250 mg/Kg 100 75 - 125

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QC Sample Results

RL

0.36

Spike

Added

1620

Spike

Added

492

MDL Unit

LCSSRM LCSSRM

MS MS

870

Result Qualifier

1140

Result Qualifier

0.14 mg/Kg

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Lab Sample ID: MB 480-393255/1-A

Matrix: Solid

Analyte

Analyte

Analyte

Phosphorus

Phosphorus

Phosphorus

Matrix: Solid

Phosphorus

Matrix: Solid

Analysis Batch: 393256

Analysis Batch: 393256

Analysis Batch: 393256

Method: SM 4500 P E - Phosphorus

Lab Sample ID: LCSSRM 480-393255/2-A

TestAmerica Job ID: 480-128745-1

Client Sample ID: Method Blank

<u>12/21/17 20:30</u> <u>12/21/17 20:30</u>

Client Sample ID: Lab Control Sample

%Rec.

Limits

28.2 - 171.

Client Sample ID: COMP SB838485

%Rec.

Limits

52 - 148

6

Analyzed

Prepared

%Rec

D %Rec

102

70.4

Prep Type: Total/NA

Prep Batch: 393255

Prep Type: Total/NA

Prep Batch: 393255

Dil Fac

Client Sample ID: COMP SB838485

Prep Type: Total/NA **Prep Batch: 393255**

Prep Type: Total/NA

Prep Batch: 393255

RPD RPD Limit

Limits

%Rec.

Lab Sample ID: 480-128745-3 MSD

Lab Sample ID: 480-128745-3 MS

Matrix: Solid

Analysis Batch: 393256

Analyte

Sample Sample Result Qualifier 370 B

Sample Sample

370 B

Result Qualifier

MB MB

0.157 J

Result Qualifier

Spike Added 492

MSD MSD Result Qualifier 813

Unit mg/Kg

Unit

Unit

mg/Kg

mg/Kg

%Rec ₩ 90

D

52 - 148

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Metals

Prep Batch: 309610	Prep	Batcl	h: 30	09610
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	3050B	
480-128745-2	COMP SB808182	Total/NA	Solid	3050B	
480-128745-3	COMP SB838485	Total/NA	Solid	3050B	
MB 240-309610/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 240-309610/2-A	Lab Control Sample	Total/NA	Solid	3050B	
480-128745-1 MS	COMP SB777879	Total/NA	Solid	3050B	
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	3050B	

Prep Batch: 309619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	7471B	
480-128745-2	COMP SB808182	Total/NA	Solid	7471B	
480-128745-3	COMP SB838485	Total/NA	Solid	7471B	
MB 240-309619/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 240-309619/2-A	Lab Control Sample	Total/NA	Solid	7471B	
480-128745-1 MS	COMP SB777879	Total/NA	Solid	7471B	
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	7471B	

Analysis Batch: 309787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	6010C	309610
480-128745-2	COMP SB808182	Total/NA	Solid	6010C	309610
480-128745-3	COMP SB838485	Total/NA	Solid	6010C	309610
MB 240-309610/1-A	Method Blank	Total/NA	Solid	6010C	309610
LCS 240-309610/2-A	Lab Control Sample	Total/NA	Solid	6010C	309610
480-128745-1 MS	COMP SB777879	Total/NA	Solid	6010C	309610
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	6010C	309610

Analysis Batch: 309788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	7471B	309619
480-128745-2	COMP SB808182	Total/NA	Solid	7471B	309619
480-128745-3	COMP SB838485	Total/NA	Solid	7471B	309619
MB 240-309619/1-A	Method Blank	Total/NA	Solid	7471B	309619
LCS 240-309619/2-A	Lab Control Sample	Total/NA	Solid	7471B	309619
480-128745-1 MS	COMP SB777879	Total/NA	Solid	7471B	309619
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	7471B	309619

Leach Batch: 392921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	1311	
480-128745-2	COMP SB808182	TCLP	Solid	1311	
480-128745-3	COMP SB838485	TCLP	Solid	1311	
LB 480-392921/1-B	Method Blank	TCLP	Solid	1311	
LB 480-392921/1-C	Method Blank	TCLP	Solid	1311	
480-128745-3 MS	COMP SB838485	TCLP	Solid	1311	
480-128745-3 MSD	COMP SB838485	TCLP	Solid	1311	

Prep Batch: 393125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	3010A	392921

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Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

Metals (Continued)

