

2018

**ANNUAL GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT**

COAL COMBUSTION RESIDUALS (CCR) RULE

**GREEN STATION CCR LANDFILL
GREEN STATION CCR SURFACE IMPOUNDMENT
REID/HMPL STATION CCR SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY**

Prepared for:

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1.0 INTRODUCTION

At the request of Big Rivers Electric Corporation (BREC), AECOM Technical Services, Inc. (AECOM) prepared this 2018 Annual Groundwater Monitoring and Corrective Action Report for the BREC Sebree Generating Station (Sebree Station), located in Webster County, Kentucky. This report was prepared in accordance with Part 257.90, Sub-Part (e) of the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule. The CCR Rule was established to regulate the disposal of CCR produced by electricity generating facilities (USEPA, 2015).

This report summarizes activities conducted in 2018 related to the CCR Rule groundwater monitoring program at the following CCR units:

- **GREEN STATION LANDFILL**
- **GREEN STATION SURFACE IMPOUNDMENT**
- **REID/HMPL STATION SURFACE IMPOUNDMENT**

The following sections present a site background summary, a discussion of field activities performed, a summary of laboratory results, statistical evaluation findings, and conclusions regarding groundwater conditions in the aquifer system subject to monitoring under the CCR Rule.

As stated in the previous 2016-2017 Annual Groundwater Monitoring and Corrective Action Report, statistical results of the baseline groundwater data indicate that the Green Landfill and Reid/HMPL Surface Impoundment would require initiation of Assessment Monitoring as most or all of the Appendix III constituents have statistically significant increases (SSIs) over background as noted below.

- Appendix III parameters calcium (Ca), chloride (Cl), sulfate (SO₄), and total dissolved solids (TDS) at the Green Landfill
- All Appendix III parameters at the Reid/HMPL Surface Impoundment

On February 5, 2018, BREC posted a formal notification that the Green Landfill and Reid/HMPL Surface Impoundment would enter into Assessment Monitoring Programs, fulfilling the requirement of 40 Code of Federal Regulations (CFR) § 257.107(h)(4).

Based upon the statistical evaluation of Appendix III parameters collected during the baseline period at the Green Surface Impoundment, BREC initiated semi-annual Detection Monitoring in 2018.

1.1 Site Background

The Sebree Station is located in Webster County approximately 3.2 miles northeast of the town of Sebree, Kentucky (**Figure 1**). Sebree Station is composed of Green Station and Reid/HMPL Station. All three CCR units are located within the Station grounds.

GREEN STATION LANDFILL

The Green Station CCR Landfill (Green Landfill) is located directly south of the Sebree Station, situated south of the Green Station CCR Surface Impoundment. The Green Landfill is a Kentucky permitted landfill that receives special wastes generated by burning coal (CCRs) from Green and Reid/HMPL Stations. The current Green Landfill footprint is approximately 170 acres (**Figure 2**).

As stated in the published CCR monitoring well network certification (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>), the original ground surface within the landfill footprint was irregular and the predominant features were small stream valleys draining towards the Green River,

which is located just east of the landfill; and towards Groves Creek, which is located just south of the landfill.

GREEN STATION SURFACE IMPOUNDMENT

The Green Station CCR Surface Impoundment (Green Surface Impoundment) is located directly south of the Sebree Station and situated north of the Green Landfill (**Figure 4**). The Green Surface Impoundment has been in place for more than 40 years and is used for the placement of CCR material; currently slurried bottom ash. The immediate watershed that drains to the CCR unit, and in which the CCR unit is considered to be located, is unnamed and 54.13 acres in size. The unnamed watershed discharges from the CCR surface impoundment outflow structure and is routed, under a Kentucky Pollution Discharge Elimination System (KPDES) permit, to the Green River.

As stated in the CCR monitoring well network certification (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>), the Green Surface Impoundment is a combined incised/dike earthen embankment structure. It is diked on the west, south and east sides, while the north side is incised. The south dike has the greatest height, reaching approximately 20 feet. The original ground surface within the pond footprint was irregular and the predominant features were small stream valleys draining eastward to Green River. Most of the central portion of the south dike was constructed on a subdued ridge.

REID/HMPL STATION SURFACE IMPOUNDMENT

The Reid/HMPL Station CCR Surface Impoundment (Reid/HMPL Surface Impoundment) is located directly northwest and adjacent of the Sebree Station (**Figure 6**). The Reid/HMPL Surface Impoundment has been in place for more than 40 years and is used for the placement of CCR material; currently slurried bottom ash. The immediate watershed that drains to the CCR unit, and in which the CCR unit is considered to be located, is unnamed and 25.45 acres in size. The unnamed watershed discharges from the CCR impoundment outflow structure and is routed, under a KPDES permit, to the Green River.

As stated in the CCR monitoring well network certification (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>), the Reid/HMPL Surface Impoundment is a combined incised/dike earthen embankment structure. It is diked on the west, south and east sides, while the north side is incised. The west dike has the greatest height reaching approximately 42 feet. The original terrain on which the pond was constructed generally sloped toward the west.

2.0 2018 ACTIVITIES SUMMARY

The following subsections describe the activities that were performed in 2018 for the three (3) CCR units noted above related to each of their corresponding CCR Groundwater Monitoring Networks.

2.1 Program Monitoring Well Systems

GREEN LANDFILL

Prior to implementation of the CCR Rule, a groundwater monitoring well network was already present at the Green Landfill in compliance with the requirements of the facility's operating permit. The existing wells are located along the perimeter of the permitted footprint for the Green Landfill, and meet the CCR Rule requirements that downgradient monitoring wells must be located at the waste boundary of the (active) CCR unit, or as close as practical.

Six (6) monitoring wells (MW-1, MW-2, MW-3A, MW-4, MW-5 and MW-6) were installed adjacent to the Green Landfill to determine the general direction of groundwater movement and to monitor groundwater at the site. MW-1 is located northwest of the landfill and is considered upgradient. MW-2, MW-3A,

MW-4, MW-5 and MW-6; located respectively, northeast, east, southeast, south and southwest are considered downgradient. As-built specifics of each well installation are summarized on **Table 1**. The locations of the groundwater monitoring wells are shown on the **Figure 2**. Each well has a dedicated bladder pump and tubing system installed for sampling purposes.

As stated in the CCR monitoring well network certification (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>), the stratigraphic interval considered as the most prominent water transmitting zone within and adjacent to the Sebree Generating Station is material identified as the Upper Sandstone Member (Sebree sandstone) of the Carbondale Formation. The United States Geological Survey (USGS) Geologic Map of the Robards Quadrangle describes the Sebree sandstone sequence as "Siltstone, sandstone, shale and coal: Siltstone, light- to medium-gray, micaceous, thin-bedded, locally calcareous. Sandstone, light- to medium-gray, grayish- and yellowish-brown, fine- to medium-grained slightly micaceous, thin-bedded to massive; locally fills channels." For purposes of compliance with the USEPA Disposal of CCR from Electric Utilities; Final Rule groundwater monitoring requirements; this sequence, and in particular the member sandstone intervals, is considered to be the uppermost aquifer underlying the Green CCR landfill.

Details about the monitoring network are presented in the *Monitoring Well Completion Report, R.D. Green Special Waste Landfill, #117-0007 LIU 1 MOGW1, Webster County* dated July 1997 maintained within the operating record at Sebree Station.

In accordance with 40 Code of Federal Regulations (CFR) § 257.91(e)(1), the CCR monitoring network for the Green Landfill was certified by a Professional Engineer on June 28, 2016. A copy of the Groundwater Monitoring System Certification document is available on the public website for CCR Activities maintained by BREC (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>).

GREEN SURFACE IMPOUNDMENT

As stated in the CCR monitoring well network certification (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>), prior to implementation of the CCR Rule three (3) temporary piezometers (P-10, P-11 and P-12) were installed adjacent to, and respectively; northwest, southwest and northeast of the Green Surface Impoundment to determine the general direction of groundwater movement. Measured static water levels, from the highest to lowest elevation were observed in P-10 (highest), P-11 and P-12 (lowest) resulting in a calculated hydraulic gradient or apparent direction of groundwater movement is generally from northwest to southeast. This groundwater gradient characterization and the ability to locate monitoring wells specific to the CCR unit justify the placement of the minimum of one upgradient and three (3) downgradient monitoring wells. The upgradient monitoring well (MW-11) was installed adjacent to, and northwest of the impoundment. The downgradient monitoring wells (MW-12, MW-13 and MW-14) were installed adjacent to, and respectively; south-southeast, southeast and east-northeast of the Green Surface Impoundment. As-built specifics of each well installation are summarized on **Table 3**. The locations of the groundwater monitoring wells are shown on the **Figure 4**. Each well has a dedicated bladder pump system and tubing installed for sampling purposes.

The stratigraphic interval considered as the most prominent water transmitting zone within and adjacent to the Sebree Generating Station is material identified as the Upper Sandstone Member (Sebree sandstone) of the Carbondale Formation. The USGS Geologic Map of the Robards Quadrangle describes the Sebree sandstone sequence as "Siltstone, sandstone, shale and coal: Siltstone, light- to medium-gray, micaceous, thin-bedded, locally calcareous. Sandstone, light- to medium-gray, grayish- and yellowish-brown, fine- to medium-grained slightly micaceous, thin-bedded to massive; locally fills channels." For purposes of compliance with the USEPA Disposal of CCR from Electric Utilities; Final Rule groundwater monitoring requirements; this sequence, and in particular the member sandstone intervals, is considered to be the uppermost aquifer underlying the Green CCR surface impoundment.

Details about the monitoring network are presented in the *Assessment of Groundwater Gradients in Vicinities of Green and Reid/HMPL CCR Impoundments* dated September 25, 2015 maintained within the operating record at Sebree Station.

In accordance with 40 CFR § 257.91(e)(1), the CCR monitoring network for the Green Surface Impoundment was certified by a Professional Engineer on June 28, 2016. A copy of the Groundwater Monitoring System Certification document is available on the public website for CCR Activities maintained by BREC (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>).

REID/HMPL SURFACE IMPOUNDMENT

As stated in the CCR monitoring well network certification, prior to implementation of the CCR Rule, five (5) temporary piezometers (P-13/P-13A, P-14 and P-15/P-15A) were installed adjacent to and (respectively) northwest, southeast and southwest of the Reid/HMPL Surface Impoundment to determine general direction of groundwater movement. Measured static water levels, from the highest to lowest elevation were observed in P-13/13A (highest), P-14 and P-15/P-15A (lowest) resulting in a calculated hydraulic gradient or apparent direction of groundwater movement generally from east-northeast to west-southwest. This groundwater gradient characterization allowed precise placement of monitoring wells for the CCR unit, thereby justifying the placement of the minimum of one upgradient and three (3) downgradient monitoring wells. The upgradient monitoring well (MW-7) was installed adjacent to, and east-northeast of the impoundment. The downgradient monitoring wells (MW-8, MW-9 and MW-10) were installed adjacent to, and respectively; west, southwest and south-southwest of the impoundment. As-built specifics of each well installation are summarized on **Table 5**. The locations of the groundwater monitoring wells are shown on the **Figure 6**. Each well has a dedicated bladder pump system and tubing installed for sampling purposes.

The stratigraphic interval considered as the most prominent water transmitting zone within and adjacent to the Sebree Generating Station is material identified as the Upper Sandstone Member (Sebree sandstone) of the Carbondale Formation. The USGS Geologic Map of the Robards Quadrangle describes the Sebree sandstone sequence as "Siltstone, sandstone, shale and coal: Siltstone, light- to medium-gray, micaceous, thin-bedded, locally calcareous. Sandstone, light- to medium-gray, grayish- and yellowish-brown, fine- to medium-grained slightly micaceous, thin-bedded to massive; locally fills channels." For purposes of compliance with the USEPA Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule groundwater monitoring requirements; this sequence, and in particular the member sandstone intervals, is considered to be the uppermost aquifer underlying the Reid/HMPL CCR surface impoundment.

Details about the monitoring network are presented in the *Assessment of Groundwater Gradients in Vicinities of Green and Reid/HMPL CCR Impoundments* dated September 25, 2015 maintained within the operating record at Sebree Station.

In accordance with 40 CFR § 257.91(e)(1), the CCR monitoring network for the Reid/HMPL Surface Impoundment was certified by a Professional Engineer on June 28, 2016. A copy of the Groundwater Monitoring System Certification document is available on the public website for CCR Activities maintained by BREC (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationsebree-station/>).

2.2 Groundwater Sampling

Three (3) Assessment groundwater sampling events were conducted at the Green Landfill and Reid/HMPL Surface Impoundment and two (2) Detection groundwater sampling events were conducted at the Green Surface Impoundment in 2018. The following tables summarize the dates of each sampling event and the wells included in the events for each CCR unit.

Green Landfill			
Event Type	Sampling Event	Dates	Wells Sampled
Assessment	10	June 4-5, 2018	Background (Upgradient) MW-1 Downgradient MW-2, MW-3A, MW-4. MW-5, MW-6
Re-Sampling (Assessment)	11	July 10-11, 2018	Background (Upgradient) MW-1 Downgradient MW-2, MW-3A, MW-4. MW-5, MW-6
Assessment	12	September 28, 2018	Background (Upgradient) MW-1 Downgradient MW-2, MW-3A, MW-4. MW-5, MW-6

Green Surface Impoundment			
Event Type	Sampling Event	Dates	Wells Sampled
Detection	10	May 7, 2018	Background (Upgradient) MW-11 Downgradient MW-12, MW-13, MW-14
Detection	11	September 27, 2018	Background (Upgradient) MW-11 Downgradient MW-12, MW-13, MW-14

Reid/HMPL Surface Impoundment			
Event Type	Sampling Event	Dates	Wells Sampled
Assessment	10	April 6, 2018	Background (Upgradient) MW-7 Downgradient MW-8, MW-9, MW-10
Re-Sampling (Assessment)	11	June 29, 2018	Background (Upgradient) MW-7 Downgradient MW-8, MW-9, MW-10
Assessment	12	September 26, 2018	Background (Upgradient) MW-7 Downgradient MW-8, MW-9, MW-10

Monitoring wells were sampled in accordance with low flow sampling techniques developed and incorporated into current operating permits which are maintained within the operating record at Sebree Station.

Groundwater sampling activities were performed by BREC personnel with all collected samples submitted to Test America, Inc. (Test America) in Nashville, Tennessee for analyses. Groundwater samples collected at the Green Landfill and Reid/HMPL Surface Impoundment during the April and June Assessment Monitoring Events were analyzed for Appendix IV parameters only in accordance with 40 CFR § 257.95(b). Groundwater samples collected during the June and July re-sampling monitoring events and the September Assessment Monitoring Events were analyzed for Appendix III and detected Appendix IV parameters in accordance with 40 CFR § 257.95(d)(1).

Groundwater samples collected at the Green Surface Impoundment during the May and September Detection Monitoring Events were analyzed for Appendix III parameters only in accordance with 40 CFR § 257.94(a).

No filtration of samples was conducted in either the field or laboratory procedures. Laboratory analyses were performed in accordance with approved USEPA methods.

3.0 DATA EVALUATION

The following sections present details pertaining to the monitoring systems, groundwater flows, groundwater sampling results, and statistical evaluations for the Green Landfill, Green Surface Impoundment, and Reid/HMPL Surface Impoundment datasets.

3.1 Monitoring Well Systems

No changes were made to the Monitoring Well Systems for the Green Landfill, Green Surface Impoundment, and Reid/HMPL Surface Impoundment in 2018.

3.2 Groundwater Flows

Water level data collected from each unit during the 2018 monitoring events are summarized on **Table 2** (Green Landfill), **Table 4** (Green Surface Impoundment), and **Table 6** (Reid/HMPL Surface Impoundment). These data were used to construct piezometric surface maps to illustrate groundwater flow conditions for the uppermost aquifer. These data and figures are representative of general conditions at the site and support the following analysis.

GREEN LANDFILL

Overall groundwater flow beneath the footprint of the Green Landfill is to the east and south towards the Green River located east and Groves Creek located south of the landfill (**Figure 3**, September 2018).

GREEN SURFACE IMPOUNDMENT

Overall groundwater flow beneath the footprint of the Green Surface Impoundment is to the east/southeast towards the Green River located east of the impoundment (**Figure 5**, September 2018).

REID/HMPL SURFACE IMPOUNDMENT

Overall groundwater flow beneath the footprint of the Reid/HMPL Surface Impoundment is to the southwest towards an unnamed tributary to Groves Creek located west/southwest of the impoundment (**Figure 7**, September 2018).

3.3 Sampling Results

During 2018 a total of three (3) Assessment sampling events were conducted at the Green Landfill and Reid/HMPL Surface Impoundment and two (2) Detection sampling events were conducted at the Green Surface Impoundment. Results from the Assessment and Detection sampling events are summarized on tables included in **Attachment A** for each unit. Complete analytical laboratory reports are included in **Attachment B** for each unit.

3.4 Statistical Evaluation

In accordance with 40 CFR § 257.93(f), 40 CFR § 257.93(h), and 40 CFR § 257.95(d)(2), AECOM conducted statistical evaluations of the collected Detection groundwater data and Assessment groundwater data to determine any SSIs over baseline concentrations for the Appendix III and Appendix IV Assessment parameters and any statistically significant levels (SSLs) over establish groundwater protection standards (GWPS) for detected Appendix IV Assessment parameters.

Statistical methods were chosen in accordance with 40 CFR § 257.93(f) and the rationale behind why each method was selected is outlined in Statistical Methods Certification Document dated June 28, 2016. A copy of this document is available on the public website for CCR Activities maintained by BREC (<http://www.bigrivers.com/ccr-rule-compliance-and-data-informationseebree-station/>).

GREEN LANDFILL

The Assessment data were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient compliance monitoring wells to those present at a background monitoring well. For the Green landfill, monitoring well MW-1 is designated as the background well because it is located upgradient, whereas monitoring wells MW-2, MW-3A, MW-4, MW-5, and MW-6 are designated as compliance wells because they are located downgradient.

The statistical analysis results indicate that Appendix III constituents calcium, Cl, SO₄, and TDS at monitoring wells MW-2, MW-3A, MW-4, MW-5, and MW-6 have SSIs over background that was confirmed by subsequent sampling events. Boron, fluoride, and pH did not have any verified SSIs over background and pH did not have any verified SSIs below the background lower prediction limit (LPL). Based on these results, Assessment Monitoring is required to continue at the Green Landfill on a semi-annual basis.

Statistical analysis of the June 2018 Appendix IV Assessment Monitoring results also indicate that arsenic and barium at monitoring well MW-2, lithium at monitoring wells MW-3A, MW-4, MW-5, and MW-6, and mercury at monitoring well MW-4 have SSIs over background that were confirmed by a subsequent re-sampling event in July 2018. The Appendix IV constituents with SSIs were further evaluated to determine whether they are present at SSLs over GWPS.

The Assessment results indicate that lithium at monitoring wells MW-3A, MW-4, MW-5, and MW-6 is present as a SSL above the GWPS. The LCLs for the remaining wells and constituents (arsenic, barium, and mercury) are equal to or less than the GWPS and thus are not considered SSLs. On December 6, 2018, BREC posted a formal notification that one constituent in Appendix IV has been detected at statistically significant levels above the established groundwater protection standard per 40 CFR Part 257.107(h)(6).

A summary of the statistical evaluation conducted on the Appendix III and Assessment Appendix IV parameters is provided as **Attachment C** for the Green Landfill.

GREEN SURFACE IMPOUNDMENT

Following receipt of the Detection groundwater monitoring results collected in May and September 2018 at the Green Surface Impoundment, the Appendix III groundwater quality monitoring data were statistically evaluated using an interwell approach that compared constituent concentrations at downgradient monitoring wells to those present at a background monitoring well. For the Green Surface Impoundment, monitoring well MW-11 is designated as the background well because it is located upgradient, whereas monitoring wells MW-12, MW-13, and MW-14 are designated as compliance wells because they are located downgradient.

The statistical analysis results for both Detection Monitoring Events indicated that none of the Appendix III constituents (boron, calcium, Cl, fluoride, pH, SO₄ or TDS) have verified SSIs over the background upper prediction limit (UPL). None of the pH results have a verified SSI below its background LPL. Based on these results, Detection Monitoring will continue at the Green Surface Impoundment.

A summary of the statistical evaluations conducted on the Detection Appendix III parameters for the Green surface Impoundment is provided as **Attachment C**.

REID/HMPL SURFACE IMPOUNDMENT

The Assessment data were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient compliance monitoring wells to those present at a background monitoring well. For the Reid/HMPL Surface Impoundment, monitoring well MW-7 is designated as the background well because it is located upgradient of the impoundment, whereas monitoring wells MW-8, MW-9, and MW-10 are designated as compliance wells because they are located downgradient of the impoundment.

The statistical analysis results indicate that Appendix III constituents boron, calcium, Cl, fluoride, SO₄, and TDS at monitoring well MW-8; calcium at monitoring well MW-9; and boron, chloride, fluoride, pH, sulfate, and TDS at monitoring well MW-10 have SSIs over background that were confirmed by subsequent sampling events. Based on these results, Assessment Monitoring is required to continue at the Reid/HMPL Surface Impoundment on a semi-annual basis.

Statistical analysis of the April 2018 Appendix IV Assessment Monitoring results also indicate that fluoride, lithium, and Ra-226+228 at monitoring well MW-8, barium and Ra-226+228 at monitoring well MW-9, and chromium, fluoride, and lithium at monitoring well MW-10 have SSIs over background that were confirmed by a subsequent re-sampling event in June 2018. The Appendix IV constituents with SSIs were further evaluated to determine whether they are present at SSLs over GWPS.

The Assessment results indicate that lithium at monitoring well MW-10 is the only Appendix IV constituent present at a SSL above the GWPS. The LCLs for the remaining wells and constituents are less than the GWPS and thus are not considered SSLs. On December 6, 2018, BREC posted a formal notification that one constituent in Appendix IV has been detected at statistically significant levels above the established groundwater protection standard per 40 CFR Part 257.107(h)(6).

A summary of the statistical evaluation conducted on the Appendix III and Assessment Appendix IV parameters is provided as **Attachment C** for the Reid/HMPL Surface Impoundment.

3.5 Discussion and Conclusions

Based upon the statistical evaluation of Appendix III and Appendix IV parameters collected during Assessment Monitoring at the Green Landfill and Reid/HMPL Surface Impoundment, BREC will continue Assessment Monitoring in 2019 and initiate an Assessment of Corrective Measures (ACM) as required under 40 CFR § 257.96.

On December 6, 2018, BREC posted a formal notification that the Green Landfill and Reid/HMPL Surface Impoundment would initiate an ACM per 40 CFR § 257.95(g)(1-5), fulfilling the requirement of 40 CFR § 257.107(h)(7).

Based upon the statistical evaluation of Appendix III parameters collected during the Detection period at the Green Surface Impoundment, BREC will continue semi-annual Detection Monitoring in 2019.

4.0 GENERAL INFORMATION

The following subsections summarize any problems encountered in the CCR program through 2018, any resolutions to those problems if needed and upcoming actions planned for 2019.

4.1 Problems Encountered and Resolutions

Waves of inclement weather during the last quarter of 2018 and the shortage of capable Kentucky certified well drillers has delayed implementation of groundwater characterization as required under 40 CFR § 257.95(g)(1). In accordance with the requirements of 40 CFR § 257.95(g)(1), two (2) new monitoring wells (proposed MW-103 and MW-104) at the Green Landfill and one (1) new monitoring (proposed MW-110) at the Reid/HMPL Surface Impoundment will be installed for the characterization of groundwater at locations indicated on **Figures 2 and 6**. The new monitoring wells, located at projected downgradient positions from monitoring wells under assessment, will assist in the characterization of the existence, quality, quantity, areal extent and depth of groundwater degradation, and the rate and direction of migration of CCR contaminants in the groundwater. A report of the pending characterization well installation and details about the characterization monitoring will be presented within the ACM Report in accordance with 40 CFR § 257.96.

No other problems were encountered during the 2018 monitoring period.

4.2 Actions Planned for 2019

Continued Assessment Monitoring of all Program monitoring wells for the Green Landfill and Reid/HMPL are planned for 2019 Surface Impoundment. Pending the results from the pending groundwater characterization in accordance with 40 CFR § 257.95(g)(1), Alternative Source Demonstration (ASD) activities or an ACM will be triggered. Any notifications required by 40 CFR § 257.95(g) or 40 CFR § 257.96 will be transmitted accordingly.

Other planned activities for 2019 also include two semi-annual Detection Monitoring sampling events and subsequent statistical evaluations for the Green Surface Impoundment.

5.0 REFERENCES

United States Environmental Protection Agency, 2015. Part 257.90, Sub-Part (e) Coal Combustion Residuals Rule.

Tables

TABLE 1

**SUMMARY OF MONITORING WELL CONSTRUCTION, GREEN LANDFILL
CCR GROUNDWATER MONITORING PROGRAM**

**BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION LANDFILL
WEBSTER COUNTY, KENTUCKY**

Well No.		Location*		Reference Elevation*		Casing Length (feet, TOIC)	Size / Type (ID / Material)	Filter Pack Interval		Screened Interval		Bottom of Boring (feet, GS)
				TOIC	GS			Interval		Interval		
		Lat	Long	(feet, NAD27)	(feet, NAD27)			(feet, GS, NAD27)		(feet, GS, NAD27)		
Program Monitoring Wells								Top	Bottom	Top	Bottom	
MW-1 (8002-9625)	U / B	37.3817	-87.3030	423.23	420.2	45.5	4 inch / PVC	389.9	377.7	387.7	377.7	45
MW-2 (8002-9630)	D	37.3815	-87.3005	392.37	389.9	50.3	4 inch / PVC	354.1	342.1	352.1	342.1	49
MW-3A (8003-6430)	D	37.3806	-87.3005	386.48	380.7	41.3	4 inch / PVC	357.2	344.5	355.2	345.2	36.2
MW-4 (8002-9628)	D	37.3744	-87.3004	391.33	388.8	33.1	4 inch / PVC	370.2	358.2	368.2	358.2	33
MW-5 (8002-9627)	D	37.3741	-87.3010	390.18	387.7	27.5	4 inch / PVC	374.7	362.7	372.7	362.7	26
MW-6 (8002-9626)	D	37.3745	-87.3027	388.17	385.7	45.5	4 inch / PVC	354.9	342.7	352.7	342.7	45

*Reference elevation of monitoring wells surveyed by Fuller, Mossbarger, Scott and May, Civil Engineers, Inc., Lexington, Kentucky, December 1996, December 1999

Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum

PVC = Polyvinyl chloride

ID = Internal Diameter

TOIC = Top of internal casing

GS = Ground Surface

U / B = Upgradient / Background

TABLE 2
GROUNDWATER ELEVATIONS, GREEN LANDFILL - 2018
BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION LANDFILL
WEBSTER COUNTY, KENTUCKY

Reference Elevation TOIC*(ft, NAD27)	GROUNDWATER MONITORING WELL PROGRAM											
	MW-1		MW-2		MW-3A		MW-4		MW-5		MW-6	
	Upgradient/Background 423.23		Downgradient 392.37		Downgradient 386.48		Downgradient 391.33		Downgradient 390.18		Downgradient 388.17	
Date Measured	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)
6/4/2018	20.02	403.21	20.06	372.31	16.18	370.3	24.13	367.2	14.07	376.11	19.96	368.21
7/10/2018	21.43	401.8	21.47	370.9	17.16	369.32	24.62	366.71	14.35	375.83	20.79	367.38
9/28/2018	22.22	401.01	22.16	370.21	16.03	370.45	23.75	367.58	15.12	375.06	21.15	367.02

*Reference elevation of monitoring wells surveyed by Fuller, Mossbarger, Scott and May, Civil Engineers, Inc.,
Lexington, Kentucky, December 1996, December 1999
Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum
TOIC = Top of internal casing
GW = Groundwater; GS = Ground Surface; NM = Not measured

TABLE 3

**SUMMARY OF MONITORING WELL CONSTRUCTION, GREEN SURFACE IMPOUNDMENT
CCR GROUNDWATER MONITORING PROGRAM**

**BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
GREEN STATION SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY**

Well No.		Location*		Reference Elevation*		Casing Length (feet, TOIC)	Size / Type (ID / Material)	Filter Pack Interval		Screened Interval		Bottom of Boring (feet, GS)
				TOIC (feet, NAD27)	GS (feet, NAD27)			Interval		Interval		
		Lat	Long					(feet, GS, NAD27)	(feet, GS, NAD27)	(feet, GS, NAD27)	(feet, GS, NAD27)	
Program Monitoring Wells								Top	Bottom	Top	Bottom	
MW-11 (8006-3938)	U / B	37.64262	-87.50325	401.32	398.36	51.5	2 inch / PVC	356.86	348.46	354.86	349.86	49.5
MW-12 (8006-3939)	D	37.63915	-87.50182	395.54	392.35	73.7	2 inch / PVC	333.85	320.35	331.85	321.85	72.0
MW-13 (8006-3940)	D	37.64086	-87.50072	394.60	391.46	52.6	2 inch / PVC	348.96	339.96	346.96	341.96	51.5
MW-14 (8006-3941)	D	37.64220	-87.50001	390.71	387.55	50.0	2 inch / PVC	347.75	337.95	345.75	340.75	49.6

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015

Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum

PVC = Polyvinyl chloride

ID = Internal Diameter

TOIC = Top of internal casing

GS = Ground Surface

U / B = Upgradient / Background

TABLE 4
GROUNDWATER ELEVATIONS, GREEN SURFACE IMPOUNDMENT - 2018
GREEN STATION SURFACE IMPOUNDMENT

BIG RIVERS ELECTRIC CORPORATION
SEBREE STATION
WEBSTER COUNTY, KENTUCKY

Reference Elevation TOIC*(ft, NAD27)	GROUNDWATER MONITORING WELL PROGRAM							
	MW-11		MW-12		MW-13		MW-14	
	Upgradient/Background 401.32		Downgradient 395.54		Downgradient 394.60		Downgradient 390.71	
Date Measured	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)
5/7/2018	9.78	391.54	26.37	369.17	18.80	375.80	22.50	368.21
9/27/2018	8.80	392.52	27.24	368.30	20.21	374.39	24.92	365.79

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015
Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum
TOIC = Top of internal casing
GW = Groundwater; GS = Ground Surface; NM = Not measured

TABLE 5

**SUMMARY OF MONITORING WELL CONSTRUCTION, REID/HMPL SURFACE IMPOUNDMENT
CCR GROUNDWATER MONITORING PROGRAM**

**BIG RIVERS ELECTRIC CORPORATION - SEBREE STATION
REID/HMPL STATION SURFACE IMPOUNDMENT
WEBSTER COUNTY, KENTUCKY**

Well No.		Location*		Reference Elevation*		Casing Length Length (feet, TOIC)	Size / Type (ID / Material)	Filter Pack Interval		Screened Interval		Bottom of Boring (feet, GS)
		Lat	Long	TOIC (feet, NAD27)	GS (feet, NAD27)			Interval (feet, GS, NAD27)	Interval (feet, GS, NAD27)			
									Top	Bottom	Top	
Program Monitoring Wells												
MW-7 (8006-3934)	U / B	37.64931	-87.50306	444.43	441.80	75.5	2 inch / PVC	375.90	368.40	373.90	368.90	73.4
MW-8 (8006-3935)	D	37.64886	-87.50860	394.29	385.84	60.7	2 inch / PVC	340.64	331.64	338.64	333.64	54.2
MW-9 (8006-3936)	D	37.64730	-87.50717	395.40	392.85	47.6	2 inch / PVC	359.85	336.55	357.85	347.85	56.3
MW-10 (8006-3937)	D	37.64637	-87.50586	422.27	419.98	81.8	2 inch / PVC	352.48	339.98	350.48	340.48	80.0

*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015

Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum

PVC = Polyvinyl chloride

ID = Internal Diameter

TOIC = Top of internal casing

GS = Ground Surface

U / B = Upgradient / Background

TABLE 6

**GROUNDWATER ELEVATIONS, REID/HMPL SURFACE IMPOUNDMENT - 2018
REID/HMPL STATION SURFACE IMPOUNDMENT**

**BIG RIVERS ELECTRIC CORPORATION
SEBREE STATION
WEBSTER COUNTY, KENTUCKY**

Reference Elevation TOIC*(ft, NAD27)	GROUNDWATER MONITORING WELL PROGRAM							
	MW-7		MW-8		MW-9		MW-10	
	Upgradient/Background 444.43		Downgradient 394.29		Downgradient 395.40		Downgradient 422.27	
Date Measured	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)	Depth to Water (ft) (feet)	GW Elevation (feet)
4/6/2018	15.46	428.97	1.96	392.33	4.35	391.05	30.46	391.81
6/29/2018	16.57	427.86	3.04	391.25	5.59	389.81	31.70	390.57
9/26/2018	17.93	426.50	4.42	389.87	6.50	388.90	32.61	389.66

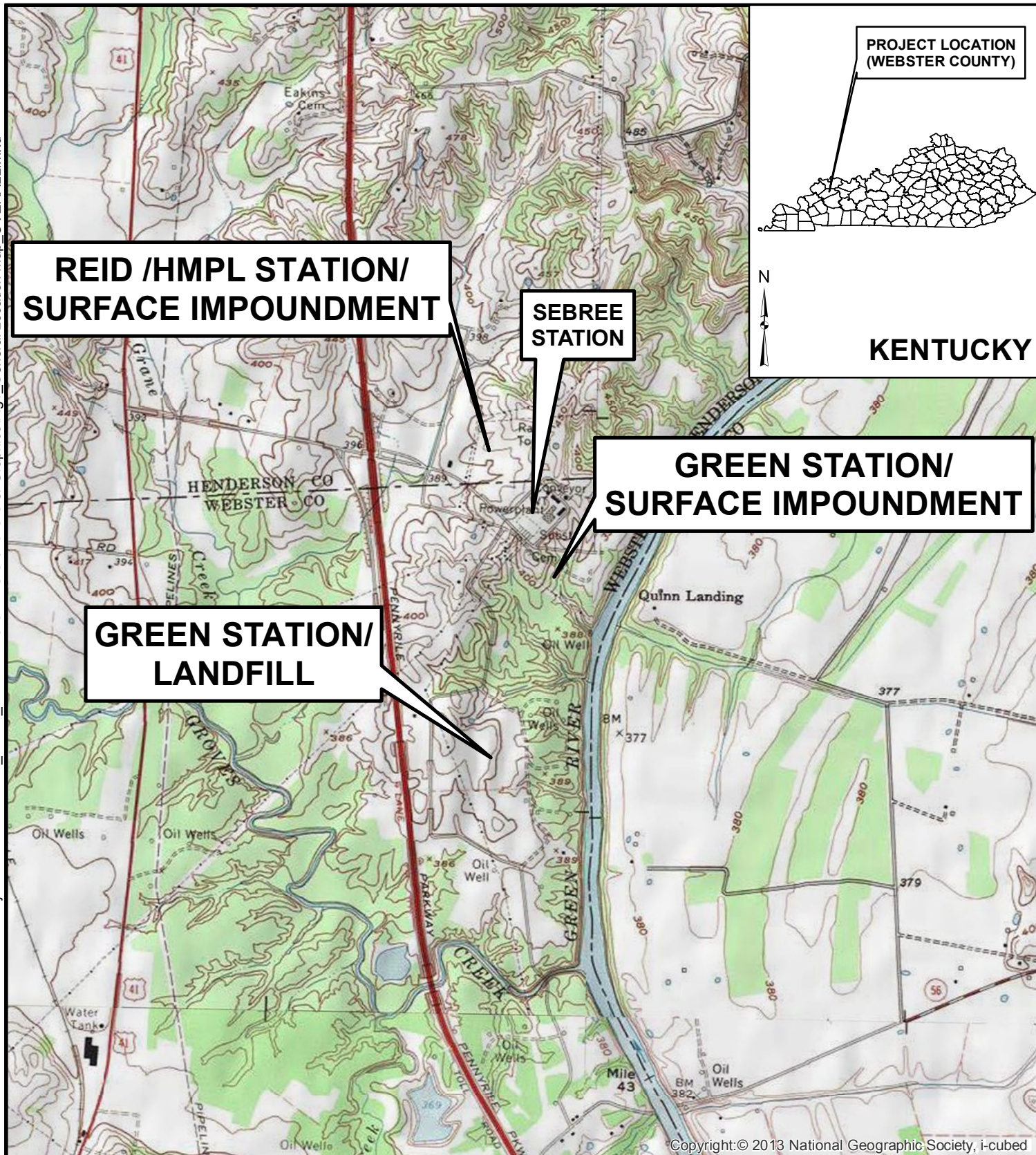
*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 2015

Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum

TOIC = Top of internal casing

GW = Groundwater; GS = Ground Surface; NM = Not measured

Figures



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

ROBARDS QUADRANGLE
DELAWARE QUADRANGLE
(FROM ARCGIS ONLINE Copyright:© 2011 National Geographic Society, i-cubed)

0 2,000 4,000
Feet



Big Rivers
ELECTRIC CORPORATION

*Sebree Station
Webster County, Kentucky*

**FIGURE 1
GENERAL LOCATION MAP**

DATE: 1/8/2019

SCALE: 1IN = 2,000 FEET

CREATED BY: ALW

JOB NO. 60579938



Legend

- Property Line
- KAR Permit Area
- CCR Fill Area
- Downgradient CCR Monitoring Well
- Upgradient CCR Monitoring Well
- Proposed Characterization Well

0 400 800

Feet

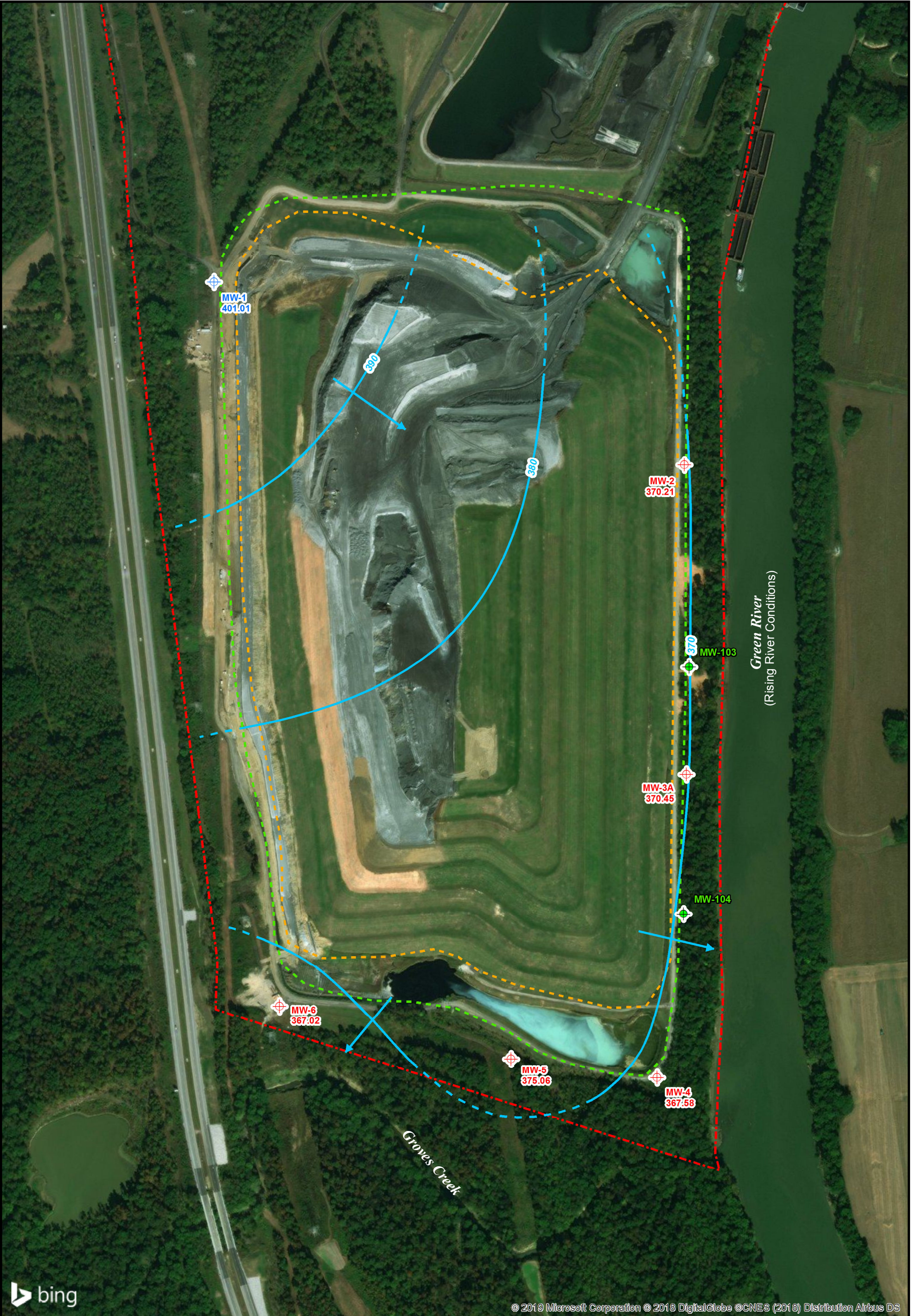
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Big Rivers
ELECTRIC CORPORATION

Green Station Landfill
Webster County, Kentucky

FIGURE 2
GROUNDWATER
MONITORING SYSTEM

DATE: 1/8/2019	SCALE: 1IN = 300 FEET
CREATED BY: ALW	
JOB NO. 60579938	



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Legend

- Property Line
- KAR Permit Area
- CCR Fill Area
- Downgradient CCR Monitoring Well
- Upgradient CCR Monitoring Well
- Proposed Characterization Well

- Water Table Contour
(Inferred from Available Monitoring Data)
- Groundwater Flow Direction
- Groundwater Elevation (Feet, MSL)
Measured September 28, 2018

0 400 800
Feet



Green Station Landfill
Webster County, Kentucky

FIGURE 3
GROUNDWATER SURFACE MAP
SEPTEMBER 2018

DATE: 1/14/2019

SCALE: 1IN = 300 FEET

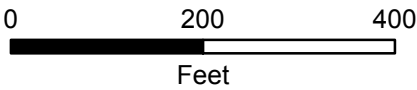
CREATED BY: ALW

JOB NO. 60579938



Legend

- (Impoundment) Unit Boundary
- Property Line
- Downgradient CCR Monitoring Well
- Upgradient CCR Monitoring Well



Big Rivers
ELECTRIC CORPORATION

Green Surface Impoundment
Webster County, Kentucky

FIGURE 4
CCR GROUNDWATER
MONITORING SYSTEM

DATE: 1/11/2019	SCALE: 1IN = 200 FEET
CREATED BY: ALW	
JOB NO. 60579938	

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Legend

- (Impoundment) Unit Boundary
- Property Line
- Downgradient CCR Monitoring Well
- Upgradient CCR Monitoring Well
- Water Table Contour (Inferred from Available Monitoring Data)
- Groundwater Flow Direction
- Groundwater Elevation (Feet, MSL)

365.79

Measured September 27, 2018

0 200 400
Feet



 Big Rivers ELECTRIC CORPORATION		<i>Green Surface Impoundment Webster County, Kentucky</i>	
FIGURE 5 GROUNDWATER SURFACE MAP SEPTEMBER 2018			
DATE: 1/14/2019		SCALE: 1IN = 200 FEET	
CREATED BY: ALW			
JOB NO. 60579938			



Legend

- Unit Boundary
- Property Line
- Downgradient CCR Monitoring Well
- Upgradient CCR Monitoring Well
- Proposed Characterization Well

0 300 600
Feet

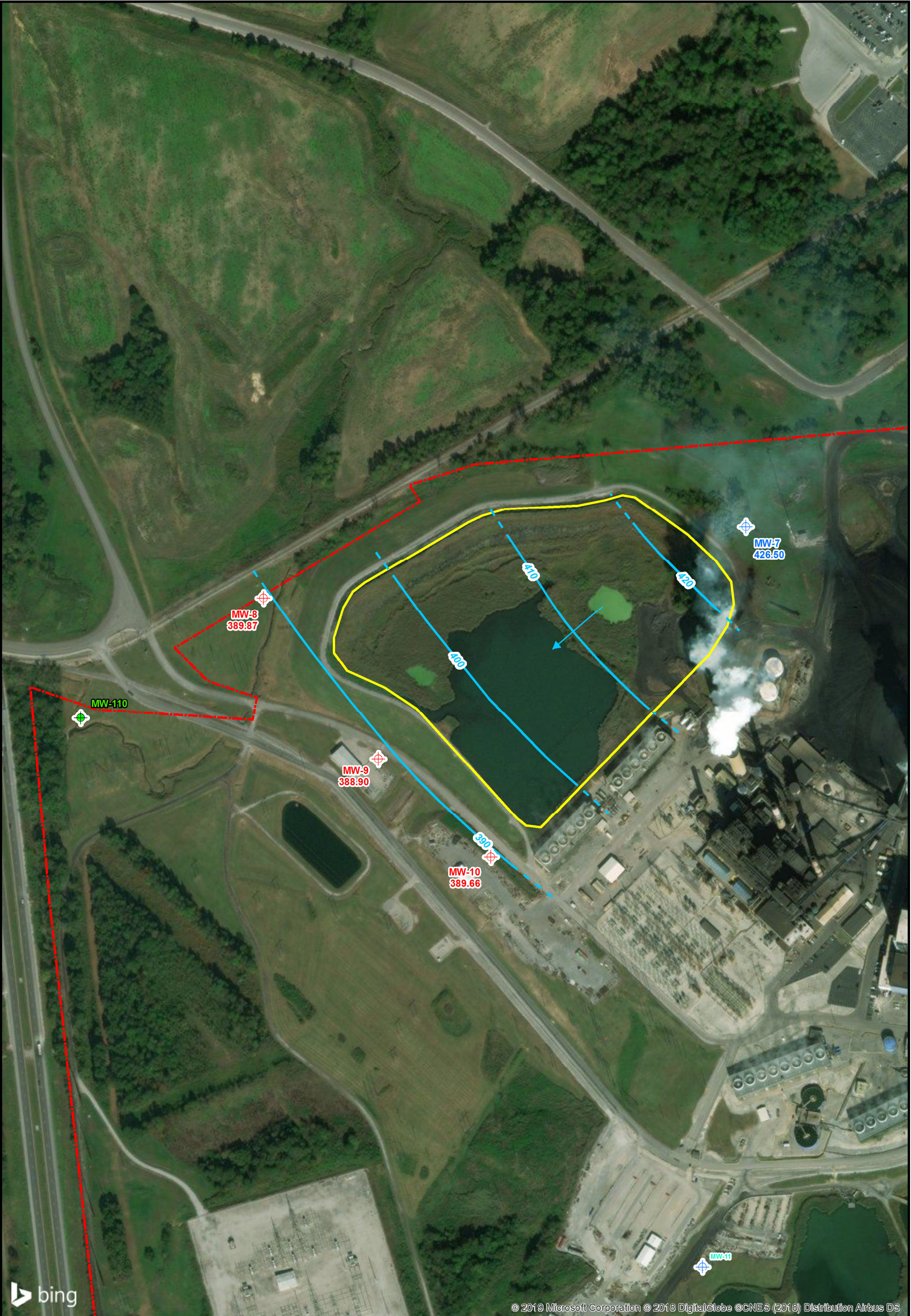
N

Big Rivers
ELECTRIC CORPORATION

Reid/HMPL Surface Impoundment
Webster County, Kentucky

FIGURE 6
GROUNDWATER
MONITORING SYSTEM

DATE: 1/8/2019	SCALE: 1IN = 200 FEET
CREATED BY: ALW	
JOB NO. 60579939	



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Legend

- Unit Boundary
- Property Line
- Downgradient CCR Monitoring Well
- Upgradient CCR Monitoring Well
- Proposed Characterization Well

Water Table Contour
(Inferred from Available Monitoring Data)

Groundwater Flow Direction

Groundwater Elevation (Feet, MSL)
Measured September 26, 2018

426.50

0 300 600
Feet

Big Rivers
ELECTRIC CORPORATION

Reid/HMPL Surface Impoundment
Webster County, Kentucky

FIGURE 7
GROUNDWATER SURFACE MAP
SEPTEMBER 2018

DATE: 1/16/2019	SCALE: 1IN = 200 FEET
CREATED BY: ALW	
JOB NO. 60579939	

Attachment A

GREEN STATION LANDFILL

GREEN LANDFILL - CCR ANALYTICAL SUMMARY
MW-1

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/26/2016		5/23/2016		8/18/2016		10/26/2016		2/1/2017		5/2/2017		8/7/2017		9/5/2017		10/5/2017		6/4/2018		7/10/2018		9/28/2018	
			Baseline Events																		Assessment		Re-Sampling		Assessment	
Boron	0.08		1.67		1.49		2.25		1.70		1.71	J	1.68		1.85	B	1.79		1.92				1.41		1.94	B
Calcium	0.5		29.1		31.8	B	33.0		30.9		20.8		28.1		27.1		29.9	B	26.4				26.5		28.5	B
Chloride	3		9.03	JB	0.501	JB	6.60	B	6.02	B	5.56	B F1	5.30	B	5.12	B F1	5.71	B	4.07	F1 B			6.34	B	6.17	B
Fluoride	1		ND	J	ND	JB	ND	J	ND	JB	ND	J F1	ND	JB	ND	J F1	ND	J	ND	J F1			ND	J	ND	JB
Sulfate	5		25.2		22.8	JB	22.9		20.7	B	28.4		24.0	B	25.3	B	23.4		24.9	JB			23.5		22.5	B
pH (SU)	0.10		7.39		7.24		7.57		7.19		7.63		7.54		7.45		7.48		7.63				7.08		8.43	
Total Dissolved Solids	10		598		588		585		585		605		630		614		627		636				585		616	
APPENDIX IV CONSTITUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	J	ND	B	ND		ND		ND	JB	0.00297	B	ND	JB			ND	JB	ND	J	NA	
Arsenic	0.005	0.01 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J F1	ND	JB			ND	JB	ND	J	ND	JB
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J F1	ND	J			ND	JB	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		ND		NA	
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		ND		NA	
Chromium	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND	J			ND	JB	ND		NA	
Cobalt	0.005	0.006 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	JB	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J F1	ND	JB	ND	J F1	ND	J			ND	J	ND	J	ND	JB
Lead	0.005	0.015 mg/L	ND	J	ND	J	ND	J	ND		ND		ND		ND		ND	J			ND		ND	J	NA	
Lithium	0.05	0.040 mg/L	0.0293	J	0.0317	J	0.0326	J	0.0286	J	0.0342	J	0.0396	J	0.0314	J	0.0315	J			0.0319	J	0.0298	J	0.0279	J
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		ND		ND	
Molybdenum	0.01	0.1 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND				ND	J	ND	J	NA	
Radium 226	1	5 pCi/L	1.05		1.02		0.676		1.02		0.694		0.666		0.491		0.601				1.92		0.882		0.905	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND		ND		ND	J	ND	J	ND				ND		ND		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND		ND	J	ND		ND		ND	J	ND				ND		ND		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.
F1 = MS and/or MSD Recovery is outside acceptance limits.