Prep Batch: 393125 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-2	COMP SB808182	TCLP	Solid	3010A	392921
480-128745-3	COMP SB838485	TCLP	Solid	3010A	392921
LB 480-392921/1-B	Method Blank	TCLP	Solid	3010A	392921
MB 480-393125/2-A	Method Blank	Total/NA	Solid	3010A	
LCS 480-393125/3-A	Lab Control Sample	Total/NA	Solid	3010A	
480-128745-3 MS	COMP SB838485	TCLP	Solid	3010A	392921
480-128745-3 MSD	COMP SB838485	TCLP	Solid	3010A	392921

Prep Batch: 393199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	7470A	392921
480-128745-2	COMP SB808182	TCLP	Solid	7470A	392921
480-128745-3	COMP SB838485	TCLP	Solid	7470A	392921
LB 480-392921/1-C	Method Blank	TCLP	Solid	7470A	392921
MB 480-393199/2-A	Method Blank	Total/NA	Solid	7470A	
LCS 480-393199/3-A	Lab Control Sample	Total/NA	Solid	7470A	
480-128745-3 MS	COMP SB838485	TCLP	Solid	7470A	392921
480-128745-3 MSD	COMP SB838485	TCLP	Solid	7470A	392921

Analysis Batch: 393379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	7470A	393199
480-128745-2	COMP SB808182	TCLP	Solid	7470A	393199
480-128745-3	COMP SB838485	TCLP	Solid	7470A	393199
LB 480-392921/1-C	Method Blank	TCLP	Solid	7470A	393199
MB 480-393199/2-A	Method Blank	Total/NA	Solid	7470A	393199
LCS 480-393199/3-A	Lab Control Sample	Total/NA	Solid	7470A	393199
480-128745-3 MS	COMP SB838485	TCLP	Solid	7470A	393199
480-128745-3 MSD	COMP SB838485	TCLP	Solid	7470A	393199

Analysis Batch: 393669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	TCLP	Solid	6010C	393125
480-128745-2	COMP SB808182	TCLP	Solid	6010C	393125
480-128745-3	COMP SB838485	TCLP	Solid	6010C	393125
LB 480-392921/1-B	Method Blank	TCLP	Solid	6010C	393125
MB 480-393125/2-A	Method Blank	Total/NA	Solid	6010C	393125
LCS 480-393125/3-A	Lab Control Sample	Total/NA	Solid	6010C	393125
480-128745-3 MS	COMP SB838485	TCLP	Solid	6010C	393125
480-128745-3 MSD	COMP SB838485	TCLP	Solid	6010C	393125

General Chemistry

Analysis Batch: 125233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	Lloyd Kahn	
480-128745-2	COMP SB808182	Total/NA	Solid	Lloyd Kahn	
480-128745-3	COMP SB838485	Total/NA	Solid	Lloyd Kahn	
MB 200-125233/6	Method Blank	Total/NA	Solid	Lloyd Kahn	
LCS 200-125233/7	Lab Control Sample	Total/NA	Solid	Lloyd Kahn	

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Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

General Chemistry (Continued)

Analysis Batch: 392832

ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
30-128745-1	COMP SB777879	Total/NA	Solid	Moisture	
30-128745-2	COMP SB808182	Total/NA	Solid	Moisture	
30-128745-3	COMP SB838485	Total/NA	Solid	Moisture	

Prep Batch: 392925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	7.3.4	
480-128745-2	COMP SB808182	Total/NA	Solid	7.3.4	
480-128745-3	COMP SB838485	Total/NA	Solid	7.3.4	
MB 480-392925/1-A	Method Blank	Total/NA	Solid	7.3.4	
LCS 480-392925/2-A	Lab Control Sample	Total/NA	Solid	7.3.4	

Leach Batch: 392972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Soluble	Solid	DI Leach	-
480-128745-2	COMP SB808182	Soluble	Solid	DI Leach	
480-128745-3	COMP SB838485	Soluble	Solid	DI Leach	
MB 480-392972/1-A	Method Blank	Soluble	Solid	DI Leach	

Analysis Batch: 393011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Soluble	Solid	D516-90, 02	392972
480-128745-2	COMP SB808182	Soluble	Solid	D516-90, 02	392972
480-128745-3	COMP SB838485	Soluble	Solid	D516-90, 02	392972
MB 480-392972/1-A	Method Blank	Soluble	Solid	D516-90, 02	392972
MB 480-393011/166	Method Blank	Total/NA	Solid	D516-90, 02	
MB 480-393011/197	Method Blank	Total/NA	Solid	D516-90, 02	
LCS 480-393011/165	Lab Control Sample	Total/NA	Solid	D516-90, 02	
LCS 480-393011/196	Lab Control Sample	Total/NA	Solid	D516-90, 02	

Analysis Batch: 393221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	9034	392925
480-128745-2	COMP SB808182	Total/NA	Solid	9034	392925
480-128745-3	COMP SB838485	Total/NA	Solid	9034	392925
MB 480-392925/1-A	Method Blank	Total/NA	Solid	9034	392925
LCS 480-392925/2-A	Lab Control Sample	Total/NA	Solid	9034	392925

Analysis Batch: 393230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	9045D	_
480-128745-2	COMP SB808182	Total/NA	Solid	9045D	
480-128745-3	COMP SB838485	Total/NA	Solid	9045D	
LCS 480-393230/1	Lab Control Sample	Total/NA	Solid	9045D	
LCS 480-393230/23	Lab Control Sample	Total/NA	Solid	9045D	

Prep Batch: 393255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	SM 4500 P B	
480-128745-2	COMP SB808182	Total/NA	Solid	SM 4500 P B	
480-128745-3	COMP SB838485	Total/NA	Solid	SM 4500 P B	

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QC Association Summary

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

General Chemistry (Continued)

Prep Batch: 393255 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-393255/1-A	Method Blank	Total/NA	Solid	SM 4500 P B	
LCSSRM 480-393255/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 P B	
480-128745-3 MS	COMP SB838485	Total/NA	Solid	SM 4500 P B	
480-128745-3 MSD	COMP SB838485	Total/NA	Solid	SM 4500 P B	

Analysis Batch: 393256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	SM 4500 P E	393255
480-128745-2	COMP SB808182	Total/NA	Solid	SM 4500 P E	393255
480-128745-3	COMP SB838485	Total/NA	Solid	SM 4500 P E	393255
MB 480-393255/1-A	Method Blank	Total/NA	Solid	SM 4500 P E	393255
LCSSRM 480-393255/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 P E	393255
480-128745-3 MS	COMP SB838485	Total/NA	Solid	SM 4500 P E	393255
480-128745-3 MSD	COMP SB838485	Total/NA	Solid	SM 4500 P E	393255

Prep Batch: 508540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	5050	_
480-128745-2	COMP SB808182	Total/NA	Solid	5050	
480-128745-3	COMP SB838485	Total/NA	Solid	5050	
MB 680-508540/1-A	Method Blank	Total/NA	Solid	5050	
LCS 680-508540/2-A	Lab Control Sample	Total/NA	Solid	5050	
480-128745-1 MS	COMP SB777879	Total/NA	Solid	5050	
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	5050	
480-128745-2 DU	COMP SB808182	Total/NA	Solid	5050	

Analysis Batch: 508563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-128745-1	COMP SB777879	Total/NA	Solid	9038	508540
480-128745-2	COMP SB808182	Total/NA	Solid	9038	508540
480-128745-3	COMP SB838485	Total/NA	Solid	9038	508540
MB 680-508540/1-A	Method Blank	Total/NA	Solid	9038	508540
LCS 680-508540/2-A	Lab Control Sample	Total/NA	Solid	9038	508540
480-128745-1 MS	COMP SB777879	Total/NA	Solid	9038	508540
480-128745-1 MSD	COMP SB777879	Total/NA	Solid	9038	508540
480-128745-2 DU	COMP SB808182	Total/NA	Solid	9038	508540

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Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Laboratory: TestAmerica Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-18
California	State Program	9	2931	04-01-18
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-18
Georgia	State Program	4	10026 (NY)	03-31-18
Georgia	State Program	4	956	03-31-18
Illinois	NELAP	5	200003	09-30-18
Iowa	State Program	7	374	03-01-19
Kansas	NELAP	7	E-10187	01-31-18 *
Kentucky (DW)	State Program	4	90029	12-31-17 *
Kentucky (UST)	State Program	4	30	03-31-18
Kentucky (WW)	State Program	4	90029	12-31-18
Louisiana	NELAP	6	02031	06-30-18
Maine	State Program	1	NY00044	12-04-18
Maryland	State Program	3	294	03-31-18
Massachusetts	State Program	1	M-NY044	06-30-18
Michigan	State Program	5	9937	03-31-18
Minnesota	NELAP	5	036-999-337	12-31-18
New Hampshire	NELAP	1	2337	11-17-18
New Jersey	NELAP	2	NY455	06-30-18
New York	NELAP	2	10026	03-31-18
North Dakota	State Program	8	R-176	03-31-18
Oklahoma	State Program	6	9421	08-31-18
Oregon	NELAP	10	NY200003	06-09-18
Pennsylvania	NELAP	3	68-00281	07-31-18
Rhode Island	State Program	1	LAO00328	12-30-17 *
Tennessee	State Program	4	TN02970	03-31-18
Texas	NELAP	6	T104704412-15-6	07-31-18
USDA	Federal		P330-11-00386	11-26-17 *
Virginia	NELAP	3	460185	09-14-18
Washington	State Program	10	C784	02-10-18 *
Wisconsin	State Program	5	998310390	08-31-18