GREEN LANDFILL - CCR ANALYTICAL SUMMARY
MW-2

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/26/2016		5/23/2016		8/18/2016		11/14/2016		2/1/2017		5/2/2017		8/8/2017		9/7/2017		10/6/2017		6/5/2018		7/11/2018		9/28/2018	
			Baseline Events														Assessment		Re-Sampling		Assessment					
Boron	0.08		ND	J	ND	J	ND	J	ND	JB	ND	J	0.113	JB	ND	JB	ND	J			ND	J	0.0630	JB		
Calcium	0.5		119		116	B	140		140	B	126		152		154		121		150			155		165	B	
Chloride	3		126	B	125	B	129	B	133		142	B	129	B	145	B	136	B	129	B			154	B	159	B
Fluoride	1		ND	J	ND		ND	J	ND	JB F1	ND	J	ND	JB	ND	JB	ND	JB F1	ND	J			ND	J	ND	JB
Sulfate	5		80.0		84.5	J	85.5	J	90.1		89.8		83.2		92.0	JB	90.8		88.6	JB			107		108	B
pH (SU)	0.10		6.81		6.59		6.7		6.78		7.12		7.04		6.77		6.69		6.86		6.64		6.40		7.02	
Total Dissolved Solids	10		764		780		830		880		862		918		913		818		970				884		937	
APPENDIX IV CONSTITUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	J	ND	JB	ND	JB	ND		ND	JB	ND	B	ND	JB			ND	JB	ND	J	NA	
Arsenic	0.005	0.01 mg/L	0.00703	J	0.00633		0.0110		0.0159		0.0462		0.00755		0.0381		0.00527			0.0327	B	0.0119		0.0211	B	
Barium	0.2	2 mg/L	ND	J	ND	J	0.280		0.319		0.347		0.332		0.308		ND	J			0.369		0.323		0.367	
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		NA		
Cadmium	0.001	0.005 mg/L	ND	J	ND		ND		ND		ND		ND		ND		ND			ND		ND		NA		
Chromium	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND			ND	JB	ND		NA		
Cobalt	0.005	0.006 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J			ND	JB	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND		ND	J	ND	JB F1	ND	J	ND	JB	ND	JB	ND	JB F1			ND	J	ND	J	ND	JB
Lead	0.005	0.015 mg/L	ND		ND		ND		ND		ND		ND		ND		ND			ND		ND	J	NA		
Lithium	0.05	0.040 mg/L	ND	J	ND		ND		ND		ND	J	ND	J	ND	JB	ND			ND		ND		ND		
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND			ND		ND		ND		
Molybdenum	0.01	0.1 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	JB			ND	J	ND	J	NA	
Radium 226	1	5 pCi/L	0.533		ND		0.46		ND		0.856		0.73		0.968		0.537				1.18		0.733		0.803	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND	JB	ND		ND		ND	JB	ND				ND		ND		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND		ND		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.
F1 = MS and/or MSD Recovery is outside acceptance limits.

GREEN LANDFILL - CCR ANALYTICAL SUMMARY
MW-3A

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/26/2016		5/23/2016		8/18/2016		11/14/2016		2/1/2017		5/2/2017		8/8/2017		9/6/2017		10/6/2017		6/5/2018		7/11/2018		9/28/2018	
			Baseline Events																		Assessment		Re-Sampling		Assessment	
Boron	0.08		0.145		0.135	J	0.279	J	0.213	J	0.235	JB	0.232	J	0.304	JB	0.376	J	0.313				0.177	J	0.257	JB
Calcium	0.5		431		322	B	362		365	B	327		420		421		438	B	408				469		447	B
Chloride	3		2630	HB	3070		2150	B	2150	B	2220	B	2120	B	1790	B	2270	B	1870	B			2180	B	2040	B
Fluoride	1		ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND		3.16		ND	J			ND	J	ND	JB
Sulfate	5		1330		1330		1190		1660		1080		1030	B	942		1130		1030	B			1010		1130	B
pH (SU)	0.10		6.92		6.86		6.95		6.75		7.17		7.11		6.81		6.9		6.95		6.84		6.55		7.98	
Total Dissolved Solids	10		4440		5010		4170		4450		4270		5170		5010		5020		5300				4540		4940	
APPENDIX IV CONSTITUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	J	ND	JB	ND	JB	ND		ND	JB	ND	JB	ND	JB			ND	JB	ND		NA	
Arsenic	0.005	0.01 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB			ND	JB	ND	J	ND	JB
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		ND		NA	
Cadmium	0.001	0.005 mg/L	ND	J	ND	J	ND		ND		ND	J	ND	J	ND		ND				ND	J	ND	J	NA	
Chromium	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND	J			ND	JB	ND		NA	
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	JB	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND		3.16				ND	J	ND	J	ND	JB
Lead	0.005	0.015 mg/L	ND	J	ND		ND		ND		ND		ND		ND	J	ND	J			ND		ND	J	NA	
Lithium	0.05	0.040 mg/L	0.669		0.516		0.648		0.677		0.689		0.746		0.767		0.762				0.699		0.790		0.766	
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		ND		ND	
Molybdenum	0.01	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND		ND		NA	
Radium 226	1	5 pCi/L	1.38		0.386		0.472		1.15		1.15		0.923		1.53		1.03				1.18		1.43		1.21	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND	J	ND	JB	ND		ND		ND		ND				ND	J	ND		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND	J			ND		ND		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.
H = Sample was prepped or analyzed beyond the specified holding time

GREEN LANDFILL - CCR ANALYTICAL SUMMARY
MW-4

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/29/2016		5/23/2016		8/18/2016		10/26/2016		2/1/2017		5/2/2017		8/8/2017		9/7/2017		10/6/2017		6/5/2018		7/11/2018		9/28/2018	
			Baseline Events																Assessment		Re-Sampling		Assessment			
Boron	0.08		0.602		0.498	J	1.58		1.7		1.54	B	2.09		2.51	B	2.87	B	1.36				0.751	J	1.33	B
Calcium	0.5		660		386	B	464		558		591		774		743		739		828				822		722	B
Chloride	3		1450	B	939	B	952	B	1000	B	1420	B	1320	B	1360	B	1880	B	1730	B			1430	B	1310	B
Fluoride	1		ND	J	ND		ND	J	ND	JB	ND	J	1.06	B	ND		ND	JB	ND	J			ND	J	ND	JB
Sulfate	5		1830		1640		1420		1420	B	1620		1430	B	1600	B	2020		1590	B			1460		1400	B
pH (SU)	0.10		6.36		6.83		7.08		6.61		7.28		7.1		6.84		6.64		6.93		6.86		6.58		8.06	
Total Dissolved Solids	10		3700		4250		3440		3250		4420		4550		4890		4700	H	6220				4880		5170	
APPENDIX IV CONSTITUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	J	ND	JB	ND		ND		ND	JB	ND	JB	ND	JB			ND	JB	ND		NA	
Arsenic	0.005	0.01 mg/L	ND		ND	J	ND	J	ND		ND	J	ND	J	ND	J	ND	JB			ND	JB	ND	J	ND	JB
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	J	ND	J	ND	JB			ND	J	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		ND		NA	
Cadmium	0.001	0.005 mg/L	ND	J	ND		ND		ND		ND		ND		ND		ND				ND		ND		NA	
Chromium	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND	JB	ND		NA	
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND	JB	ND	J	NA	
Fluoride	1	4 mg/L	ND		ND		ND	J	ND	JB	ND	J	ND	B	ND		ND	JB			ND	J	ND	J	ND	JB
Lead	0.005	0.015 mg/L	ND	J	ND	J	ND		ND		ND		ND		ND		ND				ND		ND	J	NA	
Lithium	0.05	0.040 mg/L	1.39		0.838		1.13		1.25		1.35		1.59		1.77		1.66				1.81		1.91		1.81	
Mercury	0.0002	0.002 mg/L	0.00027		0.000224		ND	J	0.000248		0.000302		0.000717		0.000825		0.000485				0.000824		0.000832		0.000680	
Molybdenum	0.01	0.1 mg/L	ND	J	ND	J	ND		ND		ND	J	ND		ND		ND				ND		ND		NA	
Radium 226	1	5 pCi/L	1.26		0.592		ND		0.536		1.22		1.43		1.94		1.19				1.62		2.00		1.51	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND	J	ND	J	ND	J	ND		ND	J	ND		ND		ND	J			ND	J	ND		NA	
Thallium	0.001	0.002 mg/L	ND		ND		ND		ND	J	ND		ND		ND		ND				ND		ND		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.
H = Sample was prepped or analyzed beyond the specified holding time

GREEN LANDFILL - CCR ANALYTICAL SUMMARY
MW-5

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/29/2016		5/23/2016		8/18/2016		10/26/2016		2/1/2017		5/2/2017		8/7/2017		9/7/2017		10/6/2017		6/5/2018		7/11/2018		9/28/2018	
			Baseline Events																Assessment		Re-Sampling		Assessment			
Boron	0.08		0.217		0.0896	J	0.216	J	0.214	J	0.222	JB	0.241	J	0.257	JB	0.276	B	0.262			0.207	J	0.263	JB	
Calcium	0.5		452		189	B	374		399		335		464		423		407	B	383			469		441	B	
Chloride	3		1630	B	521		688	B	755	B	734	B	722	B	945	B	779	B	608	B			941	B	1140	B
Fluoride	1		ND	J	ND		ND	J	ND		ND	J	ND	JB	ND		3.69		ND	J			ND	J	ND	JB
Sulfate	5		1760	HB	876		1780		1740	B	1880		1760	B	2060	B	1920		1600	B			1800		1890	B
pH (SU)	0.10		6.76		6.74		6.99		6.61		7.14		7.44		6.87		7.13		7.06		6.88		6.40		7.99	
Total Dissolved Solids	10		4210		1660		3470		3610		3680		4250		4130		4120		4390				4100		4540	
APPENDIX IV CONSTITUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	J	ND	JB	ND		ND		ND	JB	ND	JB	ND	JB			ND	JB	ND		NA	
Arsenic	0.005	0.01 mg/L	ND		ND	J	ND	JB	ND	J	ND	J	ND	J	ND	J	ND	JB			ND	JB	ND	J	ND	JB
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND		ND	J	ND		ND		ND		ND		ND				ND		ND		NA	
Cadmium	0.001	0.005 mg/L	ND	J	ND		ND		ND		ND		ND		ND		ND				ND		ND		NA	
Chromimum	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND	J	ND	J	ND		ND	J			0.00363	B	ND		NA	
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND		ND	J	ND		ND	J			ND	JB	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND		ND	J	ND		ND	J	ND		ND		3.69				ND	J	ND	J	ND	JB
Lead	0.005	0.015 mg/L	ND	J	ND	J	ND		ND		ND		ND		ND		ND				ND	J	ND	J	NA	
Lithium	0.05	0.040 mg/L	0.521		0.136		0.305		0.325		0.368		0.415		0.405		0.353				0.459		0.481		0.425	
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		0.00351		ND				ND		ND		ND	
Molybdenum	0.01	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND		ND		NA	
Radium 226	1	5 pCi/L	1.16		0.736		0.959		0.957		0.765		0.888		1.54		0.773				0.862		1.42		1.37	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND	J	ND	J	ND		ND		ND				ND	J	ND		NA	
Thallium	0.001	0.002 mg/L	ND		ND		ND	J	ND	J	ND		ND	J	ND		ND	J			ND	J	ND		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
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ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
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GREEN LANDFILL - CCR ANALYTICAL SUMMARY
MW-6

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																								
			3/29/2016		5/23/2016		8/18/2016		10/26/2016		2/1/2017		5/2/2017		8/7/2017		9/5/2017		10/5/2017		6/4/2018		7/10/2018		9/28/2018		
			Baseline Events																Assessment		Re-Sampling		Assessment				
Boron	0.08		0.156		0.137	J	0.193	J	0.168	J	0.173	B	0.179	J	0.167	JB	0.199	J	0.178				0.155	J	0.196	JB	
Calcium	0.5		467		374	B	373		400		320		415		365		382	B	376				386		356	B	
Chloride	3		167	B	149	B	136	JB	150	B	125	B	129	B	128	B	123	B	138	B			147	B	142	B	
Fluoride	1		ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND		ND	J	ND	J			ND	J	ND	JB	
Sulfate	5		2250	HB	3340		2550		2610	B	2700		2600	B	2820	B	2490		2700	B			2120		2420		
pH (SU)	0.10		6.66		6.65		6.96		6.6		6.92		6.97		6.76		6.95		6.86				6.50		7.94		
Total Dissolved Solids	10		4060		4280		4350		4470		4720		4700		4830		4890		4910				4500		4820		
APPENDIX IV CONSTITUENTS																											
Antimony	0.002	0.006 mg/L	ND		ND	J	ND	JB	ND		ND		ND	JB	ND	JB	ND	JB				ND	JB	ND		NA	
Arsenic	0.005	0.01 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB				ND	JB	ND	J	ND	JB
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J				ND	J	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND					ND		ND		NA	
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND					ND		ND		NA	
Chromimum	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND	J				ND	JB	ND		NA	
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J				ND	JB	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND		ND	J				ND	J	ND	J	ND	JB
Lead	0.005	0.015 mg/L	ND	J	ND	J	ND		ND		ND		ND		ND		ND					ND		ND	J	NA	
Lithium	0.05	0.040 mg/L	0.0475	J	0.0527		0.0555		0.0524		0.0607		0.0724		0.0589		0.0554					0.0650		0.0592		0.0558	
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND					ND		ND		ND	
Molybdenum	0.01	0.1 mg/L	ND	J	ND	J	ND	J	ND	B	ND	J	ND	J	ND	J	ND	J				ND	J	ND	J	NA	
Radium 226	1	5 pCi/L	0.741		0.386		ND		0.751		ND		ND		0.462		ND					0.392		0.532		ND	U
Radium 228																											
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND		ND		ND		ND		ND					ND	J	ND		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND					ND		ND		NA	

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pCi/L = picoCuries per Liter
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H = Sample was prepped or analyzed beyond the specified holding time

GREEN STATION SURFACE IMPOUNDMENT

GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-11

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																					
			4/1/2016		6/2/2016		8/16/2016		10/25/2016		1/26/2017		5/1/2017		8/11/2017		9/20/2017		10/9/2017		5/7/2018		9/27/2018	
			Baseline Events																Detection		Detection			
Boron	0.08	NA	0.818	JB	0.645	J	0.736	JB^	0.736	J	0.920	JB	0.754	JB	0.695	JB	0.802	J	0.769	J	0.879		0.671	B
Calcium	0.5	NA	371		378	B	243		291		276		326	B	321		299		315	B	317		312	
Chloride	3	NA	1070	B	1740	B	1880	B	2000	B	1880	B	1910	B	2360	B	1520	B	1940	B	1860	B	2000	B
Fluoride	1	4 mg/L	ND	J	ND	J	ND	JB^	ND		ND	JB	ND	JB	ND		ND	JB	ND	J F1	ND	J	ND	J
Sulfate	5	NA	1170		1400		1150		1150	B	1060		1010	B	1410		797	J	1050	B	1020	B	1080	B
pH (Field Measurement)	0.10	NA	7.23		7.24		7.29		7.22		7.20		7.04		6.89		6.88		6.86		7.18		6.70	
Total Dissolved Solids	10	NA	3920	H	4610		4840		4490		4930		4830		5100		4880		5080		5070		5020	
APPENDIX IV CONSTIUENTS																								
Antimony	0.002	0.006 mg/L	ND		ND	JB	ND	JB	ND		ND	JB	ND	JB	ND	JB	ND	JB						
Arsenic	0.005	0.01 mg/L	ND	J	ND		ND		ND	J	ND	J	ND	JB	ND	J	ND	JB						
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J						
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Chromimum	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND	J						
Cobalt	0.005	0.006 mg/L	0.00494	J	0.00267	J	0.00277	J	0.00138	J	0.00131	J	0.00129	J	0.000654	J	0.000619	J						
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND		ND	J	ND	J	ND		ND	JB						
Lead	0.005	0.015 mg/L	ND		ND	JB	ND		ND		ND		ND		ND	J	ND							
Lithium	0.05	0.040 mg/L	0.0365	J	0.0685		0.0651		0.0544		0.0591		0.0545		0.0615		0.0596							
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Molybdenum	0.01	0.1 mg/L	0.0163		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND							
Radium 226	1	5 pCi/L	1.35		0.975		1.61		1.86		1.66		2.18		2.69		2.08							
Radium 228																								
Selenium	0.01	0.05 mg/L	ND		ND	J	ND	J	ND		ND	J	ND	JB	ND		ND	J						
Thallium	0.001	0.002 mg/L	ND	J	ND		ND		ND		ND		ND	J	ND	J	ND							

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pCi/L = picoCuries per Liter
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H = Sample was prepped or analyzed beyond the specified holding time
^ = ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,DLCK or MRL standard; Instrument related QC is outside acceptance limits
F1 = MS and/or MSD Recovery is outside acceptance limits

GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-12

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																					
			4/1/2016		6/2/2016		8/16/2016		10/25/2016		1/27/2017		5/1/2017		8/11/2017		9/20/2017		10/9/2017		5/7/2018		9/27/2018	
			Baseline Events																Detection		Detection			
Boron	0.08	NA	0.174	JB	0.186	J	0.280	JB	0.286	J	0.335	JB	0.306	JB	0.296	JB	0.334	J	0.274	J	0.352		0.335	B
Calcium	0.5	NA	68.6		95.1	B	81.0		99.4		87.7		90.9	B	88.5		94.5		92	B	93.5		96.4	
Chloride	3	NA	29.0	B	32.4	B	26.9	B	26.2	B	24.6	JB	21.7	B	21.0	JB	19.8	B	17.4	B	15.4		15.5	B
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND	J	ND	JB	ND	J	ND	J	ND	J
Sulfate	5	NA	168		146		95.7		64.0	B	54		41.3	B	33.8	J	25.3	J	19.7	B	13.5	B	14.3	
pH (Field Measurement)	0.10	NA	7.85		7.4		7.52		7.33		7.65		5.02		6.56		7.07		7.07		7.34		6.84	
Total Dissolved Solids	10	NA	472		745		726		677		679		676		674		758		641		649		595	
APPENDIX IV CONSTITUENTS																								
Antimony	0.002	0.006 mg/L	0.00204		ND	JB	ND	JB	ND		ND	JB	ND	JB	ND	JB	ND	JB						
Arsenic	0.005	0.01 mg/L	0.00596		0.00566		ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB						
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	J						
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Chromimum	0.003	0.1 mg/L	ND	J	ND	J	ND		ND		ND		ND		ND		ND	J						
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	J						
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND	J	ND	JB						
Lead	0.005	0.015 mg/L	ND	J	ND	JB	ND		ND		ND		ND		ND	J	ND	J						
Lithium	0.05	0.040 mg/L	0.0100	J	0.0194	J	0.0173	J	0.0208	J	0.0215	J	0.0169	JB	0.0244	J	0.0229	J						
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Molybdenum	0.01	0.1 mg/L	0.0769		0.0234		0.0141		0.0123		0.0100		ND	JB	ND	J	ND	J						
Radium 226	1	5 pCi/L	0.842		ND		ND		0.954		0.361		0.556		0.566		ND							
Radium 228																								
Selenium	0.01	0.05 mg/L	ND	J	ND		ND		ND		ND		ND	JB	ND		ND							
Thallium	0.001	0.002 mg/L	ND		ND		ND		ND		ND		ND	JB	ND		ND							

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GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-13

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																					
			4/1/2016		6/2/2016		8/16/2016		10/25/2016		1/27/2017		5/1/2017		8/11/2017		9/20/2017		10/9/2017		5/7/2018		9/27/2018	
			Baseline Events																Detection		Detection			
Boron	0.08	NA	ND	B	ND	J	ND	JB	ND	J	ND	JB	ND	JB	ND	J	ND	J	ND	J	0.0565	JB		
Calcium	0.5	NA	93.0		95.1	B	85.1		94.5		82.8		90.2	B	92.3		94.3		92.2	B	94.3		95.6	
Chloride	3	NA	20.5	B	25.2	B	22.3	B	24.8	B	22.2	JB	21.4	B	21.6	JB	21.3	JB	19.9	B	21.0		26.6	B
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND	J	ND	JB	ND	J	ND	J	ND	J
Sulfate	5	NA	118		118		106		104	B	96.2		98.1	J	96.6		88.0		96.4	B	87.6	B	109	B
pH (Field Measurement)	0.10	NA	6.78		6.9		6.97		6.86		7.22		8.25		6.48		6.64		6.62		7.03		6.54	
Total Dissolved Solids	10	NA	699		721		684		704		678		714		702		727		695		673		697	
APPENDIX IV CONSTITUENTS																								
Antimony	0.002	0.006 mg/L	ND		ND	JB	ND	JB	ND		ND	JB	ND	JB	ND	JB	ND	JB						
Arsenic	0.005	0.01 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB						
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J						
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Chromimum	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND	J						
Cobalt	0.005	0.006 mg/L	0.00378	J	0.00221	J	0.00178	J	0.00149	J	0.000720	J	0.00115	J	0.000868	J	0.000981	J						
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND	J	ND	JB						
Lead	0.005	0.015 mg/L	ND	J	ND	JB	ND		ND		ND		ND		ND		ND							
Lithium	0.05	0.040 mg/L	0.00929	J	0.0104	J	0.0123	J	0.0104	J	0.0113	J	ND		0.0111	J	ND							
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							
Molybdenum	0.01	0.1 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J						
Radium 226	1	5 pCi/L	ND		ND		ND		ND		ND		0.164		0.47		0.749							
Radium 228																								
Selenium	0.01	0.05 mg/L	ND		ND		ND	J	ND		ND		ND		ND		ND							
Thallium	0.001	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND							

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.

GREEN SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-14

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																						
			4/1/2016		6/2/2016		8/16/2016		10/25/2016		1/27/2017		5/1/2017		8/11/2017		9/20/2017		10/9/2017		5/7/2018		9/27/2018		
			Baseline Events																Detection		Detection				
Boron	0.08	NA	0.196	JB	0.186	J	0.234	JB	0.209	J	0.250	JB	0.234	JB	0.277	JB	0.273	J	0.241	J	0.254		0.232	B	
Calcium	0.5	NA	194		194	B	171		193		183		193	B	193		187		194	B	189		200		
Chloride	3	NA	161	B	184	B	185	B	193	B	191	B	185	B	212	B	230	B	199	B	198	B		189	B
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND	JB	ND	JB	ND	J	ND		ND	J	
Sulfate	5	NA	188		219		216		215	B	221		197	B	179		198	J	185		222	B		231	B
pH (Field Measurement)	0.10	NA	6.63		6.35		7.43		7.34		7.78		5.23		7.33		7.13		7.32		7.26		6.57		
Total Dissolved Solids	10	NA	1080		1130		1140		1130		1150		1170		1150		1240		1170		1180		1100		
APPENDIX IV CONSTITUENTS																									
Antimony	0.002	0.006 mg/L	ND		ND	JB	ND	JB	ND		ND	JB	ND	JB	ND	JB	ND	JB							
Arsenic	0.005	0.01 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB							
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J							
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND								
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND								
Chromium	0.003	0.1 mg/L	ND		ND		ND		ND		ND		ND		ND		ND	J							
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J							
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	JB	ND		ND	JB	ND	J	ND	JB							
Lead	0.005	0.015 mg/L	ND		ND	JB	ND		ND		ND		ND		ND		ND	J							
Lithium	0.05	0.040 mg/L	0.0400	J	0.0488	J	0.0477	J	0.0456	J	0.0486	J	0.0437	J	0.0494	J	0.0496	J							
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND								
Molybdenum	0.01	0.1 mg/L	ND	J	ND	J	ND		ND		ND		ND		ND		ND								
Radium 226	1	5 pCi/L	1.54		1.42		1.86		1.55		1.31		2.17		2.85		1.8								
Radium 228																									
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND		ND		ND		ND		ND								
Thallium	0.001	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND		ND								

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.

REID/HMPL STATION SURFACE IMPOUNDMENT

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-7

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/30/2016		5/31/2016		8/23/2016		10/18/2016		1/31/2017		5/11/2017		8/23/2017		9/22/2017		10/11/2017		4/6/2018		6/29/2018		9/26/2018	
			Baseline Events																Assessment		Re-Sample		Assessment			
Boron	0.08	NA	0.246		0.245	J	0.271	J	0.250	J	0.33	J	0.295	J	0.286	JB	0.268	J	0.320	J			0.249	J	0.299	J
Calcium	0.5	NA	41.1		42.1	B	42.3		47.6		41.5	B	41.1		45.1		40.6		41.8	B			46.6		41.6	B
Chloride	3	NA	2.48	JB	2.52	J	2.93	JB F1	3.26	B F1	4.02	B	5.73	B	4.99	F1 B	5.28	F1 B	3.65	B			6.88	B F1	5.38	B
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J F1	ND	J F1	ND	JB	ND	J	ND	J F1	ND	J F1	ND	J			ND	J	ND	J
Sulfate	5	NA	12.8		13.2		15.9		18.8		23.6	B	25.7		22.3	B	16.6	B	14.2	F1			23.4		18.7	B
pH (Field Measurement)	0.10	NA	7.39		7.47		7.6		7.16		7.74		7.26		7.23		7.36		7.36		7.01		7.17		6.94	
Total Dissolved Solids	10	NA	233		243		243		250		253		291		290		267		278				295		263	
APPENDIX IV CONSTIUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	JB	ND	JB	ND	J	ND		ND		ND	JB	ND	JB			ND	JB	ND	JB	NA	
Arsenic	0.005	0.01 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	JB	ND	JB	NA	
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Chromimum	0.003	0.1 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND	JB	ND	JB	NA	
Cobalt	0.005	0.006 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	J			ND	J	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J F1	ND	J F1	ND	JB	ND	J	ND	J F1	ND	J F1			ND	J	ND	J	ND	J
Lead	0.005	0.015 mg/L	ND	J	ND	JB	ND		ND	J	ND		ND		ND		ND				ND		ND		NA	
Lithium	0.05	0.040 mg/L	ND	J	ND		ND		ND		ND	J	ND		ND		ND				ND		ND		ND	
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		0.000135		ND				ND		NA		NA	
Molybdenum	0.01	0.1 mg/L	0.0109		0.0185		0.0136		0.0118		0.0127		ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Radium 226	1	5 pCi/L	0.865		0.685		0.473		ND		0.921		0.662		0.795		0.642				0.650		1.15		0.730	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND	J	ND		ND		ND		ND				ND		NA		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND	J	ND		ND		ND		ND		ND				ND		NA		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.
F1 = MS and/or MSD Recovery is outside acceptance limits.

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-8

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/30/2016		5/31/2016		8/23/2016		10/18/2016		1/31/2017		5/11/2017		8/23/2017		9/22/2017		10/11/2017		4/6/2018		6/29/2018		9/26/2018	
			Baseline Events																Assessment		Re-Sample		Assessment			
Boron	0.08	NA	1.46		1.07		1.3		1.00		1.74		1.60	B	1.37	B	1.32		1.54				1.32		1.46	
Calcium	0.5	NA	283		242	B	228		194		235	B	251		253		228		235	B			253		254	B
Chloride	3	NA	48.7		38.2	J	41.4	B	66.4	JB	42.1	B	43.6	B	47.1	B	58.5	JB	38.6	B			42.0	B	46.3	B
Fluoride	1	4 mg/L	ND	J	ND	J F1	ND	J	ND	J	ND	JB	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J
Sulfate	5	NA	1100	HB	1140		1120		1080		1220	B	1180	B	1110		1440	B	1040				1050		1180	B
pH (Field Measurement)	0.10	NA	7.13		7.14		7.37		7.06		7.50		7.10		7.11		7.10		7.15		6.97		7.09		6.93	
Total Dissolved Solids	10	NA	1930		1980		1960		2030		2010		1990		2090		2030		2100				2060		1990	
APPENDIX IV CONSTIUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	JB	ND	JB	ND	J	ND		ND	JB	ND	JB	ND	JB			ND	JB	ND	JB	NA	
Arsenic	0.005	0.01 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND		ND	J			ND	JB	ND	JB	NA	
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND		NA		NA	
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Chromimum	0.003	0.1 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND	JB	ND	JB	NA	
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND		ND	J	ND		ND				ND	J	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Lead	0.005	0.015 mg/L	ND		ND		ND		ND	J	ND		ND		ND		ND				ND		ND		NA	
Lithium	0.05	0.040 mg/L	0.0314	J	0.035	J	0.0314	J	0.0324	J	0.0408	J	0.0377	J	0.0367	J	0.0375	J			0.0347	J	0.0368	J	0.0375	J
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND	JB	ND				ND		NA		NA	
Molybdenum	0.01	0.1 mg/L	0.0138	J	0.0186		0.0157		0.0147		0.0173		0.0158		0.0175		0.0139				0.0147		0.0140		0.0149	
Radium 226	1	5 pCi/L	1.98		1.32		1.36		1.36		1.92		1.12		1.48		1.4				1.29		1.6		1.46	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND	J	ND		ND		ND		ND	J			ND		NA		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND		NA		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.
H = Sample was prepped or analyzed beyond the specified holding time.
F1 = MS and/or MSD Recovery is outside acceptance limits.

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-9

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/30/2016		5/31/2016		8/23/2016		10/18/2016		1/31/2017		5/11/2017		8/23/2017		9/22/2017		10/11/2017		4/6/2018		6/29/2018		9/26/2018	
			Baseline Events																		Assessment		Re-Sample		Assessment	
Boron	0.08	NA	0.316		0.264	J	0.333	J	0.257	J	0.431	J	0.362	JB	0.101	JB	0.0844	J	0.0816	J			0.239	J	0.0857	J
Calcium	0.5	NA	64.1		71.2	B	71.5		72.3		75.0	B	72.9		60.8		57.6		57.0	B			68.6		60.3	B
Chloride	3	NA	26.5	B	30.9		36.6	B	32.6	B	42.4	B	38.0	B	6.40	B	7.14	B	5.83	B			31.2	B	6.93	B
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J
Sulfate	5	NA	9.51		17.6		27.7		39.6		57.2	B	30.4		ND	J	ND	JB	ND	J			ND	J	0.481	JB
pH (Field Measurement)	0.10	NA	7.32		7.27		7.55		7.13		7.64		7.31		7.04		7.04		7.04		7.13		7.00		6.69	
Total Dissolved Solids	10	NA	363		389		403		409		465		435		303		308		316				399		293	
APPENDIX IV CONSTIUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	JB	ND	JB	ND	J	ND		ND	JB	ND	JB	ND	JB			ND	JB	ND	JB	NA	
Arsenic	0.005	0.01 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	JB	ND	JB	NA	
Barium	0.2	2 mg/L	1.1		1.03		0.889		0.635		0.827		0.833		0.253		0.227				0.967		0.777		0.288	
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Chromimum	0.003	0.1 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND	JB	ND	JB	NA	
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND		ND		ND		ND				ND	JB	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	J	ND	J			ND	JB	ND	J	ND	J
Lead	0.005	0.015 mg/L	ND		ND	JB	ND		ND	J	ND		ND		ND		ND				ND		ND		NA	
Lithium	0.05	0.040 mg/L	0.0120	J	0.0105	J	0.0102	J	0.0119	J	0.0179	J	0.0136	J	ND		ND				0.0108	JB	0.0112	J	ND	
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND	JB	ND	J			ND		NA		NA	
Molybdenum	0.01	0.1 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		ND		ND	
Radium 226	1	5 pCi/L	2.87		2.84		2.91		1.38		2.11		2.53		1.28		1.26				2.04		1.93		1.23	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND		NA		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
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B = Compound was found in the blank and sample.

REID/HMPL SURFACE IMPOUNDMENT - ANALYTICAL SUMMARY
MW-10

APPENDIX III CONSTITUENTS	Detection Limit	GWPS	DATE																							
			3/30/2016		5/31/2016		8/23/2016		10/18/2016		2/9/2017		5/11/2017		8/23/2017		9/22/2017		10/11/2017		4/6/2018		6/29/2018		9/26/2018	
			Baseline Events																Assessment		Re-Sample		Assessment			
Boron	0.08	NA	0.416		0.336	J	0.460	J	0.489	J	0.540	JB	0.679	JB	0.560	JB	0.543	J	0.637	J			0.419	J	0.464	J
Calcium	0.5	NA	16.5		21.3	B	23		36		14.3	B	13.1		33.7		21.4		11.9	B			9.94		10.5	B
Chloride	3	NA	31.5	B	26.9		28.9	B	31.6	B	29.4	JB	29.1	B	32.3	B	29.7	B	25.8	B			26.7	B	27.9	B
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND		ND	J	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J
Sulfate	5	NA	208	HB	135		144		152		145		168		177	B	226	B	147				129		138	B
pH (Field Measurement)	0.10	NA	9.72		8.95		8.1		7.53		7.08		9.84		8.14		8.14		9.19		9.37		9.15		8.98	
Total Dissolved Solids	10	NA	644		532		558		602		679		763		758		763		728				721		673	
APPENDIX IV CONSTIUENTS																										
Antimony	0.002	0.006 mg/L	ND		ND	JB	ND	JB	ND	J	ND		ND	JB	ND	JB	ND	JB			ND	JB	ND	JB	NA	
Arsenic	0.005	0.01 mg/L	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND	J			ND	JB	ND	JB	NA	
Barium	0.2	2 mg/L	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J	ND	JB	ND	J			ND	J	ND	J	ND	J
Beryllium	0.002	0.004 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Cadmium	0.001	0.005 mg/L	ND		ND		ND		ND		ND		ND		ND		ND				ND		NA		NA	
Chromimum	0.003	0.1 mg/L	ND	J	ND	J	ND	J	ND		ND	J	ND	J	ND	JB	ND				ND	JB	ND	JB	NA	
Cobalt	0.005	0.006 mg/L	ND		ND	J	ND	J	ND	J	ND	J	ND	J	ND	JB	ND	J			ND	J	ND	J	NA	
Fluoride	1	4 mg/L	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Lead	0.005	0.015 mg/L	ND		ND	JB	ND		ND	J	ND	J	ND	J	ND		ND				ND	J	ND		NA	
Lithium	0.05	0.040 mg/L	0.339		0.199		0.219		0.0736		0.481		0.607		0.204		0.345				0.694		0.630		0.570	
Mercury	0.0002	0.002 mg/L	ND		ND		ND		ND		ND		ND		ND	JB	ND				ND		NA		NA	
Molybdenum	0.01	0.1 mg/L	0.0170	J	0.0171		0.0141		ND	J	0.0119		ND	J	ND	J	ND	J			ND	J	ND	J	ND	J
Radium 226	1	5 pCi/L	0.612		ND		0.715		ND		0.422		0.287		0.619		0.391				0.512		0.683		0.704	
Radium 228																										
Selenium	0.01	0.05 mg/L	ND		ND		ND		ND	J	ND		ND		ND		ND				ND		NA		NA	
Thallium	0.001	0.002 mg/L	ND		ND	J	ND		ND		ND		ND		ND		ND				ND		NA		NA	

*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Maximum Contaminant Level (MCL)
GWPS = Groundwater Protection Standard
NA = Not Analyzed
ND = Not Detected at or above Method Detection Limit
pCi/L = picoCuries per Liter
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
B = Compound was found in the blank and sample.
H = Sample was prepped or analyzed beyond the specified holding time.

Attachment B

GREEN STATION LANDFILL

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-153438-3

TestAmerica SDG: GL Groundwater CCR Round 8

Client Project/Site: Sebree Station, Green Landfill (GL)

Sampling Event: Big Rivers CCR/SemiAnnual GW

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

7/16/2018 5:55:00 PM

Roxanne Cisneros, Senior Project Manager

(615)301-5761

roxanne.cisneros@testamericainc.com

LINKS

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

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-153438-1	MW-1	Water	06/04/18 12:00	06/08/18 09:20
490-153438-2	MW-2	Water	06/05/18 15:40	06/08/18 09:20
490-153438-3	MW-3A	Water	06/05/18 14:20	06/08/18 09:20
490-153438-4	MW-4	Water	06/05/18 13:05	06/08/18 09:20
490-153438-5	MW-5	Water	06/05/18 10:15	06/08/18 09:20
490-153438-6	MW-6	Water	06/04/18 13:35	06/08/18 09:20
490-153438-7	DUPE	Water	06/05/18 14:35	06/08/18 09:20
490-153438-8	FIELD BLANK	Water	06/05/18 15:57	06/08/18 09:20

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Job ID: 490-153438-3

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-153438-3

Comments

No additional comments.

Receipt

The samples were received on 6/8/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.1° C, 0.4° C, 1.4° C and 3.4° C.

HPLC/IC

Method(s) 9056A: The method blank for analytical batch 490-523964 contained Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-3A (490-153438-3), MW-4 (490-153438-4), MW-5 (490-153438-5) and DUPE (490-153438-7). Elevated reporting limits (RLs) are provided.

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

Metals

Method(s) 6020A: The continuing calibration verification (CCV) associated with batch 180-248906 recovered above the upper control limit for beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

Narrative

Job Narrative 490-153438-4

RAD

Method 903.0, 9315: Radium-226 Prep Batch 160-370240:

The method blank (MB) exhibited a negative result greater in magnitude than the 3 sigma TPU: (MB 160-370240/21-A)
This occurrence was evaluated and determined to be random in nature. Sporadic occurrences such as this are statistically expected. No further action is required.