Laboratory: TestAmerica Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0751	09-30-19
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA	02-02-18
Florida	NELAP	4	E87467	06-30-18
L-A-B	DoD ELAP		L2336	02-25-20
Maine	State Program	1	VT00008	04-17-19
Minnesota	NELAP	5	050-999-436	12-31-18
New Hampshire	NELAP	1	2006	12-18-18
New Jersey	NELAP	2	VT972	06-30-18
New York	NELAP	2	10391	04-01-18
Pennsylvania	NELAP	3	68-00489	04-30-18
Rhode Island	State Program	1	LAO00298	12-30-17 *
US Fish & Wildlife	Federal		LE-058448-0	07-31-18
USDA	Federal		P330-11-00093	12-05-19

^{*} Accreditation/Certification renewal pending - accreditation/certification considered valid.

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Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Laboratory: TestAmerica Burlington (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Vermont	State Program	1	VT-4000	12-31-17 *
Virginia	NELAP	3	460209	12-14-18

Laboratory: TestAmerica Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-18
Connecticut	State Program	1	PH-0590	12-31-17 *
Florida	NELAP	4	E87225	06-30-18
Illinois	NELAP	5	200004	07-31-18
Kansas	NELAP	7	E-10336	01-31-18 *
Kentucky (UST)	State Program	4	58	02-23-18
Kentucky (WW)	State Program	4	98016	12-31-17 *
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-18
Nevada	State Program	9	OH-000482008A	07-31-18
New Jersey	NELAP	2	OH001	06-30-18
New York	NELAP	2	10975	03-31-18
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-18
Pennsylvania	NELAP	3	68-00340	08-31-18
Texas	NELAP	6	T104704517-17-9	08-31-18
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18
Washington	State Program	10	C971	01-12-18 *
West Virginia DEP	State Program	3	210	12-31-18

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	09-22-19
Arizona	State Program	9	AZ808	12-14-18
Arkansas DEQ	State Program	6	88-0692	02-01-19
California	State Program	9	2939	06-30-18
Colorado	State Program	8	N/A	12-31-18
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Guam	State Program	9	15-005r	04-16-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-18
lowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-18
Kentucky (UST)	State Program	4	18	06-30-18

^{*} Accreditation/Certification renewal pending - accreditation/certification considered valid.

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Accreditation/Certification Summary

Client: AMEC Foster Wheeler E & I, Inc Project/Site: Bailly Generating Station

TestAmerica Job ID: 480-128745-1

Laboratory: TestAmerica Savannah (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (WW)	State Program	4	90084	12-31-18 *
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-18
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-18
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-18
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-18
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-18
South Carolina	State Program	4	98001	06-30-18
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		SAV 3-04	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

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^{*} Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Buffalo

Chain of Custody Record

Temperature on Receipt ___



Drinking	Water?	Yes 🗆	No	X

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Contract/Purchase Order/Guote No.				Ma	trix				ainers ervati		-4T	3	8							900
Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Soil	Unpres.	H2SO4	HNO3	HCI	Zn4c/ NaOH	Sur	Ren	Telp	TO					480-12	29242 CO ^r
COMP 50717079	12/6/17	1145			X	X					X	X	X	X					Eca	803/161
COMP 58808182	12/6/17	1255			X	X					X	X	X	X					2ca	8 03. jal
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Possible Hazard Identification			5	Sample	Disposa	,										- 14	(
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant	☐ Poison B	Unknow	n [] Retu	rn To C	lient	N D				Arch	ive F	or _		_ Mon		ree may nger than		sessed if sample outh)	s are retained
Turn Around Time Required 24 Hours 48 Hours 7 Days 14 Days	ays 🗌 21 Day	s 🗆 o	ther_				QC.	Requ		ents (Speci		1:	a	val	Phol	1.	TA	12	12/117	1650
1. Relinquished By KEVIN MILEER (by Ra)	,	Date 12-	8-	· 17	Time	1	FE	ED	ed By	808	6	27	40:	3 6	143	3			12-8-1	7 Time
2. Relinquished By FEDEX 8086, 2703 6143		Date	9-1	7	Time	0	2.5	egeiv 11	red By	MC	?(6	1	-	- (Ra	9)		Date 12-9-1	7 11 10
3. Belinquished By Comments Comments		Date 12-	19-	17	Time	50			ed By	EX	1					/			Date 12-19-	Time
Comments Samples refrigerated a DISTRIBUTION: WHITE - Returned to Client with Report;	+ AMEC	Fos	72	RI	VIta	EEL	EA	Ļ	From	mI	2-9	3-1	7	to	12	-19-	17	•	Temp	23#1

Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

 .			*	
 P / P	~~.		~	_
	TR		11	7 1
 7 (1	1 1	- 1		. `

LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	So				PM: 480-128745 Chain of Custody											No: 39738.1			
Client Contact: Shipping/Receiving	Phone:			E-Ma iobn		ve@te	stame	erica									ge 1 of 1		
Company:	:			<u>p</u>				red (See								\dashv	Job #:		
FestAmerica Laboratories, Inc.	Due Date Request	ed:			<u> </u>												480-128745-1		
30 Community Drive, Suite 11,	12/29/2017				Analysis Requested											Preservation Code			
City: South Burlington	TAT Requested (da	ays):														200	A - HCL B - NaOH	M - Hexane N - None	
State, Zip:					. 19						1						C - Zn Acetate D - Nitric Acid	O - AsNaO2 P - Na2O4S	
/T, 05403																- ,	E - NaHSO4	Q - Na2SO3	
Phone: 302-660-1990(Tel) 802-660-1919(Fax)	PO #:				$\Gamma\Gamma$	``									ì		F - MeOH G - Amchior	R - Na2S2O3 S - H2SO4	
Email:	WO #:		1		[일]	1				- 1		1	i				H - Ascorbic Acid I - Ice	T - TSP Dodeca U - Acetone	ahydrate
		_			وَ اوَّا	Kahn										60	J - DI Water	V - MCAA	
Project Name: Bailly Generating Station	Project #: 48003007				وَ إِخَا			- [1			ine	K - EDTA L - EDA	W - pH 4-5 Z - other (specification)	fv)
Site:	SSOW#:				륌흲											containe	Other:		,
Bailly Generating Station					Sampl				1 1			l					ouici.		
		Sample	Sample Type (C=comp,	Matrix (W=water, S=solld, O=waste/oll,	Field Filtered Sample (Yes or Perform MS/MSD (Yes or No)	Lloyd_Kahn/ Re										Total Number of			
Sample Identification - Client ID (Lab ID)	Sample Date	Time		BT=Tissue, A=Air)		CO. C. CO. CO. C. C. C.										Ď	Special Ins	structions/No	ote:
	met at the second	11.45	Preserva	tion Code.	XY	$\langle \cdot $	FO C		3,4	April	7. 9			1		X	A Company		24.
COMP SB777879 (480-128745-1)	12/6/17	11:45 Eastern		Solid		X										1			
COMP SB808182 (480-128745-2)	12/6/17	12:55 Eastern		Solid		х			\prod							1			
COMP SB838485 (480-128745-3)	12/6/17	10:10 Eastern		Solid		х									1	41			
		Lastern			Π	1				1					1				
															1			1	
					П														
													H						
					H	+	\vdash	_	+	\dashv		-	\vdash						_
<u> </u>					$oldsymbol{oldsymbol{oldsymbol{eta}}}$		\perp		1 1			_				3.0			
												1							
Note: Since laboratory accreditations are subject to change, TestAmerica Laborat currently maintain accreditation in the State of Origin listed above for analysis/tes aboratories, Inc. attention immediately. If all requested accreditations are currer											ries. Th	is sample provide	le shipr d. Any	nent is for	orwarde s to acc	d und redita	er chain-of-custody. I tion status should be l	f the laboratory d brought to TestA	loes not merica
Possible Hazard Identification			-		S	ample	Disp	osal (/	4 fee r	nay l	be ass	essed	if sa	mples	are re	taine	ed longer than 1	month)	
Unconfirmed						\sqcup_F	eturn	To Clie	nt	_ [[∐] Dis	posal E	By Lat)	,	<u>Archi</u>	ive For	Months	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliver	able Rank:	2		s	pecial	Instru	ctions/0	QC Re	quire	ments	:	,				· · · · · · · · · · · · · · · · · · ·		
Empty Kit Relinquished by:		Date:			Time							Meth	od of S	Shipmen	t:				-
Relinguished by:	Date/Fine: 19/17 /600 Company				Red	ed b	λ: 1)	a 2					Date/Tir				Company		
Relinquished by:	Date/Time: Company				Rece	oived b		и_				-	IZ Zei Date/Tin		-	1040	Company		
Relinquished by:	Date/Time: Company		Company	Received by:						Date/Time:					Company				
Custody Seals Intact: Custody Seal No.: ✓ Yes △ No					Cooler Temperature(s) °C and Other Remarks: 2.4														