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

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-1
Date Collected: 06/04/18 12:00
Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-1
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.501	J	1.00	0.0100	mg/L	-		06/22/18 12:49	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0319	J	0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:20	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000351	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Arsenic	0.000650	J B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Barium	0.0728	J	0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Cadmium	ND		0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Chromium	0.00186	J B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Cobalt	0.000393	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Lead	ND		0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Molybdenum	0.00133	J	0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Selenium	ND		0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 19:58	1
Thallium	ND		0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 19:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 13:41	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.311		0.190	0.192	1.00	0.234	pCi/L	06/13/18 08:51	07/06/18 19:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					06/13/18 08:51	07/06/18 19:49	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.61		0.611	0.629	1.00	0.838	pCi/L	06/13/18 09:16	07/06/18 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					06/13/18 09:16	07/06/18 11:52	1
Y Carrier	41.1		40 - 110					06/13/18 09:16	07/06/18 11:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.92		0.640	0.658	5.00	0.838	pCi/L		07/08/18 16:53	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-2
Date Collected: 06/05/18 15:40
Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-2
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.208	J	1.00	0.0100	mg/L	-		06/22/18 13:33	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:25	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000278	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Arsenic	0.0327	B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Barium	0.369		0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Cadmium	ND		0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Chromium	0.00190	J B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Cobalt	0.00134	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Lead	ND		0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Molybdenum	0.00317	J	0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Selenium	ND		0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 20:01	1
Thallium	ND		0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 20:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 13:44	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.499		0.215	0.220	1.00	0.206	pCi/L	06/13/18 08:51	07/06/18 19:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110					06/13/18 08:51	07/06/18 19:49	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.680		0.288	0.295	1.00	0.407	pCi/L	06/13/18 09:16	07/06/18 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110					06/13/18 09:16	07/06/18 11:52	1
Y Carrier	82.2		40 - 110					06/13/18 09:16	07/06/18 11:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.18		0.359	0.368	5.00	0.407	pCi/L		07/08/18 16:53	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-3A

Date Collected: 06/05/18 14:20

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.414	J	1.00	0.0100	mg/L	-		06/22/18 13:48	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.699		0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:31	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000297	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Arsenic	0.000620	J B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Barium	0.0404	J	0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Cadmium	0.000209	J	0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Chromium	0.00227	J B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Cobalt	0.000144	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Lead	ND		0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Molybdenum	ND		0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Selenium	0.000558	J	0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 20:10	1
Thallium	ND		0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 20:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 13:47	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.463		0.202	0.206	1.00	0.186	pCi/L	06/13/18 08:51	07/06/18 19:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					06/13/18 08:51	07/06/18 19:49	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.717		0.251	0.260	1.00	0.329	pCi/L	06/13/18 09:16	07/06/18 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					06/13/18 09:16	07/06/18 11:52	1
Y Carrier	92.3		40 - 110					06/13/18 09:16	07/06/18 11:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.18		0.322	0.332	5.00	0.329	pCi/L		07/08/18 16:53	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-4
Date Collected: 06/05/18 13:05
Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-4
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.0662	J	1.00	0.0100	mg/L	-		06/22/18 14:03	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.81		0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:36	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000189	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Arsenic	0.000778	J B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Barium	0.0287	J	0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/28/18 12:36	1
Cadmium	ND		0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Chromium	0.00230	J B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Cobalt	0.000241	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Lead	ND		0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Molybdenum	ND		0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Selenium	0.00125	J	0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 20:13	1
Thallium	ND		0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 20:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000824		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 13:49	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.553		0.243	0.248	1.00	0.238	pCi/L	06/13/18 08:51	07/06/18 19:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					06/13/18 08:51	07/06/18 19:49	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.07		0.306	0.321	1.00	0.373	pCi/L	06/13/18 09:16	07/06/18 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					06/13/18 09:16	07/06/18 11:53	1
Y Carrier	88.2		40 - 110					06/13/18 09:16	07/06/18 11:53	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.62		0.391	0.406	5.00	0.373	pCi/L		07/08/18 16:53	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-5
Date Collected: 06/05/18 10:15
Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-5
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.141	J	1.00	0.0100	mg/L	-		06/22/18 14:18	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.459		0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000285	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Arsenic	0.000801	J B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Barium	0.0148	J	0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Cadmium	ND		0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Chromium	0.00363	B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Cobalt	0.000182	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Lead	0.000151	J	0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Molybdenum	ND		0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Selenium	0.00132	J	0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 20:15	1
Thallium	0.0000550	J	0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 20:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 13:52	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0703	U	0.112	0.112	1.00	0.197	pCi/L	06/13/18 08:51	07/06/18 19:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					06/13/18 08:51	07/06/18 19:47	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.792		0.273	0.282	1.00	0.365	pCi/L	06/13/18 09:16	07/06/18 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					06/13/18 09:16	07/06/18 11:53	1
Y Carrier	91.6		40 - 110					06/13/18 09:16	07/06/18 11:53	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.862		0.295	0.303	5.00	0.365	pCi/L		07/08/18 16:53	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-6
Date Collected: 06/04/18 13:35
Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-6
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.374	J	1.00	0.0100	mg/L	-		06/22/18 14:33	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0650		0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:48	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000131	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Arsenic	0.000745	J B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Barium	0.00930	J	0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Cadmium	ND		0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Chromium	0.00250	J B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Cobalt	0.000748	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Lead	ND		0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Molybdenum	0.00185	J	0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Selenium	0.00158	J	0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 20:18	1
Thallium	ND		0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 20:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 13:59	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.136	U	0.156	0.156	1.00	0.251	pCi/L	06/13/18 08:51	07/06/18 19:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/13/18 08:51	07/06/18 19:47	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.256	U	0.243	0.244	1.00	0.392	pCi/L	06/13/18 09:16	07/06/18 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					06/13/18 09:16	07/06/18 11:53	1
Y Carrier	79.6		40 - 110					06/13/18 09:16	07/06/18 11:53	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.392		0.289	0.290	5.00	0.392	pCi/L		07/08/18 16:53	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: DUPE
Date Collected: 06/05/18 14:35
Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-7
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.410	J	1.00	0.0100	mg/L	-		06/22/18 14:47	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.716		0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:53	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000150	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Arsenic	0.000873	J B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Barium	0.0430	J	0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/28/18 12:45	1
Cadmium	0.000204	J	0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Chromium	0.00329	B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Cobalt	0.000126	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Lead	0.000193	J	0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Molybdenum	ND		0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Selenium	0.00161	J	0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 20:21	1
Thallium	ND		0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 20:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 14:02	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.521		0.234	0.239	1.00	0.258	pCi/L	06/13/18 08:51	07/06/18 19:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					06/13/18 08:51	07/06/18 19:47	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.457		0.237	0.241	1.00	0.347	pCi/L	06/13/18 09:16	07/06/18 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					06/13/18 09:16	07/06/18 11:53	1
Y Carrier	89.7		40 - 110					06/13/18 09:16	07/06/18 11:53	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.978		0.333	0.339	5.00	0.347	pCi/L		07/08/18 16:53	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: FIELD BLANK

Date Collected: 06/05/18 15:57

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.0198	J	1.00	0.0100	mg/L	-		06/22/18 15:02	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L	-	06/20/18 20:14	06/22/18 17:59	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000910	J B	0.00200	0.0000213	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Arsenic	0.000611	J B	0.00500	0.000118	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Barium	ND		0.200	0.000270	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Beryllium	ND		0.00200	0.000102	mg/L	-	06/20/18 20:12	06/28/18 12:48	1
Cadmium	ND		0.00100	0.000152	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Chromium	0.00251	J B	0.00300	0.000339	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Cobalt	0.0000520	J B	0.00500	0.0000218	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Lead	ND		0.00500	0.0000675	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Molybdenum	ND		0.0100	0.000873	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Selenium	0.00119	J	0.0100	0.000348	mg/L	-	06/20/18 20:12	06/27/18 20:24	1
Thallium	ND		0.00100	0.0000360	mg/L	-	06/20/18 20:12	06/27/18 20:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L	-	06/24/18 12:56	06/25/18 14:05	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0209	U	0.112	0.112	1.00	0.229	pCi/L	06/13/18 08:51	07/06/18 19:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					06/13/18 08:51	07/06/18 19:48	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.106	U	0.184	0.184	1.00	0.313	pCi/L	06/13/18 09:16	07/06/18 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					06/13/18 09:16	07/06/18 11:53	1
Y Carrier	93.1		40 - 110					06/13/18 09:16	07/06/18 11:53	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.127	U	0.215	0.215	5.00	0.313	pCi/L		07/08/18 16:53	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-523964/3

Matrix: Water

Analysis Batch: 523964

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			06/22/18 12:04	1

Lab Sample ID: LCS 490-523964/4

Matrix: Water

Analysis Batch: 523964

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	1.000		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-523964/5

Matrix: Water

Analysis Batch: 523964

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.00	1.026		mg/L		102	80 - 120	3	20

Lab Sample ID: 490-153438-1 MS

Matrix: Water

Analysis Batch: 523964

Client Sample ID: MW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.501	J	1.00	1.561		mg/L		106	80 - 120

Lab Sample ID: 490-153438-1 MSD

Matrix: Water

Analysis Batch: 523964

Client Sample ID: MW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.501	J	1.00	1.361		mg/L		86	80 - 120	14	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-248199/1-A

Matrix: Water

Analysis Batch: 248484

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 248199

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		06/20/18 20:14	06/22/18 16:28	1

Lab Sample ID: LCS 180-248199/2-A

Matrix: Water

Analysis Batch: 248484

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 248199

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9852		mg/L		99	80 - 120

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

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

Lab Sample ID: 180-78780-G-2-C MS

Matrix: Water

Analysis Batch: 248484

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

Prep Batch: 248199

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	0.9925		mg/L		99	75 - 125

Lab Sample ID: 180-78780-G-2-D MSD

Matrix: Water

Analysis Batch: 248484

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 248199

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	1.016		mg/L		102	75 - 125	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-248198/1-A

Matrix: Water

Analysis Batch: 248906

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 248198

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00004900	J	0.00200	0.0000213	mg/L		06/20/18 20:12	06/27/18 19:21	1
Arsenic	0.0001840	J	0.00500	0.000118	mg/L		06/20/18 20:12	06/27/18 19:21	1
Barium	ND		0.200	0.000270	mg/L		06/20/18 20:12	06/27/18 19:21	1
Beryllium	ND		0.00200	0.000102	mg/L		06/20/18 20:12	06/27/18 19:21	1
Cadmium	ND		0.00100	0.000152	mg/L		06/20/18 20:12	06/27/18 19:21	1
Chromium	0.001034	J	0.00300	0.000339	mg/L		06/20/18 20:12	06/27/18 19:21	1
Cobalt	0.00002900	J	0.00500	0.0000218	mg/L		06/20/18 20:12	06/27/18 19:21	1
Lead	ND		0.00500	0.0000675	mg/L		06/20/18 20:12	06/27/18 19:21	1
Molybdenum	ND		0.0100	0.000873	mg/L		06/20/18 20:12	06/27/18 19:21	1
Selenium	ND		0.0100	0.000348	mg/L		06/20/18 20:12	06/27/18 19:21	1
Thallium	ND		0.00100	0.0000360	mg/L		06/20/18 20:12	06/27/18 19:21	1

Lab Sample ID: LCS 180-248198/2-A

Matrix: Water

Analysis Batch: 248906

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 248198

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.4986		mg/L		100	80 - 120
Arsenic	0.0400	0.03823		mg/L		96	80 - 120
Barium	2.00	1.851		mg/L		93	80 - 120
Beryllium	0.0500	0.04617		mg/L		92	80 - 120
Cadmium	0.0500	0.05131		mg/L		103	80 - 120
Chromium	0.200	0.2049		mg/L		102	80 - 120
Cobalt	0.500	0.4769		mg/L		95	80 - 120
Lead	0.0200	0.01945		mg/L		97	80 - 120
Molybdenum	1.00	0.9510		mg/L		95	80 - 120
Selenium	0.0100	0.01016		mg/L		102	80 - 120
Thallium	0.0500	0.04817		mg/L		96	80 - 120

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-78780-G-1-B MS

Matrix: Water

Analysis Batch: 248906

Client Sample ID: Matrix Spike

Prep Type: Total Recoverable

Prep Batch: 248198

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000396	J B	0.500	0.5035		mg/L		101	75 - 125
Arsenic	0.00136	J B	0.0400	0.03897		mg/L		94	75 - 125
Barium	0.0247	J	2.00	1.901		mg/L		94	75 - 125
Beryllium	ND		0.0500	0.04733		mg/L		95	75 - 125
Cadmium	ND		0.0500	0.05152		mg/L		103	75 - 125
Chromium	0.00191	J B	0.200	0.2037		mg/L		101	75 - 125
Cobalt	0.000539	J B	0.500	0.4722		mg/L		94	75 - 125
Lead	ND		0.0200	0.01952		mg/L		98	75 - 125
Molybdenum	0.00484	J	1.00	0.9436		mg/L		94	75 - 125
Selenium	0.00161	J	0.0100	0.01139		mg/L		98	75 - 125
Thallium	0.000199	J	0.0500	0.04830		mg/L		96	75 - 125

Lab Sample ID: 180-78780-G-1-C MSD

Matrix: Water

Analysis Batch: 248906

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 248198

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000396	J B	0.500	0.5070		mg/L		101	75 - 125	1	20
Arsenic	0.00136	J B	0.0400	0.03948		mg/L		95	75 - 125	1	20
Barium	0.0247	J	2.00	1.891		mg/L		93	75 - 125	1	20
Beryllium	ND		0.0500	0.04704		mg/L		94	75 - 125	1	20
Cadmium	ND		0.0500	0.05099		mg/L		102	75 - 125	1	20
Chromium	0.00191	J B	0.200	0.2063		mg/L		102	75 - 125	1	20
Cobalt	0.000539	J B	0.500	0.4629		mg/L		92	75 - 125	2	20
Lead	ND		0.0200	0.01956		mg/L		98	75 - 125	0	20
Molybdenum	0.00484	J	1.00	0.9500		mg/L		95	75 - 125	1	20
Selenium	0.00161	J	0.0100	0.01207		mg/L		105	75 - 125	6	20
Thallium	0.000199	J	0.0500	0.04806		mg/L		96	75 - 125	0	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-370240/21-A

Matrix: Water

Analysis Batch: 374245

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 370240

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.1310	U	0.0817	0.0825	1.00	0.305	pCi/L	06/13/18 08:51	07/06/18 19:46	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.8		40 - 110					06/13/18 08:51	07/06/18 19:46	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-370240/1-A

Matrix: Water

Analysis Batch: 374218

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 370240

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.8	11.13		1.36	1.00	0.267	pCi/L	94	68 - 137
Carrier	%Yield	LCS Qualifier	Limits						
Ba Carrier	97.6		40 - 110						

Lab Sample ID: LCSD 160-370240/2-A

Matrix: Water

Analysis Batch: 374218

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 370240

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.8	10.48		1.31	1.00	0.236	pCi/L	89	68 - 137	0.24	1
Carrier	%Yield	LCSD Qualifier	Limits								
Ba Carrier	101		40 - 110								

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-370246/21-A

Matrix: Water

Analysis Batch: 374349

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 370246

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1866	U	0.273	0.273	1.00	0.457	pCi/L	06/13/18 09:16	07/06/18 11:56	1
Carrier	%Yield	MB Qualifier	Limits							
Ba Carrier	80.8		40 - 110							
Y Carrier	89.7		40 - 110							
								Prepared	Analyzed	Dil Fac
								06/13/18 09:16	07/06/18 11:56	1
								06/13/18 09:16	07/06/18 11:56	1

Lab Sample ID: LCS 160-370246/1-A

Matrix: Water

Analysis Batch: 374350

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 370246

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	8.17	9.015		1.06	1.00	0.363	pCi/L	110	56 - 140
Carrier	%Yield	LCS Qualifier	Limits						
Ba Carrier	97.6		40 - 110						
Y Carrier	86.4		40 - 110						

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-370246/2-A

Matrix: Water

Analysis Batch: 374350

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 370246

					Total								
Analyte			Spike Added	LCSD Result	LCSD Qual	Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228			8.17	8.487		1.01	1.00	0.369	pCi/L	104	56 - 140	0.25	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits										
Ba Carrier	101		40 - 110										
Y Carrier	89.0		40 - 110										

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-78507-A-4 DU

Matrix: Water

Analysis Batch: 374406

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	-0.0470	U	0.1799	U	0.198	5.00	0.319	pCi/L	0.57	

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

HPLC/IC

Analysis Batch: 523964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total/NA	Water	9056A	
490-153438-2	MW-2	Total/NA	Water	9056A	
490-153438-3	MW-3A	Total/NA	Water	9056A	
490-153438-4	MW-4	Total/NA	Water	9056A	
490-153438-5	MW-5	Total/NA	Water	9056A	
490-153438-6	MW-6	Total/NA	Water	9056A	
490-153438-7	DUPE	Total/NA	Water	9056A	
490-153438-8	FIELD BLANK	Total/NA	Water	9056A	
MB 490-523964/3	Method Blank	Total/NA	Water	9056A	
LCS 490-523964/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-523964/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-153438-1 MS	MW-1	Total/NA	Water	9056A	
490-153438-1 MSD	MW-1	Total/NA	Water	9056A	

Metals

Prep Batch: 248198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total Recoverable	Water	3005A	
490-153438-2	MW-2	Total Recoverable	Water	3005A	
490-153438-3	MW-3A	Total Recoverable	Water	3005A	
490-153438-4	MW-4	Total Recoverable	Water	3005A	
490-153438-5	MW-5	Total Recoverable	Water	3005A	
490-153438-6	MW-6	Total Recoverable	Water	3005A	
490-153438-7	DUPE	Total Recoverable	Water	3005A	
490-153438-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-248198/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-248198/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-78780-G-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-78780-G-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Prep Batch: 248199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total Recoverable	Water	3005A	
490-153438-2	MW-2	Total Recoverable	Water	3005A	
490-153438-3	MW-3A	Total Recoverable	Water	3005A	
490-153438-4	MW-4	Total Recoverable	Water	3005A	
490-153438-5	MW-5	Total Recoverable	Water	3005A	
490-153438-6	MW-6	Total Recoverable	Water	3005A	
490-153438-7	DUPE	Total Recoverable	Water	3005A	
490-153438-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-248199/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-248199/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-78780-G-2-C MS	Matrix Spike	Total Recoverable	Water	3005A	
180-78780-G-2-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 248484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total Recoverable	Water	6010C	248199
490-153438-2	MW-2	Total Recoverable	Water	6010C	248199

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Metals (Continued)

Analysis Batch: 248484 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-3	MW-3A	Total Recoverable	Water	6010C	248199
490-153438-4	MW-4	Total Recoverable	Water	6010C	248199
490-153438-5	MW-5	Total Recoverable	Water	6010C	248199
490-153438-6	MW-6	Total Recoverable	Water	6010C	248199
490-153438-7	DUPE	Total Recoverable	Water	6010C	248199
490-153438-8	FIELD BLANK	Total Recoverable	Water	6010C	248199
MB 180-248199/1-A	Method Blank	Total Recoverable	Water	6010C	248199
LCS 180-248199/2-A	Lab Control Sample	Total Recoverable	Water	6010C	248199
180-78780-G-2-C MS	Matrix Spike	Total Recoverable	Water	6010C	248199
180-78780-G-2-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010C	248199

Analysis Batch: 248906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total Recoverable	Water	6020A	248198
490-153438-2	MW-2	Total Recoverable	Water	6020A	248198
490-153438-3	MW-3A	Total Recoverable	Water	6020A	248198
490-153438-4	MW-4	Total Recoverable	Water	6020A	248198
490-153438-5	MW-5	Total Recoverable	Water	6020A	248198
490-153438-6	MW-6	Total Recoverable	Water	6020A	248198
490-153438-7	DUPE	Total Recoverable	Water	6020A	248198
490-153438-8	FIELD BLANK	Total Recoverable	Water	6020A	248198
MB 180-248198/1-A	Method Blank	Total Recoverable	Water	6020A	248198
LCS 180-248198/2-A	Lab Control Sample	Total Recoverable	Water	6020A	248198
180-78780-G-1-B MS	Matrix Spike	Total Recoverable	Water	6020A	248198
180-78780-G-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	248198

Analysis Batch: 249001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-4	MW-4	Total Recoverable	Water	6020A	248198
490-153438-7	DUPE	Total Recoverable	Water	6020A	248198
490-153438-8	FIELD BLANK	Total Recoverable	Water	6020A	248198

Prep Batch: 524345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total/NA	Water	7470A	
490-153438-2	MW-2	Total/NA	Water	7470A	
490-153438-3	MW-3A	Total/NA	Water	7470A	
490-153438-4	MW-4	Total/NA	Water	7470A	
490-153438-5	MW-5	Total/NA	Water	7470A	
490-153438-6	MW-6	Total/NA	Water	7470A	
490-153438-7	DUPE	Total/NA	Water	7470A	
490-153438-8	FIELD BLANK	Total/NA	Water	7470A	

Analysis Batch: 524624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total/NA	Water	7470A	524345
490-153438-2	MW-2	Total/NA	Water	7470A	524345
490-153438-3	MW-3A	Total/NA	Water	7470A	524345
490-153438-4	MW-4	Total/NA	Water	7470A	524345
490-153438-5	MW-5	Total/NA	Water	7470A	524345
490-153438-6	MW-6	Total/NA	Water	7470A	524345

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Metals (Continued)

Analysis Batch: 524624 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-7	DUPE	Total/NA	Water	7470A	524345
490-153438-8	FIELD BLANK	Total/NA	Water	7470A	524345

Rad

Prep Batch: 370240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total/NA	Water	PrecSep-21	
490-153438-2	MW-2	Total/NA	Water	PrecSep-21	
490-153438-3	MW-3A	Total/NA	Water	PrecSep-21	
490-153438-4	MW-4	Total/NA	Water	PrecSep-21	
490-153438-5	MW-5	Total/NA	Water	PrecSep-21	
490-153438-6	MW-6	Total/NA	Water	PrecSep-21	
490-153438-7	DUPE	Total/NA	Water	PrecSep-21	
490-153438-8	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-370240/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-370240/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-370240/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 370246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-153438-1	MW-1	Total/NA	Water	PrecSep_0	
490-153438-2	MW-2	Total/NA	Water	PrecSep_0	
490-153438-3	MW-3A	Total/NA	Water	PrecSep_0	
490-153438-4	MW-4	Total/NA	Water	PrecSep_0	
490-153438-5	MW-5	Total/NA	Water	PrecSep_0	
490-153438-6	MW-6	Total/NA	Water	PrecSep_0	
490-153438-7	DUPE	Total/NA	Water	PrecSep_0	
490-153438-8	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-370246/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-370246/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-370246/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-1

Date Collected: 06/04/18 12:00

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 12:49	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:20	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 19:58	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 13:41	CSL	TAL NSH
Total/NA	Prep	PrecSep-21			1000.16 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374350	07/06/18 19:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.16 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:52	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 06/05/18 15:40

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 13:33	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:25	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 20:01	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 13:44	CSL	TAL NSH
Total/NA	Prep	PrecSep-21			1000.31 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374350	07/06/18 19:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.31 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:52	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Client Sample ID: MW-3A

Date Collected: 06/05/18 14:20

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 13:48	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:31	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 20:10	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 13:47	CSL	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.56 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374350	07/06/18 19:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.56 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:52	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 06/05/18 13:05

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 14:03	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:36	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 20:13	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			249001	06/28/18 12:36	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 13:49	CSL	TAL NSH
Total/NA	Prep	PrecSep-21			1000.32 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374350	07/06/18 19:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.32 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Client Sample ID: MW-5

Date Collected: 06/05/18 10:15

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 14:18	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 20:15	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 13:52	CSL	TAL NSH
Total/NA	Prep	PrecSep-21			1000.18 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374349	07/06/18 19:47	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.18 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: MW-6

Date Collected: 06/04/18 13:35

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 14:33	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:48	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 20:18	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 13:59	CSL	TAL NSH
Total/NA	Prep	PrecSep-21			1000.30 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374349	07/06/18 19:47	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.30 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 06/05/18 14:35

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 14:47	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:53	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 20:21	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			249001	06/28/18 12:45	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 14:02	CSL	TAL NSH
Total/NA	Prep	PrecSep-21			999.82 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374349	07/06/18 19:47	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.82 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 06/05/18 15:57

Date Received: 06/08/18 09:20

Lab Sample ID: 490-153438-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			523964	06/22/18 15:02	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	248199	06/20/18 20:14	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			248484	06/22/18 17:59	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			248906	06/27/18 20:24	RSK	TAL PIT

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-153438-8

Date Collected: 06/05/18 15:57

Matrix: Water

Date Received: 06/08/18 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	248198	06/20/18 20:12	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			249001	06/28/18 12:48	RSK	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	524345	06/24/18 12:56	CSL	TAL NSH
Total/NA	Analysis	7470A		1			524624	06/25/18 14:05	CSL	TAL NSH
Total/NA	Prep	PrecSep-21			1000.26 mL	1.0 g	370240	06/13/18 08:51	JLC	TAL SL
Total/NA	Analysis	903.0		1			374349	07/06/18 19:48	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.26 mL	1.0 g	370246	06/13/18 09:16	JLC	TAL SL
Total/NA	Analysis	904.0		1			374350	07/06/18 11:53	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			374406	07/08/18 16:53	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL NSH

Protocol References:

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18 *
The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:				
Analysis Method	Prep Method	Matrix	Analyte	
9056A		Water	Fluoride	

Laboratory: TestAmerica Pittsburgh

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	88-0690	06-27-18 *
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-18 *
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-18 *
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18 *
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18
Michigan	State Program	5	9005	06-30-18 *

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

TestAmerica Nashville

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Laboratory: TestAmerica St. Louis (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
Missouri	State Program	7	780	06-30-18 *
Nevada	State Program	9	MO000542018-1	07-31-18 *
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-18 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18 *
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18 *
Texas	NELAP	6	T104704193-17-11	07-31-18 *
US Fish & Wildlife	Federal		058448	07-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18 *
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18 *

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

TestAmerica Nashville

COOLER RECEIPT FORM



Cooler Received/Opened On 6/8/2018 @ 0920

Time Samples Removed From Cooler 13:02 Time Samples Placed In Storage 13:30 (2 Hour Window)

1. Tracking # 3423 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17610176 pH Strip Lot H2695560 Chlorine Strip Lot 072617F

2. Temperature of rep. sample or temp blank when opened: 1.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 (Front)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (Initial) JD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry Ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES NO NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # KD

I certify that I unloaded the cooler and answered questions 7-14 (Initial) KD

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (Initial) KD

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (Initial) KD

I certify that I attached a label with the unique LIMS number to each container (Initial) KD

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES...NO...# NO

COOLER RECEIPT FORM

Cooler Received/Opened On 6/8/2018 @0920

Time Samples Removed From Cooler 13:02 Time Samples Placed In Storage 13:30 (2 Hour Window)

1. Tracking # 3797 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960353 pH Strip Lot HL695560 Chlorine Strip Lot 072617F

2. Temperature of rep. sample or temp blank when opened: 5.1 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) KA

7. Were custody seals on containers: YES NO and intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # KA

I certify that I unloaded the cooler and answered questions 7-14 (initial) KA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) KA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) KA

I certify that I attached a label with the unique LIMS number to each container (initial) KA

21. Were there Non-Conformance issues at login? YES...NO... Was a NCM generated? YES...NO...#

COOLER RECEIPT FORM

Cooler Received/Opened On 6/8/2018 @0920

Time Samples Removed From Cooler 13:02 Time Samples Placed In Storage 13:30 (2 Hour Window)

1. Tracking # 3401 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960353 pH Strip Lot H26A5560 Chlorine Strip Lot 072617F

2. Temperature of rep. sample or temp blank when opened: 6.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) ca

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # KA

I certify that I unloaded the cooler and answered questions 7-14 (initial) KA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) KA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) KA

I certify that I attached a label with the unique LIMS number to each container (initial) KA

21. Were there Non-Conformance issues at login? YES...NO... Was a NCM generated? YES...NO...# 0

COOLER RECEIPT FORM

Cooler Received/Opened On 6/8/2018 @ 0920

Time Samples Removed From Cooler 13:02 Time Samples Placed In Storage 13:30 (2 Hour Window)

1. Tracking # 3412 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID Raynger pH Strip Lot 11695560 Chlorine Strip Lot 072619F

2. Temperature of rep. sample or temp blank when opened: 3.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) ASD

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES NO...NA If multiple coolers, sequence # KA

I certify that I unloaded the cooler and answered questions 7-14 (initial) KA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) KA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) KA

I certify that I attached a label with the unique LIMS number to each container (initial) KA

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO...#

TestAmerica Nashville
2960 Foster Creighton Drive

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

Chain of Custody Record

LCC: 490
53438

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Client Contact: Samantha Howard
Company: Big Rivers Electric Corporation
Address: PO Box 24
City/State/Zip: Henderson, KY 42419
(270) 844-6027 Phone FAX
(xxx) xxx-xxxx
Project Name: GL OCR Groundwater-Round 8/2nd Semi-Annual
Site: Seabee Station, Green Landfill (GL)
P O #: Purchase Order-see DOCS

Project Manager: Samantha Howard
Tel/Fax: (270) 844-6027
Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS
TAT if different from Below
☒ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Site Contact: Greg Dick
Lab Contact: Roxanne Cisneros

Date: 06/07/2018
Carrier: FedEx

COC No: 1 of 2 COCs

Sampler: Greg Dick

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.
MW-1	6/4/18	1200	G	Water	8
MW-2	6/5/18	1540	G	Water	8
MW-3A	6/5/18	1420	G	Water	8
MW-4	6/5/18	1305	G	Water	8
MW-5	6/5/18	1015	G	Water	8
MW-6	6/4/18	1335	G	Water	8
DUPE	6/5/18	1435	G	Water	8
FIELD BLANK	6/5/18	1557	G	Water	8

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other, 7= None

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the

Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 401 KAR Chapter 45 (Kentucky Regulations). See attached constituent lists for analysis.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for Months

Custody Seal Intact: ☐ Yes ☐ No

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

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Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

Relinquished by: *Greg Dick*

1.4, 0.1, 0.4, 3.4

Green Landfill:

40 CFR PART 257 Constituent List:

Appendix IV to Part 257

Antimony

Arsenic

Barium

Beryllium

Cadmium

Chromium

Cobalt

Fluoride

Lead

Lithium

Mercury

Molybdenum

Selenium

Thallium

Radium 226 & 228 combined

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-153438-4
SDG Number: GL Groundwater CCR Round 8

Login Number: 153438

List Number: 2

Creator: Press, Nicholas B

List Source: TestAmerica St. Louis

List Creation: 06/12/18 12:19 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18
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?	False	
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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Sebree Station, Green Landfill (GL)

TestAmerica Job ID: 490-153438-3
SDG: GL Groundwater CCR Round 8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
490-153438-1	MW-1	92.6	
490-153438-2	MW-2	97.9	
490-153438-3	MW-3A	99.1	
490-153438-4	MW-4	88.8	
490-153438-5	MW-5	97.6	
490-153438-6	MW-6	101	
490-153438-7	DUPE	97.6	
490-153438-8	FIELD BLANK	100	
LCS 160-370240/1-A	Lab Control Sample	97.6	
LCSD 160-370240/2-A	Lab Control Sample Dup	101	
MB 160-370240/21-A	Method Blank	80.8	
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-153438-1	MW-1	92.6	41.1
490-153438-2	MW-2	97.9	82.2
490-153438-3	MW-3A	99.1	92.3
490-153438-4	MW-4	88.8	88.2
490-153438-5	MW-5	97.6	91.6
490-153438-6	MW-6	101	79.6
490-153438-7	DUPE	97.6	89.7
490-153438-8	FIELD BLANK	100	93.1
LCS 160-370246/1-A	Lab Control Sample	97.6	86.4
LCSD 160-370246/2-A	Lab Control Sample Dup	101	89.0
MB 160-370246/21-A	Method Blank	80.8	89.7
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			
Y Carrier = Y Carrier			

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-155658-1

TestAmerica SDG: Sebree Station, Green Landfill

Client Project/Site: Green Landfill CCR Groundwater

Sampling Event: Big Rivers CCR/SemiAnnual GW

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

8/16/2018 3:19:28 PM

Roxanne Cisneros, Senior Project Manager

(615)301-5761

roxanne.cisneros@testamericainc.com

LINKS

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results through

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www.testamericainc.com

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

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-155658-1	MW-1	Water	07/10/18 12:15	07/14/18 10:50
490-155658-2	MW-2	Water	07/11/18 12:55	07/14/18 10:50
490-155658-3	MW-3A	Water	07/11/18 11:50	07/14/18 10:50
490-155658-4	MW-4	Water	07/11/18 10:50	07/14/18 10:50
490-155658-5	MW-5	Water	07/11/18 09:55	07/14/18 10:50
490-155658-6	MW-6	Water	07/10/18 13:10	07/14/18 10:50
490-155658-7	DUPE	Water	07/10/18 13:25	07/14/18 10:50
490-155658-8	FIELD BLANK	Water	07/11/18 13:15	07/14/18 10:50

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Job ID: 490-155658-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-155658-1

Comments

Revised Report 8/03/2018 to report Total Alkalinity.

Receipt

The samples were received on 7/14/2018 10:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.0° C and 4.6° C.

HPLC/IC

Method(s) 9056A: The method blank for analytical batch 490-530118 contained Chloride above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-530118 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-2 (490-155658-2), MW-3A (490-155658-3), MW-4 (490-155658-4), MW-5 (490-155658-5), MW-6 (490-155658-6) and DUPE (490-155658-7). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-531239. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-531240 contained Chloride above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-531240. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

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

Metals

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

General Chemistry

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

Organic Prep

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

Narrative

Job Narrative 490-155658-2

Comments

No additional comments.

Receipt

The samples were received on 7/14/2018 10:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.0° C and 4.6° C.

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Job ID: 490-155658-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-376750: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-1 (490-155658-1), MW-2 (490-155658-2), MW-3A (490-155658-3), MW-4 (490-155658-4), MW-5 (490-155658-5), MW-6 (490-155658-6), DUPE (490-155658-7) and FIELD BLANK (490-155658-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-376745: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-1 (490-155658-1), MW-2 (490-155658-2), MW-3A (490-155658-3), MW-4 (490-155658-4), MW-5 (490-155658-5), MW-6 (490-155658-6), DUPE (490-155658-7) and FIELD BLANK (490-155658-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-1
Date Collected: 07/10/18 12:15
Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-1
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.34	B	3.00	0.200	mg/L			07/20/18 05:34	1
Fluoride	0.572	J	1.00	0.0100	mg/L			07/20/18 05:34	1
Sulfate	23.5		5.00	0.0300	mg/L			07/20/18 05:34	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0298	J	0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:00	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000178	J	0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:01	1
Arsenic	0.000442	J	0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:01	1
Barium	0.0726	J	0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:01	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:01	1
Boron	1.41		1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:01	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:01	1
Calcium	26.5		1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:01	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:01	1
Cobalt	0.0000440	J	0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:01	1
Iron	0.0177	J	0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:01	1
Lead	0.000215	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:01	1
Magnesium	9.60		1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:01	1
Molybdenum	0.000882	J	0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:01	1
Potassium	3.54		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:01	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:01	1
Sodium	182		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:01	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 16:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.90		0.100	0.100	SU			07/23/18 18:50	1
Temperature	22.1		0.100	0.100	Degrees C			07/23/18 18:50	1
Alkalinity	487		10.0	5.00	mg/L			07/24/18 13:50	1
Total Dissolved Solids	585		10.0	7.00	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.615		0.139	0.150	1.00	0.0964	pCi/L	07/19/18 15:20	08/10/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/19/18 15:20	08/10/18 16:36	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-1

Date Collected: 07/10/18 12:15

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-1

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.266	U	0.214	0.215	1.00	0.338	pCi/L	07/19/18 15:49	08/02/18 09:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/19/18 15:49	08/02/18 09:19	1
Y Carrier	88.6		40 - 110					07/19/18 15:49	08/02/18 09:19	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.882		0.255	0.262	5.00	0.338	pCi/L		08/16/18 13:48	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-2
Date Collected: 07/11/18 12:55
Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-2
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	154	B	30.0	2.00	mg/L			07/25/18 18:14	10
Fluoride	0.297	J	1.00	0.0100	mg/L			07/20/18 05:52	1
Sulfate	107		50.0	0.300	mg/L			07/24/18 18:51	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:05	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000440	J	0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:05	1
Arsenic	0.0119		0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:05	1
Barium	0.323		0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:05	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:05	1
Boron	0.0445	J	1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:05	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:05	1
Calcium	155		1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:05	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:05	1
Cobalt	0.00153	J	0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:05	1
Iron	6.49		0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:05	1
Lead	0.000212	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:05	1
Magnesium	80.8		1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:05	1
Molybdenum	0.00246	J	0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:05	1
Potassium	1.53		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:05	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:05	1
Sodium	57.3		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:05	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:05	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 16:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.10		0.100	0.100	SU			07/23/18 18:50	1
Temperature	22.2		0.100	0.100	Degrees C			07/23/18 18:50	1
Alkalinity	521		10.0	5.00	mg/L			07/24/18 19:25	1
Total Dissolved Solids	884		10.0	7.00	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.380		0.110	0.115	1.00	0.0875	pCi/L	07/19/18 15:20	08/10/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/19/18 15:20	08/10/18 16:37	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-2

Date Collected: 07/11/18 12:55

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-2

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.353		0.224	0.226	1.00	0.342	pCi/L	07/19/18 15:49	08/02/18 09:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/19/18 15:49	08/02/18 09:19	1
Y Carrier	87.1		40 - 110					07/19/18 15:49	08/02/18 09:19	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.733		0.250	0.254	5.00	0.342	pCi/L		08/16/18 13:48	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-3A

Date Collected: 07/11/18 11:50

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2180	B	600	40.0	mg/L			07/25/18 18:32	200
Fluoride	0.428	J	1.00	0.0100	mg/L			07/20/18 06:10	1
Sulfate	1010		500	3.00	mg/L			07/24/18 19:10	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.790		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:10	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:10	1
Arsenic	0.000230	J	0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:10	1
Barium	0.0453	J	0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:10	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:10	1
Boron	0.177	J	1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:10	1
Cadmium	0.000207	J	0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:10	1
Calcium	469		1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:10	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:10	1
Cobalt	0.0000680	J	0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:10	1
Iron	ND		0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:10	1
Lead	0.000211	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:10	1
Magnesium	612		1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:10	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:10	1
Potassium	6.81		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:10	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:10	1
Sodium	321		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:10	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:10	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 16:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.39		0.100	0.100	SU			07/23/18 18:53	1
Temperature	22.4		0.100	0.100	Degrees C			07/23/18 18:53	1
Alkalinity	314		10.0	5.00	mg/L			07/24/18 19:31	1
Total Dissolved Solids	4540		40.0	28.0	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.431		0.130	0.136	1.00	0.100	pCi/L	07/19/18 15:20	08/10/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					07/19/18 15:20	08/10/18 16:37	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-3A

Date Collected: 07/11/18 11:50

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-3

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.995		0.276	0.291	1.00	0.331	pCi/L	07/19/18 15:49	08/02/18 09:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					07/19/18 15:49	08/02/18 09:19	1
Y Carrier	87.1		40 - 110					07/19/18 15:49	08/02/18 09:19	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.43		0.305	0.321	5.00	0.331	pCi/L		08/16/18 13:48	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-4
Date Collected: 07/11/18 10:50
Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-4
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1430	B	300	20.0	mg/L			07/25/18 18:50	100
Fluoride	0.146	J	1.00	0.0100	mg/L			07/20/18 07:04	1
Sulfate	1460		500	3.00	mg/L			07/24/18 19:46	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.91		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:16	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:15	1
Arsenic	0.000165	J	0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:15	1
Barium	0.0272	J	0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:15	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:15	1
Boron	0.751	J	1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:15	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:15	1
Calcium	822		1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:15	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:15	1
Cobalt	0.0000310	J	0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:15	1
Iron	ND		0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:15	1
Lead	0.000157	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:15	1
Magnesium	206		1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:15	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:15	1
Potassium	161		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:15	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:15	1
Sodium	281		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:15	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000832		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 16:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.44		0.100	0.100	SU			07/23/18 18:53	1
Temperature	22.4		0.100	0.100	Degrees C			07/23/18 18:53	1
Alkalinity	133		10.0	5.00	mg/L			07/24/18 19:38	1
Total Dissolved Solids	4880		40.0	28.0	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.513		0.129	0.137	1.00	0.0870	pCi/L	07/19/18 15:20	08/10/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					07/19/18 15:20	08/10/18 16:37	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-4

Date Collected: 07/11/18 10:50

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-4

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.48		0.317	0.345	1.00	0.346	pCi/L	07/19/18 15:49	08/02/18 09:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					07/19/18 15:49	08/02/18 09:19	1
Y Carrier	87.5		40 - 110					07/19/18 15:49	08/02/18 09:19	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.00		0.342	0.371	5.00	0.346	pCi/L		08/16/18 13:48	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-5
Date Collected: 07/11/18 09:55
Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-5
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	941	B	300	20.0	mg/L			07/25/18 19:08	100
Fluoride	0.172	J	1.00	0.0100	mg/L			07/20/18 07:22	1
Sulfate	1800		500	3.00	mg/L			07/24/18 20:22	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.481		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:22	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:19	1
Arsenic	0.000270	J	0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:19	1
Barium	0.0142	J	0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:19	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:19	1
Boron	0.207	J	1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:19	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:19	1
Calcium	469		1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:19	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:19	1
Cobalt	0.0000310	J	0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:19	1
Iron	ND		0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:19	1
Lead	0.000119	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:19	1
Magnesium	489		1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:19	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:19	1
Potassium	16.0		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:19	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:19	1
Sodium	216		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:19	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.32		0.100	0.100	SU			07/23/18 18:53	1
Temperature	22.3		0.100	0.100	Degrees C			07/23/18 18:53	1
Alkalinity	402		10.0	5.00	mg/L			07/24/18 19:45	1
Total Dissolved Solids	4100		40.0	28.0	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.487		0.131	0.138	1.00	0.107	pCi/L	07/19/18 15:20	08/10/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					07/19/18 15:20	08/10/18 16:38	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-5

Date Collected: 07/11/18 09:55

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-5

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.935		0.280	0.293	1.00	0.354	pCi/L	07/19/18 15:49	08/02/18 09:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					07/19/18 15:49	08/02/18 09:19	1
Y Carrier	89.7		40 - 110					07/19/18 15:49	08/02/18 09:19	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.42		0.309	0.324	5.00	0.354	pCi/L		08/16/18 13:48	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-6
Date Collected: 07/10/18 13:10
Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-6
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	147	B	30.0	2.00	mg/L			07/24/18 23:23	10
Fluoride	0.540	J	1.00	0.0100	mg/L			07/20/18 07:40	1
Sulfate	2120	J	2500	15.0	mg/L			07/24/18 23:59	500

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0592		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:27	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:24	1
Arsenic	0.000157	J	0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:24	1
Barium	0.00794	J	0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:24	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:24	1
Boron	0.155	J	1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:24	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:24	1
Calcium	386		1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:24	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:24	1
Cobalt	0.000118	J	0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:24	1
Iron	ND		0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:24	1
Lead	0.000145	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:24	1
Magnesium	391		1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:24	1
Molybdenum	0.00130	J	0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:24	1
Potassium	3.53		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:24	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:24	1
Sodium	419		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:24	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 16:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.94		0.100	0.100	SU			07/23/18 18:53	1
Temperature	22.3		0.100	0.100	Degrees C			07/23/18 18:53	1
Alkalinity	745		10.0	5.00	mg/L			07/24/18 13:58	1
Total Dissolved Solids	4500		40.0	28.0	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.264		0.0959	0.0988	1.00	0.0891	pCi/L	07/19/18 15:20	08/10/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					07/19/18 15:20	08/10/18 16:38	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-6

Date Collected: 07/10/18 13:10

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-6

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.267	U	0.241	0.243	1.00	0.388	pCi/L	07/19/18 15:49	08/02/18 09:19	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					07/19/18 15:49	08/02/18 09:19	1
Y Carrier	84.5		40 - 110					07/19/18 15:49	08/02/18 09:19	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.532		0.259	0.262	5.00	0.388	pCi/L		08/16/18 13:48	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: DUPE
Date Collected: 07/10/18 13:25
Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-7
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150	B	30.0	2.00	mg/L			07/25/18 00:17	10
Fluoride	0.549	J	1.00	0.0100	mg/L			07/20/18 07:58	1
Sulfate	2170	J	2500	15.0	mg/L			07/25/18 00:53	500

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0602		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:33	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:28	1
Arsenic	0.000352	J	0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:28	1
Barium	0.00909	J	0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:28	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:28	1
Boron	0.165	J	1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:28	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:28	1
Calcium	383		1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:28	1
Chromium	0.00119	J	0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:28	1
Cobalt	0.000319	J	0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:28	1
Iron	2.99		0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:28	1
Lead	0.000155	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:28	1
Magnesium	408		1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:28	1
Molybdenum	0.00151	J	0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:28	1
Potassium	3.61		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:28	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:28	1
Sodium	432		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:28	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 17:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.13		0.100	0.100	SU			07/23/18 18:53	1
Temperature	22.3		0.100	0.100	Degrees C			07/23/18 18:53	1
Alkalinity	742		10.0	5.00	mg/L			07/24/18 14:05	1
Total Dissolved Solids	4300		40.0	28.0	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.181		0.0912	0.0926	1.00	0.113	pCi/L	07/19/18 15:20	08/10/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/19/18 15:20	08/10/18 16:38	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: DUPE

Date Collected: 07/10/18 13:25

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-7

Matrix: Water

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.300	U	0.214	0.216	1.00	0.333	pCi/L	07/19/18 15:49	08/02/18 09:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/19/18 15:49	08/02/18 09:20	1
Y Carrier	89.3		40 - 110					07/19/18 15:49	08/02/18 09:20	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.480		0.233	0.235	5.00	0.333	pCi/L		08/16/18 13:48	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: FIELD BLANK

Date Collected: 07/11/18 13:15

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.338	J B	3.00	0.200	mg/L			07/20/18 08:16	1
Fluoride	ND		1.00	0.0100	mg/L			07/20/18 08:16	1
Sulfate	0.281	J	5.00	0.0300	mg/L			07/20/18 08:16	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 13:38	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		07/18/18 12:39	07/25/18 05:33	1
Arsenic	ND		0.00500	0.000118	mg/L		07/18/18 12:39	07/25/18 05:33	1
Barium	ND		0.200	0.000270	mg/L		07/18/18 12:39	07/25/18 05:33	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/25/18 05:33	1
Boron	ND		1.00	0.00339	mg/L		07/18/18 12:39	07/25/18 05:33	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/25/18 05:33	1
Calcium	0.0453	J	1.00	0.0412	mg/L		07/18/18 12:39	07/25/18 05:33	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/25/18 05:33	1
Cobalt	ND		0.00500	0.0000218	mg/L		07/18/18 12:39	07/25/18 05:33	1
Iron	ND		0.0500	0.0141	mg/L		07/18/18 12:39	07/25/18 05:33	1
Lead	0.0000850	J	0.00500	0.0000675	mg/L		07/18/18 12:39	07/25/18 05:33	1
Magnesium	0.0440	J	1.00	0.0152	mg/L		07/18/18 12:39	07/25/18 05:33	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/18/18 12:39	07/25/18 05:33	1
Potassium	ND		1.00	0.136	mg/L		07/18/18 12:39	07/25/18 05:33	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/25/18 05:33	1
Sodium	ND		1.00	0.251	mg/L		07/18/18 12:39	07/25/18 05:33	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/25/18 05:33	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 17:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.87		0.100	0.100	SU			07/23/18 18:53	1
Temperature	22.3		0.100	0.100	Degrees C			07/23/18 18:53	1
Alkalinity	ND		10.0	5.00	mg/L			07/24/18 19:50	1
Total Dissolved Solids	7.00	J	10.0	7.00	mg/L			07/17/18 14:55	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.196		0.0843	0.0861	1.00	0.0878	pCi/L	07/19/18 15:20	08/10/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/19/18 15:20	08/10/18 16:38	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-155658-8

Date Collected: 07/11/18 13:15

Matrix: Water

Date Received: 07/14/18 10:50

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.274	U	0.199	0.201	1.00	0.309	pCi/L	07/19/18 15:49	08/02/18 09:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/19/18 15:49	08/02/18 09:20	1
Y Carrier	89.0		40 - 110					07/19/18 15:49	08/02/18 09:20	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.470		0.216	0.219	5.00	0.309	pCi/L		08/16/18 13:48	1

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-530118/3

Matrix: Water

Analysis Batch: 530118

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3956	J	3.00	0.200	mg/L			07/20/18 01:39	1
Fluoride	ND		1.00	0.0100	mg/L			07/20/18 01:39	1
Sulfate	ND		5.00	0.0300	mg/L			07/20/18 01:39	1

Lab Sample ID: LCS 490-530118/4

Matrix: Water

Analysis Batch: 530118

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.504		mg/L		95	80 - 120
Fluoride	1.00	0.9475	J	mg/L		95	80 - 120
Sulfate	10.0	9.198		mg/L		92	80 - 120

Lab Sample ID: LCSD 490-530118/5

Matrix: Water

Analysis Batch: 530118

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.277		mg/L		93	80 - 120	2	20
Fluoride	1.00	0.9401	J	mg/L		94	80 - 120	1	20
Sulfate	10.0	9.132		mg/L		91	80 - 120	1	20

Lab Sample ID: MB 490-531239/3

Matrix: Water

Analysis Batch: 531239

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			07/24/18 13:44	1
Sulfate	ND		5.00	0.0300	mg/L			07/24/18 13:44	1

Lab Sample ID: LCS 490-531239/4

Matrix: Water

Analysis Batch: 531239

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	0.9021	J	mg/L		90	80 - 120
Sulfate	10.0	9.047		mg/L		90	80 - 120

Lab Sample ID: LCSD 490-531239/5

Matrix: Water

Analysis Batch: 531239

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.00	0.9639	J	mg/L		96	80 - 120	7	20
Sulfate	10.0	9.648		mg/L		96	80 - 120	6	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 490-531240/3

Matrix: Water

Analysis Batch: 531240

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2033	J	3.00	0.200	mg/L			07/24/18 22:10	1
Fluoride	ND		1.00	0.0100	mg/L			07/24/18 22:10	1
Sulfate	ND		5.00	0.0300	mg/L			07/24/18 22:10	1

Lab Sample ID: LCS 490-531240/5

Matrix: Water

Analysis Batch: 531240

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.274		mg/L		93	80 - 120
Fluoride	1.00	0.9624	J	mg/L		96	80 - 120
Sulfate	10.0	9.635		mg/L		96	80 - 120

Lab Sample ID: LCSD 490-531240/6

Matrix: Water

Analysis Batch: 531240

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	8.934		mg/L		89	80 - 120	4	20
Fluoride	1.00	0.9381	J	mg/L		94	80 - 120	3	20
Sulfate	10.0	9.339		mg/L		93	80 - 120	3	20

Lab Sample ID: MB 490-531402/3

Matrix: Water

Analysis Batch: 531402

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2637	J	3.00	0.200	mg/L			07/25/18 16:26	1
Fluoride	ND		1.00	0.0100	mg/L			07/25/18 16:26	1
Sulfate	ND		5.00	0.0300	mg/L			07/25/18 16:26	1

Lab Sample ID: LCS 490-531402/5

Matrix: Water

Analysis Batch: 531402

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.325		mg/L		93	80 - 120
Fluoride	1.00	0.9597	J	mg/L		96	80 - 120
Sulfate	10.0	9.548		mg/L		95	80 - 120

Lab Sample ID: LCSD 490-531402/6

Matrix: Water

Analysis Batch: 531402

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.348		mg/L		93	80 - 120	0	20
Fluoride	1.00	0.9796	J	mg/L		98	80 - 120	2	20
Sulfate	10.0	9.668		mg/L		96	80 - 120	1	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-250898/1-A
Matrix: Water
Analysis Batch: 251527

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 250898

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		07/18/18 12:37	07/24/18 11:09	1

Lab Sample ID: LCS 180-250898/2-A
Matrix: Water
Analysis Batch: 251527

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 250898

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.003		mg/L		100	80 - 120

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-250900/1-A
Matrix: Water
Analysis Batch: 251631

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 250900

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00200	0.0000213	mg/L		07/18/18 12:39	07/24/18 22:51	1
Arsenic	ND		0.00500	0.000118	mg/L		07/18/18 12:39	07/24/18 22:51	1
Barium	ND		0.200	0.000270	mg/L		07/18/18 12:39	07/24/18 22:51	1
Beryllium	ND		0.00200	0.000102	mg/L		07/18/18 12:39	07/24/18 22:51	1
Boron	ND		1.00	0.00339	mg/L		07/18/18 12:39	07/24/18 22:51	1
Cadmium	ND		0.00100	0.000152	mg/L		07/18/18 12:39	07/24/18 22:51	1
Calcium	ND		1.00	0.0412	mg/L		07/18/18 12:39	07/24/18 22:51	1
Chromium	ND		0.00300	0.000339	mg/L		07/18/18 12:39	07/24/18 22:51	1
Cobalt	ND		0.00500	0.0000218	mg/L		07/18/18 12:39	07/24/18 22:51	1
Iron	ND		0.0500	0.0141	mg/L		07/18/18 12:39	07/24/18 22:51	1
Lead	ND		0.00500	0.0000675	mg/L		07/18/18 12:39	07/24/18 22:51	1
Magnesium	ND		1.00	0.0152	mg/L		07/18/18 12:39	07/24/18 22:51	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/18/18 12:39	07/24/18 22:51	1
Potassium	ND		1.00	0.136	mg/L		07/18/18 12:39	07/24/18 22:51	1
Selenium	ND		0.0100	0.000348	mg/L		07/18/18 12:39	07/24/18 22:51	1
Sodium	ND		1.00	0.251	mg/L		07/18/18 12:39	07/24/18 22:51	1
Thallium	ND		0.00100	0.0000360	mg/L		07/18/18 12:39	07/24/18 22:51	1

Lab Sample ID: LCS 180-250900/2-A
Matrix: Water
Analysis Batch: 251631

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 250900

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5010		mg/L		100	80 - 120
Arsenic	0.0400	0.03674		mg/L		92	80 - 120
Barium	2.00	1.944		mg/L		97	80 - 120
Beryllium	0.0500	0.04897		mg/L		98	80 - 120
Boron	1.00	0.8576	J	mg/L		86	80 - 120
Cadmium	0.0500	0.05178		mg/L		104	80 - 120
Calcium	50.0	45.49		mg/L		91	80 - 120
Chromium	0.200	0.1774		mg/L		89	80 - 120
Cobalt	0.500	0.4710		mg/L		94	80 - 120

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-250900/2-A
Matrix: Water
Analysis Batch: 251631

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 250900

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.8765		mg/L		88	80 - 120
Lead	0.0200	0.02109		mg/L		105	80 - 120
Magnesium	50.0	45.68		mg/L		91	80 - 120
Molybdenum	1.00	0.9925		mg/L		99	80 - 120
Potassium	50.0	45.92		mg/L		92	80 - 120
Selenium	0.0100	0.009186	J	mg/L		92	80 - 120
Sodium	50.0	44.81		mg/L		90	80 - 120
Thallium	0.0500	0.05028		mg/L		101	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-531706/1-A
Matrix: Water
Analysis Batch: 532390

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 531706

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		07/26/18 15:08	07/28/18 16:25	1

Lab Sample ID: LCS 490-531706/2-A
Matrix: Water
Analysis Batch: 532390

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 531706

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.001020		mg/L		102	80 - 120

Lab Sample ID: 490-155658-1 MS
Matrix: Water
Analysis Batch: 532390

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 531706

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00100	0.0009537		mg/L		95	75 - 125

Lab Sample ID: 490-155658-1 MSD
Matrix: Water
Analysis Batch: 532390

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 531706

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	ND		0.00100	0.0009721		mg/L		97	75 - 125	2	20

Method: 9040C - pH

Lab Sample ID: LCS 490-530922/1
Matrix: Water
Analysis Batch: 530922

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.000		SU		100	98 - 103

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: 9040C - pH (Continued)

Lab Sample ID: LCS 490-530923/1

Matrix: Water

Analysis Batch: 530923

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.000		SU		100	98 - 103

Lab Sample ID: 490-155658-3 DU

Matrix: Water

Analysis Batch: 530923

Client Sample ID: MW-3A

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.39		7.400		SU		0.1	20
Temperature	22.4		22.40		Degrees C		0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 490-531384/13

Matrix: Water

Analysis Batch: 531384

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10.0	5.00	mg/L			07/24/18 11:54	1

Lab Sample ID: MB 490-531384/49

Matrix: Water

Analysis Batch: 531384

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10.0	5.00	mg/L			07/24/18 17:32	1

Lab Sample ID: LCS 490-531384/14

Matrix: Water

Analysis Batch: 531384

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	102.9		mg/L		103	90 - 110

Lab Sample ID: LCS 490-531384/50

Matrix: Water

Analysis Batch: 531384

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	93.48		mg/L		93	90 - 110

Lab Sample ID: LCSD 490-531384/36

Matrix: Water

Analysis Batch: 531384

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	100	96.04		mg/L		96	90 - 110	7	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 490-531384/72

Matrix: Water

Analysis Batch: 531384

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	100	96.58		mg/L		97	90 - 110	3	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-529396/1

Matrix: Water

Analysis Batch: 529396

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			07/17/18 14:55	1

Lab Sample ID: LCS 490-529396/2

Matrix: Water

Analysis Batch: 529396

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	91.00		mg/L		91	90 - 110

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-376745/23-A

Matrix: Water

Analysis Batch: 381568

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 376745

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2502		0.100	0.103	1.00	0.106	pCi/L	07/19/18 15:20	08/10/18 16:41	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					07/19/18 15:20	08/10/18 16:41	1

Lab Sample ID: LCS 160-376745/1-A

Matrix: Water

Analysis Batch: 381577

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 376745

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	11.66		1.20	1.00	0.0735	pCi/L	103	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	100		40 - 110						

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-376745/2-A

Matrix: Water

Analysis Batch: 381577

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 376745

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226		11.4	10.89		1.13	1.00	0.109	pCi/L	96	68 - 137	0.33	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits									
Ba Carrier	100		40 - 110									

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-376750/23-A

Matrix: Water

Analysis Batch: 379784

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 376750

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1002	U	0.206	0.206	1.00	0.387	pCi/L	07/19/18 15:49	08/02/18 09:22	1
Carrier	MB %Yield	MB Qualifier	Limits							
Ba Carrier	97.1		40 - 110							
Y Carrier	85.6		40 - 110							

Lab Sample ID: LCS 160-376750/1-A

Matrix: Water

Analysis Batch: 379945

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 376750

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228		11.2	11.05		1.23	1.00	0.352	pCi/L	99	56 - 140		
Carrier	LCS %Yield	LCS Qualifier	Limits									
Ba Carrier	100		40 - 110									
Y Carrier	86.4		40 - 110									

Lab Sample ID: LCSD 160-376750/2-A

Matrix: Water

Analysis Batch: 379945

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 376750

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228		11.2	11.70		1.29	1.00	0.336	pCi/L	105	56 - 140	0.26	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits									
Ba Carrier	100		40 - 110									
Y Carrier	87.5		40 - 110									

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

HPLC/IC

Analysis Batch: 530118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	9056A	
490-155658-2	MW-2	Total/NA	Water	9056A	
490-155658-3	MW-3A	Total/NA	Water	9056A	
490-155658-4	MW-4	Total/NA	Water	9056A	
490-155658-5	MW-5	Total/NA	Water	9056A	
490-155658-6	MW-6	Total/NA	Water	9056A	
490-155658-7	DUPE	Total/NA	Water	9056A	
490-155658-8	FIELD BLANK	Total/NA	Water	9056A	
MB 490-530118/3	Method Blank	Total/NA	Water	9056A	
LCS 490-530118/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-530118/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 531239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-2	MW-2	Total/NA	Water	9056A	
490-155658-3	MW-3A	Total/NA	Water	9056A	
490-155658-4	MW-4	Total/NA	Water	9056A	
490-155658-5	MW-5	Total/NA	Water	9056A	
MB 490-531239/3	Method Blank	Total/NA	Water	9056A	
LCS 490-531239/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-531239/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 531240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-6	MW-6	Total/NA	Water	9056A	
490-155658-6	MW-6	Total/NA	Water	9056A	
490-155658-7	DUPE	Total/NA	Water	9056A	
490-155658-7	DUPE	Total/NA	Water	9056A	
MB 490-531240/3	Method Blank	Total/NA	Water	9056A	
LCS 490-531240/5	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-531240/6	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 531402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-2	MW-2	Total/NA	Water	9056A	
490-155658-3	MW-3A	Total/NA	Water	9056A	
490-155658-4	MW-4	Total/NA	Water	9056A	
490-155658-5	MW-5	Total/NA	Water	9056A	
MB 490-531402/3	Method Blank	Total/NA	Water	9056A	
LCS 490-531402/5	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-531402/6	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 250898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total Recoverable	Water	3005A	
490-155658-2	MW-2	Total Recoverable	Water	3005A	
490-155658-3	MW-3A	Total Recoverable	Water	3005A	
490-155658-4	MW-4	Total Recoverable	Water	3005A	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Metals (Continued)

Prep Batch: 250898 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-5	MW-5	Total Recoverable	Water	3005A	
490-155658-6	MW-6	Total Recoverable	Water	3005A	
490-155658-7	DUPE	Total Recoverable	Water	3005A	
490-155658-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-250898/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-250898/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 250900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total Recoverable	Water	3005A	
490-155658-2	MW-2	Total Recoverable	Water	3005A	
490-155658-3	MW-3A	Total Recoverable	Water	3005A	
490-155658-4	MW-4	Total Recoverable	Water	3005A	
490-155658-5	MW-5	Total Recoverable	Water	3005A	
490-155658-6	MW-6	Total Recoverable	Water	3005A	
490-155658-7	DUPE	Total Recoverable	Water	3005A	
490-155658-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-250900/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-250900/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 251527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total Recoverable	Water	6010C	250898
490-155658-2	MW-2	Total Recoverable	Water	6010C	250898
490-155658-3	MW-3A	Total Recoverable	Water	6010C	250898
490-155658-4	MW-4	Total Recoverable	Water	6010C	250898
490-155658-5	MW-5	Total Recoverable	Water	6010C	250898
490-155658-6	MW-6	Total Recoverable	Water	6010C	250898
490-155658-7	DUPE	Total Recoverable	Water	6010C	250898
490-155658-8	FIELD BLANK	Total Recoverable	Water	6010C	250898
MB 180-250898/1-A	Method Blank	Total Recoverable	Water	6010C	250898
LCS 180-250898/2-A	Lab Control Sample	Total Recoverable	Water	6010C	250898

Analysis Batch: 251631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total Recoverable	Water	6020A	250900
490-155658-2	MW-2	Total Recoverable	Water	6020A	250900
490-155658-3	MW-3A	Total Recoverable	Water	6020A	250900
490-155658-4	MW-4	Total Recoverable	Water	6020A	250900
490-155658-5	MW-5	Total Recoverable	Water	6020A	250900
490-155658-6	MW-6	Total Recoverable	Water	6020A	250900
490-155658-7	DUPE	Total Recoverable	Water	6020A	250900
490-155658-8	FIELD BLANK	Total Recoverable	Water	6020A	250900
MB 180-250900/1-A	Method Blank	Total Recoverable	Water	6020A	250900
LCS 180-250900/2-A	Lab Control Sample	Total Recoverable	Water	6020A	250900

Prep Batch: 531706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	7470A	
490-155658-2	MW-2	Total/NA	Water	7470A	
490-155658-3	MW-3A	Total/NA	Water	7470A	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Metals (Continued)

Prep Batch: 531706 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-4	MW-4	Total/NA	Water	7470A	
490-155658-5	MW-5	Total/NA	Water	7470A	
490-155658-6	MW-6	Total/NA	Water	7470A	
490-155658-7	DUPE	Total/NA	Water	7470A	
490-155658-8	FIELD BLANK	Total/NA	Water	7470A	
MB 490-531706/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-531706/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-155658-1 MS	MW-1	Total/NA	Water	7470A	
490-155658-1 MSD	MW-1	Total/NA	Water	7470A	

Analysis Batch: 532390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	7470A	531706
490-155658-2	MW-2	Total/NA	Water	7470A	531706
490-155658-3	MW-3A	Total/NA	Water	7470A	531706
490-155658-4	MW-4	Total/NA	Water	7470A	531706
490-155658-5	MW-5	Total/NA	Water	7470A	531706
490-155658-6	MW-6	Total/NA	Water	7470A	531706
490-155658-7	DUPE	Total/NA	Water	7470A	531706
490-155658-8	FIELD BLANK	Total/NA	Water	7470A	531706
MB 490-531706/1-A	Method Blank	Total/NA	Water	7470A	531706
LCS 490-531706/2-A	Lab Control Sample	Total/NA	Water	7470A	531706
490-155658-1 MS	MW-1	Total/NA	Water	7470A	531706
490-155658-1 MSD	MW-1	Total/NA	Water	7470A	531706

General Chemistry

Analysis Batch: 529396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	SM 2540C	
490-155658-2	MW-2	Total/NA	Water	SM 2540C	
490-155658-3	MW-3A	Total/NA	Water	SM 2540C	
490-155658-4	MW-4	Total/NA	Water	SM 2540C	
490-155658-5	MW-5	Total/NA	Water	SM 2540C	
490-155658-6	MW-6	Total/NA	Water	SM 2540C	
490-155658-7	DUPE	Total/NA	Water	SM 2540C	
490-155658-8	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-529396/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-529396/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 530922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	9040C	
490-155658-2	MW-2	Total/NA	Water	9040C	
LCS 490-530922/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 530923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-3	MW-3A	Total/NA	Water	9040C	
490-155658-4	MW-4	Total/NA	Water	9040C	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

General Chemistry (Continued)

Analysis Batch: 530923 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-5	MW-5	Total/NA	Water	9040C	
490-155658-6	MW-6	Total/NA	Water	9040C	
490-155658-7	DUPE	Total/NA	Water	9040C	
490-155658-8	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-530923/1	Lab Control Sample	Total/NA	Water	9040C	
490-155658-3 DU	MW-3A	Total/NA	Water	9040C	

Analysis Batch: 531384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	SM 2320B	
490-155658-2	MW-2	Total/NA	Water	SM 2320B	
490-155658-3	MW-3A	Total/NA	Water	SM 2320B	
490-155658-4	MW-4	Total/NA	Water	SM 2320B	
490-155658-5	MW-5	Total/NA	Water	SM 2320B	
490-155658-6	MW-6	Total/NA	Water	SM 2320B	
490-155658-7	DUPE	Total/NA	Water	SM 2320B	
490-155658-8	FIELD BLANK	Total/NA	Water	SM 2320B	
MB 490-531384/13	Method Blank	Total/NA	Water	SM 2320B	
MB 490-531384/49	Method Blank	Total/NA	Water	SM 2320B	
LCS 490-531384/14	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 490-531384/50	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 490-531384/36	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LCSD 490-531384/72	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Rad

Prep Batch: 376745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	PrecSep-21	
490-155658-2	MW-2	Total/NA	Water	PrecSep-21	
490-155658-3	MW-3A	Total/NA	Water	PrecSep-21	
490-155658-4	MW-4	Total/NA	Water	PrecSep-21	
490-155658-5	MW-5	Total/NA	Water	PrecSep-21	
490-155658-6	MW-6	Total/NA	Water	PrecSep-21	
490-155658-7	DUPE	Total/NA	Water	PrecSep-21	
490-155658-8	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-376745/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-376745/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-376745/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 376750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-155658-1	MW-1	Total/NA	Water	PrecSep_0	
490-155658-2	MW-2	Total/NA	Water	PrecSep_0	
490-155658-3	MW-3A	Total/NA	Water	PrecSep_0	
490-155658-4	MW-4	Total/NA	Water	PrecSep_0	
490-155658-5	MW-5	Total/NA	Water	PrecSep_0	
490-155658-6	MW-6	Total/NA	Water	PrecSep_0	
490-155658-7	DUPE	Total/NA	Water	PrecSep_0	
490-155658-8	FIELD BLANK	Total/NA	Water	PrecSep_0	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Rad (Continued)

Prep Batch: 376750 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-376750/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-376750/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-376750/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-1

Date Collected: 07/10/18 12:15

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 05:34	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:00	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:01	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 16:30	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530922	07/23/18 18:50	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 13:50	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.18 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:36	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.18 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:19	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 07/11/18 12:55

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 05:52	SW1	TAL NSH
Total/NA	Analysis	9056A		10			531239	07/24/18 18:51	SW1	TAL NSH
Total/NA	Analysis	9056A		10			531402	07/25/18 18:14	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:05	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:05	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 16:43	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530922	07/23/18 18:50	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 19:25	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.95 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:37	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.95 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:19	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-3A

Date Collected: 07/11/18 11:50

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 06:10	SW1	TAL NSH
Total/NA	Analysis	9056A		100			531239	07/24/18 19:10	SW1	TAL NSH
Total/NA	Analysis	9056A		200			531402	07/25/18 18:32	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:10	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:10	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 16:46	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530923	07/23/18 18:53	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 19:31	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.43 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:37	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.43 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:19	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 07/11/18 10:50

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 07:04	SW1	TAL NSH
Total/NA	Analysis	9056A		100			531239	07/24/18 19:46	SW1	TAL NSH
Total/NA	Analysis	9056A		100			531402	07/25/18 18:50	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:16	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:15	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 16:48	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530923	07/23/18 18:53	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 19:38	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.19 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:37	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.19 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:19	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-5

Date Collected: 07/11/18 09:55

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 07:22	SW1	TAL NSH
Total/NA	Analysis	9056A		100			531239	07/24/18 20:22	SW1	TAL NSH
Total/NA	Analysis	9056A		100			531402	07/25/18 19:08	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:22	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:19	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 16:56	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530923	07/23/18 18:53	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 19:45	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.16 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:38	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.16 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:19	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 07/10/18 13:10

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 07:40	SW1	TAL NSH
Total/NA	Analysis	9056A		10			531240	07/24/18 23:23	SW1	TAL NSH
Total/NA	Analysis	9056A		500			531240	07/24/18 23:59	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:27	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:24	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 16:58	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530923	07/23/18 18:53	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 13:58	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			999.24 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:38	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.24 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:19	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Client Sample ID: DUPE

Date Collected: 07/10/18 13:25

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 07:58	SW1	TAL NSH
Total/NA	Analysis	9056A		10			531240	07/25/18 00:17	SW1	TAL NSH
Total/NA	Analysis	9056A		500			531240	07/25/18 00:53	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:33	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:28	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 17:01	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530923	07/23/18 18:53	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 14:05	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.32 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:38	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.32 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:20	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 07/11/18 13:15

Date Received: 07/14/18 10:50

Lab Sample ID: 490-155658-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			530118	07/20/18 08:16	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	250898	07/18/18 12:37	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			251527	07/24/18 13:38	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	250900	07/18/18 12:39	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251631	07/25/18 05:33	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	531706	07/26/18 15:08	CSL	TAL NSH
Total/NA	Analysis	7470A		1			532390	07/28/18 17:04	CSL	TAL NSH
Total/NA	Analysis	9040C		1			530923	07/23/18 18:53	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	531384	07/24/18 19:50	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	529396	07/17/18 14:55	BMC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.43 mL	1.0 g	376745	07/19/18 15:20	JLC	TAL SL
Total/NA	Analysis	903.0		1			381577	08/10/18 16:38	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.43 mL	1.0 g	376750	07/19/18 15:49	JLC	TAL SL
Total/NA	Analysis	904.0		1			379945	08/02/18 09:20	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			382942	08/16/18 13:48	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TestAmerica Nashville

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2320B	Alkalinity	SM	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL NSH

Protocol References:

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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-19
The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:				
Analysis Method	Prep Method	Matrix	Analyte	
9040C		Water	pH	
9040C		Water	Temperature	
9056A		Water	Chloride	
9056A		Water	Fluoride	
9056A		Water	Sulfate	
SM 2320B		Water	Alkalinity	
SM 2540C		Water	Total Dissolved Solids	

Laboratory: TestAmerica Pittsburgh

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	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-18 *
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-18 *
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18

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

TestAmerica Nashville

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Laboratory: TestAmerica St. Louis (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
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18 *
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-18 *
Nevada	State Program	9	MO000542018-1	07-31-18 *
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18 *
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18 *
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18 *
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-18 *
West Virginia DEP	State Program	3	381	08-31-18 *

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

TestAmerica Nashville



COOLER RECEIPT FORM

Cooler Received/Opened On 7/14/2018 @ 1050

Time Samples Removed From Cooler 1249 Time Samples Placed In Storage 1258 (2 Hour Window)

1. Tracking # 5612 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960357 pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 4.6 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen?

YES NO...NA

4. Were custody seals on outside of cooler?

YES...NO...NA

If yes, how many and where: 2 Front

5. Were the seals intact, signed, and dated correctly?

YES...NO...NA

6. Were custody papers inside cooler?

YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) GH

7. Were custody seals on containers: YES NO and Intact

YES...NO...NA

Were these signed and dated correctly?

YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)?

YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)?

YES...NO...NA

12. Did all container labels and tags agree with custody papers?

YES...NO...NA

13a. Were VOA vials received?

YES...NO...NA

b. Was there any observable headspace present in any VOA vial?

YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # GH

I certify that I unloaded the cooler and answered questions 7-14 (initial) GH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level?

YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used

YES...NO...NA

16. Was residual chlorine present?

YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) GH

17. Were custody papers properly filled out (ink, signed, etc)?

YES...NO...NA

18. Did you sign the custody papers in the appropriate place?

YES...NO...NA

19. Were correct containers used for the analysis requested?

YES...NO...NA

20. Was sufficient amount of sample sent in each container?

YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) GH

I certify that I attached a label with the unique LIMS number to each container (initial) GH

21. Were there Non-Conformance issues at login? YES...NO... Was a NCM generated? YES...NO...# GH

COOLER RECEIPT FORM

Loc: 490

155658

Cooler Received/Opened On 7/14/2018 @ 1050

Time Samples Removed From Cooler 1249 Time Samples Placed In Storage 1258 (2 Hour Window)

1. Tracking # 5623 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960357 pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 2.0 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? 2 Front YES NO...NA

If yes, how many and where:

5. Were the seals intact, signed, and dated correctly? YES NO...NA

6. Were custody papers inside cooler? GH YES NO...NA

I certify that I opened the cooler and answered questions 1-6 (Initial) GH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly?

YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO...NA

12. Did all container labels and tags agree with custody papers? YES NO...NA

13a. Were VOA vials received? YES NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (Initial) GH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used

YES...NO...NA

16. Was residual chlorine present? YES...NO NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (Initial) GH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (Initial) GH

I certify that I attached a label with the unique LIMS number to each container (Initial) GH

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO...# _____

Green Landfill CCR Constituent List:**Appendix III to Part 257**

Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

My Quil
BREL

Appendix IV to Part 257

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

7/13/2018
1700

Additional Constituents

Total Alkalinity
Iron
Magnesium
Potassium
Sodium

TestAmerica Nashville

2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)		Sampler:	Lab P/N:	Carrier Tracking No(s):	COC No:				
Client Contact:	Phone:	Cineros, Roxanne			490-75464.1				
Shipping/Receiving:	E-Mail:	roxanne.cineros@testamericainc.com	State of Origin:		Page: 1 of 1				
Company:	TestAmerica Laboratories, Inc.	Accreditations Required (See note):	Kentucky		Page 1 of 1				
Address:	Due Date Requested:	State Program - Kentucky (UST)			490-155658-2				
13715 Rider Trail North,	8/13/2018								
City:	TAT Requested (days):	Analysis Requested							
Earth City									
State, Zip:	PO #:								
MO, 63045	WO #:								
Phone:	Project #:								
314-298-8566 (Tel) 314-298-8757 (Fax)	49010431								
Email:	SSOW#:								
Project Name:	Green Landfill CCR Groundwater								
Site:	Big Rivers CCR								
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Water, Soil, Organics, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note:
MMW-1 (490-155658-1)	7/10/18	12:15	Central	Water	X	X	X	2	run once - upload data twice
MMW-2 (490-155658-2)	7/11/18	12:55	Central	Water	X	X	X	2	run once - upload data twice
MMW-3A (490-155658-3)	7/11/18	11:50	Central	Water	X	X	X	2	run once - upload data twice
MMW-4 (490-155658-4)	7/11/18	10:50	Central	Water	X	X	X	2	run once - upload data twice
MMW-5 (490-155658-5)	7/11/18	09:55	Central	Water	X	X	X	2	run once - upload data twice
MMW-6 (490-155658-6)	7/10/18	13:10	Central	Water	X	X	X	2	run once - upload data twice
DUPE (490-155658-7)	7/10/18	13:25	Central	Water	X	X	X	2	run once - upload data twice
FIELD BLANK (490-155658-8)	7/11/18	13:15	Central	Water	X	X	X	2	run once - upload data twice
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other institutions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.									
Possible Hazard Identification		☐ Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months							
Unconfirmed									
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:					
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:	Company:			
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:	Company:			
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) "C" and Other Remarks:					
A Yes A No				10.5C					

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-155658-2

SDG Number: Sebree Station, Green Landfill

Login Number: 155658

List Number: 3

Creator: McBride, Mike

List Source: TestAmerica St. Louis

List Creation: 07/17/18 04:21 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
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	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.	True	
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Landfill CCR Groundwater

TestAmerica Job ID: 490-155658-1
SDG: Sebree Station, Green Landfill

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
490-155658-1	MW-1	101	
490-155658-2	MW-2	102	
490-155658-3	MW-3A	96.5	
490-155658-4	MW-4	94.1	
490-155658-5	MW-5	92.6	
490-155658-6	MW-6	98.2	
490-155658-7	DUPE	100	
490-155658-8	FIELD BLANK	104	
LCS 160-376745/1-A	Lab Control Sample	100	
LCSD 160-376745/2-A	Lab Control Sample Dup	100	
MB 160-376745/23-A	Method Blank	97.1	
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-155658-1	MW-1	101	88.6
490-155658-2	MW-2	102	87.1
490-155658-3	MW-3A	96.5	87.1
490-155658-4	MW-4	94.1	87.5
490-155658-5	MW-5	92.6	89.7
490-155658-6	MW-6	98.2	84.5
490-155658-7	DUPE	100	89.3
490-155658-8	FIELD BLANK	104	89.0
LCS 160-376750/1-A	Lab Control Sample	100	86.4
LCSD 160-376750/2-A	Lab Control Sample Dup	100	87.5
MB 160-376750/23-A	Method Blank	97.1	85.6
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			
Y Carrier = Y Carrier			

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-160288-3

TestAmerica SDG: Sebree Station, Green Landfill

Client Project/Site: GL CCR Groundwater

Sampling Event: Big Rivers CCR/SemiAnnual GW

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

10/31/2018 5:27:34 PM

Roxanne Cisneros, Senior Project Manager

(615)301-5761

roxanne.cisneros@testamericainc.com

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-160288-1	MW-1	Water	09/28/18 12:20	10/02/18 10:00
490-160288-2	MW-2	Water	09/28/18 16:55	10/02/18 10:00
490-160288-3	MW-3A	Water	09/28/18 16:17	10/02/18 10:00
490-160288-4	MW-4	Water	09/28/18 15:25	10/02/18 10:00
490-160288-5	MW-5	Water	09/28/18 14:30	10/02/18 10:00
490-160288-6	MW-6	Water	09/28/18 13:25	10/02/18 10:00
490-160288-7	DUPE	Water	09/28/18 13:40	10/02/18 10:00
490-160288-8	FIELD BLANK	Water	09/28/18 17:05	10/02/18 10:00

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Job ID: 490-160288-3

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-160288-3

Comments

No additional comments.

Receipt

The samples were received on 10/2/2018 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.0° C, 2.1° C, 3.3° C and 3.4° C.

HPLC/IC

Method(s) 9056A: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-548111 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 9056A: The method blank for analytical batch 490-548111 contained Chloride, Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction or re-analysis of samples was not performed.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-1 (490-160288-1), MW-2 (490-160288-2), MW-3A (490-160288-3), MW-4 (490-160288-4), MW-5 (490-160288-5), MW-6 (490-160288-6) and DUPE (490-160288-7). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-548563 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-548563 contained Chloride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction or re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-548624 contained Chloride above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction or re-analysis of samples was not performed.

Method(s) 9056A: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-548624. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits. (LCS 490-548624/4)

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

Metals

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

General Chemistry

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

Organic Prep

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

Narrative

Job Narrative 490-160288-4

Comments

No additional comments.

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Job ID: 490-160288-3 (Continued)

Laboratory: TestAmerica Nashville (Continued)

Receipt

The samples were received on 10/2/2018 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.0° C, 2.1° C, 3.3° C and 3.4° C.

RAD

Method(s) 904.0: Ra-228 Prep Batch 160-393042 : The following samples have an RER (replicate error ratio) result outside of the acceptance criteria of 1 (1.16) for Ra-228. Duplicate precision is demonstrated by acceptable relative percent difference (RPD), within the limit of 40% (26%). The data have been reported with this narrative. MW-1 (490-160288-1), MW-2 (490-160288-2), MW-3A (490-160288-3), MW-4 (490-160288-4), MW-5 (490-160288-5), MW-6 (490-160288-6), DUPE (490-160288-7), FIELD BLANK (490-160288-8), (LCS 160-393042/1-A), (MB 160-393042/16-A), (490-160178-H-1-B), (490-160178-F-1-B MS) and (490-160178-E-1-B MSD)

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

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-1

Date Collected: 09/28/18 12:20

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.17	B	3.00	0.200	mg/L			10/06/18 07:29	1
Fluoride	0.577	J B	1.00	0.0100	mg/L			10/06/18 07:29	1
Sulfate	22.5	B	10.0	0.0600	mg/L			10/08/18 22:39	2

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0279	J	0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 13:55	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000594	J B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 15:52	1
Barium	0.0783	J	0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 15:52	1
Boron	1.94	B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 20:40	1
Calcium	28.5	B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 15:52	1
Iron	0.0164	J	0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 15:52	1
Magnesium	9.18		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 15:52	1
Potassium	3.60		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 15:52	1
Sodium	179	B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 15:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.43		0.100	0.100	SU			10/06/18 18:04	1
Temperature	22.8		0.100	0.100	Degrees C			10/06/18 18:04	1
Bicarbonate Alkalinity as CaCO3	496		10.0	5.00	mg/L			10/02/18 17:31	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 17:31	1
Alkalinity	496		10.0	5.00	mg/L			10/02/18 17:31	1
Total Dissolved Solids	616		10.0	7.00	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.484		0.127	0.134	1.00	0.101	pCi/L	10/04/18 10:28	10/26/18 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					10/04/18 10:28	10/26/18 12:29	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.421	F	0.231	0.234	1.00	0.340	pCi/L	10/04/18 11:11	10/18/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					10/04/18 11:11	10/18/18 17:17	1
Y Carrier	82.6		40 - 110					10/04/18 11:11	10/18/18 17:17	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-1

Date Collected: 09/28/18 12:20

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-1

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.905		0.264	0.270	5.00	0.340	pCi/L		10/31/18 13:21	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-2
Date Collected: 09/28/18 16:55
Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-2
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	159	B	30.0	2.00	mg/L			10/08/18 22:57	10
Fluoride	0.299	J B	1.00	0.0100	mg/L			10/06/18 08:23	1
Sulfate	108	B	50.0	0.300	mg/L			10/08/18 22:57	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 14:00	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0211	B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 16:11	1
Barium	0.367		0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 16:11	1
Boron	0.0630	J B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 21:16	1
Calcium	165	B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 16:11	1
Iron	9.82		0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 16:11	1
Magnesium	80.1		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 16:11	1
Potassium	1.33		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 16:11	1
Sodium	52.6	B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 16:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.02		0.100	0.100	SU			10/06/18 18:04	1
Temperature	22.8		0.100	0.100	Degrees C			10/06/18 18:04	1
Bicarbonate Alkalinity as CaCO3	527		10.0	5.00	mg/L			10/02/18 17:38	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 17:38	1
Alkalinity	527		10.0	5.00	mg/L			10/02/18 17:38	1
Total Dissolved Solids	937		10.0	7.00	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.703		0.146	0.159	1.00	0.0852	pCi/L	10/04/18 10:28	10/26/18 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					10/04/18 10:28	10/26/18 12:29	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.101	U F	0.214	0.214	1.00	0.368	pCi/L	10/04/18 11:11	10/18/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					10/04/18 11:11	10/18/18 17:17	1
Y Carrier	80.4		40 - 110					10/04/18 11:11	10/18/18 17:17	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-2

Date Collected: 09/28/18 16:55

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-2

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.803		0.259	0.267	5.00	0.368	pCi/L		10/31/18 13:21	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-3A
Date Collected: 09/28/18 16:17
Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-3
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2040	B	1500	100	mg/L			10/08/18 23:51	500
Fluoride	0.256	J B	1.00	0.0100	mg/L			10/06/18 08:41	1
Sulfate	1130	B	500	3.00	mg/L			10/08/18 23:33	100

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.766		0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 14:06	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000675	J B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 16:14	1
Barium	0.0486	J	0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 16:14	1
Boron	0.257	J B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 21:21	1
Calcium	447	B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 16:14	1
Iron	0.0698		0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 16:14	1
Magnesium	543		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 16:14	1
Potassium	6.82		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 16:14	1
Sodium	302	B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 16:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.98		0.100	0.100	SU			10/06/18 18:04	1
Temperature	22.8		0.100	0.100	Degrees C			10/06/18 18:04	1
Bicarbonate Alkalinity as CaCO3	309		10.0	5.00	mg/L			10/02/18 17:44	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 17:44	1
Alkalinity	309		10.0	5.00	mg/L			10/02/18 17:44	1
Total Dissolved Solids	4940		40.0	28.0	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.599		0.142	0.152	1.00	0.109	pCi/L	10/04/18 10:28	10/26/18 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					10/04/18 10:28	10/26/18 12:29	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.615	F	0.242	0.248	1.00	0.330	pCi/L	10/04/18 11:11	10/18/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					10/04/18 11:11	10/18/18 17:17	1
Y Carrier	86.4		40 - 110					10/04/18 11:11	10/18/18 17:17	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-3A

Date Collected: 09/28/18 16:17

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-3

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.21		0.281	0.291	5.00	0.330	pCi/L		10/31/18 13:21	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-4
Date Collected: 09/28/18 15:25
Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-4
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1310	B	600	40.0	mg/L			10/09/18 00:09	200
Fluoride	0.102	J B	1.00	0.0100	mg/L			10/06/18 08:59	1
Sulfate	1400	B	1000	6.00	mg/L			10/09/18 00:09	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	1.81		0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 14:11	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000806	J B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 16:17	1
Barium	0.0306	J	0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 16:17	1
Boron	1.33	B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 21:26	1
Calcium	722	B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 16:17	1
Iron	ND		0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 16:17	1
Magnesium	156		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 16:17	1
Potassium	185		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 16:17	1
Sodium	242	B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 16:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000680		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.06		0.100	0.100	SU			10/06/18 18:04	1
Temperature	22.8		0.100	0.100	Degrees C			10/06/18 18:04	1
Bicarbonate Alkalinity as CaCO3	135		10.0	5.00	mg/L			10/02/18 17:51	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 17:51	1
Alkalinity	135		10.0	5.00	mg/L			10/02/18 17:51	1
Total Dissolved Solids	5170		40.0	28.0	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.405		0.122	0.128	1.00	0.103	pCi/L	10/04/18 10:28	10/26/18 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					10/04/18 10:28	10/26/18 12:29	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.11	F	0.299	0.316	1.00	0.354	pCi/L	10/04/18 11:11	10/18/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					10/04/18 11:11	10/18/18 17:17	1
Y Carrier	83.7		40 - 110					10/04/18 11:11	10/18/18 17:17	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-4

Date Collected: 09/28/18 15:25

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-4

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.51		0.323	0.341	5.00	0.354	pCi/L		10/31/18 13:21	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-5
Date Collected: 09/28/18 14:30
Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-5
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1140	B	300	20.0	mg/L			10/09/18 01:21	100
Fluoride	0.119	J B	1.00	0.0100	mg/L			10/06/18 09:17	1
Sulfate	1890	B	1000	6.00	mg/L			10/09/18 01:39	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.425		0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 14:16	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000739	J B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 16:20	1
Barium	0.0171	J	0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 16:20	1
Boron	0.263	J B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 21:30	1
Calcium	441	B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 16:20	1
Iron	ND		0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 16:20	1
Magnesium	439		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 16:20	1
Potassium	15.1		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 16:20	1
Sodium	194	B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 16:20	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.99		0.100	0.100	SU			10/06/18 18:04	1
Temperature	22.8		0.100	0.100	Degrees C			10/06/18 18:04	1
Bicarbonate Alkalinity as CaCO3	404		10.0	5.00	mg/L			10/02/18 17:58	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 17:58	1
Alkalinity	404		10.0	5.00	mg/L			10/02/18 17:58	1
Total Dissolved Solids	4540		40.0	28.0	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.376		0.112	0.117	1.00	0.0889	pCi/L	10/04/18 10:28	10/26/18 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					10/04/18 10:28	10/26/18 12:29	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.996	F	0.300	0.314	1.00	0.381	pCi/L	10/04/18 11:11	10/18/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					10/04/18 11:11	10/18/18 17:17	1
Y Carrier	80.4		40 - 110					10/04/18 11:11	10/18/18 17:17	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-5

Date Collected: 09/28/18 14:30

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-5

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.37		0.320	0.335	5.00	0.381	pCi/L		10/31/18 13:21	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-6
Date Collected: 09/28/18 13:25
Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-6
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	142	B	30.0	2.00	mg/L			10/09/18 01:57	10
Fluoride	0.470	J B	1.00	0.0100	mg/L			10/06/18 09:35	1
Sulfate	2420		1000	6.00	mg/L			10/09/18 13:15	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0558		0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 14:32	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000804	J B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 16:22	1
Barium	0.0115	J	0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 16:22	1
Boron	0.196	J B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 21:35	1
Calcium	356	B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 16:22	1
Iron	0.0448	J	0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 16:22	1
Magnesium	347		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 16:22	1
Potassium	3.47		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 16:22	1
Sodium	374	B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 16:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.94		0.100	0.100	SU			10/06/18 18:04	1
Temperature	22.9		0.100	0.100	Degrees C			10/06/18 18:04	1
Bicarbonate Alkalinity as CaCO3	754		10.0	5.00	mg/L			10/02/18 18:06	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 18:06	1
Alkalinity	754		10.0	5.00	mg/L			10/02/18 18:06	1
Total Dissolved Solids	4820		40.0	28.0	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.194		0.0838	0.0856	1.00	0.0863	pCi/L	10/04/18 10:28	10/26/18 12:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					10/04/18 10:28	10/26/18 12:30	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0509	U F	0.179	0.179	1.00	0.315	pCi/L	10/04/18 11:11	10/18/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					10/04/18 11:11	10/18/18 17:17	1
Y Carrier	85.2		40 - 110					10/04/18 11:11	10/18/18 17:17	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-6

Date Collected: 09/28/18 13:25

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-6

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.245	U	0.198	0.198	5.00	0.315	pCi/L		10/31/18 13:21	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: DUPE
Date Collected: 09/28/18 13:40
Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-7
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	141	B	30.0	2.00	mg/L			10/09/18 02:34	10
Fluoride	0.457	J B	1.00	0.0100	mg/L			10/06/18 09:53	1
Sulfate	2400		1000	6.00	mg/L			10/09/18 13:33	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0564		0.0500	0.00959	mg/L		10/04/18 12:49	10/05/18 14:53	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000791	J B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 16:25	1
Barium	0.0116	J	0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 16:25	1
Boron	0.212	J B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 21:39	1
Calcium	355	B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 16:25	1
Iron	ND		0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 16:25	1
Magnesium	365		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 16:25	1
Potassium	3.49		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 16:25	1
Sodium	389	B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 16:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.12		0.100	0.100	SU			10/06/18 18:04	1
Temperature	22.8		0.100	0.100	Degrees C			10/06/18 18:04	1
Bicarbonate Alkalinity as CaCO3	754		10.0	5.00	mg/L			10/02/18 18:13	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 18:13	1
Alkalinity	754		10.0	5.00	mg/L			10/02/18 18:13	1
Total Dissolved Solids	4740		40.0	28.0	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.248		0.0957	0.0983	1.00	0.0961	pCi/L	10/04/18 10:28	10/26/18 12:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					10/04/18 10:28	10/26/18 12:30	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.118	U F	0.183	0.183	1.00	0.309	pCi/L	10/04/18 11:11	10/18/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					10/04/18 11:11	10/18/18 17:17	1
Y Carrier	86.4		40 - 110					10/04/18 11:11	10/18/18 17:17	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: DUPE

Date Collected: 09/28/18 13:40

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-7

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.366		0.207	0.208	5.00	0.309	pCi/L		10/31/18 13:21	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: FIELD BLANK

Date Collected: 09/28/18 17:05

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-8

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.370	J B	3.00	0.200	mg/L			10/06/18 10:11	1
Fluoride	ND		1.00	0.0100	mg/L			10/06/18 10:11	1
Sulfate	0.132	J B	5.00	0.0300	mg/L			10/06/18 10:11	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 14:58	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000522	J B	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 16:28	1
Barium	ND		0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 16:28	1
Boron	0.00670	J B	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 21:44	1
Calcium	0.138	J B	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 16:28	1
Iron	ND		0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 16:28	1
Magnesium	0.0902	J	1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 16:28	1
Potassium	ND		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 16:28	1
Sodium	0.534	J B	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 16:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.36		0.100	0.100	SU			10/06/18 18:09	1
Temperature	22.9		0.100	0.100	Degrees C			10/06/18 18:09	1
Bicarbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 18:19	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 18:19	1
Alkalinity	ND		10.0	5.00	mg/L			10/02/18 18:19	1
Total Dissolved Solids	20.0		10.0	7.00	mg/L			10/05/18 23:03	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.138		0.0762	0.0772	1.00	0.0930	pCi/L	10/04/18 10:28	10/26/18 12:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					10/04/18 10:28	10/26/18 12:30	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0612	U F	0.189	0.189	1.00	0.354	pCi/L	10/04/18 11:11	10/18/18 17:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					10/04/18 11:11	10/18/18 17:18	1
Y Carrier	85.2		40 - 110					10/04/18 11:11	10/18/18 17:18	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: FIELD BLANK

Date Collected: 09/28/18 17:05

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-8

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0763	U	0.204	0.204	5.00	0.354	pCi/L		10/31/18 13:21	1

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-548111/3

Matrix: Water

Analysis Batch: 548111

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4212	J	3.00	0.200	mg/L			10/06/18 05:58	1
Fluoride	0.02654	J	1.00	0.0100	mg/L			10/06/18 05:58	1
Sulfate	0.1439	J	5.00	0.0300	mg/L			10/06/18 05:58	1

Lab Sample ID: LCS 490-548111/4

Matrix: Water

Analysis Batch: 548111

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.695		mg/L		97	80 - 120
Fluoride	1.00	0.9390	J	mg/L		94	80 - 120
Sulfate	10.0	9.809		mg/L		98	80 - 120

Lab Sample ID: LCSD 490-548111/5

Matrix: Water

Analysis Batch: 548111

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.672		mg/L		97	80 - 120	0	20
Fluoride	1.00	0.9384	J	mg/L		94	80 - 120	0	20
Sulfate	10.0	9.798		mg/L		98	80 - 120	0	20

Lab Sample ID: 490-160288-1 MS

Matrix: Water

Analysis Batch: 548111

Client Sample ID: MW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.17	B	10.0	16.69		mg/L		105	80 - 120
Fluoride	0.577	J B	1.00	1.529		mg/L		95	80 - 120
Sulfate	24.2	E B F1	10.0	35.91	E	mg/L		117	80 - 120

Lab Sample ID: 490-160288-1 MSD

Matrix: Water

Analysis Batch: 548111

Client Sample ID: MW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6.17	B	10.0	17.32		mg/L		111	80 - 120	4	20
Fluoride	0.577	J B	1.00	1.571		mg/L		99	80 - 120	3	20
Sulfate	24.2	E B F1	10.0	36.40	E F1	mg/L		122	80 - 120	1	20

Lab Sample ID: MB 490-548563/3

Matrix: Water

Analysis Batch: 548563

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4945	J	3.00	0.200	mg/L			10/08/18 20:50	1
Fluoride	ND		1.00	0.0100	mg/L			10/08/18 20:50	1
Sulfate	0.1490	J	5.00	0.0300	mg/L			10/08/18 20:50	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-548563/4

Matrix: Water

Analysis Batch: 548563

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.639		mg/L		96	80 - 120
Fluoride	1.00	0.9377	J	mg/L		94	80 - 120
Sulfate	10.0	9.742		mg/L		97	80 - 120

Lab Sample ID: LCSD 490-548563/5

Matrix: Water

Analysis Batch: 548563

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.659		mg/L		96	80 - 120	0	20
Fluoride	1.00	0.9359	J	mg/L		93	80 - 120	0	20
Sulfate	10.0	9.745		mg/L		97	80 - 120	0	20

Lab Sample ID: MB 490-548624/3

Matrix: Water

Analysis Batch: 548624

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3578	J	3.00	0.200	mg/L			10/09/18 12:21	1
Fluoride	ND		1.00	0.0100	mg/L			10/09/18 12:21	1
Sulfate	ND		5.00	0.0300	mg/L			10/09/18 12:21	1

Lab Sample ID: LCS 490-548624/4

Matrix: Water

Analysis Batch: 548624

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.469		mg/L		95	80 - 120
Fluoride	1.00	0.9386	J	mg/L		94	80 - 120
Sulfate	10.0	9.734		mg/L		97	80 - 120