Ver: 09/20/2016

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1/9/2018

ORIGIN ID:DKKA (716) 691-2600 CHAR BRONSON TEST AMERICA 10 HAZELWOOD

SHIP DATE: 19DEC17 ACTWGT: 11.40 LB CAD: 846654/CAFE3108 DIMS: 15x13x10 IN

AMHERST , NY 14228 UNITED STATES US

BILL RECIPIENT

SAMPLE MGT. TA BURLINGTON 30 COMMUNITY DRIVE **SUITE 11**

SOUTH BURLINGTON VT 05403

(802) 660 - 1990 DEPT: SAMPLE CONTROL

FedEx Express

TRK# 5657 0123 5923

WED - 20 DEC 3:00F STANDARD OVERNIGHT

05403 BTV VT-US



Phone (716) 691-2600 Fax (716) 691-7991

10 Hazelwood Drive Amherst, NY 14228-2298 1.6/1.3

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:			Lab PN Scho	PM: chove, John R						Carrier Tracking No(s):					COC No: 480-39740.1			
Client Contact:	Phone:			E-Mail							100000000000000000000000000000000000000	of Origin:				Page:			
Shipping/Receiving					schove@testamericainc.com Indiana Accreditations Required (See note):											Page 1 of 1			
Company: FestAmerica Laboratories, Inc.					Accred	tation	s Kequi	red (See	note):							Job #: 480-128745-1			
Address:	Due Date Requeste	d:			_	_		_							_	Preservation Codes	:		
4101 Shuffel Street NW,	12/29/2017				Analysis Requested										A-HCL M	M - Hexane			
City:	TAT Requested (da	ys):			R IS								1		100	B - NaOH	N - None		
North Canton				- 1	温息				1 1					1 1			D - AsNaO2 P - Na2O4S		
State, Zip: OH, 44720				1			1		1 1		1 1	- 1	1 1		432	E - NaHSO4	Q - Na2SO3		
Phone:	PO#:			_	15 是	1	1						1 1		130		R - Na2S2O3 S - H2SO4		
330-497-9396(Tel) 330-497-0772(Fax)					6		1 1				1 1		1 1	1			T - TSP Dodecahydrate		
Email:	WO#:				Or N								1 1		髓		U - Acetone V - MCAA		
					Yes or or No)	ist.							1 1	1	5		W - pH 4-5		
Project Name: Bailly Generating Station	Project #: 48003007				200	14	on l		1	1	1		1 1		tainers	L-EDA	Z - other (specify)		
Site:	SSOW#:				10 E	Met	Mer						1 1			Other:			
Bailly Generating Station					MS/MSD (Yes	CCR Metals List	7471B/7471B_Prep Mercury								5				
				Matrix	Pe W	B	8						1 1		ber				
			Sample	(W=water,	ito n	6010C/3050B	471						1 1		Total Number	1 211			
		Sample		S=solid, =waste/oil,	A P	QC/3	18/1			1			1 1		7	(34			
Sample Identification - Client ID (Lab ID)	Sample Date	Time	G=grab) BT=		Field Filt	60	747								Tot	Special Ins	tructions/Note:		
		><	Preservation	Code:	XX		THE REAL PROPERTY.	1000 W		1580	F 35	理能認	S 535		X	No. of the last	A THE PARTY OF THE		
COMP SB777879 (480-128745-1)	12/6/17	11:45		Solid	T	×	×								1				
COMP 5B777879 (460-126745-1)	12/0/17	Eastern		Solid	₩	1^	1^		-	\vdash			+						
COMP SB808182 (480-128745-2)	12/6/17	12:55 Eastern		Solid		X	X								1				
COMP SB838485 (480-128745-3)	12/6/17	10:10		Solid	П	×	X								1				
		Eastern			++	-	-	-	-	+	+	-	+	-	000				
	N				11										165				
					Π										83				
				-	++	-	+-	-	+	++	-	-	+	-	754				
															题				
			\ \ \		П										236				
			1		++	+	+	+	+	+-+	-	-	-		500				
															100				
					TT										認				
			1 1		11	1	_				1				140				
Note: Since laboratory accreditations are subject to change, TestAmeric	a Laboratories, Inc. places th	e ownership o	f method, analyte a	k accreditat	ion com	pliano	e upon	out subc	contract	aborato	ries. This	sample s	hipment	is forward	ed und	der chain-of-custody. I	f the laboratory does no		
currently maintain accreditation in the State of Origin listed above for an Laboratories, Inc. attention immediately. If all requested accreditations	alysis/tests/matrix being analy are current to date, return the	signed Chain	of Custody attesting	ed back to t	mplica	nce to	TestAn	ratory or nerica La	boratori	es, Inc.	s will be p	rovided.	Any char	iges to ac	credita	ation status should be	brought to TestAmerica		
	-											anad H			nen Im	and language than d			
Possible Hazard Identification					1	samp	1			may				es are re		ed longer than 1			
Unconfirmed					-		_	n To C				osal By	Lab		Arch	nive For	Months		
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delive	rable Rank	2		1	Speci	al Inst	ruction	s/QC F	Require	ments:								
Empty Kit Relinguished by:		Date:			Tim	e:						Method	of Shipm	nent:					
Religguished by: / /	Date/Time:/	1	11	ompany		R	eceived	by: /		1	,	-	Date	/Time:	-	17 1000	Company		
Pendinale_	112/47	1/17	1600	TOL	B Received by				12/28						17 (000	1/4			
Refinquished by:	Date/Time:	,	C	ompany	ny' Received by:				9=	1	/	Date	/Time:			Company			
Relinquished by:	Date/Time:	-	0	ompany	any Received by:					Date/Time:						Company			
					The state of the s				Date. Times										
Custody Seals Intact: Custody Seal No.:			-		TENT	c	ooler Te	emperatu	re(s) °C	and Oth	er Rema	ks							
Δ Yes Δ No																			
																	Ver: 09/20/2016		