Lab Sample ID: LCSD 490-548624/5

Matrix: Water

Analysis Batch: 548624

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.575		mg/L		96	80 - 120	1	20
Fluoride	1.00	0.9472	J	mg/L		95	80 - 120	1	20
Sulfate	10.0	9.811		mg/L		98	80 - 120	1	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-258830/1-A

Matrix: Water

Analysis Batch: 259085

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 258830

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/04/18 12:48	10/05/18 13:45	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

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

Lab Sample ID: LCS 180-258830/2-A
Matrix: Water
Analysis Batch: 259085

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 258830

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9641		mg/L		96	80 - 120

Lab Sample ID: 490-160288-6 MS
Matrix: Water
Analysis Batch: 259085

Client Sample ID: MW-6
Prep Type: Total Recoverable
Prep Batch: 258830

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0558		1.00	1.103		mg/L		105	75 - 125

Lab Sample ID: 490-160288-6 MSD
Matrix: Water
Analysis Batch: 259085

Client Sample ID: MW-6
Prep Type: Total Recoverable
Prep Batch: 258830

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lithium	0.0558		1.00	0.9668		mg/L		91	75 - 125	13	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-258832/1-A
Matrix: Water
Analysis Batch: 259040

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0003530	J	0.00500	0.000118	mg/L		10/04/18 12:51	10/05/18 15:46	1
Barium	ND		0.200	0.000270	mg/L		10/04/18 12:51	10/05/18 15:46	1
Calcium	0.06398	J	1.00	0.0412	mg/L		10/04/18 12:51	10/05/18 15:46	1
Iron	ND		0.0500	0.0141	mg/L		10/04/18 12:51	10/05/18 15:46	1
Magnesium	ND		1.00	0.0152	mg/L		10/04/18 12:51	10/05/18 15:46	1
Potassium	ND		1.00	0.136	mg/L		10/04/18 12:51	10/05/18 15:46	1
Sodium	0.2671	J	1.00	0.251	mg/L		10/04/18 12:51	10/05/18 15:46	1

Lab Sample ID: MB 180-258832/1-A
Matrix: Water
Analysis Batch: 259077

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.004130	J	1.00	0.00339	mg/L		10/04/18 12:51	10/06/18 20:31	1

Lab Sample ID: LCS 180-258832/2-A
Matrix: Water
Analysis Batch: 259040

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0400	0.03804		mg/L		95	80 - 120
Barium	2.00	2.120		mg/L		106	80 - 120
Calcium	50.0	52.65		mg/L		105	80 - 120
Iron	11.0	12.22		mg/L		111	80 - 120
Magnesium	50.0	47.79		mg/L		96	80 - 120
Potassium	50.0	50.37		mg/L		101	80 - 120

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-258832/2-A
Matrix: Water
Analysis Batch: 259040

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	50.0	47.99		mg/L		96	80 - 120

Lab Sample ID: LCS 180-258832/2-A
Matrix: Water
Analysis Batch: 259077

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.101		mg/L		110	80 - 120

Lab Sample ID: 490-160288-1 MS
Matrix: Water
Analysis Batch: 259040

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.000594	J B	0.0400	0.03773		mg/L		93	75 - 125
Barium	0.0783	J	2.00	2.168		mg/L		104	75 - 125
Calcium	28.5	B	50.0	80.05		mg/L		103	75 - 125
Iron	0.0164	J	11.0	11.75		mg/L		107	75 - 125
Magnesium	9.18		50.0	54.18		mg/L		90	75 - 125
Potassium	3.60		50.0	52.05		mg/L		97	75 - 125
Sodium	179	B	50.0	225.1		mg/L		92	75 - 125

Lab Sample ID: 490-160288-1 MS
Matrix: Water
Analysis Batch: 259077

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.94	B	1.00	3.042		mg/L		110	75 - 125

Lab Sample ID: 490-160288-1 MSD
Matrix: Water
Analysis Batch: 259040

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.000594	J B	0.0400	0.03790		mg/L		93	75 - 125	0	20
Barium	0.0783	J	2.00	2.130		mg/L		103	75 - 125	2	20
Calcium	28.5	B	50.0	80.12		mg/L		103	75 - 125	0	20
Iron	0.0164	J	11.0	11.60		mg/L		105	75 - 125	1	20
Magnesium	9.18		50.0	54.62		mg/L		91	75 - 125	1	20
Potassium	3.60		50.0	51.48		mg/L		96	75 - 125	1	20
Sodium	179	B	50.0	227.2		mg/L		96	75 - 125	1	20

Lab Sample ID: 490-160288-1 MSD
Matrix: Water
Analysis Batch: 259077

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 258832

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	1.94	B	1.00	2.880		mg/L		94	75 - 125	5	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 490-548906/1-A
Matrix: Water
Analysis Batch: 549355

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 548906

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000100	mg/L		10/10/18 10:06	10/10/18 23:21	1

Lab Sample ID: LCS 490-548906/2-A
Matrix: Water
Analysis Batch: 549355

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 548906

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00100	0.0007974		mg/L		80	80 - 120

Lab Sample ID: 490-160288-1 MS
Matrix: Water
Analysis Batch: 549355

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 548906

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00100	0.0009514		mg/L		95	75 - 125

Lab Sample ID: 490-160288-1 MSD
Matrix: Water
Analysis Batch: 549355

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 548906

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.0009125		mg/L		91	75 - 125	4	20

Method: 9040C - pH

Lab Sample ID: LCS 490-548246/1
Matrix: Water
Analysis Batch: 548246

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.960		SU		99	98 - 103

Lab Sample ID: 490-160154-C-10 DU
Matrix: Water
Analysis Batch: 548246

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.69		7.690		SU		0	20
Temperature	22.8		22.80		Degrees C		0	20

Lab Sample ID: LCS 490-548247/1
Matrix: Water
Analysis Batch: 548247

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.010		SU		100	98 - 103

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 9040C - pH (Continued)

Lab Sample ID: 490-160288-8 DU
Matrix: Water
Analysis Batch: 548247

Client Sample ID: FIELD BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.36		6.370		SU		0.2	20
Temperature	22.9		22.90		Degrees C		0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 490-547167/5
Matrix: Water
Analysis Batch: 547167

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 16:06	1
Carbonate Alkalinity as CaCO3	ND		10.0	5.00	mg/L			10/02/18 16:06	1
Alkalinity	ND		10.0	5.00	mg/L			10/02/18 16:06	1

Lab Sample ID: LCS 490-547167/6
Matrix: Water
Analysis Batch: 547167

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	92.63		mg/L		93	90 - 110

Lab Sample ID: LCSD 490-547167/26
Matrix: Water
Analysis Batch: 547167

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	100	94.43		mg/L		94	90 - 110	2	20

Lab Sample ID: 490-160258-I-3 DU
Matrix: Water
Analysis Batch: 547167

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Bicarbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity	ND		ND		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-548101/1
Matrix: Water
Analysis Batch: 548101

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/05/18 23:03	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-548101/2
Matrix: Water
Analysis Batch: 548101

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	105.0		mg/L		105	90 - 110

Lab Sample ID: 490-160397-I-1 DU
Matrix: Water
Analysis Batch: 548101

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	183		183.0		mg/L		0	20

Lab Sample ID: 590-9540-B-1 DU
Matrix: Water
Analysis Batch: 548101

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	414		408.0		mg/L		1	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-392976/16-A
Matrix: Water
Analysis Batch: 397458

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 392976

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1825		0.0805	0.0821	1.00	0.0812	pCi/L	10/04/18 10:28	10/26/18 12:31	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					10/04/18 10:28	10/26/18 12:31	1

Lab Sample ID: LCS 160-392976/1-A
Matrix: Water
Analysis Batch: 397454

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 392976

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	10.49		1.10	1.00	0.0795	pCi/L	92	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	105		40 - 110						

Lab Sample ID: 490-160178-E-1-A MSD
Matrix: Water
Analysis Batch: 397454

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 392976

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.517		11.4	10.91		1.13	1.00	0.0863	pCi/L	92	75 - 138	0.31	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: 490-160178-E-1-A MSD
Matrix: Water
Analysis Batch: 397454

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 392976

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	103		40 - 110

Lab Sample ID: 490-160178-F-1-A MS
Matrix: Water
Analysis Batch: 397454

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 392976

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	0.517		11.4	10.23		1.09	1.00	0.116	pCi/L	86	75 - 138
Carrier	MS %Yield	MS Qualifier	Limits								
Ba Carrier	80.2		40 - 110								

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-393042/16-A
Matrix: Water
Analysis Batch: 395878

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 393042

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2897	U	0.300	0.301	1.00	0.490	pCi/L	10/04/18 11:11	10/18/18 17:22	1
Carrier	MB %Yield	MB Qualifier	Limits							
Ba Carrier	102		40 - 110							
Y Carrier	77.8		40 - 110							

Lab Sample ID: LCS 160-393042/1-A
Matrix: Water
Analysis Batch: 395728

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 393042

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	10.9	10.08		1.15	1.00	0.340	pCi/L	93	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	105		40 - 110						
Y Carrier	83.0		40 - 110						

Lab Sample ID: 490-160178-E-1-B MSD
Matrix: Water
Analysis Batch: 395726

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 393042

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	1.43	F	10.9	12.38	F	1.36	1.00	0.349	pCi/L	101	45 - 150	1.16	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 490-160178-E-1-B MSD

Matrix: Water

Analysis Batch: 395726

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 393042

	MSD	MSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	85.2		40 - 110

Lab Sample ID: 490-160178-F-1-B MS

Matrix: Water

Analysis Batch: 395726

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 393042

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	1.43	F	10.9	16.09		1.85	1.00	0.587	pCi/L	135	45 - 150

	MS	MS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	80.2		40 - 110
Y Carrier	64.7		40 - 110

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

HPLC/IC

Analysis Batch: 548111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	9056A	
490-160288-2	MW-2	Total/NA	Water	9056A	
490-160288-3	MW-3A	Total/NA	Water	9056A	
490-160288-4	MW-4	Total/NA	Water	9056A	
490-160288-5	MW-5	Total/NA	Water	9056A	
490-160288-6	MW-6	Total/NA	Water	9056A	
490-160288-7	DUPE	Total/NA	Water	9056A	
490-160288-8	FIELD BLANK	Total/NA	Water	9056A	
MB 490-548111/3	Method Blank	Total/NA	Water	9056A	
LCS 490-548111/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-548111/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-160288-1 MS	MW-1	Total/NA	Water	9056A	
490-160288-1 MSD	MW-1	Total/NA	Water	9056A	

Analysis Batch: 548563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	9056A	
490-160288-2	MW-2	Total/NA	Water	9056A	
490-160288-3	MW-3A	Total/NA	Water	9056A	
490-160288-3	MW-3A	Total/NA	Water	9056A	
490-160288-4	MW-4	Total/NA	Water	9056A	
490-160288-5	MW-5	Total/NA	Water	9056A	
490-160288-5	MW-5	Total/NA	Water	9056A	
490-160288-6	MW-6	Total/NA	Water	9056A	
490-160288-7	DUPE	Total/NA	Water	9056A	
MB 490-548563/3	Method Blank	Total/NA	Water	9056A	
LCS 490-548563/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-548563/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 548624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-6	MW-6	Total/NA	Water	9056A	
490-160288-7	DUPE	Total/NA	Water	9056A	
MB 490-548624/3	Method Blank	Total/NA	Water	9056A	
LCS 490-548624/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-548624/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 258830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total Recoverable	Water	3005A	
490-160288-2	MW-2	Total Recoverable	Water	3005A	
490-160288-3	MW-3A	Total Recoverable	Water	3005A	
490-160288-4	MW-4	Total Recoverable	Water	3005A	
490-160288-5	MW-5	Total Recoverable	Water	3005A	
490-160288-6	MW-6	Total Recoverable	Water	3005A	
490-160288-7	DUPE	Total Recoverable	Water	3005A	
490-160288-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-258830/1-A	Method Blank	Total Recoverable	Water	3005A	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Metals (Continued)

Prep Batch: 258830 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-258830/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-160288-6 MS	MW-6	Total Recoverable	Water	3005A	
490-160288-6 MSD	MW-6	Total Recoverable	Water	3005A	

Prep Batch: 258832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total Recoverable	Water	3005A	
490-160288-2	MW-2	Total Recoverable	Water	3005A	
490-160288-3	MW-3A	Total Recoverable	Water	3005A	
490-160288-4	MW-4	Total Recoverable	Water	3005A	
490-160288-5	MW-5	Total Recoverable	Water	3005A	
490-160288-6	MW-6	Total Recoverable	Water	3005A	
490-160288-7	DUPE	Total Recoverable	Water	3005A	
490-160288-8	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-258832/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-258832/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-160288-1 MS	MW-1	Total Recoverable	Water	3005A	
490-160288-1 MSD	MW-1	Total Recoverable	Water	3005A	

Analysis Batch: 259040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total Recoverable	Water	6020A	258832
490-160288-2	MW-2	Total Recoverable	Water	6020A	258832
490-160288-3	MW-3A	Total Recoverable	Water	6020A	258832
490-160288-4	MW-4	Total Recoverable	Water	6020A	258832
490-160288-5	MW-5	Total Recoverable	Water	6020A	258832
490-160288-6	MW-6	Total Recoverable	Water	6020A	258832
490-160288-7	DUPE	Total Recoverable	Water	6020A	258832
490-160288-8	FIELD BLANK	Total Recoverable	Water	6020A	258832
MB 180-258832/1-A	Method Blank	Total Recoverable	Water	6020A	258832
LCS 180-258832/2-A	Lab Control Sample	Total Recoverable	Water	6020A	258832
490-160288-1 MS	MW-1	Total Recoverable	Water	6020A	258832
490-160288-1 MSD	MW-1	Total Recoverable	Water	6020A	258832

Analysis Batch: 259077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total Recoverable	Water	6020A	258832
490-160288-2	MW-2	Total Recoverable	Water	6020A	258832
490-160288-3	MW-3A	Total Recoverable	Water	6020A	258832
490-160288-4	MW-4	Total Recoverable	Water	6020A	258832
490-160288-5	MW-5	Total Recoverable	Water	6020A	258832
490-160288-6	MW-6	Total Recoverable	Water	6020A	258832
490-160288-7	DUPE	Total Recoverable	Water	6020A	258832
490-160288-8	FIELD BLANK	Total Recoverable	Water	6020A	258832
MB 180-258832/1-A	Method Blank	Total Recoverable	Water	6020A	258832
LCS 180-258832/2-A	Lab Control Sample	Total Recoverable	Water	6020A	258832
490-160288-1 MS	MW-1	Total Recoverable	Water	6020A	258832
490-160288-1 MSD	MW-1	Total Recoverable	Water	6020A	258832

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Metals (Continued)

Analysis Batch: 259085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total Recoverable	Water	6010C	258830
490-160288-2	MW-2	Total Recoverable	Water	6010C	258830
490-160288-3	MW-3A	Total Recoverable	Water	6010C	258830
490-160288-4	MW-4	Total Recoverable	Water	6010C	258830
490-160288-5	MW-5	Total Recoverable	Water	6010C	258830
490-160288-6	MW-6	Total Recoverable	Water	6010C	258830
490-160288-7	DUPE	Total Recoverable	Water	6010C	258830
490-160288-8	FIELD BLANK	Total Recoverable	Water	6010C	258830
MB 180-258830/1-A	Method Blank	Total Recoverable	Water	6010C	258830
LCS 180-258830/2-A	Lab Control Sample	Total Recoverable	Water	6010C	258830
490-160288-6 MS	MW-6	Total Recoverable	Water	6010C	258830
490-160288-6 MSD	MW-6	Total Recoverable	Water	6010C	258830

Prep Batch: 548906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	7470A	
490-160288-2	MW-2	Total/NA	Water	7470A	
490-160288-3	MW-3A	Total/NA	Water	7470A	
490-160288-4	MW-4	Total/NA	Water	7470A	
490-160288-5	MW-5	Total/NA	Water	7470A	
490-160288-6	MW-6	Total/NA	Water	7470A	
490-160288-7	DUPE	Total/NA	Water	7470A	
490-160288-8	FIELD BLANK	Total/NA	Water	7470A	
MB 490-548906/1-A	Method Blank	Total/NA	Water	7470A	
LCS 490-548906/2-A	Lab Control Sample	Total/NA	Water	7470A	
490-160288-1 MS	MW-1	Total/NA	Water	7470A	
490-160288-1 MSD	MW-1	Total/NA	Water	7470A	

Analysis Batch: 549355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	7470A	548906
490-160288-2	MW-2	Total/NA	Water	7470A	548906
490-160288-3	MW-3A	Total/NA	Water	7470A	548906
490-160288-4	MW-4	Total/NA	Water	7470A	548906
490-160288-5	MW-5	Total/NA	Water	7470A	548906
490-160288-6	MW-6	Total/NA	Water	7470A	548906
490-160288-7	DUPE	Total/NA	Water	7470A	548906
490-160288-8	FIELD BLANK	Total/NA	Water	7470A	548906
MB 490-548906/1-A	Method Blank	Total/NA	Water	7470A	548906
LCS 490-548906/2-A	Lab Control Sample	Total/NA	Water	7470A	548906
490-160288-1 MS	MW-1	Total/NA	Water	7470A	548906
490-160288-1 MSD	MW-1	Total/NA	Water	7470A	548906

General Chemistry

Analysis Batch: 547167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	SM 2320B	
490-160288-2	MW-2	Total/NA	Water	SM 2320B	
490-160288-3	MW-3A	Total/NA	Water	SM 2320B	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

General Chemistry (Continued)

Analysis Batch: 547167 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-4	MW-4	Total/NA	Water	SM 2320B	
490-160288-5	MW-5	Total/NA	Water	SM 2320B	
490-160288-6	MW-6	Total/NA	Water	SM 2320B	
490-160288-7	DUPE	Total/NA	Water	SM 2320B	
490-160288-8	FIELD BLANK	Total/NA	Water	SM 2320B	
MB 490-547167/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 490-547167/6	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 490-547167/26	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
490-160258-I-3 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 548101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	SM 2540C	
490-160288-2	MW-2	Total/NA	Water	SM 2540C	
490-160288-3	MW-3A	Total/NA	Water	SM 2540C	
490-160288-4	MW-4	Total/NA	Water	SM 2540C	
490-160288-5	MW-5	Total/NA	Water	SM 2540C	
490-160288-6	MW-6	Total/NA	Water	SM 2540C	
490-160288-7	DUPE	Total/NA	Water	SM 2540C	
490-160288-8	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-548101/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-548101/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-160397-I-1 DU	Duplicate	Total/NA	Water	SM 2540C	
590-9540-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 548246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	9040C	
490-160288-2	MW-2	Total/NA	Water	9040C	
490-160288-3	MW-3A	Total/NA	Water	9040C	
490-160288-4	MW-4	Total/NA	Water	9040C	
490-160288-5	MW-5	Total/NA	Water	9040C	
490-160288-6	MW-6	Total/NA	Water	9040C	
490-160288-7	DUPE	Total/NA	Water	9040C	
LCS 490-548246/1	Lab Control Sample	Total/NA	Water	9040C	
490-160154-C-10 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 548247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-8	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-548247/1	Lab Control Sample	Total/NA	Water	9040C	
490-160288-8 DU	FIELD BLANK	Total/NA	Water	9040C	

Rad

Prep Batch: 392976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	PrecSep-21	
490-160288-2	MW-2	Total/NA	Water	PrecSep-21	
490-160288-3	MW-3A	Total/NA	Water	PrecSep-21	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Rad (Continued)

Prep Batch: 392976 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-4	MW-4	Total/NA	Water	PrecSep-21	
490-160288-5	MW-5	Total/NA	Water	PrecSep-21	
490-160288-6	MW-6	Total/NA	Water	PrecSep-21	
490-160288-7	DUPE	Total/NA	Water	PrecSep-21	
490-160288-8	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-392976/16-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-392976/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
490-160178-E-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	
490-160178-F-1-A MS	Matrix Spike	Total/NA	Water	PrecSep-21	

Prep Batch: 393042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160288-1	MW-1	Total/NA	Water	PrecSep_0	
490-160288-2	MW-2	Total/NA	Water	PrecSep_0	
490-160288-3	MW-3A	Total/NA	Water	PrecSep_0	
490-160288-4	MW-4	Total/NA	Water	PrecSep_0	
490-160288-5	MW-5	Total/NA	Water	PrecSep_0	
490-160288-6	MW-6	Total/NA	Water	PrecSep_0	
490-160288-7	DUPE	Total/NA	Water	PrecSep_0	
490-160288-8	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-393042/16-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-393042/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
490-160178-E-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	
490-160178-F-1-B MS	Matrix Spike	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-1

Date Collected: 09/28/18 12:20

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 07:29	P1B	TAL NSH
Total/NA	Analysis	9056A		2			548563	10/08/18 22:39	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:48	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			259085	10/05/18 13:55	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 15:52	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 20:40	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH
Total/NA	Analysis	7470A		1			549355	10/10/18 23:26	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548246	10/06/18 18:04	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 17:31	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.06 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:29	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.06 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

Client Sample ID: MW-2

Date Collected: 09/28/18 16:55

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 08:23	P1B	TAL NSH
Total/NA	Analysis	9056A		10			548563	10/08/18 22:57	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:48	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			259085	10/05/18 14:00	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 16:11	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 21:16	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH
Total/NA	Analysis	7470A		1			549355	10/10/18 23:39	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548246	10/06/18 18:04	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 17:38	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.75 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:29	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.75 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-3A

Date Collected: 09/28/18 16:17

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 08:41	P1B	TAL NSH
Total/NA	Analysis	9056A		100			548563	10/08/18 23:33	P1B	TAL NSH
Total/NA	Analysis	9056A		500			548563	10/08/18 23:51	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:48	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			259085	10/05/18 14:06	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 16:14	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 21:21	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH
Total/NA	Analysis	7470A		1			549355	10/10/18 23:41	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548246	10/06/18 18:04	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 17:44	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.35 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:29	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.35 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

Client Sample ID: MW-4

Date Collected: 09/28/18 15:25

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 08:59	P1B	TAL NSH
Total/NA	Analysis	9056A		200			548563	10/09/18 00:09	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:48	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			259085	10/05/18 14:11	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 16:17	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 21:26	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH
Total/NA	Analysis	7470A		1			549355	10/10/18 23:44	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548246	10/06/18 18:04	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 17:51	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.47 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:29	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.47 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:17	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-4

Date Collected: 09/28/18 15:25

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

Client Sample ID: MW-5

Date Collected: 09/28/18 14:30

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 09:17	P1B	TAL NSH
Total/NA	Analysis	9056A		100			548563	10/09/18 01:21	P1B	TAL NSH
Total/NA	Analysis	9056A		200			548563	10/09/18 01:39	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:48	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			259085	10/05/18 14:16	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 16:20	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 21:30	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH
Total/NA	Analysis	7470A		1			549355	10/10/18 23:52	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548246	10/06/18 18:04	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 17:58	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.85 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:29	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.85 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

Client Sample ID: MW-6

Date Collected: 09/28/18 13:25

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 09:35	P1B	TAL NSH
Total/NA	Analysis	9056A		10			548563	10/09/18 01:57	P1B	TAL NSH
Total/NA	Analysis	9056A		200			548624	10/09/18 13:15	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:48	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			259085	10/05/18 14:32	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 16:22	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 21:35	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: MW-6

Date Collected: 09/28/18 13:25

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1			549355	10/10/18 23:54	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548246	10/06/18 18:04	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 18:06	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.26 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.26 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

Client Sample ID: DUPE

Date Collected: 09/28/18 13:40

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 09:53	P1B	TAL NSH
Total/NA	Analysis	9056A		10			548563	10/09/18 02:34	P1B	TAL NSH
Total/NA	Analysis	9056A		200			548624	10/09/18 13:33	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:49	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			259085	10/05/18 14:53	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 16:25	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 21:39	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH
Total/NA	Analysis	7470A		1			549355	10/10/18 23:57	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548246	10/06/18 18:04	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 18:13	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.37 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.37 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:17	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 09/28/18 17:05

Date Received: 10/02/18 10:00

Lab Sample ID: 490-160288-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			548111	10/06/18 10:11	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258830	10/04/18 12:48	NAM	TAL PIT

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-160288-8

Date Collected: 09/28/18 17:05

Matrix: Water

Date Received: 10/02/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6010C		1			259085	10/05/18 14:58	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259040	10/05/18 16:28	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258832	10/04/18 12:51	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259077	10/06/18 21:44	WTR	TAL PIT
Total/NA	Prep	7470A			30 mL	30 mL	548906	10/10/18 10:06	CSL	TAL NSH
Total/NA	Analysis	7470A		1			549355	10/10/18 23:59	BLG	TAL NSH
Total/NA	Analysis	9040C		1			548247	10/06/18 18:09	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	547167	10/02/18 18:19	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	548101	10/05/18 23:03	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.90 mL	1.0 g	392976	10/04/18 10:28	JLC	TAL SL
Total/NA	Analysis	903.0		1			397454	10/26/18 12:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.90 mL	1.0 g	393042	10/04/18 11:11	JLC	TAL SL
Total/NA	Analysis	904.0		1			395726	10/18/18 17:18	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			398556	10/31/18 13:21	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
7470A	Mercury (CVAA)	SW846	TAL NSH
9040C	pH	SW846	TAL NSH
SM 2320B	Alkalinity	SM	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL NSH

Protocol References:

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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-19
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.				
Analysis Method	Prep Method	Matrix	Analyte	
9040C		Water	pH	
9040C		Water	Temperature	
9056A		Water	Chloride	
9056A		Water	Fluoride	
9056A		Water	Sulfate	
SM 2320B		Water	Alkalinity	
SM 2320B		Water	Bicarbonate Alkalinity as CaCO3	
SM 2320B		Water	Carbonate Alkalinity as CaCO3	
SM 2540C		Water	Total Dissolved Solids	

Laboratory: TestAmerica Pittsburgh

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	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-19

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18 *
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19

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

TestAmerica Nashville

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Laboratory: TestAmerica St. Louis (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
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18 *
Iowa	State Program	7	373	12-01-18 *
Kansas	NELAP	7	E-10236	10-31-18 *
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18 *
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19

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

TestAmerica Nashville

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ORIGIN ID:RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US

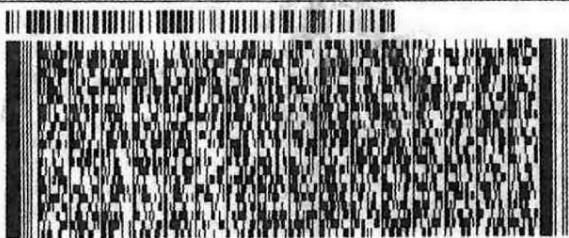
SHIP DATE: 02OCT18
ACTWGT: 10.00 LB MAIN
CAD: 820425/CAFE3210

BILL RECIPIENT

TO SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238

(412) 963-7068
PO: YES

REF: 8490-90244



FedEx
Express



TRK# 4587 8109 8671
0201

WED - 03 OCT 10:30A
PRIORITY OVERNIGHT

NA AGCA

15238
PA-US PIT

ected temp 18.4 °C
mometer ID 9
CF 0 Initials TS
No Ice

PT-WI-SR-001 effective 7/26/13

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving		Phone:	Cisneros, Roxanne		490-79635.1
Company: TestAmerica Laboratories, Inc.		E-Mail:	roxanne.cisneros@testamericainc.com	State of Origin:	Page:
Address: 13715 Rider Trail North,		Accreditations Required (See note): State Program - Kentucky (UST)		Job #:	Page 1 of 1
City: Earth City		Due Date Requested: 10/30/2018		Job #:	490-160288-2
State, Zip: MO, 63045		TAT Requested (days):		Preservation Codes:	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		PO #:		A - HCL M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Email:		WO #:		Other:	
Project Name: GL-2nd Semi Annual 2018		Project #: 49010431			
Site: Big Rivers CCR		SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=Blood, A=Air)	Analysis Requested			Total Number of Containers	Special Instructions/Note:
					Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PreSep. 21 Standard Target List		
MW-1 (490-160288-1)	9/28/18	12:20 Central		Water				2	run once - upload data twice
MW-2 (490-160288-2)	9/28/18	16:55 Central		Water				2	run once - upload data twice
MW-3A (490-160288-3)	9/28/18	16:17 Central		Water				2	run once - upload data twice
MW-4 (490-160288-4)	9/28/18	15:25 Central		Water				2	run once - upload data twice
MW-5 (490-160288-5)	9/28/18	14:30 Central		Water				2	run once - upload data twice
MW-6 (490-160288-6)	9/28/18	13:25 Central		Water				2	run once - upload data twice
DUPE (490-160288-7)	9/28/18	13:40 Central		Water				2	run once - upload data twice
FIELD BLANK (490-160288-8)	9/28/18	17:05 Central		Water				2	run once - upload data twice

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: <i>mm3x</i>		Date: 10-3-18 0905	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact: ☐ Yes ☐ No		Cooler Temperature(s) °C and Other Remarks:	

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING



Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:					
Client Contact: Shipping/Receiving		Phone:	Cisneros, Roxanne		490-79635.1					
Company:			E-Mail:	State of Origin:	Page:					
TestAmerica Laboratories, Inc.			roxanne.cisneros@testamericainc.com	Kentucky	Page 1 of 1					
Address:			Accreditations Required (See note):		Job #:					
13715 Rider Trail North,			State Program - Kentucky (UST)		490-160288-4					
City:	Earth City		Analysis Requested							
State, Zip:	MO, 63045		Preservation Codes:							
Phone:	314-298-8566(Tel) 314-298-8757(Fax)		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)							
Email:			Other:							
Project Name:	GL CCR Groundwater									
Site:	Big Rivers CCR									
PO #:										
WO #:										
Project #:	49010431									
SSOW#:										
Due Date Requested:	10/30/2018									
TAT Requested (days):										
Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=oil)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PreSep. 21 Standard Target List	904.0/PreSep. 0 Standard Target List	Ra226Ra228_GFPc	Total Number of containers	Special Instructions/Note:
MW-1 (490-160288-1)	9/28/18	12:20 Central	Water	X	X	X	X	X	2	run once - upload data twice
MW-2 (490-160288-2)	9/28/18	16:55 Central	Water	X	X	X	X	X	2	run once - upload data twice
MW-3A (490-160288-3)	9/28/18	16:17 Central	Water	X	X	X	X	X	2	run once - upload data twice
MW-4 (490-160288-4)	9/28/18	15:25 Central	Water	X	X	X	X	X	2	run once - upload data twice
MW-5 (490-160288-5)	9/28/18	13:25 Central	Water	X	X	X	X	X	2	run once - upload data twice
MW-6 (490-160288-6)	9/28/18	13:40 Central	Water	X	X	X	X	X	2	run once - upload data twice
DUPE (490-160288-7)	9/28/18	17:05 Central	Water	X	X	X	X	X	2	run once - upload data twice
FIELD BLANK (490-160288-8)	9/28/18	Central	Water	X	X	X	X	X	2	run once - upload data twice
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.										
Possible Hazard Identification										
Unconfirmed										
Deliverable Requested: I, II, III, IV, Other (specify)										
Primary Deliverable Rank: 2										
Empty Kit Relinquished by:										
Date:										
Time:										
Relinquished by:										
Date/Time:										
Relinquished by:										
Date/Time:										
Relinquished by:										
Date/Time:										
Custody Seals Intact: ☐ Yes ☐ No										
Custody Seal No.:										
Cooler Temperature(s) °C and Other Remarks:										
Received by: <i>Michael Huen</i> Date/Time: <i>10.31.18 0905</i> Company: <i>TH 512</i> Received by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____										

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-160288-4
SDG Number: Sebree Station, Green Landfill

Login Number: 160288

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 10/03/18 11:58 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0
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.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: GL CCR Groundwater

TestAmerica Job ID: 490-160288-3
SDG: Sebree Station, Green Landfill

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
490-160178-E-1-A MSD	Matrix Spike Duplicate	103	
490-160178-F-1-A MS	Matrix Spike	80.2	
490-160288-1	MW-1	100	
490-160288-2	MW-2	102	
490-160288-3	MW-3A	101	
490-160288-4	MW-4	91.7	
490-160288-5	MW-5	99.7	
490-160288-6	MW-6	104	
490-160288-7	DUPE	99.1	
490-160288-8	FIELD BLANK	101	
LCS 160-392976/1-A	Lab Control Sample	105	
MB 160-392976/16-A	Method Blank	102	

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-160178-E-1-B MSD	Matrix Spike Duplicate	103	85.2
490-160178-F-1-B MS	Matrix Spike	80.2	64.7
490-160288-1	MW-1	100	82.6
490-160288-2	MW-2	102	80.4
490-160288-3	MW-3A	101	86.4
490-160288-4	MW-4	91.7	83.7
490-160288-5	MW-5	99.7	80.4
490-160288-6	MW-6	104	85.2
490-160288-7	DUPE	99.1	86.4
490-160288-8	FIELD BLANK	101	85.2
LCS 160-393042/1-A	Lab Control Sample	105	83.0
MB 160-393042/16-A	Method Blank	102	77.8

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier

GREEN STATION SURFACE IMPOUNDMENT

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-151667-1

TestAmerica SDG: Sebree Station, Green Ash Pond

Client Project/Site: Green Ash Pond CCR Groundwater

Sampling Event: Big Rivers CCR/SemiAnnual GW

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

5/21/2018 11:59:15 AM

Roxanne Cisneros, Senior Project Manager

(615)301-5761

roxanne.cisneros@testamericainc.com

LINKS

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

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-151667-1	MW-11	Ground Water	05/07/18 11:10	05/10/18 09:10
490-151667-2	MW-12	Ground Water	05/07/18 13:40	05/10/18 09:10
490-151667-3	MW-13	Ground Water	05/07/18 13:00	05/10/18 09:10
490-151667-4	MW-14	Ground Water	05/07/18 12:25	05/10/18 09:10
490-151667-5	DUPE	Ground Water	05/07/18 11:22	05/10/18 09:10
490-151667-6	FIELD BLANK	Water	05/07/18 14:00	05/10/18 09:10

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Job ID: 490-151667-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-151667-1

Comments

No additional comments.

Receipt

The samples were received on 5/10/2018 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

HPLC/IC

Method(s) 9056A: The method blank for analytical batch 490-515861 contained Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-515861 contained Chloride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-515918 contained Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-515918 contained Chloride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-11 (490-151667-1), MW-13 (490-151667-3), MW-14 (490-151667-4) and DUPE (490-151667-5). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-515861 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

Method(s) 9056A: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-515918. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

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

Metals

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

General Chemistry

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

Organic Prep

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

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-11

Date Collected: 05/07/18 11:10

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1860	B	150	10.0	mg/L			05/18/18 17:23	50
Fluoride	0.161	J	1.00	0.0100	mg/L			05/18/18 04:38	1
Sulfate	1020	B	250	1.50	mg/L			05/18/18 17:23	50

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.879		0.0800	0.0303	mg/L		05/14/18 14:27	05/18/18 04:02	1
Calcium	317		0.500	0.116	mg/L		05/14/18 14:27	05/16/18 21:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.18		0.100	0.100	SU			05/11/18 12:56	1
Temperature	24.0		0.100	0.100	Degrees C			05/11/18 12:56	1
Total Dissolved Solids	5070		100	70.0	mg/L			05/12/18 19:36	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-12

Date Collected: 05/07/18 13:40

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15.4		3.00	0.200	mg/L			05/18/18 04:50	1
Fluoride	0.397	J	1.00	0.0100	mg/L			05/18/18 04:50	1
Sulfate	13.5	B	5.00	0.0300	mg/L			05/18/18 04:50	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.352		0.0800	0.0303	mg/L		05/14/18 14:27	05/18/18 04:20	1
Calcium	93.5		0.500	0.116	mg/L		05/14/18 14:27	05/16/18 21:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.34		0.100	0.100	SU			05/11/18 12:56	1
Temperature	24.0		0.100	0.100	Degrees C			05/11/18 12:56	1
Total Dissolved Solids	649		10.0	7.00	mg/L			05/12/18 19:36	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-13

Date Collected: 05/07/18 13:00

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21.0		3.00	0.200	mg/L			05/18/18 05:01	1
Fluoride	0.252	J	1.00	0.0100	mg/L			05/18/18 05:01	1
Sulfate	87.6	B	25.0	0.150	mg/L			05/18/18 17:47	5

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0403	J	0.0800	0.0303	mg/L		05/14/18 14:27	05/18/18 04:25	1
Calcium	94.3		0.500	0.116	mg/L		05/14/18 14:27	05/16/18 21:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.03		0.100	0.100	SU			05/11/18 12:56	1
Temperature	24.0		0.100	0.100	Degrees C			05/11/18 12:56	1
Total Dissolved Solids	673		10.0	7.00	mg/L			05/12/18 19:36	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-14
Date Collected: 05/07/18 12:25
Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-4
Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	198	B	30.0	2.00	mg/L			05/18/18 18:10	10
Fluoride	0.307	J	1.00	0.0100	mg/L			05/18/18 05:36	1
Sulfate	222	B	50.0	0.300	mg/L			05/18/18 18:10	10

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.254		0.0800	0.0303	mg/L		05/14/18 14:27	05/18/18 04:29	1
Calcium	189		0.500	0.116	mg/L		05/14/18 14:27	05/16/18 21:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.26		0.100	0.100	SU			05/11/18 12:56	1
Temperature	24.0		0.100	0.100	Degrees C			05/11/18 12:56	1
Total Dissolved Solids	1180		20.0	14.0	mg/L			05/12/18 19:36	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: DUPE
Date Collected: 05/07/18 11:22
Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-5
Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1940	B	150	10.0	mg/L			05/18/18 18:56	50
Fluoride	0.155	J	1.00	0.0100	mg/L			05/18/18 05:48	1
Sulfate	1040	B	250	1.50	mg/L			05/18/18 18:56	50

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.873		0.0800	0.0303	mg/L		05/14/18 14:27	05/18/18 04:34	1
Calcium	329		0.500	0.116	mg/L		05/14/18 14:27	05/16/18 21:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.07		0.100	0.100	SU			05/11/18 13:01	1
Temperature	24.0		0.100	0.100	Degrees C			05/11/18 13:01	1
Total Dissolved Solids	5140		100	70.0	mg/L			05/12/18 19:36	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-151667-6

Date Collected: 05/07/18 14:00

Matrix: Water

Date Received: 05/10/18 09:10

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			05/18/18 05:59	1
Fluoride	0.0350	J	1.00	0.0100	mg/L			05/18/18 05:59	1
Sulfate	0.407	J B	5.00	0.0300	mg/L			05/18/18 05:59	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.0800	0.0303	mg/L		05/14/18 14:27	05/18/18 04:39	1
Calcium	ND		0.500	0.116	mg/L		05/14/18 14:27	05/16/18 21:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.94		0.100	0.100	SU			05/11/18 13:01	1
Temperature	24.0		0.100	0.100	Degrees C			05/11/18 13:01	1
Total Dissolved Solids	14.0		10.0	7.00	mg/L			05/12/18 19:36	1

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-515861/3

Matrix: Water

Analysis Batch: 515861

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.00	0.200	mg/L			05/18/18 02:19	1
Fluoride	ND		1.00	0.0100	mg/L			05/18/18 02:19	1
Sulfate	0.4090	J	5.00	0.0300	mg/L			05/18/18 02:19	1

Lab Sample ID: LCS 490-515861/4

Matrix: Water

Analysis Batch: 515861

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.842		mg/L		98	80 - 120
Fluoride	1.00	0.9915	J	mg/L		99	80 - 120
Sulfate	10.0	9.580		mg/L		96	80 - 120

Lab Sample ID: LCSD 490-515861/5

Matrix: Water

Analysis Batch: 515861

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.823		mg/L		98	80 - 120	0	20
Fluoride	1.00	0.9885	J	mg/L		99	80 - 120	0	20
Sulfate	10.0	9.708		mg/L		97	80 - 120	1	20

Lab Sample ID: 490-151660-C-1 MS

Matrix: Water

Analysis Batch: 515861

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.145	J	1.00	1.240		mg/L		109	80 - 120

Lab Sample ID: 490-151660-C-1 MSD

Matrix: Water

Analysis Batch: 515861

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.145	J	1.00	1.190		mg/L		104	80 - 120	4	20

Lab Sample ID: 490-151664-C-2 DU

Matrix: Water

Analysis Batch: 515861

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	33.8		33.15		mg/L		2	20
Fluoride	0.0940	J	0.09395	J	mg/L		0.07	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 490-515918/3

Matrix: Water

Analysis Batch: 515918

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2173	J	3.00	0.200	mg/L			05/18/18 16:02	1
Fluoride	ND		1.00	0.0100	mg/L			05/18/18 16:02	1
Sulfate	0.4182	J	5.00	0.0300	mg/L			05/18/18 16:02	1

Lab Sample ID: LCS 490-515918/4

Matrix: Water

Analysis Batch: 515918

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.931		mg/L		99	80 - 120
Fluoride	1.00	0.9986	J	mg/L		100	80 - 120
Sulfate	10.0	9.903		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-515918/5

Matrix: Water

Analysis Batch: 515918

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.986		mg/L		100	80 - 120	1	20
Fluoride	1.00	1.015		mg/L		101	80 - 120	2	20
Sulfate	10.0	9.900		mg/L		99	80 - 120	0	20

Lab Sample ID: 490-151664-C-2 DU

Matrix: Water

Analysis Batch: 515918

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	33.4	B	32.52		mg/L		3	20
Fluoride	0.136	J	0.1296	J	mg/L		5	20
Sulfate	62.8	B	62.02		mg/L		1	20

Lab Sample ID: 490-151675-A-2 DU

Matrix: Water

Analysis Batch: 515918

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	31.2	B	33.62		mg/L		7	20
Fluoride	0.303	J	0.3190	J	mg/L		5	20
Sulfate	145	B	155.0		mg/L		7	20

Lab Sample ID: 490-151675-A-2 DU

Matrix: Water

Analysis Batch: 515918

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	31.6	B	30.07		mg/L		5	20
Fluoride	0.477	J	0.4788	J	mg/L		0.3	20
Sulfate	143	B	142.9		mg/L		0.2	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-244840/1-A
Matrix: Water
Analysis Batch: 245202

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.500	0.116	mg/L		05/14/18 14:27	05/16/18 21:05	1

Lab Sample ID: MB 180-244840/1-A
Matrix: Water
Analysis Batch: 245332

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.0800	0.0303	mg/L		05/14/18 14:27	05/18/18 03:53	1

Lab Sample ID: LCS 180-244840/2-A
Matrix: Water
Analysis Batch: 245202

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50.0	51.14		mg/L		102	80 - 120

Lab Sample ID: LCS 180-244840/2-A
Matrix: Water
Analysis Batch: 245332

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.076		mg/L		108	80 - 120

Lab Sample ID: 180-77643-A-1-A MS
Matrix: Water
Analysis Batch: 245202

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	54.8		50.0	103.3		mg/L		97	75 - 125

Lab Sample ID: 180-77643-A-1-A MS
Matrix: Water
Analysis Batch: 245332

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	ND		1.00	1.087		mg/L		109	75 - 125

Lab Sample ID: 180-77643-A-1-B MSD
Matrix: Water
Analysis Batch: 245202

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	54.8		50.0	103.8		mg/L		98	75 - 125	0	20

Lab Sample ID: 180-77643-A-1-B MSD
Matrix: Water
Analysis Batch: 245332

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 244840

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	ND		1.00	1.104		mg/L		110	75 - 125	2	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Method: 9040C - pH

Lab Sample ID: LCS 490-514343/1
Matrix: Water
Analysis Batch: 514343

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.000		SU		100	98 - 103

Lab Sample ID: 490-151667-4 DU
Matrix: Ground Water
Analysis Batch: 514343

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.26		7.260		SU		0	20
Temperature	24.0		24.00		Degrees C		0	20

Lab Sample ID: LCS 490-514344/1
Matrix: Water
Analysis Batch: 514344

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.000		SU		100	98 - 103

Lab Sample ID: 490-151667-6 DU
Matrix: Water
Analysis Batch: 514344

Client Sample ID: FIELD BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.94		7.940		SU		0	20
Temperature	24.0		24.00		Degrees C		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-514147/1
Matrix: Water
Analysis Batch: 514147

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			05/12/18 19:36	1

Lab Sample ID: LCS 490-514147/2
Matrix: Water
Analysis Batch: 514147

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	104.0		mg/L		104	90 - 110

Lab Sample ID: 280-109630-A-1 DU
Matrix: Water
Analysis Batch: 514147

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1360		1392		mg/L		2	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 490-151667-2 DU
Matrix: Ground Water
Analysis Batch: 514147

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	649		640.0		mg/L	—	1	20

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

HPLC/IC

Analysis Batch: 515861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-1	MW-11	Total/NA	Ground Water	9056A	
490-151667-2	MW-12	Total/NA	Ground Water	9056A	
490-151667-3	MW-13	Total/NA	Ground Water	9056A	
490-151667-4	MW-14	Total/NA	Ground Water	9056A	
490-151667-5	DUPE	Total/NA	Ground Water	9056A	
490-151667-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-515861/3	Method Blank	Total/NA	Water	9056A	
LCS 490-515861/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-515861/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-151660-C-1 MS	Matrix Spike	Total/NA	Water	9056A	
490-151660-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	
490-151664-C-2 DU	Duplicate	Total/NA	Water	9056A	

Analysis Batch: 515918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-1	MW-11	Total/NA	Ground Water	9056A	
490-151667-3	MW-13	Total/NA	Ground Water	9056A	
490-151667-4	MW-14	Total/NA	Ground Water	9056A	
490-151667-5	DUPE	Total/NA	Ground Water	9056A	
MB 490-515918/3	Method Blank	Total/NA	Water	9056A	
LCS 490-515918/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-515918/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-151664-C-2 DU	Duplicate	Total/NA	Water	9056A	
490-151675-A-2 DU	Duplicate	Total/NA	Water	9056A	
490-151675-A-2 DU	Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 244840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-1	MW-11	Total Recoverable	Ground Water	3005A	
490-151667-2	MW-12	Total Recoverable	Ground Water	3005A	
490-151667-3	MW-13	Total Recoverable	Ground Water	3005A	
490-151667-4	MW-14	Total Recoverable	Ground Water	3005A	
490-151667-5	DUPE	Total Recoverable	Ground Water	3005A	
490-151667-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-244840/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-244840/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-77643-A-1-A MS	Matrix Spike	Total Recoverable	Water	3005A	
180-77643-A-1-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

Analysis Batch: 245202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-1	MW-11	Total Recoverable	Ground Water	6020A	244840
490-151667-2	MW-12	Total Recoverable	Ground Water	6020A	244840
490-151667-3	MW-13	Total Recoverable	Ground Water	6020A	244840
490-151667-4	MW-14	Total Recoverable	Ground Water	6020A	244840
490-151667-5	DUPE	Total Recoverable	Ground Water	6020A	244840
490-151667-6	FIELD BLANK	Total Recoverable	Water	6020A	244840
MB 180-244840/1-A	Method Blank	Total Recoverable	Water	6020A	244840

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Metals (Continued)

Analysis Batch: 245202 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-244840/2-A	Lab Control Sample	Total Recoverable	Water	6020A	244840
180-77643-A-1-A MS	Matrix Spike	Total Recoverable	Water	6020A	244840
180-77643-A-1-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	244840

Analysis Batch: 245332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-1	MW-11	Total Recoverable	Ground Water	6020A	244840
490-151667-2	MW-12	Total Recoverable	Ground Water	6020A	244840
490-151667-3	MW-13	Total Recoverable	Ground Water	6020A	244840
490-151667-4	MW-14	Total Recoverable	Ground Water	6020A	244840
490-151667-5	DUPE	Total Recoverable	Ground Water	6020A	244840
490-151667-6	FIELD BLANK	Total Recoverable	Water	6020A	244840
MB 180-244840/1-A	Method Blank	Total Recoverable	Water	6020A	244840
LCS 180-244840/2-A	Lab Control Sample	Total Recoverable	Water	6020A	244840
180-77643-A-1-A MS	Matrix Spike	Total Recoverable	Water	6020A	244840
180-77643-A-1-B MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	244840

General Chemistry

Analysis Batch: 514147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-151667-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-151667-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-151667-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-151667-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-151667-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-514147/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-514147/2	Lab Control Sample	Total/NA	Water	SM 2540C	
280-109630-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
490-151667-2 DU	MW-12	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 514343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-1	MW-11	Total/NA	Ground Water	9040C	
490-151667-2	MW-12	Total/NA	Ground Water	9040C	
490-151667-3	MW-13	Total/NA	Ground Water	9040C	
490-151667-4	MW-14	Total/NA	Ground Water	9040C	
LCS 490-514343/1	Lab Control Sample	Total/NA	Water	9040C	
490-151667-4 DU	MW-14	Total/NA	Ground Water	9040C	

Analysis Batch: 514344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-151667-5	DUPE	Total/NA	Ground Water	9040C	
490-151667-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-514344/1	Lab Control Sample	Total/NA	Water	9040C	
490-151667-6 DU	FIELD BLANK	Total/NA	Water	9040C	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-11

Date Collected: 05/07/18 11:10

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			515861	05/18/18 04:38	SW1	TAL NSH
Total/NA	Analysis	9056A		50			515918	05/18/18 17:23	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245202	05/16/18 21:16	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245332	05/18/18 04:02	WTR	TAL PIT
Total/NA	Analysis	9040C		1			514343	05/11/18 12:56	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	514147	05/12/18 19:36	AEC	TAL NSH

Client Sample ID: MW-12

Date Collected: 05/07/18 13:40

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			515861	05/18/18 04:50	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245202	05/16/18 21:19	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245332	05/18/18 04:20	WTR	TAL PIT
Total/NA	Analysis	9040C		1			514343	05/11/18 12:56	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	514147	05/12/18 19:36	AEC	TAL NSH

Client Sample ID: MW-13

Date Collected: 05/07/18 13:00

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			515861	05/18/18 05:01	SW1	TAL NSH
Total/NA	Analysis	9056A		5			515918	05/18/18 17:47	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245202	05/16/18 21:22	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245332	05/18/18 04:25	WTR	TAL PIT
Total/NA	Analysis	9040C		1			514343	05/11/18 12:56	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	514147	05/12/18 19:36	AEC	TAL NSH

Client Sample ID: MW-14

Date Collected: 05/07/18 12:25

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			515861	05/18/18 05:36	SW1	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		10			515918	05/18/18 18:10	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245202	05/16/18 21:25	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245332	05/18/18 04:29	WTR	TAL PIT
Total/NA	Analysis	9040C		1			514343	05/11/18 12:56	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	514147	05/12/18 19:36	AEC	TAL NSH

Client Sample ID: DUPE

Date Collected: 05/07/18 11:22

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			515861	05/18/18 05:48	SW1	TAL NSH
Total/NA	Analysis	9056A		50			515918	05/18/18 18:56	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245202	05/16/18 21:28	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245332	05/18/18 04:34	WTR	TAL PIT
Total/NA	Analysis	9040C		1			514344	05/11/18 13:01	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	514147	05/12/18 19:36	AEC	TAL NSH

Client Sample ID: FIELD BLANK

Date Collected: 05/07/18 14:00

Date Received: 05/10/18 09:10

Lab Sample ID: 490-151667-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			515861	05/18/18 05:59	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245202	05/16/18 21:31	WTR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	244840	05/14/18 14:27	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			245332	05/18/18 04:39	WTR	TAL PIT
Total/NA	Analysis	9040C		1			514344	05/11/18 13:01	AH	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	514147	05/12/18 19:36	AEC	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6020A	Metals (ICP/MS)	SW846	TAL PIT
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

Protocol References:

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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-151667-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18
The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:				
Analysis Method	Prep Method	Matrix	Analyte	
9040C		Ground Water	pH	
9040C		Ground Water	Temperature	
9040C		Water	pH	
9040C		Water	Temperature	
9056A		Ground Water	Chloride	
9056A		Ground Water	Fluoride	
9056A		Ground Water	Sulfate	
9056A		Water	Chloride	
9056A		Water	Fluoride	
9056A		Water	Sulfate	
SM 2540C		Ground Water	Total Dissolved Solids	
SM 2540C		Water	Total Dissolved Solids	

Laboratory: TestAmerica Pittsburgh

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	88-0690	06-27-18
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP Secondary AB	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-18 *
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

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

TestAmerica Nashville

COOLER RECEIPT FORM



Cooler Received/Opened On 05-10-2018 @ 09:10

Time Samples Removed From Cooler 16:04 Time Samples Placed In Storage 16:21 (2 Hour Window)

1. Tracking # 2714 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 31470366 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 2.4 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 2 (front)

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) KA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry Ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # KA

I certify that I unloaded the cooler and answered questions 7-14 (initial) KA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) KA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) KA

I certify that I attached a label with the unique LIMS number to each container (initial) KA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# KA

40 CFR PART 257 Constituent List:

Appendix III to Part 257

Boron

Calcium

Chloride

Fluoride

pH

Sulfate

Total Dissolved Solids (TDS)

Loc: 490

151667

Greg Dink

BREC

5/9/2018

1130

2 of 2

TestAmerica Nashville

2960 Foster Creighton Drive
Nashville, TN 37204
Phone (615) 726-0177 Fax (615) 726-3404

Chain of Custody Record



estAmerica
LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab) Company: TestAmerica Laboratories, Inc. Address: 301 Alpha Drive, RIDC Park, Pittsburgh, PA, 15238 Phone: 412-963-7058(Tel) 412-963-2468(Fax) Email: Project Name: Big Rivers Electric Corp - CCR & SemiAnn Site: Big Rivers CCR		Sampler: (Lab PM) Cisneros, Roxanne Phone: E-Mail: roxanne.cisneros@testamerica.com		No. 72783.1 Page 1 of 1 Job # 490-151667-1 State of Origin: Kentucky State Program - Kentucky (UST)	
Due Date Requested: 5/22/2018 TAT Requested (days): PO #: WO #: Project #: 49010431 SOW#:		Analysis Requested Accreditations Required (See note): State Program - Kentucky (UST)			
Sample Identification - Client ID (Lab ID)		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - PH 4-5 Z - other (specify)			
Sample Identification - Client ID (Lab ID)		Special Instructions/Note:			
MW-11 (490-151667-1)		Total Number of containers: 1			
MW-12 (490-151667-2)		Total Number of containers: 1			
MW-13 (490-151667-3)		Total Number of containers: 1			
MW-14 (490-151667-4)		Total Number of containers: 1			
DUPE (490-151667-5)		Total Number of containers: 1			
FIELD BLANK (490-151667-6)		Total Number of containers: 1			
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica Laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months			
Possible Hazard Identification Unconfirmed		Special Instructions/QC Requirements:			
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2		Date: _____ Time: _____			
Empty Kit Relinquished by: _____		Date: _____ Time: _____			
Relinquished by: _____		Date: _____ Time: _____			
Relinquished by: _____		Date: _____ Time: _____			
Relinquished by: _____		Date: _____ Time: _____			
Custody Seals Intact: _____ Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:			

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-151667-1

SDG Number: Sebree Station, Green Ash Pond

Login Number: 151667

List Number: 2

Creator: Say, Thomas C

List Source: TestAmerica Pittsburgh

List Creation: 05/12/18 02:26 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
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	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-160137-1

TestAmerica SDG: Sebree Station, Green Ash Pond

Client Project/Site: Green Ash Pond CCR Groundwater

Sampling Event: Big Rivers CCR/SemiAnnual GW

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

10/11/2018 9:51:38 AM

Roxanne Cisneros, Senior Project Manager

(615)301-5761

roxanne.cisneros@testamericainc.com

LINKS

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

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-160137-1	MW-11	Ground Water	09/27/18 10:50	09/28/18 09:55
490-160137-2	MW-12	Ground Water	09/27/18 13:50	09/28/18 09:55
490-160137-3	MW-13	Ground Water	09/27/18 12:55	09/28/18 09:55
490-160137-4	MW-14	Ground Water	09/27/18 11:55	09/28/18 09:55
490-160137-5	DUPE	Ground Water	09/27/18 13:00	09/28/18 09:55
490-160137-6	FIELD BLANK	Water	09/27/18 14:00	09/28/18 09:55

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Job ID: 490-160137-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-160137-1

Comments

No additional comments.

Receipt

The samples were received on 9/28/2018 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

HPLC/IC

Method(s) 9056A: The method blank for analytical batch 490-547837 contained Chloride above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: Due to the high concentration of Chloride and Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-547837 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

Method(s) 9056A: The method blank for analytical batch 490-548110 contained Chloride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed; or associated samples were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 9056A: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-548110. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-11 (490-160137-1), MW-13 (490-160137-3), MW-14 (490-160137-4) and DUPE (490-160137-5). Elevated reporting limits (RLs) are provided.

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

Metals

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

General Chemistry

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

Organic Prep

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

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-11

Date Collected: 09/27/18 10:50

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-1

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	B	600	40.0	mg/L			10/06/18 00:33	200
Fluoride	0.243	J	1.00	0.0100	mg/L			10/04/18 21:47	1
Sulfate	1080	B	1000	6.00	mg/L			10/06/18 00:33	200

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.671	B	0.0800	0.0303	mg/L		10/03/18 12:13	10/08/18 21:59	1
Calcium	312		0.500	0.116	mg/L		10/03/18 12:13	10/08/18 21:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.44		0.100	0.100	SU			09/29/18 15:07	1
Temperature	21.9		0.100	0.100	Degrees C			09/29/18 15:07	1
Total Dissolved Solids	5020		100	70.0	mg/L			10/04/18 23:00	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-12

Date Collected: 09/27/18 13:50

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-2

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15.5	B	3.00	0.200	mg/L			10/04/18 23:18	1
Fluoride	0.554	J	1.00	0.0100	mg/L			10/04/18 23:18	1
Sulfate	14.3		5.00	0.0300	mg/L			10/04/18 23:18	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.335	B	0.0800	0.0303	mg/L		10/03/18 12:13	10/08/18 22:31	1
Calcium	96.4		0.500	0.116	mg/L		10/03/18 12:13	10/08/18 22:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.49		0.100	0.100	SU			09/29/18 15:07	1
Temperature	21.6		0.100	0.100	Degrees C			09/29/18 15:07	1
Total Dissolved Solids	595		10.0	7.00	mg/L			10/04/18 23:00	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-13

Date Collected: 09/27/18 12:55

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-3

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.6	B	6.00	0.400	mg/L			10/06/18 00:51	2
Fluoride	0.364	J	1.00	0.0100	mg/L			10/04/18 23:36	1
Sulfate	109	B	50.0	0.300	mg/L			10/06/18 01:09	10

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0565	J B	0.0800	0.0303	mg/L		10/03/18 12:13	10/08/18 22:36	1
Calcium	95.6		0.500	0.116	mg/L		10/03/18 12:13	10/08/18 22:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.02		0.100	0.100	SU			09/29/18 15:07	1
Temperature	21.6		0.100	0.100	Degrees C			09/29/18 15:07	1
Total Dissolved Solids	697		10.0	7.00	mg/L			10/04/18 23:00	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-14

Date Collected: 09/27/18 11:55

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-4

Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	189	B	60.0	4.00	mg/L			10/06/18 01:45	20
Fluoride	0.510	J	1.00	0.0100	mg/L			10/04/18 23:54	1
Sulfate	231	B	100	0.600	mg/L			10/06/18 01:45	20

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.232	B	0.0800	0.0303	mg/L		10/03/18 12:13	10/08/18 22:40	1
Calcium	200		0.500	0.116	mg/L		10/03/18 12:13	10/08/18 22:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.06		0.100	0.100	SU			09/29/18 15:07	1
Temperature	21.7		0.100	0.100	Degrees C			09/29/18 15:07	1
Total Dissolved Solids	1100		10.0	7.00	mg/L			10/04/18 23:00	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: DUPE
Date Collected: 09/27/18 13:00
Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-5
Matrix: Ground Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.5	B	6.00	0.400	mg/L			10/06/18 02:03	2
Fluoride	0.352	J	1.00	0.0100	mg/L			10/05/18 00:12	1
Sulfate	109	B	50.0	0.300	mg/L			10/06/18 02:21	10

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.0491	J B	0.0800	0.0303	mg/L		10/03/18 12:13	10/08/18 22:45	1
Calcium	93.0		0.500	0.116	mg/L		10/03/18 12:13	10/08/18 22:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.02		0.100	0.100	SU			09/29/18 15:07	1
Temperature	21.7		0.100	0.100	Degrees C			09/29/18 15:07	1
Total Dissolved Solids	689		10.0	7.00	mg/L			10/04/18 23:00	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-160137-6

Date Collected: 09/27/18 14:00

Matrix: Water

Date Received: 09/28/18 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.357	J B	3.00	0.200	mg/L			10/05/18 00:30	1
Fluoride	ND		1.00	0.0100	mg/L			10/05/18 00:30	1
Sulfate	ND		5.00	0.0300	mg/L			10/05/18 00:30	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.0800	0.0303	mg/L		10/03/18 12:13	10/08/18 22:50	1
Calcium	ND		0.500	0.116	mg/L		10/03/18 12:13	10/08/18 22:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.77		0.100	0.100	SU			09/29/18 15:07	1
Temperature	21.7		0.100	0.100	Degrees C			09/29/18 15:07	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/04/18 23:00	1

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-547837/3

Matrix: Water

Analysis Batch: 547837

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4504	J	3.00	0.200	mg/L			10/04/18 20:53	1
Fluoride	ND		1.00	0.0100	mg/L			10/04/18 20:53	1
Sulfate	ND		5.00	0.0300	mg/L			10/04/18 20:53	1

Lab Sample ID: LCS 490-547837/4

Matrix: Water

Analysis Batch: 547837

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.754		mg/L		97	80 - 120
Fluoride	1.00	0.9559	J	mg/L		95	80 - 120
Sulfate	10.0	9.731		mg/L		97	80 - 120

Lab Sample ID: LCSD 490-547837/5

Matrix: Water

Analysis Batch: 547837

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.619		mg/L		96	80 - 120	1	20
Fluoride	1.00	0.9559	J	mg/L		95	80 - 120	0	20
Sulfate	10.0	9.774		mg/L		98	80 - 120	0	20

Lab Sample ID: 490-160137-1 MS

Matrix: Ground Water

Analysis Batch: 547837

Client Sample ID: MW-11

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.243	J	1.00	1.104		mg/L		86	80 - 120

Lab Sample ID: 490-160137-1 MSD

Matrix: Ground Water

Analysis Batch: 547837

Client Sample ID: MW-11

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.243	J	1.00	1.280		mg/L		104	80 - 120	15	20

Lab Sample ID: MB 490-548110/3

Matrix: Water

Analysis Batch: 548110

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.4456	J	3.00	0.200	mg/L			10/05/18 23:20	1
Fluoride	ND		1.00	0.0100	mg/L			10/05/18 23:20	1
Sulfate	0.1182	J	5.00	0.0300	mg/L			10/05/18 23:20	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-548110/4

Matrix: Water

Analysis Batch: 548110

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.841		mg/L		98	80 - 120
Fluoride	1.00	0.9473	J	mg/L		95	80 - 120
Sulfate	10.0	9.951		mg/L		99	80 - 120

Lab Sample ID: LCSD 490-548110/5

Matrix: Water

Analysis Batch: 548110

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.849		mg/L		98	80 - 120	0	20
Fluoride	1.00	0.9329	J	mg/L		93	80 - 120	2	20
Sulfate	10.0	9.962		mg/L		99	80 - 120	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-258688/1-A

Matrix: Water

Analysis Batch: 259264

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 258688

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.05161	J	0.0800	0.0303	mg/L		10/03/18 12:13	10/08/18 21:50	1
Calcium	ND		0.500	0.116	mg/L		10/03/18 12:13	10/08/18 21:50	1

Lab Sample ID: LCS 180-258688/2-A

Matrix: Water

Analysis Batch: 259264

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 258688

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.8989		mg/L		90	80 - 120
Calcium	50.0	51.03		mg/L		102	80 - 120

Lab Sample ID: 490-160137-1 MS

Matrix: Ground Water

Analysis Batch: 259264

Client Sample ID: MW-11

Prep Type: Total Recoverable

Prep Batch: 258688

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.671	B	1.00	1.689		mg/L		102	75 - 125
Calcium	312		50.0	364.9	4	mg/L		106	75 - 125

Lab Sample ID: 490-160137-1 MSD

Matrix: Ground Water

Analysis Batch: 259264

Client Sample ID: MW-11

Prep Type: Total Recoverable

Prep Batch: 258688

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.671	B	1.00	1.733		mg/L		106	75 - 125	3	20
Calcium	312		50.0	361.0	4	mg/L		98	75 - 125	1	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Method: 9040C - pH

Lab Sample ID: LCS 490-546525/1
Matrix: Water
Analysis Batch: 546525

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.050		SU		101	98 - 103

Lab Sample ID: 490-160137-1 DU
Matrix: Ground Water
Analysis Batch: 546525

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.44		8.440		SU		0	20
Temperature	21.9		21.90		Degrees C		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-543827/1
Matrix: Water
Analysis Batch: 543827

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/04/18 23:00	1

Lab Sample ID: LCS 490-543827/2
Matrix: Water
Analysis Batch: 543827

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	101.0		mg/L		101	90 - 110

Lab Sample ID: 490-160137-6 DU
Matrix: Water
Analysis Batch: 543827

Client Sample ID: FIELD BLANK
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	ND		ND		mg/L		NC	20

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

HPLC/IC

Analysis Batch: 547837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160137-1	MW-11	Total/NA	Ground Water	9056A	
490-160137-2	MW-12	Total/NA	Ground Water	9056A	
490-160137-3	MW-13	Total/NA	Ground Water	9056A	
490-160137-4	MW-14	Total/NA	Ground Water	9056A	
490-160137-5	DUPE	Total/NA	Ground Water	9056A	
490-160137-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-547837/3	Method Blank	Total/NA	Water	9056A	
LCS 490-547837/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-547837/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-160137-1 MS	MW-11	Total/NA	Ground Water	9056A	
490-160137-1 MSD	MW-11	Total/NA	Ground Water	9056A	

Analysis Batch: 548110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160137-1	MW-11	Total/NA	Ground Water	9056A	
490-160137-3	MW-13	Total/NA	Ground Water	9056A	
490-160137-3	MW-13	Total/NA	Ground Water	9056A	
490-160137-4	MW-14	Total/NA	Ground Water	9056A	
490-160137-5	DUPE	Total/NA	Ground Water	9056A	
490-160137-5	DUPE	Total/NA	Ground Water	9056A	
MB 490-548110/3	Method Blank	Total/NA	Water	9056A	
LCS 490-548110/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-548110/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 258688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160137-1	MW-11	Total Recoverable	Ground Water	3005A	
490-160137-2	MW-12	Total Recoverable	Ground Water	3005A	
490-160137-3	MW-13	Total Recoverable	Ground Water	3005A	
490-160137-4	MW-14	Total Recoverable	Ground Water	3005A	
490-160137-5	DUPE	Total Recoverable	Ground Water	3005A	
490-160137-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-258688/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-258688/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-160137-1 MS	MW-11	Total Recoverable	Ground Water	3005A	
490-160137-1 MSD	MW-11	Total Recoverable	Ground Water	3005A	

Analysis Batch: 259264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160137-1	MW-11	Total Recoverable	Ground Water	6020A	258688
490-160137-2	MW-12	Total Recoverable	Ground Water	6020A	258688
490-160137-3	MW-13	Total Recoverable	Ground Water	6020A	258688
490-160137-4	MW-14	Total Recoverable	Ground Water	6020A	258688
490-160137-5	DUPE	Total Recoverable	Ground Water	6020A	258688
490-160137-6	FIELD BLANK	Total Recoverable	Water	6020A	258688
MB 180-258688/1-A	Method Blank	Total Recoverable	Water	6020A	258688
LCS 180-258688/2-A	Lab Control Sample	Total Recoverable	Water	6020A	258688
490-160137-1 MS	MW-11	Total Recoverable	Ground Water	6020A	258688

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Metals (Continued)

Analysis Batch: 259264 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160137-1 MSD	MW-11	Total Recoverable	Ground Water	6020A	258688

General Chemistry

Analysis Batch: 543827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160137-1	MW-11	Total/NA	Ground Water	SM 2540C	
490-160137-2	MW-12	Total/NA	Ground Water	SM 2540C	
490-160137-3	MW-13	Total/NA	Ground Water	SM 2540C	
490-160137-4	MW-14	Total/NA	Ground Water	SM 2540C	
490-160137-5	DUPE	Total/NA	Ground Water	SM 2540C	
490-160137-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-543827/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-543827/2	Lab Control Sample	Total/NA	Water	SM 2540C	
490-160137-6 DU	FIELD BLANK	Total/NA	Water	SM 2540C	

Analysis Batch: 546525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160137-1	MW-11	Total/NA	Ground Water	9040C	
490-160137-2	MW-12	Total/NA	Ground Water	9040C	
490-160137-3	MW-13	Total/NA	Ground Water	9040C	
490-160137-4	MW-14	Total/NA	Ground Water	9040C	
490-160137-5	DUPE	Total/NA	Ground Water	9040C	
490-160137-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-546525/1	Lab Control Sample	Total/NA	Water	9040C	
490-160137-1 DU	MW-11	Total/NA	Ground Water	9040C	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-11
Date Collected: 09/27/18 10:50
Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			547837	10/04/18 21:47	SW1	TAL NSH
Total/NA	Analysis	9056A		200			548110	10/06/18 00:33	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258688	10/03/18 12:13	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259264	10/08/18 21:59	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546525	09/29/18 15:07	MXX	TAL NSH
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	543827	10/04/18 23:00	AEC	TAL NSH

Client Sample ID: MW-12
Date Collected: 09/27/18 13:50
Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			547837	10/04/18 23:18	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258688	10/03/18 12:13	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259264	10/08/18 22:31	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546525	09/29/18 15:07	MXX	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543827	10/04/18 23:00	AEC	TAL NSH

Client Sample ID: MW-13
Date Collected: 09/27/18 12:55
Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-3
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			547837	10/04/18 23:36	SW1	TAL NSH
Total/NA	Analysis	9056A		2			548110	10/06/18 00:51	SW1	TAL NSH
Total/NA	Analysis	9056A		10			548110	10/06/18 01:09	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258688	10/03/18 12:13	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259264	10/08/18 22:36	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546525	09/29/18 15:07	MXX	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543827	10/04/18 23:00	AEC	TAL NSH

Client Sample ID: MW-14
Date Collected: 09/27/18 11:55
Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-4
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			547837	10/04/18 23:54	SW1	TAL NSH
Total/NA	Analysis	9056A		20			548110	10/06/18 01:45	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258688	10/03/18 12:13	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259264	10/08/18 22:40	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546525	09/29/18 15:07	MXX	TAL NSH

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Client Sample ID: MW-14

Date Collected: 09/27/18 11:55

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543827	10/04/18 23:00	AEC	TAL NSH

Client Sample ID: DUPE

Date Collected: 09/27/18 13:00

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			547837	10/05/18 00:12	SW1	TAL NSH
Total/NA	Analysis	9056A		2			548110	10/06/18 02:03	SW1	TAL NSH
Total/NA	Analysis	9056A		10			548110	10/06/18 02:21	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258688	10/03/18 12:13	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259264	10/08/18 22:45	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546525	09/29/18 15:07	MXX	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543827	10/04/18 23:00	AEC	TAL NSH

Client Sample ID: FIELD BLANK

Date Collected: 09/27/18 14:00

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160137-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			547837	10/05/18 00:30	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258688	10/03/18 12:13	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259264	10/08/18 22:50	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546525	09/29/18 15:07	MXX	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543827	10/04/18 23:00	AEC	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6020A	Metals (ICP/MS)	SW846	TAL PIT
9040C	pH	SW846	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

Protocol References:

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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Green Ash Pond CCR Groundwater

TestAmerica Job ID: 490-160137-1
SDG: Sebree Station, Green Ash Pond

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-19
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.				
Analysis Method	Prep Method	Matrix	Analyte	
9040C		Ground Water	pH	
9040C		Ground Water	Temperature	
9040C		Water	pH	
9040C		Water	Temperature	
9056A		Ground Water	Chloride	
9056A		Ground Water	Fluoride	
9056A		Ground Water	Sulfate	
9056A		Water	Chloride	
9056A		Water	Fluoride	
9056A		Water	Sulfate	
SM 2540C		Ground Water	Total Dissolved Solids	
SM 2540C		Water	Total Dissolved Solids	

Laboratory: TestAmerica Pittsburgh

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	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (VW/SW)	State Program	4	434	12-31-18
Oregon	NELAP	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-19



Cooler Received/Opened On 9/28/2018 @ 0955

Time Samples Removed From Cooler _____ Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 2795 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960357 pH Strip Lot N/A Chlorine Strip Lot N/A
2. Temperature of rep. sample or temp blank when opened: 1.7 Degrees Celsius
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA
4. Were custody seals on outside of cooler? 2 Front YES...NO...NA
If yes, how many and where: _____
5. Were the seals intact, signed, and dated correctly? GH YES...NO...NA
6. Were custody papers inside cooler? YES...NO...NA
- I certify that I opened the cooler and answered questions 1-6 (initial) GH
7. Were custody seals on containers: YES NO and intact YES...NO...NA
Were these signed and dated correctly? YES...NO...NA
8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None
9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None
10. Did all containers arrive in good condition (unbroken)? YES...NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA
12. Did all container labels and tags agree with custody papers? YES...NO...NA
- 13a. Were VOA vials received? YES...NO...NA
- b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) ADH

- 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA
- b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA
16. Was residual chlorine present? YES...NO...NA
- I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) ADH
17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA
18. Did you sign the custody papers in the appropriate place? YES...NO...NA
19. Were correct containers used for the analysis requested? YES...NO...NA
20. Was sufficient amount of sample sent in each container? YES...NO...NA
- I certify that I entered this project into LIMS and answered questions 17-20 (initial) ADH
- I certify that I attached a label with the unique LIMS number to each container (initial) ADH
21. Were there Non-Conformance issues at login? YES...NO...NA Was a NCM generated? YES...NO...# _____

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: Coal Combustion Residuals (CCR)

Client Contact: Greg Dick
Company: Big Rivers Electric Corporation

Date: 09/27/2018

Site Contact: Greg Dick

Lab Contact: Roxanne Cisneros

Carrier: FedEx

Address: PO Box 24
City/State/Zip: Henderson, KY 42419

Phone
(270) 844-6010
(xxx) xxx-xxxx FAX

Project Name: Green Ash Pond CCR Groundwater

Site: Sebree Station, Green Ash Pond

P O #: Purchase Order-see DOCS

Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS

TAT if different from Below
☒ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Sample Identification

Sample Date

Sample Time

Sample Type
(C=Comp, G=Grab)

Matrix

of Cont.

Filtered Sample (Y/N)

Perform MS/MSD (Y/N)

6020A - ICP/MS Boron, Calcium

9040C, 9056A, ORGFM, 28D

2540C, Calcd, TDS

Sample Specific Notes:

Loc: 490

160137

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

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Green Impoundment – 9/27/2018

40 CFR PART 257 Constituent List:

Appendix III to Part 257

Boron

Calcium

Chloride

Fluoride

pH

Sulfate

Total Dissolved Solids (TDS)

2 of 2

Aug Dieb

BREC

9/27/2018

1720

Client Information (Sub Contract Lab)				Lab PM: Cisneros, Roxanne E-Mail: roxanne.cisneros@testamericainc.com		Carrier Tracking No(s): 490-79562.1		COC No: 490-79562.1	
Client Contact Shipping/Receiving Company: TestAmerica Laboratories, Inc.				Phone: State of Origin: Kentucky		Page: Page 1 of 1		Job #: 490-160137-1	
Address: 301 Alpha Drive, RIDG Park, City: Pittsburg State, Zip: PA, 15238				Accreditations Required (See note): State Program - Kentucky (UST)		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Z - other (specify)	
Due Date Requested: 10/10/2018 TAT Requested (days):				PO #: WO #: Project #: 49010431 SSOW#:		Analysis Requested		Total Number of Containers	
Sample Identification - Client ID (Lab ID)				Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
				Matrix (Water, Spill, On-site, BT-Tissue, A/A)		Preservation Code:		Field Filtered Sample (Yes or No)	
MW-11 (490-160137-1)				9/27/18		10:50 Central		Water	
MW-12 (490-160137-2)				9/27/18		13:50 Central		Water	
MW-13 (490-160137-3)				9/27/18		12:55 Central		Water	
MW-14 (490-160137-4)				9/27/18		11:55 Central		Water	
DUPE (490-160137-5)				9/27/18		13:00 Central		Water	
FIELD BLANK (490-160137-6)				9/27/18		14:00 Eastern		Water	
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months		Special Instructions/QC Requirements:		Method of Shipment:	
Deliverable Requested: I, II, III, IV, Other (specify)				Primary Deliverable Rank: 2		Date:		Date/Time:	
Empty Kit Relinquished by:				Date/Time:		Date/Time:		Date/Time:	
Relinquished by:				Date/Time:		Date/Time:		Date/Time:	
Relinquished by:				Date/Time:		Date/Time:		Date/Time:	
Custody Seal No.:				Custody Seal No.:		Custody Seal No.:		Custody Seal No.:	

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-160137-1

SDG Number: Sebree Station, Green Ash Pond

Login Number: 160137

List Number: 2

Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh

List Creation: 10/02/18 05:30 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	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?	False	
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.	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

REID/HMPL STATION SURFACE IMPOUNDMENT

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-149725-1

Client Project/Site: Reid/HMP&L Ash Pond

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

5/10/2018 4:11:56 PM

Roxanne Cisneros, Senior Project Manager

(615)301-5761

roxanne.cisneros@testamericainc.com

LINKS

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results through

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

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-149725-1	MW-7	Water	04/06/18 11:41	04/10/18 09:20
490-149725-2	MW-8	Water	04/06/18 13:27	04/10/18 09:20
490-149725-3	MW-9	Water	04/06/18 14:53	04/10/18 09:20
490-149725-4	MW-10	Water	04/06/18 16:15	04/10/18 09:20
490-149725-5	Field Blank	Water	04/06/18 16:32	04/10/18 09:20
490-149725-6	DUPE	Water	04/06/18 13:47	04/10/18 09:20

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Job ID: 490-149725-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-149725-1

Comments

No additional comments.

Receipt

The samples were received on 4/10/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were -0.1° C and 1.0° C.

HPLC/IC

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

Metals

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

Narrative

Job Narrative 490-149725-2

Comments

No additional comments.

Receipt

The samples were received on 4/10/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were -0.1° C and 1.0° C.

RAD

Method PrecSep_0: Radium 228 Prep Batch 160-360414: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-149725-1), MW-8 (490-149725-2), MW-9 (490-149725-3), MW-10 (490-149725-4), Field Blank (490-149725-5) and DUPE (490-149725-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-360406: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-149725-1), MW-8 (490-149725-2), MW-9 (490-149725-3), MW-10 (490-149725-4), Field Blank (490-149725-5) and DUPE (490-149725-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: MW-7

Date Collected: 04/06/18 11:41

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-1

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.257	J	1.00	0.0100	mg/L	-		04/11/18 12:49	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L	-	04/12/18 14:30	04/20/18 11:21	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000600	J B	0.00200	0.0000213	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Arsenic	0.00251	J B	0.00500	0.000118	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Barium	0.0738	J	0.200	0.000270	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Beryllium	ND		0.00200	0.000102	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Cadmium	ND		0.00100	0.000152	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Chromium	0.00171	J B	0.00300	0.000339	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Cobalt	0.000449	J	0.00500	0.0000218	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Lead	ND		0.00500	0.0000675	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Molybdenum	0.00261	J	0.0100	0.000873	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Selenium	ND		0.0100	0.000348	mg/L	-	04/12/18 14:33	04/19/18 10:22	1
Thallium	ND		0.00100	0.0000360	mg/L	-	04/12/18 14:33	04/19/18 10:22	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.0653	ug/L	-	04/13/18 11:30	04/14/18 08:33	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.342		0.0994	0.104	1.00	0.0749	pCi/L	04/12/18 08:42	05/04/18 05:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					04/12/18 08:42	05/04/18 05:34	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.308	U	0.257	0.258	1.00	0.411	pCi/L	04/12/18 09:19	04/18/18 08:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					04/12/18 09:19	04/18/18 08:43	1
Y Carrier	93.8		40 - 110					04/12/18 09:19	04/18/18 08:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.650		0.276	0.278	5.00	0.411	pCi/L		05/07/18 13:49	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: MW-8

Date Collected: 04/06/18 13:27

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.366	J	1.00	0.0100	mg/L	-		04/11/18 13:01	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0347	J	0.0500	0.00959	mg/L	-	04/12/18 14:30	04/20/18 11:26	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000478	J B	0.00200	0.0000213	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Arsenic	0.000447	J B	0.00500	0.000118	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Barium	0.0179	J	0.200	0.000270	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Beryllium	ND		0.00200	0.000102	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Cadmium	ND		0.00100	0.000152	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Chromium	0.00162	J B	0.00300	0.000339	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Cobalt	0.0000900	J	0.00500	0.0000218	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Lead	ND		0.00500	0.0000675	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Molybdenum	0.0147		0.0100	0.000873	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Selenium	ND		0.0100	0.000348	mg/L	-	04/12/18 14:33	04/19/18 10:25	1
Thallium	ND		0.00100	0.0000360	mg/L	-	04/12/18 14:33	04/19/18 10:25	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.0653	ug/L	-	04/13/18 11:30	04/14/18 08:35	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.334		0.0947	0.0994	1.00	0.0674	pCi/L	04/12/18 08:42	05/04/18 05:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/12/18 08:42	05/04/18 05:34	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.955		0.256	0.271	1.00	0.311	pCi/L	04/12/18 09:19	04/18/18 08:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/12/18 09:19	04/18/18 08:43	1
Y Carrier	93.1		40 - 110					04/12/18 09:19	04/18/18 08:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.29		0.273	0.289	5.00	0.311	pCi/L		05/07/18 13:49	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: MW-9

Date Collected: 04/06/18 14:53

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.241	J	1.00	0.0100	mg/L			04/11/18 13:12	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0108	J	0.0500	0.00959	mg/L		04/12/18 14:30	04/20/18 11:32	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000364	J B	0.00200	0.0000213	mg/L		04/12/18 14:33	04/19/18 10:27	1
Arsenic	0.000387	J B	0.00500	0.000118	mg/L		04/12/18 14:33	04/19/18 10:27	1
Barium	0.967		0.200	0.000270	mg/L		04/12/18 14:33	04/19/18 10:27	1
Beryllium	ND		0.00200	0.000102	mg/L		04/12/18 14:33	04/19/18 10:27	1
Cadmium	ND		0.00100	0.000152	mg/L		04/12/18 14:33	04/19/18 10:27	1
Chromium	0.00140	J B	0.00300	0.000339	mg/L		04/12/18 14:33	04/19/18 10:27	1
Cobalt	0.0000280	J	0.00500	0.0000218	mg/L		04/12/18 14:33	04/19/18 10:27	1
Lead	ND		0.00500	0.0000675	mg/L		04/12/18 14:33	04/19/18 10:27	1
Molybdenum	ND		0.0100	0.000873	mg/L		04/12/18 14:33	04/19/18 10:27	1
Selenium	ND		0.0100	0.000348	mg/L		04/12/18 14:33	04/19/18 10:27	1
Thallium	ND		0.00100	0.0000360	mg/L		04/12/18 14:33	04/19/18 10:27	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.0653	ug/L		04/13/18 11:30	04/14/18 08:37	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.36		0.187	0.224	1.00	0.0774	pCi/L	04/12/18 08:42	05/04/18 05:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					04/12/18 08:42	05/04/18 05:34	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.677		0.239	0.247	1.00	0.318	pCi/L	04/12/18 09:19	04/18/18 08:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					04/12/18 09:19	04/18/18 08:43	1
Y Carrier	95.7		40 - 110					04/12/18 09:19	04/18/18 08:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.04		0.303	0.333	5.00	0.318	pCi/L		05/07/18 13:49	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: MW-10

Date Collected: 04/06/18 16:15

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.635	J	1.00	0.0100	mg/L	-		04/11/18 13:47	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.694		0.0500	0.00959	mg/L	-	04/12/18 14:30	04/20/18 11:37	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000440	J B	0.00200	0.0000213	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Arsenic	0.00290	J B	0.00500	0.000118	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Barium	0.0526	J	0.200	0.000270	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Beryllium	ND		0.00200	0.000102	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Cadmium	ND		0.00100	0.000152	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Chromium	0.00205	J B	0.00300	0.000339	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Cobalt	0.000256	J	0.00500	0.0000218	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Lead	0.000156	J	0.00500	0.0000675	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Molybdenum	0.00679	J	0.0100	0.000873	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Selenium	ND		0.0100	0.000348	mg/L	-	04/12/18 14:33	04/19/18 10:30	1
Thallium	ND		0.00100	0.0000360	mg/L	-	04/12/18 14:33	04/19/18 10:30	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.0653	ug/L	-	04/13/18 11:30	04/14/18 08:43	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.217		0.0827	0.0849	1.00	0.0780	pCi/L	04/12/18 08:42	05/04/18 05:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					04/12/18 08:42	05/04/18 05:34	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.295	U	0.208	0.210	1.00	0.321	pCi/L	04/12/18 09:19	04/18/18 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					04/12/18 09:19	04/18/18 08:44	1
Y Carrier	87.5		40 - 110					04/12/18 09:19	04/18/18 08:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.512		0.224	0.227	5.00	0.321	pCi/L		05/07/18 13:49	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: Field Blank

Date Collected: 04/06/18 16:32

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.0378	J	1.00	0.0100	mg/L	-		04/11/18 13:59	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L	-	04/12/18 14:30	04/20/18 11:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000331	J B	0.00200	0.0000213	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Arsenic	0.000289	J B	0.00500	0.000118	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Barium	ND		0.200	0.000270	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Beryllium	ND		0.00200	0.000102	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Cadmium	ND		0.00100	0.000152	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Chromium	0.00142	J B	0.00300	0.000339	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Cobalt	ND		0.00500	0.0000218	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Lead	ND		0.00500	0.0000675	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Molybdenum	ND		0.0100	0.000873	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Selenium	ND		0.0100	0.000348	mg/L	-	04/12/18 14:33	04/19/18 10:33	1
Thallium	ND		0.00100	0.0000360	mg/L	-	04/12/18 14:33	04/19/18 10:33	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.0653	ug/L	-	04/13/18 11:30	04/14/18 08:45	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0109	U	0.0299	0.0299	1.00	0.0728	pCi/L	04/12/18 08:42	05/04/18 05:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					04/12/18 08:42	05/04/18 05:35	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.162	U	0.180	0.181	1.00	0.295	pCi/L	04/12/18 09:19	04/18/18 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					04/12/18 09:19	04/18/18 08:44	1
Y Carrier	92.7		40 - 110					04/12/18 09:19	04/18/18 08:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.151	U	0.182	0.183	5.00	0.295	pCi/L		05/07/18 13:49	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: DUPE

Date Collected: 04/06/18 13:47

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.365	J	1.00	0.0100	mg/L			04/11/18 14:10	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0360	J	0.0500	0.00959	mg/L		04/12/18 14:30	04/20/18 11:47	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000362	J B	0.00200	0.0000213	mg/L		04/12/18 14:33	04/19/18 10:36	1
Arsenic	0.000445	J B	0.00500	0.000118	mg/L		04/12/18 14:33	04/19/18 10:36	1
Barium	0.0171	J	0.200	0.000270	mg/L		04/12/18 14:33	04/19/18 10:36	1
Beryllium	ND		0.00200	0.000102	mg/L		04/12/18 14:33	04/19/18 10:36	1
Cadmium	ND		0.00100	0.000152	mg/L		04/12/18 14:33	04/19/18 10:36	1
Chromium	0.00169	J B	0.00300	0.000339	mg/L		04/12/18 14:33	04/19/18 10:36	1
Cobalt	0.0000740	J	0.00500	0.0000218	mg/L		04/12/18 14:33	04/19/18 10:36	1
Lead	ND		0.00500	0.0000675	mg/L		04/12/18 14:33	04/19/18 10:36	1
Molybdenum	0.0142		0.0100	0.000873	mg/L		04/12/18 14:33	04/19/18 10:36	1
Selenium	ND		0.0100	0.000348	mg/L		04/12/18 14:33	04/19/18 10:36	1
Thallium	ND		0.00100	0.0000360	mg/L		04/12/18 14:33	04/19/18 10:36	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.0653	ug/L		04/13/18 11:30	04/14/18 08:47	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.430		0.108	0.115	1.00	0.0868	pCi/L	04/12/18 08:42	05/04/18 05:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					04/12/18 08:42	05/04/18 05:35	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.34		0.287	0.312	1.00	0.310	pCi/L	04/12/18 09:19	04/18/18 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					04/12/18 09:19	04/18/18 08:44	1
Y Carrier	90.5		40 - 110					04/12/18 09:19	04/18/18 08:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.77		0.307	0.333	5.00	0.310	pCi/L		05/07/18 13:49	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-507653/3

Matrix: Water

Analysis Batch: 507653

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.00	0.0100	mg/L			04/11/18 10:18	1

Lab Sample ID: LCS 490-507653/8

Matrix: Water

Analysis Batch: 507653

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.00	0.9552	J	mg/L		95	80 - 120

Lab Sample ID: LCSD 490-507653/9

Matrix: Water

Analysis Batch: 507653

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.00	0.9509	J	mg/L		95	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: 180-76648-S-1-A MS

Matrix: Water

Analysis Batch: 242707

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 242012

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0728		1.00	1.133		mg/L		106	75 - 125

Lab Sample ID: 180-76648-S-1-B MSD

Matrix: Water

Analysis Batch: 242707

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 242012

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0728		1.00	1.142		mg/L		107	75 - 125	1	20

Lab Sample ID: MB 180-242012/1-A

Matrix: Water

Analysis Batch: 242707

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 242012

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		04/12/18 14:30	04/20/18 08:47	1

Lab Sample ID: LCS 180-242012/2-A

Matrix: Water

Analysis Batch: 242707

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 242012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.006		mg/L		101	80 - 120

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: 180-76648-S-1-C MS

Matrix: Water

Analysis Batch: 242663

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 242013

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	0.000248	J B	0.500	0.5262		mg/L		105	75 - 125
Arsenic	0.000973	J B	0.0400	0.03616		mg/L		88	75 - 125
Barium	0.0126	J	2.00	1.965		mg/L		98	75 - 125
Beryllium	ND		0.0500	0.04881		mg/L		98	75 - 125
Cadmium	ND		0.0500	0.05183		mg/L		104	75 - 125
Chromium	0.00170	J B	0.200	0.2166		mg/L		107	75 - 125
Cobalt	0.00171	J	0.500	0.4319		mg/L		86	75 - 125
Lead	ND		0.0200	0.02080		mg/L		104	75 - 125
Molybdenum	ND		1.00	0.9708		mg/L		97	75 - 125
Selenium	ND		0.0100	0.01004		mg/L		100	75 - 125
Thallium	ND		0.0500	0.05210		mg/L		104	75 - 125

Lab Sample ID: 180-76648-S-1-D MSD

Matrix: Water

Analysis Batch: 242663

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 242013

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.000248	J B	0.500	0.5276		mg/L		105	75 - 125	0	20
Arsenic	0.000973	J B	0.0400	0.03614		mg/L		88	75 - 125	0	20
Barium	0.0126	J	2.00	1.972		mg/L		98	75 - 125	0	20
Beryllium	ND		0.0500	0.04897		mg/L		98	75 - 125	0	20
Cadmium	ND		0.0500	0.05280		mg/L		106	75 - 125	2	20
Chromium	0.00170	J B	0.200	0.2200		mg/L		109	75 - 125	2	20
Cobalt	0.00171	J	0.500	0.4319		mg/L		86	75 - 125	0	20
Lead	ND		0.0200	0.02075		mg/L		104	75 - 125	0	20
Molybdenum	ND		1.00	0.9679		mg/L		97	75 - 125	0	20
Selenium	ND		0.0100	0.009545	J	mg/L		95	75 - 125	5	20
Thallium	ND		0.0500	0.05190		mg/L		104	75 - 125	0	20

Lab Sample ID: MB 180-242013/1-A

Matrix: Water

Analysis Batch: 242663

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 242013

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001570	J	0.00200	0.0000213	mg/L		04/12/18 14:33	04/19/18 10:16	1
Arsenic	0.0001260	J	0.00500	0.000118	mg/L		04/12/18 14:33	04/19/18 10:16	1
Barium	ND		0.200	0.000270	mg/L		04/12/18 14:33	04/19/18 10:16	1
Beryllium	ND		0.00200	0.000102	mg/L		04/12/18 14:33	04/19/18 10:16	1
Cadmium	ND		0.00100	0.000152	mg/L		04/12/18 14:33	04/19/18 10:16	1
Chromium	0.0006500	J	0.00300	0.000339	mg/L		04/12/18 14:33	04/19/18 10:16	1
Cobalt	ND		0.00500	0.0000218	mg/L		04/12/18 14:33	04/19/18 10:16	1
Lead	ND		0.00500	0.0000675	mg/L		04/12/18 14:33	04/19/18 10:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		04/12/18 14:33	04/19/18 10:16	1
Selenium	ND		0.0100	0.000348	mg/L		04/12/18 14:33	04/19/18 10:16	1
Thallium	ND		0.00100	0.0000360	mg/L		04/12/18 14:33	04/19/18 10:16	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-242013/2-A
Matrix: Water
Analysis Batch: 242663