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TestAmerica Canton Sample Receipt a state of the	ogin # :
Canton Facility	Cooler unpacked by:
Client TA Boffalo Site Name	7. Int
Cooler Received on \2128117 Opened on \2128117	Cu /
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courie	
Receipt After-hours: Drop-off Date/Time Storage Locatio	
Facking material used. Dubble Will Tours	
COOLANT. Wellie Blue lee Diy iee	Form
1. Cooler temperature upon receipt IR GUN# IR-8 (CF -0.3 °C) Observed Cooler Temp.	r Temp. 1.3 °C
IR GUN# 1R-8 (CF +0.3°C) Observed Cooler Temp °C Corrected Cooler	Temp. °C
IR GUN # 627 (CF -1.3°C) Observed Cooler Temp. °C Corrected Cooler	Temp°C
	Yes No
	Yes No NA
	Yes ®
	Yes No NA
Shippers' packing slip attached to the cooler(s)?	🗞 No
Did custody papers accompany the sample(s)?	Yes No Tests that are not
5 Were the custody papers relinquished & signed in the appropriate place?	Yes No checked for pH by
6 Was/were the person(s) who collected the samples clearly identified on the COC?	Yes No Receiving:
7. Did all bottles arrive in good condition (Unbroken)?	Yes No VOAs
Could all bottle labels be reconciled with the COC?	Oil and Greese
9. Were correct bottle(s) used for the test(s) indicated?	Yes No TOC
10. Sufficient quantity received to perform indicated analyses?	Yes No
11. Are these work share samples?	Yes No
If yes, Questions 12-16 have been checked at the originating laboratory.	Yes No NA pH Strip Lot# HC730269
12. Were all preserved sample(s) at the correct pri apon receipt	Yes No
I I Were VUASUII IIIC COC:	Yes No NA
14. Were all bubbles to film in any von viais.	Yes No
16. Was a LL Hg or Me Hg trip blank present?	Yes No
Contacted PM Date by via Verba	l Voice Mail Other
Contacted PM Bate by	
Concerning	
	Samples processed by:
16. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES	Dampies processor 23.
17. SAMPLE CONDITION	nolding time had expired
Sample(s) were received after the recommended by were received after the recommended by were received after the recommended by the received after the received	ived in a broken container.
Sample(s) were received with bubble >6 n	
Sample(s)were received with bubble > 0 in	and the state of t
18. SAMPLE PRESERVATION	
Sample(s) were	e further preserved in the laboratory.
Sample(s) were Preservative(s) added/Lot number(s):	
Court Known	