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 242013

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5190		mg/L		104	80 - 120
Arsenic	0.0400	0.03858		mg/L		96	80 - 120
Barium	2.00	2.038		mg/L		102	80 - 120
Beryllium	0.0500	0.05207		mg/L		104	80 - 120
Cadmium	0.0500	0.05339		mg/L		107	80 - 120
Chromium	0.200	0.2154		mg/L		108	80 - 120
Cobalt	0.500	0.4584		mg/L		92	80 - 120
Lead	0.0200	0.02115		mg/L		106	80 - 120
Molybdenum	1.00	0.9787		mg/L		98	80 - 120
Selenium	0.0100	0.009760	J	mg/L		98	80 - 120
Thallium	0.0500	0.05242		mg/L		105	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-242090/1-A
Matrix: Water
Analysis Batch: 242181

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 242090

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200	0.0653	ug/L		04/13/18 11:30	04/14/18 08:18	1

Lab Sample ID: LCS 180-242090/2-A
Matrix: Water
Analysis Batch: 242181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 242090

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.50	2.513		ug/L		101	80 - 120

Lab Sample ID: 180-76579-C-17-C MS
Matrix: Water
Analysis Batch: 242181

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 242090

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		1.00	1.041		ug/L		104	75 - 125

Lab Sample ID: 180-76579-C-17-D MSD
Matrix: Water
Analysis Batch: 242181

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 242090

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		1.00	0.9536		ug/L		95	75 - 125	9	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-360406/23-A

Matrix: Water

Analysis Batch: 363944

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 360406

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01413	U	0.0458	0.0459	1.00	0.0868	pCi/L	04/12/18 08:42	05/04/18 05:35	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/12/18 08:42	05/04/18 05:35	1

Lab Sample ID: LCS 160-360406/1-A

Matrix: Water

Analysis Batch: 363943

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 360406

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226		11.8	11.21		1.13	1.00	0.0731	pCi/L	95	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	109		40 - 110							

Lab Sample ID: LCSD 160-360406/2-A

Matrix: Water

Analysis Batch: 363943

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 360406

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226		11.8	11.53		1.17	1.00	0.0648	pCi/L	98	68 - 137	0.14	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits									
Ba Carrier	97.9		40 - 110									

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-360414/23-A

Matrix: Water

Analysis Batch: 361538

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 360414

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2751	U	0.199	0.200	1.00	0.308	pCi/L	04/12/18 09:19	04/18/18 08:44	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/12/18 09:19	04/18/18 08:44	1
Y Carrier	90.5		40 - 110					04/12/18 09:19	04/18/18 08:44	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-360414/1-A

Matrix: Water

Analysis Batch: 361532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 360414

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	8.38	8.698		1.00	1.00	0.335	pCi/L	104	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	109		40 - 110
Y Carrier	85.6		40 - 110

Lab Sample ID: LCSD 160-360414/2-A

Matrix: Water

Analysis Batch: 361532

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 360414

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	8.38	8.564		1.00	1.00	0.355	pCi/L	102	56 - 140	0.07	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	97.9		40 - 110
Y Carrier	89.3		40 - 110

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

HPLC/IC

Analysis Batch: 507653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total/NA	Water	9056A	
490-149725-2	MW-8	Total/NA	Water	9056A	
490-149725-3	MW-9	Total/NA	Water	9056A	
490-149725-4	MW-10	Total/NA	Water	9056A	
490-149725-5	Field Blank	Total/NA	Water	9056A	
490-149725-6	DUPE	Total/NA	Water	9056A	
MB 490-507653/3	Method Blank	Total/NA	Water	9056A	
LCS 490-507653/8	Lab Control Sample	Total/NA	Water	9056A	
LCS 490-507653/9	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 242012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total Recoverable	Water	3005A	
490-149725-2	MW-8	Total Recoverable	Water	3005A	
490-149725-3	MW-9	Total Recoverable	Water	3005A	
490-149725-4	MW-10	Total Recoverable	Water	3005A	
490-149725-5	Field Blank	Total Recoverable	Water	3005A	
490-149725-6	DUPE	Total Recoverable	Water	3005A	
MB 180-242012/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-242012/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-76648-S-1-A MS	Matrix Spike	Total/NA	Water	3005A	
180-76648-S-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	

Prep Batch: 242013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total Recoverable	Water	3005A	
490-149725-2	MW-8	Total Recoverable	Water	3005A	
490-149725-3	MW-9	Total Recoverable	Water	3005A	
490-149725-4	MW-10	Total Recoverable	Water	3005A	
490-149725-5	Field Blank	Total Recoverable	Water	3005A	
490-149725-6	DUPE	Total Recoverable	Water	3005A	
MB 180-242013/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-242013/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-76648-S-1-C MS	Matrix Spike	Total/NA	Water	3005A	
180-76648-S-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	

Prep Batch: 242090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total/NA	Water	7470A	
490-149725-2	MW-8	Total/NA	Water	7470A	
490-149725-3	MW-9	Total/NA	Water	7470A	
490-149725-4	MW-10	Total/NA	Water	7470A	
490-149725-5	Field Blank	Total/NA	Water	7470A	
490-149725-6	DUPE	Total/NA	Water	7470A	
MB 180-242090/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-242090/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-76579-C-17-C MS	Matrix Spike	Dissolved	Water	7470A	
180-76579-C-17-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Metals (Continued)

Analysis Batch: 242181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total/NA	Water	EPA 7470A	242090
490-149725-2	MW-8	Total/NA	Water	EPA 7470A	242090
490-149725-3	MW-9	Total/NA	Water	EPA 7470A	242090
490-149725-4	MW-10	Total/NA	Water	EPA 7470A	242090
490-149725-5	Field Blank	Total/NA	Water	EPA 7470A	242090
490-149725-6	DUPE	Total/NA	Water	EPA 7470A	242090
MB 180-242090/1-A	Method Blank	Total/NA	Water	EPA 7470A	242090
LCS 180-242090/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	242090
180-76579-C-17-C MS	Matrix Spike	Dissolved	Water	EPA 7470A	242090
180-76579-C-17-D MSD	Matrix Spike Duplicate	Dissolved	Water	EPA 7470A	242090

Analysis Batch: 242663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total Recoverable	Water	6020A	242013
490-149725-2	MW-8	Total Recoverable	Water	6020A	242013
490-149725-3	MW-9	Total Recoverable	Water	6020A	242013
490-149725-4	MW-10	Total Recoverable	Water	6020A	242013
490-149725-5	Field Blank	Total Recoverable	Water	6020A	242013
490-149725-6	DUPE	Total Recoverable	Water	6020A	242013
MB 180-242013/1-A	Method Blank	Total Recoverable	Water	6020A	242013
LCS 180-242013/2-A	Lab Control Sample	Total Recoverable	Water	6020A	242013
180-76648-S-1-C MS	Matrix Spike	Total/NA	Water	6020A	242013
180-76648-S-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	242013

Analysis Batch: 242707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total Recoverable	Water	6010C	242012
490-149725-2	MW-8	Total Recoverable	Water	6010C	242012
490-149725-3	MW-9	Total Recoverable	Water	6010C	242012
490-149725-4	MW-10	Total Recoverable	Water	6010C	242012
490-149725-5	Field Blank	Total Recoverable	Water	6010C	242012
490-149725-6	DUPE	Total Recoverable	Water	6010C	242012
MB 180-242012/1-A	Method Blank	Total Recoverable	Water	6010C	242012
LCS 180-242012/2-A	Lab Control Sample	Total Recoverable	Water	6010C	242012
180-76648-S-1-A MS	Matrix Spike	Total/NA	Water	6010C	242012
180-76648-S-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	6010C	242012

Rad

Prep Batch: 360406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total/NA	Water	PrecSep-21	
490-149725-2	MW-8	Total/NA	Water	PrecSep-21	
490-149725-3	MW-9	Total/NA	Water	PrecSep-21	
490-149725-4	MW-10	Total/NA	Water	PrecSep-21	
490-149725-5	Field Blank	Total/NA	Water	PrecSep-21	
490-149725-6	DUPE	Total/NA	Water	PrecSep-21	
MB 160-360406/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-360406/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-360406/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Rad (Continued)

Prep Batch: 360414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-149725-1	MW-7	Total/NA	Water	PrecSep_0	
490-149725-2	MW-8	Total/NA	Water	PrecSep_0	
490-149725-3	MW-9	Total/NA	Water	PrecSep_0	
490-149725-4	MW-10	Total/NA	Water	PrecSep_0	
490-149725-5	Field Blank	Total/NA	Water	PrecSep_0	
490-149725-6	DUPE	Total/NA	Water	PrecSep_0	
MB 160-360414/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-360414/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-360414/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: MW-7

Date Collected: 04/06/18 11:41

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			507653	04/11/18 12:49	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	242012	04/12/18 14:30	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			242707	04/20/18 11:21	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	242013	04/12/18 14:33	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			242663	04/19/18 10:22	RSK	TAL PIT
Total/NA	Prep	7470A			50.0 mL	50.0 mL	242090	04/13/18 11:30	RSK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			242181	04/14/18 08:33	RSK	TAL PIT
Total/NA	Prep	PrecSep-21			1000.11 mL	1.0 g	360406	04/12/18 08:42	TJT	TAL SL
Total/NA	Analysis	903.0		1			363943	05/04/18 05:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.11 mL	1.0 g	360414	04/12/18 09:19	TJT	TAL SL
Total/NA	Analysis	904.0		1			361532	04/18/18 08:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			364377	05/07/18 13:49	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 04/06/18 13:27

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			507653	04/11/18 13:01	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	242012	04/12/18 14:30	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			242707	04/20/18 11:26	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	242013	04/12/18 14:33	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			242663	04/19/18 10:25	RSK	TAL PIT
Total/NA	Prep	7470A			50.0 mL	50.0 mL	242090	04/13/18 11:30	RSK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			242181	04/14/18 08:35	RSK	TAL PIT
Total/NA	Prep	PrecSep-21			1000.05 mL	1.0 g	360406	04/12/18 08:42	TJT	TAL SL
Total/NA	Analysis	903.0		1			363943	05/04/18 05:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.05 mL	1.0 g	360414	04/12/18 09:19	TJT	TAL SL
Total/NA	Analysis	904.0		1			361532	04/18/18 08:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			364377	05/07/18 13:49	RTM	TAL SL

Client Sample ID: MW-9

Date Collected: 04/06/18 14:53

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			507653	04/11/18 13:12	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	242012	04/12/18 14:30	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			242707	04/20/18 11:32	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	242013	04/12/18 14:33	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			242663	04/19/18 10:27	RSK	TAL PIT
Total/NA	Prep	7470A			50.0 mL	50.0 mL	242090	04/13/18 11:30	RSK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			242181	04/14/18 08:37	RSK	TAL PIT

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.67 mL	1.0 g	360406	04/12/18 08:42	TJT	TAL SL
Total/NA	Analysis	903.0		1			363943	05/04/18 05:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.67 mL	1.0 g	360414	04/12/18 09:19	TJT	TAL SL
Total/NA	Analysis	904.0		1			361532	04/18/18 08:43	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			364377	05/07/18 13:49	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 04/06/18 16:15

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			507653	04/11/18 13:47	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	242012	04/12/18 14:30	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			242707	04/20/18 11:37	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	242013	04/12/18 14:33	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			242663	04/19/18 10:30	RSK	TAL PIT
Total/NA	Prep	7470A			50.0 mL	50.0 mL	242090	04/13/18 11:30	RSK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			242181	04/14/18 08:43	RSK	TAL PIT
Total/NA	Prep	PrecSep-21			999.81 mL	1.0 g	360406	04/12/18 08:42	TJT	TAL SL
Total/NA	Analysis	903.0		1			363943	05/04/18 05:34	RTM	TAL SL
Total/NA	Prep	PrecSep_0			999.81 mL	1.0 g	360414	04/12/18 09:19	TJT	TAL SL
Total/NA	Analysis	904.0		1			361538	04/18/18 08:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			364377	05/07/18 13:49	RTM	TAL SL

Client Sample ID: Field Blank

Date Collected: 04/06/18 16:32

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			507653	04/11/18 13:59	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	242012	04/12/18 14:30	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			242707	04/20/18 11:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	242013	04/12/18 14:33	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			242663	04/19/18 10:33	RSK	TAL PIT
Total/NA	Prep	7470A			50.0 mL	50.0 mL	242090	04/13/18 11:30	RSK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			242181	04/14/18 08:45	RSK	TAL PIT
Total/NA	Prep	PrecSep-21			1000.36 mL	1.0 g	360406	04/12/18 08:42	TJT	TAL SL
Total/NA	Analysis	903.0		1			363944	05/04/18 05:35	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.36 mL	1.0 g	360414	04/12/18 09:19	TJT	TAL SL
Total/NA	Analysis	904.0		1			361538	04/18/18 08:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			364377	05/07/18 13:49	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Client Sample ID: DUPE

Date Collected: 04/06/18 13:47

Date Received: 04/10/18 09:20

Lab Sample ID: 490-149725-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			507653	04/11/18 14:10	JHS	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	242012	04/12/18 14:30	KA	TAL PIT
Total Recoverable	Analysis	6010C		1			242707	04/20/18 11:47	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	242013	04/12/18 14:33	KA	TAL PIT
Total Recoverable	Analysis	6020A		1			242663	04/19/18 10:36	RSK	TAL PIT
Total/NA	Prep	7470A			50.0 mL	50.0 mL	242090	04/13/18 11:30	RSK	TAL PIT
Total/NA	Analysis	EPA 7470A		1			242181	04/14/18 08:47	RSK	TAL PIT
Total/NA	Prep	PrecSep-21			1000.07 mL	1.0 g	360406	04/12/18 08:42	TJT	TAL SL
Total/NA	Analysis	903.0		1			363944	05/04/18 05:35	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.07 mL	1.0 g	360414	04/12/18 09:19	TJT	TAL SL
Total/NA	Analysis	904.0		1			361538	04/18/18 08:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			364377	05/07/18 13:49	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

Protocol References:

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

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-18
The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:				
Analysis Method	Prep Method	Matrix	Analyte	
9056A		Water	Fluoride	

Laboratory: TestAmerica Pittsburgh

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
A2LA	A2LA		PA00164	07-31-18
Arkansas DEQ	State Program	6	88-0690	06-27-18
California	State Program	9	2891	03-31-18 *
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-18
Illinois	NELAP	5	200005	06-30-18
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-18
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-18
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP Secondary AB	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-18 *
South Carolina	State Program	4	89014	04-30-18 *
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-18
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-18 *
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18 *
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-18
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18

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

TestAmerica Nashville

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Laboratory: TestAmerica St. Louis (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
Michigan	State Program	5	9005	06-30-18
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18 *
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-18
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18
Texas	NELAP	6	T104704193-17-11	07-31-18
US Fish & Wildlife	Federal		058448	08-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18
Virginia	NELAP	3	460230	06-14-18 *
Washington	State Program	10	C592	08-30-18
West Virginia DEP	State Program	3	381	08-31-18 *

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

TestAmerica Nashville

COOLER RECEIPT FORM



490-149725 Chain of Custody

Cooler Received/Opened On 04-10-2018 @ 09:20

Time Samples Removed From Cooler 1224 Time Samples Placed In Storage 1247 (2 Hour Window)

1. Tracking # 4206 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960353 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 0.1 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA NA **KD 04-10-2018**

4. Were custody seals on outside of cooler? YES NO NA NA

If yes, how many and where: 2 (front)

5. Were the seals intact, signed, and dated correctly? YES NO NA NA

6. Were custody papers inside cooler? YES NO NA NA

I certify that I opened the cooler and answered questions 1-6 (initial) KD

7. Were custody seals on containers: YES NO and intact YES NO NA NA

Were these signed and dated correctly? YES NO NA NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES NO NA NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES NO NA NA

12. Did all container labels and tags agree with custody papers? YES NO NA NA

13a. Were VOA vials received? YES NO NA NA

b. Was there any observable headspace present in any VOA vial? YES NO NA NA



← Larger than this.

14. Was there a Trip Blank in this cooler? YES NO NA If multiple coolers, sequence # ADH

I certify that I unloaded the cooler and answered questions 7-14 (initial) ADH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES NO NA NA

b. Did the bottle labels indicate that the correct preservatives were used YES NO NA NA

16. Was residual chlorine present? YES NO NA NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) ADH

17. Were custody papers properly filled out (ink, signed, etc)? YES NO NA NA

18. Did you sign the custody papers in the appropriate place? YES NO NA NA

19. Were correct containers used for the analysis requested? YES NO NA NA

20. Was sufficient amount of sample sent in each container? YES NO NA NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) ADH

I certify that I attached a label with the unique LIMS number to each container (initial) ADH

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO # ADH

COOLER RECEIPT FORM

149725

Cooler Received/Opened On 4/10/2018 @ 0920

Time Samples Removed From Cooler 1224 Time Samples Placed In Storage 1247 (2 Hour Window)

1. Tracking # 1226 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960358 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.0 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? 2 Front YES...NO...NA

If yes, how many and where: 2 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) GH

7. Were custody seals on containers: YES NO and intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry Ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) ASH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) ASH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) ASH

I certify that I attached a label with the unique LIMS number to each container (initial) ASH

21. Were there Non-Conformance Issues at login? YES NO Was a NCM generated? YES NO...# _____

Chain of Custody Record

Client Information		Lab PWT: Cisneros, Roxanne		Carrier Tracking No(s):		GOC No: 490-83037-24275.1	
Client Contact: Greg Dick		Phone: (270) 244-6010		E-Mail: roxanne.cisneros@testamerica.com		Page: Page 1 of 2	
Company: Big Rivers Electric Corporation		Address: PO BOX 24		City: Henderson		State: KY, 42419	
Phone: 270-844-6010(Tel)		PO #: 270-844-6010(Tel)		Purchase Order Requested		WO #:	
Email: Gregory.Dick@bigrivers.com		Project #: 49010431		Site: Kentucky			
Due Date Requested:		TAT Requested (days):		Standard TAT (2 weeks)			
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
MW-7		4/16/2018		1141		G	
MW-8		4/16/2018		1327		G	
MW-9		4/16/2018		1453		G	
MW-10		4/16/2018		1615		G	
FIELD BLANK		4/16/2018		1632		G	
DUPE DUPE		4/16/2018		1347		G	
MW-11		4/16/2018		1347		G	
MW-12		4/16/2018		1347		G	
MW-13		4/16/2018		1347		G	
MW-14		4/16/2018		1347		G	
MW-15		4/16/2018		1347		G	
MW-16		4/16/2018		1347		G	
MW-17		4/16/2018		1347		G	
MW-18		4/16/2018		1347		G	
MW-19		4/16/2018		1347		G	
MW-20		4/16/2018		1347		G	
MW-21		4/16/2018		1347		G	
MW-22		4/16/2018		1347		G	
MW-23		4/16/2018		1347		G	
MW-24		4/16/2018		1347		G	
MW-25		4/16/2018		1347		G	
MW-26		4/16/2018		1347		G	
MW-27		4/16/2018		1347		G	
MW-28		4/16/2018		1347		G	
MW-29		4/16/2018		1347		G	
MW-30		4/16/2018		1347		G	
MW-31		4/16/2018		1347		G	
MW-32		4/16/2018		1347		G	
MW-33		4/16/2018		1347		G	
MW-34		4/16/2018		1347		G	
MW-35		4/16/2018		1347		G	
MW-36		4/16/2018		1347		G	
MW-37		4/16/2018		1347		G	
MW-38		4/16/2018		1347		G	
MW-39		4/16/2018		1347		G	
MW-40		4/16/2018		1347		G	
MW-41		4/16/2018		1347		G	
MW-42		4/16/2018		1347		G	
MW-43		4/16/2018		1347		G	
MW-44		4/16/2018		1347		G	
MW-45		4/16/2018		1347		G	
MW-46		4/16/2018		1347		G	
MW-47		4/16/2018		1347		G	
MW-48		4/16/2018		1347		G	
MW-49		4/16/2018		1347		G	
MW-50		4/16/2018		1347		G	
MW-51		4/16/2018		1347		G	
MW-52		4/16/2018		1347		G	
MW-53		4/16/2018		1347		G	
MW-54		4/16/2018		1347		G	
MW-55		4/16/2018		1347		G	
MW-56		4/16/2018		1347		G	
MW-57		4/16/2018		1347		G	
MW-58		4/16/2018		1347		G	
MW-59		4/16/2018		1347		G	
MW-60		4/16/2018		1347		G	
MW-61		4/16/2018		1347		G	
MW-62		4/16/2018		1347		G	
MW-63		4/16/2018		1347		G	
MW-64		4/16/2018		1347		G	
MW-65		4/16/2018		1347		G	
MW-66		4/16/2018		1347		G	
MW-67		4/16/2018		1347		G	
MW-68		4/16/2018		1347		G	
MW-69		4/16/2018		1347		G	
MW-70		4/16/2018		1347		G	
MW-71		4/16/2018		1347		G	
MW-72		4/16/2018		1347		G	
MW-73		4/16/2018		1347		G	
MW-74		4/16/2018		1347		G	
MW-75		4/16/2018		1347		G	
MW-76		4/16/2018		1347		G	
MW-77		4/16/2018		1347		G	
MW-78		4/16/2018		1347		G	
MW-79		4/16/2018		1347		G	
MW-80		4/16/2018		1347		G	
MW-81		4/16/2018		1347		G	
MW-82		4/16/2018		1347		G	
MW-83		4/16/2018		1347		G	
MW-84		4/16/2018		1347		G	
MW-85		4/16/2018		1347		G	
MW-86		4/16/2018		1347		G	
MW-87		4/16/2018		1347		G	
MW-88		4/16/2018		1347		G	
MW-89		4/16/2018		1347		G	
MW-90		4/16/2018		1347		G	
MW-91		4/16/2018		1347		G	
MW-92		4/16/2018		1347		G	
MW-93		4/16/2018		1347		G	
MW-94		4/16/2018		1347		G	
MW-95		4/16/2018		1347		G	
MW-96		4/16/2018		1347		G	
MW-97		4/16/2018		1347		G	
MW-98		4/16/2018		1347		G	
MW-99		4/16/2018		1347		G	
MW-100		4/16/2018		1347		G	
MW-101		4/16/2018		1347		G	
MW-102		4/16/2018		1347		G	
MW-103		4/16/2018		1347		G	
MW-104		4/16/2018		1347		G	
MW-105		4/16/2018		1347		G	
MW-106		4/16/2018		1347		G	
MW-107		4/16/2018		1347		G	
MW-108		4/16/2018		1347		G	
MW-109		4/16/2018		1347		G	
MW-110		4/16/2018		1347		G	
MW-111		4/16/2018		1347		G	
MW-112		4/16/2018		1347		G	
MW-113		4/16/2018		1347		G	
MW-114		4/16/2018		1347		G	
MW-115		4/16/2018		1347		G	
MW-116		4/16/2018		1347		G	
MW-117		4/16/2018		1347		G	
MW-118		4/16/2018		1347		G	
MW-119		4/16/2018		1347		G	
MW-120		4/16/2018		1347		G	
MW-121		4/16/2018		1347		G	
MW-122		4/16/2018		1347		G	
MW-123		4/16/2018		1347		G	
MW-124		4/16/2018		1347		G	
MW-125		4/16/2018		1347		G	
MW-126		4/16/2018		1347		G	
MW-127		4/16/2018		1347		G	
MW-128		4/16/2018		1347		G	
MW-129		4/16/2018		1347		G	
MW-130		4/16/2018		1347		G	
MW-131		4/16/2018		1347		G	
MW-132		4/16/2018		1347		G	
MW-133		4/16/2018		1347		G	
MW-134		4/16/2018		1347		G	
MW-135		4/16/2018		1347		G	
MW-136		4/16/2018		1347		G	
MW-137		4/16/2018		1347		G	
MW-138		4/16/2018		1347		G	
MW-139		4/16/2018		1347		G	
MW-140		4/16/2018		1347		G	
MW-141		4/16/2018		1347		G	
MW-142		4/16/2018		1347		G	
MW-143		4/16/2018		1347		G	
MW-144		4/16/2018		1347		G	
MW-145		4/16/2018		1347		G	
MW-146		4/16/2018		1347		G	
MW-147		4/16/2018		1347		G	
MW-148		4/16/2018		1347		G	
MW-149		4/16/2018		1347		G	
MW-150		4/16/2018		1347		G	
MW-151		4/16/2018		1347		G	
MW-152		4/16/2018		1347		G	
MW-153		4/16/2018		1347		G	
MW-154		4/16/2018		1347		G	
MW-155		4/16/2018		1347		G	
MW-156		4/16/2018		1347		G	
MW-157		4/16/2018		1347		G	
MW-158		4/16/2018		1347		G	
MW-159		4/16/2018		1347		G	
MW-160		4/16/2018		1347		G	
MW-161		4/16/2018		1347		G	
MW-162		4/16/2018		1347		G	
MW-163		4/16/2018		1347		G	
MW-164		4/16/2018		1347		G	
MW-165		4/16/2018		1347		G	
MW-166		4/16/2018		1347		G	
MW-167		4/16/2018		1347		G	
MW-168		4/16/2018		1347		G	
MW-169		4/16/2018		1347		G	
MW-170		4/16/2018		1347		G	
MW-171		4/16/2018		1347		G	
MW-172		4/16/2018		1347		G	
MW-173		4/16/2018		1347		G	
MW-174		4/16/2018		1347		G	
MW-175		4/16/2018		1347		G	
MW-176		4/16/2018		1347		G	
MW-177		4/16/2018		1347		G	
MW-178		4/16/2018		1347		G	
MW-179		4/16/2018		1347		G	
MW-180		4/16/2018		1347		G	
MW-181		4/16/2018		1347		G	
MW-182		4/16/2018		1347		G	
MW-183		4/16/2018		1347		G	
MW-184		4/16/2018		1347		G	
MW-185		4/16/2018		1347		G	
MW-186		4/16/2018		1347		G	
MW-187		4/16/2018		1347		G	
MW-188		4/16/2018		1347		G	
MW-189		4/16/2018		1347		G	
MW-190		4/16/2018		1347		G	
MW-191		4/16/2018		1347		G	
MW-192		4/16/2018		1347		G	
MW-193		4/16/2018		1347		G	
MW							

Loc: 490
149725

Reid/HMP&L Ash Pond

40 CFR PART 257 Constituent List:

Appendix IV to Part 257

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 & 228 combined

Greg Duch

BREC

4/9/2018

1200

[illegible]

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-149725-2

Login Number: 149725

List Number: 2

Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis

List Creation: 04/11/18 02:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	19.0
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?	False	
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.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L Ash Pond

TestAmerica Job ID: 490-149725-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
490-149725-1	MW-7	95.0	
490-149725-2	MW-8	101	
490-149725-3	MW-9	98.2	
490-149725-4	MW-10	98.8	
490-149725-5	Field Blank	98.5	
490-149725-6	DUPE	99.1	
LCS 160-360406/1-A	Lab Control Sample	109	
LCSD 160-360406/2-A	Lab Control Sample Dup	97.9	
MB 160-360406/23-A	Method Blank	101	
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-149725-1	MW-7	95.0	93.8
490-149725-2	MW-8	101	93.1
490-149725-3	MW-9	98.2	95.7
490-149725-4	MW-10	98.8	87.5
490-149725-5	Field Blank	98.5	92.7
490-149725-6	DUPE	99.1	90.5
LCS 160-360414/1-A	Lab Control Sample	109	85.6
LCSD 160-360414/2-A	Lab Control Sample Dup	97.9	89.3
MB 160-360414/23-A	Method Blank	101	90.5
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			
Y Carrier = Y Carrier			

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-154959-1

Client Project/Site: Reid/HMP&L GW CCR Event

Sampling Event: Big Rivers CCR/SemiAnnual GW

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

7/31/2018 12:59:32 PM

Roxanne Cisneros, Senior Project Manager

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

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-154959-1	MW-7	Water	06/29/18 10:35	06/30/18 09:30
490-154959-2	MW-8	Water	06/29/18 12:20	06/30/18 09:30
490-154959-3	MW-9	Water	06/29/18 13:55	06/30/18 09:30
490-154959-4	MW-10	Water	06/29/18 15:20	06/30/18 09:30
490-154959-5	FIELD BLANK	Water	06/29/18 16:00	06/30/18 09:30
490-154959-6	DUPE	Water	06/29/18 14:20	06/30/18 09:30

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Job ID: 490-154959-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-154959-1

Comments

No additional comments.

Receipt

The samples were received on 6/30/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3° C and 0.8° C.

HPLC/IC

Method(s) 9056A: The method blank for analytical batch 490-527903 contained Chloride above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 490-527903 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 9056A: The method blank for analytical batch 490-528251 contained Chloride above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-8 (490-154959-2), MW-9 (490-154959-3), MW-10 (490-154959-4) and DUPE (490-154959-6). Elevated reporting limits (RLs) are provided.

Method(s) 9056A: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-528251 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

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

Metals

Method(s) 6020A: The post digestion spike % recovery for sodium associated with batch 180-250846 was outside of control limits.

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

General Chemistry

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

Organic Prep

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

Narrative

Job Narrative 490-154959-2

Comments

No additional comments.

Receipt

The samples were received on 6/30/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3° C and 0.8° C.

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-374063: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-154959-1), MW-8 (490-154959-2), MW-9 (490-154959-3), MW-10 (490-154959-4), FIELD

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Job ID: 490-154959-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

BLANK (490-154959-5) and DUPE (490-154959-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-374040: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: MW-7 (490-154959-1), MW-8 (490-154959-2), MW-9 (490-154959-3), MW-10 (490-154959-4), FIELD BLANK (490-154959-5) and DUPE (490-154959-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
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.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-7
Date Collected: 06/29/18 10:35
Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-1
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.88	B F1	3.00	0.200	mg/L			07/10/18 19:53	1
Fluoride	0.351	J	1.00	0.0100	mg/L			07/10/18 19:53	1
Sulfate	23.4		5.00	0.0300	mg/L			07/10/18 19:53	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		07/05/18 13:00	07/10/18 11:16	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000170	J B	0.00200	0.0000213	mg/L		07/05/18 13:03	07/17/18 13:08	1
Arsenic	0.00123	J B	0.00500	0.000118	mg/L		07/05/18 13:03	07/17/18 13:08	1
Barium	0.0767	J	0.200	0.000270	mg/L		07/05/18 13:03	07/17/18 13:08	1
Boron	0.249	J	1.00	0.00339	mg/L		07/05/18 13:03	07/19/18 01:56	1
Calcium	46.6		1.00	0.0412	mg/L		07/05/18 13:03	07/17/18 13:08	1
Chromium	0.00112	J B	0.00300	0.000339	mg/L		07/05/18 13:03	07/17/18 13:08	1
Cobalt	0.000332	J	0.00500	0.0000218	mg/L		07/05/18 13:03	07/17/18 13:08	1
Iron	0.174		0.0500	0.0141	mg/L		07/05/18 13:03	07/17/18 13:08	1
Lead	ND		0.00500	0.0000675	mg/L		07/05/18 13:03	07/17/18 13:08	1
Magnesium	8.34		1.00	0.0152	mg/L		07/05/18 13:03	07/17/18 13:08	1
Molybdenum	0.00571	J	0.0100	0.000873	mg/L		07/05/18 13:03	07/17/18 13:08	1
Potassium	1.83		1.00	0.136	mg/L		07/05/18 13:03	07/17/18 13:08	1
Sodium	43.1		1.00	0.251	mg/L		07/05/18 13:03	07/17/18 13:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.93		0.100	0.100	SU			07/05/18 20:15	1
Temperature	23.3		0.100	0.100	Degrees C			07/05/18 20:15	1
Alkalinity	224		10.0	5.00	mg/L			07/12/18 10:50	1
Total Dissolved Solids	295		10.0	7.00	mg/L			07/06/18 18:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.408		0.142	0.147	1.00	0.139	pCi/L	07/05/18 09:12	07/27/18 12:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					07/05/18 09:12	07/27/18 12:26	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.746		0.287	0.295	1.00	0.410	pCi/L	07/05/18 11:52	07/24/18 13:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					07/05/18 11:52	07/24/18 13:01	1
Y Carrier	91.2		40 - 110					07/05/18 11:52	07/24/18 13:01	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-7

Date Collected: 06/29/18 10:35

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-1

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.15		0.320	0.330	5.00	0.410	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-8
Date Collected: 06/29/18 12:20
Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-2
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.0	B	15.0	1.00	mg/L			07/11/18 13:18	5
Fluoride	0.530	J	1.00	0.0100	mg/L			07/10/18 20:50	1
Sulfate	1050		1000	6.00	mg/L			07/11/18 13:37	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0368	J	0.0500	0.00959	mg/L		07/05/18 13:00	07/10/18 11:37	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000116	J B	0.00200	0.0000213	mg/L		07/05/18 13:03	07/17/18 13:11	1
Arsenic	0.000187	J B	0.00500	0.000118	mg/L		07/05/18 13:03	07/17/18 13:11	1
Barium	0.0174	J	0.200	0.000270	mg/L		07/05/18 13:03	07/17/18 13:11	1
Boron	1.32		1.00	0.00339	mg/L		07/05/18 13:03	07/19/18 02:01	1
Calcium	253		1.00	0.0412	mg/L		07/05/18 13:03	07/17/18 13:11	1
Chromium	0.00105	J B	0.00300	0.000339	mg/L		07/05/18 13:03	07/17/18 13:11	1
Cobalt	0.0000650	J	0.00500	0.0000218	mg/L		07/05/18 13:03	07/17/18 13:11	1
Iron	1.10		0.0500	0.0141	mg/L		07/05/18 13:03	07/17/18 13:11	1
Lead	ND		0.00500	0.0000675	mg/L		07/05/18 13:03	07/17/18 13:11	1
Magnesium	59.3		1.00	0.0152	mg/L		07/05/18 13:03	07/17/18 13:11	1
Molybdenum	0.0140		0.0100	0.000873	mg/L		07/05/18 13:03	07/17/18 13:11	1
Potassium	3.94		1.00	0.136	mg/L		07/05/18 13:03	07/17/18 13:11	1
Sodium	256		1.00	0.251	mg/L		07/05/18 13:03	07/17/18 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.53		0.100	0.100	SU			07/05/18 20:15	1
Temperature	23.3		0.100	0.100	Degrees C			07/05/18 20:15	1
Alkalinity	253		10.0	5.00	mg/L			07/12/18 10:57	1
Total Dissolved Solids	2060		20.0	14.0	mg/L			07/06/18 18:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.428		0.143	0.148	1.00	0.119	pCi/L	07/05/18 09:12	07/27/18 12:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/05/18 09:12	07/27/18 12:26	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.17		0.303	0.321	1.00	0.379	pCi/L	07/05/18 11:52	07/24/18 13:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/05/18 11:52	07/24/18 13:01	1
Y Carrier	84.9		40 - 110					07/05/18 11:52	07/24/18 13:01	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-8

Date Collected: 06/29/18 12:20

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-2

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.60		0.335	0.353	5.00	0.379	pCi/L		07/31/18 11:33	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-9

Date Collected: 06/29/18 13:55

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.2	B	6.00	0.400	mg/L			07/11/18 13:56	2
Fluoride	0.251	J	1.00	0.0100	mg/L			07/10/18 21:09	1
Sulfate	0.412	J	5.00	0.0300	mg/L			07/10/18 21:09	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0112	J	0.0500	0.00959	mg/L		07/05/18 13:00	07/10/18 11:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000496	J B	0.00200	0.0000213	mg/L		07/05/18 13:03	07/17/18 13:31	1
Arsenic	0.000292	J B	0.00500	0.000118	mg/L		07/05/18 13:03	07/17/18 13:31	1
Barium	0.777		0.200	0.000270	mg/L		07/05/18 13:03	07/17/18 13:31	1
Boron	0.239	J	1.00	0.00339	mg/L		07/05/18 13:03	07/19/18 02:24	1
Calcium	68.6		1.00	0.0412	mg/L		07/05/18 13:03	07/17/18 13:31	1
Chromium	0.000956	J B	0.00300	0.000339	mg/L		07/05/18 13:03	07/17/18 13:31	1
Cobalt	0.0000610	J	0.00500	0.0000218	mg/L		07/05/18 13:03	07/17/18 13:31	1
Iron	0.792		0.0500	0.0141	mg/L		07/05/18 13:03	07/17/18 13:31	1
Lead	ND		0.00500	0.0000675	mg/L		07/05/18 13:03	07/17/18 13:31	1
Magnesium	16.9		1.00	0.0152	mg/L		07/05/18 13:03	07/17/18 13:31	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/05/18 13:03	07/17/18 13:31	1
Potassium	1.31		1.00	0.136	mg/L		07/05/18 13:03	07/17/18 13:31	1
Sodium	40.6		1.00	0.251	mg/L		07/05/18 13:03	07/17/18 13:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.80		0.100	0.100	SU			07/05/18 20:15	1
Temperature	23.2		0.100	0.100	Degrees C			07/05/18 20:15	1
Alkalinity	314		10.0	5.00	mg/L			07/12/18 11:04	1
Total Dissolved Solids	399		10.0	7.00	mg/L			07/06/18 18:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.865		0.194	0.209	1.00	0.119	pCi/L	07/05/18 09:12	07/27/18 12:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/05/18 09:12	07/27/18 12:26	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.06		0.302	0.317	1.00	0.393	pCi/L	07/05/18 11:52	07/24/18 13:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/05/18 11:52	07/24/18 13:01	1
Y Carrier	82.2		40 - 110					07/05/18 11:52	07/24/18 13:01	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-9

Date Collected: 06/29/18 13:55

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-3

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.93		0.359	0.380	5.00	0.393	pCi/L		07/31/18 11:33	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-10

Date Collected: 06/29/18 15:20

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.7	B	6.00	0.400	mg/L			07/11/18 14:16	2
Fluoride	0.727	J	1.00	0.0100	mg/L			07/10/18 21:28	1
Sulfate	129		100	0.600	mg/L			07/11/18 14:35	20

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.630		0.0500	0.00959	mg/L		07/05/18 13:00	07/10/18 11:47	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000574	J B	0.00200	0.0000213	mg/L		07/05/18 13:03	07/17/18 13:45	1
Arsenic	0.00263	J B	0.00500	0.000118	mg/L		07/05/18 13:03	07/17/18 13:45	1
Barium	0.0586	J	0.200	0.000270	mg/L		07/05/18 13:03	07/17/18 13:45	1
Boron	0.419	J	1.00	0.00339	mg/L		07/05/18 13:03	07/19/18 02:29	1
Calcium	9.94		1.00	0.0412	mg/L		07/05/18 13:03	07/17/18 13:45	1
Chromium	0.00181	J B	0.00300	0.000339	mg/L		07/05/18 13:03	07/17/18 13:45	1
Cobalt	0.000285	J	0.00500	0.0000218	mg/L		07/05/18 13:03	07/17/18 13:45	1
Iron	0.0202	J	0.0500	0.0141	mg/L		07/05/18 13:03	07/17/18 13:45	1
Lead	ND		0.00500	0.0000675	mg/L		07/05/18 13:03	07/17/18 13:45	1
Magnesium	4.50		1.00	0.0152	mg/L		07/05/18 13:03	07/17/18 13:45	1
Molybdenum	0.00672	J	0.0100	0.000873	mg/L		07/05/18 13:03	07/17/18 13:45	1
Potassium	39.5		1.00	0.136	mg/L		07/05/18 13:03	07/17/18 13:45	1
Sodium	189		1.00	0.251	mg/L		07/05/18 13:03	07/17/18 13:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.26		0.100	0.100	SU			07/05/18 20:15	1
Temperature	23.2		0.100	0.100	Degrees C			07/05/18 20:15	1
Alkalinity	342		10.0	5.00	mg/L			07/12/18 11:12	1
Total Dissolved Solids	721		10.0	7.00	mg/L			07/06/18 18:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.249		0.113	0.115	1.00	0.109	pCi/L	07/05/18 09:12	07/27/18 12:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					07/05/18 09:12	07/27/18 12:26	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.434		0.267	0.270	1.00	0.409	pCi/L	07/05/18 11:52	07/24/18 13:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					07/05/18 11:52	07/24/18 13:01	1
Y Carrier	78.5		40 - 110					07/05/18 11:52	07/24/18 13:01	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-10

Date Collected: 06/29/18 15:20

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-4

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.683		0.290	0.293	5.00	0.409	pCi/L		07/31/18 11:33	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-154959-5

Date Collected: 06/29/18 16:00

Matrix: Water

Date Received: 06/30/18 09:30

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.258	J B	3.00	0.200	mg/L			07/10/18 21:47	1
Fluoride	ND		1.00	0.0100	mg/L			07/10/18 21:47	1
Sulfate	0.279	J	5.00	0.0300	mg/L			07/10/18 21:47	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		07/05/18 13:00	07/10/18 11:53	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000520	J B	0.00200	0.0000213	mg/L		07/05/18 13:03	07/17/18 13:48	1
Arsenic	0.000214	J B	0.00500	0.000118	mg/L		07/05/18 13:03	07/17/18 13:48	1
Barium	ND		0.200	0.000270	mg/L		07/05/18 13:03	07/17/18 13:48	1
Boron	0.00845	J	1.00	0.00339	mg/L		07/05/18 13:03	07/19/18 02:33	1
Calcium	ND		1.00	0.0412	mg/L		07/05/18 13:03	07/17/18 13:48	1
Chromium	0.00132	J B	0.00300	0.000339	mg/L		07/05/18 13:03	07/17/18 13:48	1
Cobalt	ND		0.00500	0.0000218	mg/L		07/05/18 13:03	07/17/18 13:48	1
Iron	ND		0.0500	0.0141	mg/L		07/05/18 13:03	07/17/18 13:48	1
Lead	ND		0.00500	0.0000675	mg/L		07/05/18 13:03	07/17/18 13:48	1
Magnesium	ND		1.00	0.0152	mg/L		07/05/18 13:03	07/17/18 13:48	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/05/18 13:03	07/17/18 13:48	1
Potassium	ND		1.00	0.136	mg/L		07/05/18 13:03	07/17/18 13:48	1
Sodium	ND		1.00	0.251	mg/L		07/05/18 13:03	07/17/18 13:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.26		0.100	0.100	SU			07/03/18 20:03	1
Temperature	23.4		0.100	0.100	Degrees C			07/03/18 20:03	1
Alkalinity	ND		10.0	5.00	mg/L			07/12/18 11:26	1
Total Dissolved Solids	ND		10.0	7.00	mg/L			07/06/18 18:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0618	U	0.0624	0.0626	1.00	0.0952	pCi/L	07/05/18 09:12	07/29/18 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					07/05/18 09:12	07/29/18 12:32	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.110	U	0.210	0.210	1.00	0.358	pCi/L	07/05/18 11:52	07/24/18 13:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					07/05/18 11:52	07/24/18 13:01	1
Y Carrier	83.7		40 - 110					07/05/18 11:52	07/24/18 13:01	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-154959-5

Date Collected: 06/29/18 16:00

Matrix: Water

Date Received: 06/30/18 09:30

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.172	U	0.219	0.219	5.00	0.358	pCi/L		07/31/18 11:33	1

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: DUPE

Date Collected: 06/29/18 14:20

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.3	B	6.00	0.400	mg/L			07/11/18 14:54	2
Fluoride	0.393	J	1.00	0.0100	mg/L			07/10/18 22:06	1
Sulfate	0.369	J	5.00	0.0300	mg/L			07/10/18 22:06	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0107	J	0.0500	0.00959	mg/L		07/05/18 13:00	07/10/18 11:58	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000204	J B	0.00200	0.0000213	mg/L		07/05/18 13:03	07/17/18 13:51	1
Arsenic	0.000238	J B	0.00500	0.000118	mg/L		07/05/18 13:03	07/17/18 13:51	1
Barium	0.762		0.200	0.000270	mg/L		07/05/18 13:03	07/17/18 13:51	1
Boron	0.199	J	1.00	0.00339	mg/L		07/05/18 13:03	07/19/18 02:38	1
Calcium	69.0		1.00	0.0412	mg/L		07/05/18 13:03	07/17/18 13:51	1
Chromium	0.000851	J B	0.00300	0.000339	mg/L		07/05/18 13:03	07/17/18 13:51	1
Cobalt	0.0000220	J	0.00500	0.0000218	mg/L		07/05/18 13:03	07/17/18 13:51	1
Iron	0.830		0.0500	0.0141	mg/L		07/05/18 13:03	07/17/18 13:51	1
Lead	ND		0.00500	0.0000675	mg/L		07/05/18 13:03	07/17/18 13:51	1
Magnesium	17.1		1.00	0.0152	mg/L		07/05/18 13:03	07/17/18 13:51	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/05/18 13:03	07/17/18 13:51	1
Potassium	1.25		1.00	0.136	mg/L		07/05/18 13:03	07/17/18 13:51	1
Sodium	39.1		1.00	0.251	mg/L		07/05/18 13:03	07/17/18 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.57		0.100	0.100	SU			07/03/18 20:03	1
Temperature	21.0		0.100	0.100	Degrees C			07/03/18 20:03	1
Alkalinity	288		10.0	5.00	mg/L			07/12/18 11:33	1
Total Dissolved Solids	353		10.0	7.00	mg/L			07/06/18 18:50	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.952		0.180	0.199	1.00	0.0821	pCi/L	07/05/18 09:12	07/29/18 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/05/18 09:12	07/29/18 12:32	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.941		0.256	0.270	1.00	0.318	pCi/L	07/05/18 11:52	07/24/18 13:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/05/18 11:52	07/24/18 13:01	1
Y Carrier	87.9		40 - 110					07/05/18 11:52	07/24/18 13:01	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: DUPE

Date Collected: 06/29/18 14:20

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-6

Matrix: Water

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2 σ +/-)	Total Uncert. (2 σ +/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.89		0.313	0.335	5.00	0.318	pCi/L		07/31/18 11:33	1

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-527903/3

Matrix: Water

Analysis Batch: 527903

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2780	J	3.00	0.200	mg/L			07/10/18 18:56	1
Fluoride	ND		1.00	0.0100	mg/L			07/10/18 18:56	1
Sulfate	ND		5.00	0.0300	mg/L			07/10/18 18:56	1

Lab Sample ID: LCS 490-527903/4

Matrix: Water

Analysis Batch: 527903

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.449		mg/L		94	80 - 120
Fluoride	1.00	0.9454	J	mg/L		94	80 - 120
Sulfate	10.0	9.329		mg/L		93	80 - 120