TestAmerica Buffalo

Phone (716) 691-2600 Fax (716) 691-7991

10 Hazelwood Drive Amherst, NY 14228-2298

Chain of Custody Record

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampier:				Schove, John R						Carrier Tracking No(s).					180-39741.1			
Client Contact: Shipping/Receiving	Phone:			E-t/		hove	(A)to	stameri	caine	com		State of	of Origin:	jin:			Page: Page 1 of 1		
Company:		-		Join	-		_	Require				mula	ild.			_	ob#	Alexander of the second	_
TestAmerica Laboratories, Inc.					_												180-128745-1		
Address 5102 LaRoche Avenue,	Due Date Requeste 12/29/2017	ed:							А	naly	sis R	equest	ed			- 10	Preservation Codes: A - HCL M - Hexane		
City.	TAT Requested (da	iys):			100	39				TI							B - NaOH	N - None	
Savannah State, Zip:					18									1 1	1 8			O - AsNaO2 P - Na2O4S	
GA, 31404					15	35						1			1 18			Q - Na2SO3 R - Na2S2O3	
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:				6											0	G - Amchlor	S - H2SO4 T - TSP Dodecahyd	rate
Email:	WO#.				or No		Total							1 1		10	J - DI Water	U - Acetone V - MCAA	
Project Name: Bailly Generating Station	Project #: 48003007					s or No	fur, To							1 1				W - pH 4-5 Z - other (specify)	
Site: Bailly Generating Station	S\$OW#				Sample (Yes	SD (Ye	50 Sulfur,							1		of con	Other:		
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wewater, Sesolid, Oewaste/oil, STETISSUE, A=Ai	eld Filtered	form MS/N	9038_Total_S/5050									Total Number of	Special Inst	tructions/Note	
Mary Committee State of State	\rightarrow	><	Preservat	ion Code:	X	\propto	(SI)	阿瓜	8 8	(1025)	108	10 200	第 	EXE A		X	WILLIAM STATE		
COMP SB777879 (480-128745-1)	12/6/17	11:45 Eastern		Solid	I		X								1 10	1			
COMP SB808182 (480-128745-2)	12/6/17	12:55 Eastern		Solid			×								100	1			
COMP SB838485 (480-128745-3)	12/6/17	10:10 Eastern		Solid	-	_	×							\sqcup	1	1			
					+	1			-				-	1		9			
	_				+	+			-	-	-		_	++	- 1	100			
					+	+			-	-		-		++					
				-	+	-			+	-		-		1					
	_				+	\perp		1	+			-	-	++		100			
					1											13			
Note: Since laboratory accreditations are subject to change, TestAmeric currently maintain accreditation in the State of Origin listed above for and Laboratories, Inc. attention immediately. If all requested accreditations a	alysis/tests/matrix being analy	zed, the samp	oles must be ship	pped back to	the ?	TestA	merica	laborato	ary or ot	her inst	ructions	es. This s will be pr	ample st ovided.	ipment is Any chang	forwarded (es to accre	unde	er chain-of-custody. If ion status should be b	the laboratory does crought to TestAmer	not
Possible Hazard Identification						Sa	mple	Dispo	sal (A fee	may b	asses	sed if	samples	s are reta	aine	d longer than 1 i	month)	_
Unconfirmed						1		Return 7			L		sal By L	.ab	L Ar	rchiv	ve For	Months	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliver	able Rank:	2			Sp	ecial	Instruc	tions/	QC Re	equirer	nents:							
Empty Kit Relinquished by:	,	Date:				ime;							Method	of Shipme	int.				
Reinfquished by:	Date Time: 27	1/17/	600	Company	3	Received by							Date/T	778		930	Company TASA/		
Relinquished by:	Date/Time:			Company	y Received by.						Date/T	ime:			Company				
Relinquished by:	Date/Time:			Company			Rece	eived by:						Date/T	ime:	-		Company	
Custody Seals Intact: Custody Seal No.:						ī	Cool	ler Temp	erature	32°C7	nd Othe	Remark	T!	2.5		13.1			
Δ Yes Δ No		_	_		-	-	_	-		-	-			V		-		Ver. 09/20/2016	

1/9/2018

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Login Sample Receipt Checklist

Client: AMEC Foster Wheeler E & I, Inc Job Number: 480-128745-1

Login Number: 128745 List Source: TestAmerica Buffalo

List Number: 1

Creator: Wallace, Cameron

Grouter: Trainese, Cameron		
Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is 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.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	Split off volume for Canton, Savannah, Burlington
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

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Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-128745-1

Login Number: 128745 List Source: TestAmerica Burlington List Number: 2

List Creation: 12/20/17 11:31 AM

Creator: Hahl, Victoria L

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td>Lab does not accept radioactive samples.</td>	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	099433
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	2.4 °C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: AMEC Foster Wheeler E & I, Inc

Job Number: 480-128745-1

List Source: TestAmerica Savannah
List Number: 3
List Creation: 12/28/17 10:19 AM

Creator: Hopkins, Ashley

Creator: Hopkins, Ashley		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
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.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

wood.

Attachment D

Lang Tool Company Excavation Cells and Dual Axis Blender