Lab Sample ID: LCSD 490-527903/5

Matrix: Water

Analysis Batch: 527903

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.501		mg/L		95	80 - 120	1	20
Fluoride	1.00	0.9455	J	mg/L		94	80 - 120	0	20
Sulfate	10.0	9.345		mg/L		93	80 - 120	0	20

Lab Sample ID: 490-154959-1 MS

Matrix: Water

Analysis Batch: 527903

Client Sample ID: MW-7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.88	B F1	10.0	19.00	F1	mg/L		121	80 - 120
Fluoride	0.351	J	1.00	1.444		mg/L		109	80 - 120
Sulfate	23.4		10.0	35.42		mg/L		120	80 - 120

Lab Sample ID: 490-154959-1 MSD

Matrix: Water

Analysis Batch: 527903

Client Sample ID: MW-7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6.88	B F1	10.0	16.12		mg/L		92	80 - 120	16	20
Fluoride	0.351	J	1.00	1.181		mg/L		83	80 - 120	20	20
Sulfate	23.4		10.0	32.66		mg/L		92	80 - 120	8	20

Lab Sample ID: MB 490-528251/3

Matrix: Water

Analysis Batch: 528251

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2797	J	3.00	0.200	mg/L			07/11/18 12:21	1
Fluoride	ND		1.00	0.0100	mg/L			07/11/18 12:21	1
Sulfate	ND		5.00	0.0300	mg/L			07/11/18 12:21	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-528251/4

Matrix: Water

Analysis Batch: 528251

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.364		mg/L		94	80 - 120
Fluoride	1.00	0.9388	J	mg/L		94	80 - 120
Sulfate	10.0	9.298		mg/L		93	80 - 120

Lab Sample ID: LCSD 490-528251/5

Matrix: Water

Analysis Batch: 528251

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.358		mg/L		93	80 - 120	0	20
Fluoride	1.00	0.9397	J	mg/L		94	80 - 120	0	20
Sulfate	10.0	9.301		mg/L		93	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-249661/1-A

Matrix: Water

Analysis Batch: 250097

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 249661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		07/05/18 13:00	07/10/18 10:55	1

Lab Sample ID: LCS 180-249661/2-A

Matrix: Water

Analysis Batch: 250097

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 249661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.024		mg/L		102	80 - 120

Lab Sample ID: 490-154959-1 MS

Matrix: Water

Analysis Batch: 250097

Client Sample ID: MW-7

Prep Type: Total Recoverable

Prep Batch: 249661

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	1.032		mg/L		103	75 - 125

Lab Sample ID: 490-154959-1 MSD

Matrix: Water

Analysis Batch: 250097

Client Sample ID: MW-7

Prep Type: Total Recoverable

Prep Batch: 249661

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	0.9717		mg/L		97	75 - 125	6	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-249663/1-A

Matrix: Water

Analysis Batch: 250846

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 249663

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0001170	J	0.00200	0.0000213	mg/L		07/05/18 13:03	07/17/18 12:53	1
Arsenic	0.0001230	J	0.00500	0.000118	mg/L		07/05/18 13:03	07/17/18 12:53	1
Barium	ND		0.200	0.000270	mg/L		07/05/18 13:03	07/17/18 12:53	1
Calcium	ND		1.00	0.0412	mg/L		07/05/18 13:03	07/17/18 12:53	1
Chromium	0.0008370	J	0.00300	0.000339	mg/L		07/05/18 13:03	07/17/18 12:53	1
Cobalt	ND		0.00500	0.0000218	mg/L		07/05/18 13:03	07/17/18 12:53	1
Iron	ND		0.0500	0.0141	mg/L		07/05/18 13:03	07/17/18 12:53	1
Lead	ND		0.00500	0.0000675	mg/L		07/05/18 13:03	07/17/18 12:53	1
Magnesium	ND		1.00	0.0152	mg/L		07/05/18 13:03	07/17/18 12:53	1
Molybdenum	ND		0.0100	0.000873	mg/L		07/05/18 13:03	07/17/18 12:53	1
Potassium	ND		1.00	0.136	mg/L		07/05/18 13:03	07/17/18 12:53	1
Sodium	ND		1.00	0.251	mg/L		07/05/18 13:03	07/17/18 12:53	1

Lab Sample ID: MB 180-249663/1-A

Matrix: Water

Analysis Batch: 251072

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 249663

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		07/05/18 13:03	07/19/18 01:42	1

Lab Sample ID: LCS 180-249663/2-A

Matrix: Water

Analysis Batch: 250846

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 249663

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.5247		mg/L		105	80 - 120
Arsenic	0.0400	0.03390		mg/L		85	80 - 120
Barium	2.00	2.044		mg/L		102	80 - 120
Calcium	50.0	52.14		mg/L		104	80 - 120
Chromium	0.200	0.2209		mg/L		110	80 - 120
Cobalt	0.500	0.4187		mg/L		84	80 - 120
Iron	1.00	1.066		mg/L		107	80 - 120
Lead	0.0200	0.02075		mg/L		104	80 - 120
Magnesium	50.0	46.20		mg/L		92	80 - 120
Molybdenum	1.00	0.9681		mg/L		97	80 - 120
Potassium	50.0	45.65		mg/L		91	80 - 120
Sodium	50.0	45.14		mg/L		90	80 - 120

Lab Sample ID: LCS 180-249663/2-A

Matrix: Water

Analysis Batch: 251072

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 249663

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.9154	J	mg/L		92	80 - 120

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-154959-2 MS

Matrix: Water

Analysis Batch: 250846

Client Sample ID: MW-8
Prep Type: Total Recoverable
Prep Batch: 249663

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.000116	J B	0.500	0.5288		mg/L		106	75 - 125
Arsenic	0.000187	J B	0.0400	0.03110		mg/L		77	75 - 125
Barium	0.0174	J	2.00	1.729		mg/L		86	75 - 125
Calcium	253		50.0	300.9	4	mg/L		96	75 - 125
Chromium	0.00105	J B	0.200	0.1829		mg/L		91	75 - 125
Cobalt	0.0000650	J	0.500	0.3782		mg/L		76	75 - 125
Iron	1.10		1.00	1.979		mg/L		88	75 - 125
Lead	ND		0.0200	0.01763		mg/L		88	75 - 125
Magnesium	59.3		50.0	106.9		mg/L		95	75 - 125
Molybdenum	0.0140		1.00	1.041		mg/L		103	75 - 125
Potassium	3.94		50.0	50.37		mg/L		93	75 - 125
Sodium	256		50.0	308.4	4	mg/L		105	75 - 125

Lab Sample ID: 490-154959-2 MS

Matrix: Water

Analysis Batch: 251072

Client Sample ID: MW-8
Prep Type: Total Recoverable
Prep Batch: 249663

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.32		1.00	2.093		mg/L		78	75 - 125

Lab Sample ID: 490-154959-2 MSD

Matrix: Water

Analysis Batch: 250846

Client Sample ID: MW-8
Prep Type: Total Recoverable
Prep Batch: 249663

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.000116	J B	0.500	0.4701		mg/L		94	75 - 125	12	20
Arsenic	0.000187	J B	0.0400	0.03505		mg/L		87	75 - 125	12	20
Barium	0.0174	J	2.00	2.017		mg/L		100	75 - 125	15	20
Calcium	253		50.0	308.2	4	mg/L		111	75 - 125	2	20
Chromium	0.00105	J B	0.200	0.2111		mg/L		105	75 - 125	14	20
Cobalt	0.0000650	J	0.500	0.4267		mg/L		85	75 - 125	12	20
Iron	1.10		1.00	2.126		mg/L		102	75 - 125	7	20
Lead	ND		0.0200	0.02032		mg/L		102	75 - 125	14	20
Magnesium	59.3		50.0	107.4		mg/L		96	75 - 125	0	20
Molybdenum	0.0140		1.00	0.9101		mg/L		90	75 - 125	13	20
Potassium	3.94		50.0	49.38		mg/L		91	75 - 125	2	20
Sodium	256		50.0	309.1	4	mg/L		106	75 - 125	0	20

Lab Sample ID: 490-154959-2 MSD

Matrix: Water

Analysis Batch: 251072

Client Sample ID: MW-8
Prep Type: Total Recoverable
Prep Batch: 249663

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.32		1.00	2.281		mg/L		96	75 - 125	9	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: 9040C - pH

Lab Sample ID: LCS 490-526669/1
Matrix: Water
Analysis Batch: 526669

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.120		SU		102	98 - 103

Lab Sample ID: LCS 490-527018/1
Matrix: Water
Analysis Batch: 527018

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.980		SU		100	98 - 103

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 490-528539/5
Matrix: Water
Analysis Batch: 528539

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10.0	5.00	mg/L			07/12/18 09:50	1

Lab Sample ID: LCS 490-528539/6
Matrix: Water
Analysis Batch: 528539

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	95.45		mg/L		95	90 - 110

Lab Sample ID: LCSD 490-528539/28
Matrix: Water
Analysis Batch: 528539

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	100	96.24		mg/L		96	90 - 110	1	20

Lab Sample ID: 490-154959-4 DU
Matrix: Water
Analysis Batch: 528539

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	342		340.0		mg/L		0.7	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-522634/1
Matrix: Water
Analysis Batch: 522634

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			07/06/18 18:50	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-522634/2
Matrix: Water
Analysis Batch: 522634

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	104.0		mg/L		104	90 - 110

Lab Sample ID: LCSD 490-522634/3
Matrix: Water
Analysis Batch: 522634

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	100	106.0		mg/L		106	90 - 110	2	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-374040/19-A
Matrix: Water
Analysis Batch: 378577

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374040

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06184	U	0.0591	0.0593	1.00	0.0879	pCi/L	07/05/18 09:12	07/29/18 12:32	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/05/18 09:12	07/29/18 12:32	1

Lab Sample ID: LCS 160-374040/1-A
Matrix: Water
Analysis Batch: 378220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374040

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.710		1.08	1.00	0.114	pCi/L	86	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	101		40 - 110						

Lab Sample ID: LCSD 160-374040/2-A
Matrix: Water
Analysis Batch: 378220

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374040

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.4	10.32		1.13	1.00	0.108	pCi/L	91	68 - 137	0.27	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	108		40 - 110								

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-374063/19-A

Matrix: Water

Analysis Batch: 377646

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 374063

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0000	U	0.175	0.175	1.00	0.315	pCi/L	07/05/18 11:52	07/24/18 13:01	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/05/18 11:52	07/24/18 13:01	1
Y Carrier	85.2		40 - 110					07/05/18 11:52	07/24/18 13:01	1

Lab Sample ID: LCS 160-374063/1-A

Matrix: Water

Analysis Batch: 377646

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 374063

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	8.12	8.154		0.952	1.00	0.354	pCi/L	100	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	101		40 - 110						
Y Carrier	86.7		40 - 110						

Lab Sample ID: LCSD 160-374063/2-A

Matrix: Water

Analysis Batch: 377646

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 374063

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	8.12	8.260		0.951	1.00	0.304	pCi/L	102	56 - 140	0.06	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	108		40 - 110								
Y Carrier	86.7		40 - 110								

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

HPLC/IC

Analysis Batch: 527903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total/NA	Water	9056A	
490-154959-2	MW-8	Total/NA	Water	9056A	
490-154959-3	MW-9	Total/NA	Water	9056A	
490-154959-4	MW-10	Total/NA	Water	9056A	
490-154959-5	FIELD BLANK	Total/NA	Water	9056A	
490-154959-6	DUPE	Total/NA	Water	9056A	
MB 490-527903/3	Method Blank	Total/NA	Water	9056A	
LCS 490-527903/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-527903/5	Lab Control Sample Dup	Total/NA	Water	9056A	
490-154959-1 MS	MW-7	Total/NA	Water	9056A	
490-154959-1 MSD	MW-7	Total/NA	Water	9056A	

Analysis Batch: 528251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-2	MW-8	Total/NA	Water	9056A	
490-154959-2	MW-8	Total/NA	Water	9056A	
490-154959-3	MW-9	Total/NA	Water	9056A	
490-154959-4	MW-10	Total/NA	Water	9056A	
490-154959-4	MW-10	Total/NA	Water	9056A	
490-154959-6	DUPE	Total/NA	Water	9056A	
MB 490-528251/3	Method Blank	Total/NA	Water	9056A	
LCS 490-528251/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-528251/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 249661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total Recoverable	Water	3005A	
490-154959-2	MW-8	Total Recoverable	Water	3005A	
490-154959-3	MW-9	Total Recoverable	Water	3005A	
490-154959-4	MW-10	Total Recoverable	Water	3005A	
490-154959-5	FIELD BLANK	Total Recoverable	Water	3005A	
490-154959-6	DUPE	Total Recoverable	Water	3005A	
MB 180-249661/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-249661/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-154959-1 MS	MW-7	Total Recoverable	Water	3005A	
490-154959-1 MSD	MW-7	Total Recoverable	Water	3005A	

Prep Batch: 249663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total Recoverable	Water	3005A	
490-154959-2	MW-8	Total Recoverable	Water	3005A	
490-154959-3	MW-9	Total Recoverable	Water	3005A	
490-154959-4	MW-10	Total Recoverable	Water	3005A	
490-154959-5	FIELD BLANK	Total Recoverable	Water	3005A	
490-154959-6	DUPE	Total Recoverable	Water	3005A	
MB 180-249663/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-249663/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-154959-2 MS	MW-8	Total Recoverable	Water	3005A	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Metals (Continued)

Prep Batch: 249663 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-2 MSD	MW-8	Total Recoverable	Water	3005A	

Analysis Batch: 250097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total Recoverable	Water	6010C	249661
490-154959-2	MW-8	Total Recoverable	Water	6010C	249661
490-154959-3	MW-9	Total Recoverable	Water	6010C	249661
490-154959-4	MW-10	Total Recoverable	Water	6010C	249661
490-154959-5	FIELD BLANK	Total Recoverable	Water	6010C	249661
490-154959-6	DUPE	Total Recoverable	Water	6010C	249661
MB 180-249661/1-A	Method Blank	Total Recoverable	Water	6010C	249661
LCS 180-249661/2-A	Lab Control Sample	Total Recoverable	Water	6010C	249661
490-154959-1 MS	MW-7	Total Recoverable	Water	6010C	249661
490-154959-1 MSD	MW-7	Total Recoverable	Water	6010C	249661

Analysis Batch: 250846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total Recoverable	Water	6020A	249663
490-154959-2	MW-8	Total Recoverable	Water	6020A	249663
490-154959-3	MW-9	Total Recoverable	Water	6020A	249663
490-154959-4	MW-10	Total Recoverable	Water	6020A	249663
490-154959-5	FIELD BLANK	Total Recoverable	Water	6020A	249663
490-154959-6	DUPE	Total Recoverable	Water	6020A	249663
MB 180-249663/1-A	Method Blank	Total Recoverable	Water	6020A	249663
LCS 180-249663/2-A	Lab Control Sample	Total Recoverable	Water	6020A	249663
490-154959-2 MS	MW-8	Total Recoverable	Water	6020A	249663
490-154959-2 MSD	MW-8	Total Recoverable	Water	6020A	249663

Analysis Batch: 251072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total Recoverable	Water	6020A	249663
490-154959-2	MW-8	Total Recoverable	Water	6020A	249663
490-154959-3	MW-9	Total Recoverable	Water	6020A	249663
490-154959-4	MW-10	Total Recoverable	Water	6020A	249663
490-154959-5	FIELD BLANK	Total Recoverable	Water	6020A	249663
490-154959-6	DUPE	Total Recoverable	Water	6020A	249663
MB 180-249663/1-A	Method Blank	Total Recoverable	Water	6020A	249663
LCS 180-249663/2-A	Lab Control Sample	Total Recoverable	Water	6020A	249663
490-154959-2 MS	MW-8	Total Recoverable	Water	6020A	249663
490-154959-2 MSD	MW-8	Total Recoverable	Water	6020A	249663

General Chemistry

Analysis Batch: 522634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total/NA	Water	SM 2540C	
490-154959-2	MW-8	Total/NA	Water	SM 2540C	
490-154959-3	MW-9	Total/NA	Water	SM 2540C	
490-154959-4	MW-10	Total/NA	Water	SM 2540C	
490-154959-5	FIELD BLANK	Total/NA	Water	SM 2540C	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

General Chemistry (Continued)

Analysis Batch: 522634 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-6	DUPE	Total/NA	Water	SM 2540C	
MB 490-522634/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-522634/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-522634/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 526669

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-5	FIELD BLANK	Total/NA	Water	9040C	
490-154959-6	DUPE	Total/NA	Water	9040C	
LCS 490-526669/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 527018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total/NA	Water	9040C	
490-154959-2	MW-8	Total/NA	Water	9040C	
490-154959-3	MW-9	Total/NA	Water	9040C	
490-154959-4	MW-10	Total/NA	Water	9040C	
LCS 490-527018/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 528539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total/NA	Water	SM 2320B	
490-154959-2	MW-8	Total/NA	Water	SM 2320B	
490-154959-3	MW-9	Total/NA	Water	SM 2320B	
490-154959-4	MW-10	Total/NA	Water	SM 2320B	
490-154959-5	FIELD BLANK	Total/NA	Water	SM 2320B	
490-154959-6	DUPE	Total/NA	Water	SM 2320B	
MB 490-528539/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 490-528539/6	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 490-528539/28	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
490-154959-4 DU	MW-10	Total/NA	Water	SM 2320B	

Rad

Prep Batch: 374040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total/NA	Water	PrecSep-21	
490-154959-2	MW-8	Total/NA	Water	PrecSep-21	
490-154959-3	MW-9	Total/NA	Water	PrecSep-21	
490-154959-4	MW-10	Total/NA	Water	PrecSep-21	
490-154959-5	FIELD BLANK	Total/NA	Water	PrecSep-21	
490-154959-6	DUPE	Total/NA	Water	PrecSep-21	
MB 160-374040/19-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-374040/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-374040/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 374063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-1	MW-7	Total/NA	Water	PrecSep_0	
490-154959-2	MW-8	Total/NA	Water	PrecSep_0	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Rad (Continued)

Prep Batch: 374063 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-154959-3	MW-9	Total/NA	Water	PrecSep_0	
490-154959-4	MW-10	Total/NA	Water	PrecSep_0	
490-154959-5	FIELD BLANK	Total/NA	Water	PrecSep_0	
490-154959-6	DUPE	Total/NA	Water	PrecSep_0	
MB 160-374063/19-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-374063/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-374063/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-7

Date Collected: 06/29/18 10:35

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			527903	07/10/18 19:53	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	249661	07/05/18 13:00	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			250097	07/10/18 11:16	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			250846	07/17/18 13:08	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251072	07/19/18 01:56	WTR	TAL PIT
Total/NA	Analysis	9040C		1			527018	07/05/18 20:15	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	528539	07/12/18 10:50	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	522634	07/06/18 18:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.57 mL	1.0 g	374040	07/05/18 09:12	JLC	TAL SL
Total/NA	Analysis	903.0		1			378220	07/27/18 12:26	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.57 mL	1.0 g	374063	07/05/18 11:52	JLC	TAL SL
Total/NA	Analysis	904.0		1			377646	07/24/18 13:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 06/29/18 12:20

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			527903	07/10/18 20:50	SW1	TAL NSH
Total/NA	Analysis	9056A		5			528251	07/11/18 13:18	SW1	TAL NSH
Total/NA	Analysis	9056A		200			528251	07/11/18 13:37	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	249661	07/05/18 13:00	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			250097	07/10/18 11:37	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			250846	07/17/18 13:11	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251072	07/19/18 02:01	WTR	TAL PIT
Total/NA	Analysis	9040C		1			527018	07/05/18 20:15	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	528539	07/12/18 10:57	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	522634	07/06/18 18:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.36 mL	1.0 g	374040	07/05/18 09:12	JLC	TAL SL
Total/NA	Analysis	903.0		1			378220	07/27/18 12:26	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.36 mL	1.0 g	374063	07/05/18 11:52	JLC	TAL SL
Total/NA	Analysis	904.0		1			377646	07/24/18 13:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			379373	07/31/18 11:33	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: MW-9

Date Collected: 06/29/18 13:55

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			527903	07/10/18 21:09	SW1	TAL NSH
Total/NA	Analysis	9056A		2			528251	07/11/18 13:56	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	249661	07/05/18 13:00	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			250097	07/10/18 11:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			250846	07/17/18 13:31	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251072	07/19/18 02:24	WTR	TAL PIT
Total/NA	Analysis	9040C		1			527018	07/05/18 20:15	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	528539	07/12/18 11:04	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	522634	07/06/18 18:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.60 mL	1.0 g	374040	07/05/18 09:12	JLC	TAL SL
Total/NA	Analysis	903.0		1			378220	07/27/18 12:26	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.60 mL	1.0 g	374063	07/05/18 11:52	JLC	TAL SL
Total/NA	Analysis	904.0		1			377646	07/24/18 13:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			379373	07/31/18 11:33	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 06/29/18 15:20

Date Received: 06/30/18 09:30

Lab Sample ID: 490-154959-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			527903	07/10/18 21:28	SW1	TAL NSH
Total/NA	Analysis	9056A		2			528251	07/11/18 14:16	SW1	TAL NSH
Total/NA	Analysis	9056A		20			528251	07/11/18 14:35	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	249661	07/05/18 13:00	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			250097	07/10/18 11:47	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			250846	07/17/18 13:45	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251072	07/19/18 02:29	WTR	TAL PIT
Total/NA	Analysis	9040C		1			527018	07/05/18 20:15	JDG	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	528539	07/12/18 11:12	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	522634	07/06/18 18:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.28 mL	1.0 g	374040	07/05/18 09:12	JLC	TAL SL
Total/NA	Analysis	903.0		1			378220	07/27/18 12:26	RTM	TAL SL
Total/NA	Prep	PrecSep_0			1000.28 mL	1.0 g	374063	07/05/18 11:52	JLC	TAL SL
Total/NA	Analysis	904.0		1			377646	07/24/18 13:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			379373	07/31/18 11:33	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 490-154959-5

Date Collected: 06/29/18 16:00

Matrix: Water

Date Received: 06/30/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			527903	07/10/18 21:47	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	249661	07/05/18 13:00	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			250097	07/10/18 11:53	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			250846	07/17/18 13:48	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251072	07/19/18 02:33	WTR	TAL PIT
Total/NA	Analysis	9040C		1			526669	07/03/18 20:03	MS	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	528539	07/12/18 11:26	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	522634	07/06/18 18:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.25 mL	1.0 g	374040	07/05/18 09:12	JLC	TAL SL
Total/NA	Analysis	903.0		1			378577	07/29/18 12:32	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.25 mL	1.0 g	374063	07/05/18 11:52	JLC	TAL SL
Total/NA	Analysis	904.0		1			377646	07/24/18 13:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			379373	07/31/18 11:33	RTM	TAL SL

Client Sample ID: DUPE

Lab Sample ID: 490-154959-6

Date Collected: 06/29/18 14:20

Matrix: Water

Date Received: 06/30/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			527903	07/10/18 22:06	SW1	TAL NSH
Total/NA	Analysis	9056A		2			528251	07/11/18 14:54	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	249661	07/05/18 13:00	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			250097	07/10/18 11:58	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			250846	07/17/18 13:51	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	249663	07/05/18 13:03	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			251072	07/19/18 02:38	WTR	TAL PIT
Total/NA	Analysis	9040C		1			526669	07/03/18 20:03	MS	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	528539	07/12/18 11:33	BMC	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	522634	07/06/18 18:50	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.32 mL	1.0 g	374040	07/05/18 09:12	JLC	TAL SL
Total/NA	Analysis	903.0		1			378577	07/29/18 12:32	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.32 mL	1.0 g	374063	07/05/18 11:52	JLC	TAL SL
Total/NA	Analysis	904.0		1			377646	07/24/18 13:01	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			379373	07/31/18 11:33	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TestAmerica Nashville

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
9040C	pH	SW846	TAL NSH
SM 2320B	Alkalinity	SM	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

Protocol References:

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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-19
The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:				
Analysis Method	Prep Method	Matrix	Analyte	
9040C		Water	pH	
9040C		Water	Temperature	
9056A		Water	Chloride	
9056A		Water	Fluoride	
9056A		Water	Sulfate	
SM 2320B		Water	Alkalinity	
SM 2540C		Water	Total Dissolved Solids	

Laboratory: TestAmerica Pittsburgh

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	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-18
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-18
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-18 *
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-18
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-18
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-18

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18
Iowa	State Program	7	373	12-01-18

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

TestAmerica Nashville

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Laboratory: TestAmerica St. Louis (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
Kansas	NELAP	7	E-10236	10-31-18
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-18 *
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-18 *
Nevada	State Program	9	MO000542018-1	07-31-18 *
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-18 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-18 *
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-18 *
Texas	NELAP	6	T104704193-17-11	07-31-18 *
US Fish & Wildlife	Federal		058448	07-31-18
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542016-8	07-31-18 *
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-18 *
West Virginia DEP	State Program	3	381	08-31-18 *

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

TestAmerica Nashville

COOLER RECEIPT FORM



490-154959 Chain of Custody

Cooler Received/Opened On 6/30/2018 @ 0930

Time Samples Removed From Cooler 15:20 Time Samples Placed In Storage 16:29 (2 Hour Window)

1. Tracking # 8434 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 97310166 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 0.3 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? 2 (Front) YES...NO...NA

If yes, how many and where: _____

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) 22

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry Ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) 22

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) 22

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) 22

I certify that I attached a label with the unique LIMS number to each container (initial) 22

21. Were there Non-Conformance issues at login? YES NO Was a NCM generated? YES NO...# _____

COOLER RECEIPT FORM

490-154959

Cooler Received/Opened On 6/30/2018 @ 0930

Time Samples Removed From Cooler 15:00 Time Samples Placed In Storage 15:29 (2 Hour Window)

1. Tracking # 4445 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 14740456 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 0.8 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler?

YES...NO...NA

If yes, how many and where: 2 - Front

5. Were the seals intact, signed, and dated correctly?

YES...NO...NA

6. Were custody papers inside cooler?

YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) 22

7. Were custody seals on containers: YES NO and Intact

YES...NO...NA

Were these signed and dated correctly?

YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry Ice Other None

10. Did all containers arrive in good condition (unbroken)?

YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)?

YES...NO...NA

12. Did all container labels and tags agree with custody papers?

YES...NO...NA

13a. Were VOA vials received?

YES...NO...NA

b. Was there any observable headspace present in any VOA vial?

YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) 22

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level?

YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used

YES...NO...NA

16. Was residual chlorine present?

YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) 22

17. Were custody papers properly filled out (ink, signed, etc)?

YES...NO...NA

18. Did you sign the custody papers in the appropriate place?

YES...NO...NA

19. Were correct containers used for the analysis requested?

YES...NO...NA

20. Was sufficient amount of sample sent in each container?

YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) 22

I certify that I attached a label with the unique LIMS number to each container (initial) 22

21. Were there Non-Conformance issues at login? YES...NO... Was a NCM generated? YES...NO...# _____

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Loc: 490
154959

Client Information		Lab PM:	
Client Contact: Greg Dick		Cisneros, Roxanne	
Phone: (270) 844-6010		E-Mail: roxanne.cisneros@testamericainc.com	
Company: Big Rivers Electric Corporation		Lab PM: 15433	
Address: PO BOX 24		COC No: 490-86144-25057.1	
City: Henderson		Page: 1 of 2	
State: KY, 42419		Job #:	
Phone: 270-844-6010(Tel)		Analysis Request:	
Email: Gregory.Dick@bigrivers.com		Due Date Requested:	
Project Name: Reid/HMP&L GW CCR Event		TAT Requested (days):	
Site: Kentucky		STANDARD TAT	
SSOW#:		Purchase Order Requested	
WO#:		PO#:	
Field Filtered Sample (Yes or No)		Field Filtered Sample (Yes or No)	
Sample Date		Sample Time	
Sample Type (C=comp, G=grab)		Matrix (Water, Solid, On-wast, Soil, etc.)	
Preservation Code		Matrix	
Sample Identification		Sample Identification	
MW-7		MW-7	
MW-8		MW-8	
MW-9		MW-9	
MW-10		MW-10	
FIELD BLANK		FIELD BLANK	
DUPE		DUPE	
Possible Hazard Identification		Possible Hazard Identification	
Non-Hazard		Non-Hazard	
Flammable		Flammable	
Skin Irritant		Skin Irritant	
Deliverable Requested: I, II, III, IV, Other (specify)		Deliverable Requested: I, II, III, IV, Other (specify)	
Empty Kit Relinquished by:		Empty Kit Relinquished by:	
Relinquished by: Greg Dick		Relinquished by: Greg Dick	
Date/Time: 6/29/2018 1730		Date/Time: 6/29/2018 1730	
Company: BREC		Company: BREC	
Relinquished by:		Relinquished by:	
Date/Time:		Date/Time:	
Relinquished by:		Relinquished by:	
Date/Time:		Date/Time:	
Custody Seal No.:		Custody Seal No.:	
Yes No		Yes No	
Custody Seals Intact:		Custody Seals Intact:	
Yes No		Yes No	
Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:	
0.308		0.308	

Loc: 490
154959

2 of 2

Reid/HMP&L Ash Pond Constituent List:

Appendix III

Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

Aug Dick
BREC
6/29/2018
1730

Appendix IV

Antimony
Arsenic
Barium
Chromium
Cobalt
Lead
Lithium
Molybdenum
Radium 226 & 228 combined

Additional Constituents

Total Alkalinity
Iron
Magnesium
Potassium
Sodium

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

490-154959 Waybill



ORIGIN ID: RNCA (615) 726-0177
SHIPPING
TEST AMERICA
2960 FOSTER CREIGHTON DR
NASHVILLE, TN 37204
UNITED STATES US

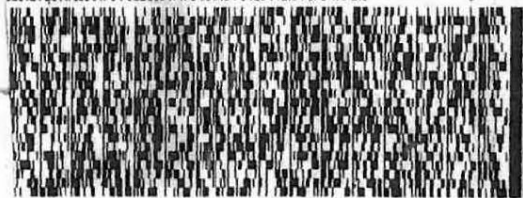
SHIP DATE: 02JUL18
ACTWGT: 10.00 LB MAN
CAD: 820425/CAFE3111

BILL RECIPIENT

SHIPPING/RECEIVING
TESTAMERICA LABORATORIES, INC.
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238

112) 963-7058
0: YES

REF: S490-86805



FedEx
Express



API0002019101/LT

TAL-00501016

490-154954 Waybill



490-154881 Waybill



4399 8183 0460

TUE - 03 JUL 10:30A
PRIORITY OVERNIGHT

7 AGCA

15238
PA-US PIT

corrected temp
ermometer ID

1.9
9 °C
Initials JS

-SR-001 effective 7/26/13

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-154959-2

Login Number: 154959

List Number: 3

Creator: Press, Nicholas B

List Source: TestAmerica St. Louis

List Creation: 07/03/18 05:42 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0
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.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMP&L GW CCR Event

TestAmerica Job ID: 490-154959-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
490-154959-1	MW-7	95.9	
490-154959-2	MW-8	100	
490-154959-3	MW-9	103	
490-154959-4	MW-10	97.3	
490-154959-5	FIELD BLANK	96.5	
490-154959-6	DUPE	104	
LCS 160-374040/1-A	Lab Control Sample	101	
LCSD 160-374040/2-A	Lab Control Sample Dup	108	
MB 160-374040/19-A	Method Blank	104	
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-154959-1	MW-7	95.9	91.2
490-154959-2	MW-8	100	84.9
490-154959-3	MW-9	103	82.2
490-154959-4	MW-10	97.3	78.5
490-154959-5	FIELD BLANK	96.5	83.7
490-154959-6	DUPE	104	87.9
LCS 160-374063/1-A	Lab Control Sample	101	86.7
LCSD 160-374063/2-A	Lab Control Sample Dup	108	86.7
MB 160-374063/19-A	Method Blank	104	85.2
Tracer/Carrier Legend			
Ba Carrier = Ba Carrier			
Y Carrier = Y Carrier			

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Nashville

2960 Foster Creighton Drive

Nashville, TN 37204

Tel: (615)726-0177

TestAmerica Job ID: 490-160084-1

Client Project/Site: Reid/HMPL Impoundment GW CCR

Sampling Event: Big Rivers CCR/SemiAnnual GW

For:

Big Rivers Electric Corporation

PO BOX 24

Henderson, Kentucky 42419

Attn: Greg Dick

Roxanne Cisneros

Authorized for release by:

10/24/2018 5:03:47 PM

Roxanne Cisneros, Senior Project Manager

(615)301-5761

roxanne.cisneros@testamericainc.com

LINKS

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results through

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www.testamericainc.com

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

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

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

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Sample Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-160084-1	MW-7	Water	09/26/18 08:40	09/28/18 09:55
490-160084-2	MW-8	Water	09/26/18 10:25	09/28/18 09:55
490-160084-3	MW-9	Water	09/26/18 11:50	09/28/18 09:55
490-160084-4	MW-10	Water	09/26/18 13:00	09/28/18 09:55
490-160084-5	DUPE	Water	09/26/18 10:52	09/28/18 09:55
490-160084-6	FIELD BLANK	Water	09/26/18 13:26	09/28/18 09:55

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Job ID: 490-160084-1

Laboratory: TestAmerica Nashville

Narrative

**Job Narrative
490-160084-1**

Comments

No additional comments.

Receipt

The samples were received on 9/28/2018 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5° C and 1.1° C.

HPLC/IC

Method(s) 9056A: The method blank for analytical batch 490-546911 contained Chloride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction or re-analysis of samples was not performed.

Method(s) 9056A: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 490-546911 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 9056A: The method blank for analytical batch 490-547083 contained Chloride, Fluoride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: The method blank for analytical batch 490-547083 contained Chloride and Sulfate above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

Method(s) 9056A: Due to the nature of the sample matrix, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with 490-547083. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within the acceptance limits.

Method(s) 9056A: The following samples were diluted due to the nature of the sample matrix: MW-8 (490-160084-2), MW-10 (490-160084-4) and DUPE (490-160084-5). Elevated reporting limits (RLs) are provided.

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

Metals

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

General Chemistry

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

Organic Prep

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

Narrative

**Job Narrative
490-160084-2**

Comments

No additional comments.

Receipt

The samples were received on 9/28/2018 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5° C and 1.1° C.

Case Narrative

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Job ID: 490-160084-1 (Continued)

Laboratory: TestAmerica Nashville (Continued)

RAD

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

1

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Definitions/Glossary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: MW-7
Date Collected: 09/26/18 08:40
Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-1
Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.38	B	3.00	0.200	mg/L			10/01/18 14:03	1
Fluoride	0.279	J	1.00	0.0100	mg/L			10/01/18 14:03	1
Sulfate	18.7	B	5.00	0.0300	mg/L			10/01/18 14:03	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/02/18 12:09	10/03/18 17:37	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0645	J	0.200	0.000270	mg/L		10/02/18 12:12	10/04/18 15:33	1
Boron	0.299	J	1.00	0.00339	mg/L		10/02/18 12:12	10/05/18 20:50	1
Calcium	41.6	B	1.00	0.0412	mg/L		10/02/18 12:12	10/04/18 15:33	1
Iron	0.211		0.0500	0.0141	mg/L		10/02/18 12:12	10/04/18 15:33	1
Magnesium	8.35		1.00	0.0152	mg/L		10/02/18 12:12	10/04/18 15:33	1
Molybdenum	0.00909	J	0.0100	0.000873	mg/L		10/02/18 12:12	10/04/18 15:33	1
Potassium	2520		1000	136	ug/L		10/02/18 12:12	10/04/18 15:33	1
Sodium	43.7		1.00	0.251	mg/L		10/02/18 12:12	10/04/18 15:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.41		0.100	0.100	SU			09/29/18 14:57	1
Temperature	21.4		0.100	0.100	Degrees C			09/29/18 14:57	1
Alkalinity	209		10.0	5.00	mg/L			09/29/18 14:49	1
Total Dissolved Solids	263		10.0	7.00	mg/L			10/03/18 23:20	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.420		0.103	0.109	1.00	0.0684	pCi/L	10/01/18 11:09	10/23/18 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					10/01/18 11:09	10/23/18 07:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.309	U	0.207	0.209	1.00	0.321	pCi/L	10/01/18 11:37	10/08/18 17:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					10/01/18 11:37	10/08/18 17:04	1
Y Carrier	84.9		40 - 110					10/01/18 11:37	10/08/18 17:04	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.730		0.231	0.236	5.00	0.321	pCi/L		10/24/18 15:54	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: MW-8

Date Collected: 09/26/18 10:25

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-2

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.3	B	15.0	1.00	mg/L			10/02/18 13:44	5
Fluoride	0.404	J	1.00	0.0100	mg/L			10/01/18 14:14	1
Sulfate	1180	B	250	1.50	mg/L			10/02/18 13:55	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0375	J	0.0500	0.00959	mg/L		10/02/18 12:09	10/03/18 17:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0196	J	0.200	0.000270	mg/L		10/02/18 12:12	10/04/18 15:44	1
Boron	1.46		1.00	0.00339	mg/L		10/02/18 12:12	10/05/18 21:08	1
Calcium	254	B	1.00	0.0412	mg/L		10/02/18 12:12	10/04/18 15:44	1
Iron	1.18		0.0500	0.0141	mg/L		10/02/18 12:12	10/04/18 15:44	1
Magnesium	65.8		1.00	0.0152	mg/L		10/02/18 12:12	10/04/18 15:44	1
Molybdenum	0.0149		0.0100	0.000873	mg/L		10/02/18 12:12	10/04/18 15:44	1
Potassium	4330		1000	136	ug/L		10/02/18 12:12	10/04/18 15:44	1
Sodium	296		1.00	0.251	mg/L		10/02/18 12:12	10/04/18 15:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.28		0.100	0.100	SU			09/29/18 14:57	1
Temperature	21.4		0.100	0.100	Degrees C			09/29/18 14:57	1
Alkalinity	252		10.0	5.00	mg/L			09/29/18 14:55	1
Total Dissolved Solids	1990		20.0	14.0	mg/L			10/03/18 23:20	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.519		0.113	0.122	1.00	0.0610	pCi/L	10/01/18 11:09	10/23/18 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					10/01/18 11:09	10/23/18 07:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.940		0.242	0.257	1.00	0.287	pCi/L	10/01/18 11:37	10/08/18 17:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					10/01/18 11:37	10/08/18 17:04	1
Y Carrier	83.4		40 - 110					10/01/18 11:37	10/08/18 17:04	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.46		0.267	0.284	5.00	0.287	pCi/L		10/24/18 15:54	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: MW-9

Date Collected: 09/26/18 11:50

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-3

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.93	B	3.00	0.200	mg/L			10/01/18 14:26	1
Fluoride	0.204	J	1.00	0.0100	mg/L			10/01/18 14:26	1
Sulfate	0.481	J B	5.00	0.0300	mg/L			10/01/18 14:26	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/02/18 12:09	10/03/18 18:04	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.288		0.200	0.000270	mg/L		10/02/18 12:12	10/04/18 15:47	1
Boron	0.0857	J	1.00	0.00339	mg/L		10/02/18 12:12	10/05/18 21:13	1
Calcium	60.3	B	1.00	0.0412	mg/L		10/02/18 12:12	10/04/18 15:47	1
Iron	1.13		0.0500	0.0141	mg/L		10/02/18 12:12	10/04/18 15:47	1
Magnesium	20.8		1.00	0.0152	mg/L		10/02/18 12:12	10/04/18 15:47	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/02/18 12:12	10/04/18 15:47	1
Potassium	807	J	1000	136	ug/L		10/02/18 12:12	10/04/18 15:47	1
Sodium	26.7		1.00	0.251	mg/L		10/02/18 12:12	10/04/18 15:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.33		0.100	0.100	SU			09/29/18 14:57	1
Temperature	21.5		0.100	0.100	Degrees C			09/29/18 14:57	1
Alkalinity	264		10.0	5.00	mg/L			09/29/18 15:02	1
Total Dissolved Solids	293		10.0	7.00	mg/L			10/03/18 23:20	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.778		0.135	0.153	1.00	0.0746	pCi/L	10/01/18 11:09	10/23/18 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					10/01/18 11:09	10/23/18 07:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.448		0.200	0.204	1.00	0.283	pCi/L	10/01/18 11:37	10/08/18 17:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					10/01/18 11:37	10/08/18 17:05	1
Y Carrier	84.1		40 - 110					10/01/18 11:37	10/08/18 17:05	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.23		0.241	0.255	5.00	0.283	pCi/L		10/24/18 15:54	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: MW-10

Date Collected: 09/26/18 13:00

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-4

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27.9	B	3.00	0.200	mg/L			10/01/18 14:37	1
Fluoride	0.632	J	1.00	0.0100	mg/L			10/01/18 14:37	1
Sulfate	138	B	50.0	0.300	mg/L			10/02/18 14:18	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.570		0.0500	0.00959	mg/L		10/02/18 12:09	10/03/18 18:09	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0679	J	0.200	0.000270	mg/L		10/02/18 12:12	10/04/18 15:49	1
Boron	0.464	J	1.00	0.00339	mg/L		10/02/18 12:12	10/05/18 21:17	1
Calcium	10.5	B	1.00	0.0412	mg/L		10/02/18 12:12	10/04/18 15:49	1
Iron	0.0200	J	0.0500	0.0141	mg/L		10/02/18 12:12	10/04/18 15:49	1
Magnesium	4.94		1.00	0.0152	mg/L		10/02/18 12:12	10/04/18 15:49	1
Molybdenum	0.00702	J	0.0100	0.000873	mg/L		10/02/18 12:12	10/04/18 15:49	1
Potassium	37600		1000	136	ug/L		10/02/18 12:12	10/04/18 15:49	1
Sodium	202		1.00	0.251	mg/L		10/02/18 12:12	10/04/18 15:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.86		0.100	0.100	SU			09/29/18 14:57	1
Temperature	22.5		0.100	0.100	Degrees C			09/29/18 14:57	1
Alkalinity	333		10.0	5.00	mg/L			09/29/18 15:10	1
Total Dissolved Solids	673		10.0	7.00	mg/L			10/03/18 23:20	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.383		0.0979	0.104	1.00	0.0708	pCi/L	10/01/18 11:09	10/23/18 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					10/01/18 11:09	10/23/18 07:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.321		0.184	0.186	1.00	0.274	pCi/L	10/01/18 11:37	10/08/18 17:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					10/01/18 11:37	10/08/18 17:05	1
Y Carrier	84.5		40 - 110					10/01/18 11:37	10/08/18 17:05	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.704		0.208	0.213	5.00	0.274	pCi/L		10/24/18 15:54	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: DUPE

Date Collected: 09/26/18 10:52

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-5

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.0	B	15.0	1.00	mg/L			10/02/18 14:30	5
Fluoride	0.456	J	1.00	0.0100	mg/L			10/01/18 14:49	1
Sulfate	1180	B	250	1.50	mg/L			10/02/18 14:42	50

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.0373	J	0.0500	0.00959	mg/L		10/02/18 12:09	10/03/18 18:15	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0187	J	0.200	0.000270	mg/L		10/02/18 12:12	10/04/18 15:52	1
Boron	1.42		1.00	0.00339	mg/L		10/02/18 12:12	10/05/18 21:22	1
Calcium	246	B	1.00	0.0412	mg/L		10/02/18 12:12	10/04/18 15:52	1
Iron	1.16		0.0500	0.0141	mg/L		10/02/18 12:12	10/04/18 15:52	1
Magnesium	63.6		1.00	0.0152	mg/L		10/02/18 12:12	10/04/18 15:52	1
Molybdenum	0.0142		0.0100	0.000873	mg/L		10/02/18 12:12	10/04/18 15:52	1
Potassium	4190		1000	136	ug/L		10/02/18 12:12	10/04/18 15:52	1
Sodium	288		1.00	0.251	mg/L		10/02/18 12:12	10/04/18 15:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.22		0.100	0.100	SU			09/29/18 14:57	1
Temperature	21.6		0.100	0.100	Degrees C			09/29/18 14:57	1
Alkalinity	252		10.0	5.00	mg/L			09/29/18 15:17	1
Total Dissolved Solids	2060		20.0	14.0	mg/L			10/03/18 23:20	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.540		0.115	0.125	1.00	0.0630	pCi/L	10/01/18 11:09	10/23/18 07:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					10/01/18 11:09	10/23/18 07:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.04		0.258	0.275	1.00	0.302	pCi/L	10/01/18 11:37	10/08/18 17:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					10/01/18 11:37	10/08/18 17:05	1
Y Carrier	82.2		40 - 110					10/01/18 11:37	10/08/18 17:05	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.58		0.282	0.302	5.00	0.302	pCi/L		10/24/18 15:54	1

TestAmerica Nashville

Client Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: FIELD BLANK

Date Collected: 09/26/18 13:26

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-6

Matrix: Water

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.248	J B	3.00	0.200	mg/L			10/01/18 15:01	1
Fluoride	ND		1.00	0.0100	mg/L			10/01/18 15:01	1
Sulfate	0.442	J B	5.00	0.0300	mg/L			10/01/18 15:01	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/02/18 12:09	10/03/18 18:20	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.200	0.000270	mg/L		10/02/18 12:12	10/04/18 15:55	1
Boron	0.00729	J	1.00	0.00339	mg/L		10/02/18 12:12	10/05/18 21:26	1
Calcium	0.102	J B	1.00	0.0412	mg/L		10/02/18 12:12	10/04/18 15:55	1
Iron	ND		0.0500	0.0141	mg/L		10/02/18 12:12	10/04/18 15:55	1
Magnesium	ND		1.00	0.0152	mg/L		10/02/18 12:12	10/04/18 15:55	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/02/18 12:12	10/04/18 15:55	1
Potassium	ND		1000	136	ug/L		10/02/18 12:12	10/04/18 15:55	1
Sodium	ND		1.00	0.251	mg/L		10/02/18 12:12	10/04/18 15:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.10		0.100	0.100	SU			09/29/18 14:57	1
Temperature	21.7		0.100	0.100	Degrees C			09/29/18 14:57	1
Alkalinity	ND		10.0	5.00	mg/L			09/29/18 15:22	1
Total Dissolved Solids	10.0		10.0	7.00	mg/L			10/03/18 23:20	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.203		0.0765	0.0786	1.00	0.0746	pCi/L	10/01/18 11:09	10/23/18 07:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					10/01/18 11:09	10/23/18 07:41	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0438	U	0.171	0.171	1.00	0.316	pCi/L	10/01/18 11:37	10/08/18 17:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					10/01/18 11:37	10/08/18 17:08	1
Y Carrier	83.4		40 - 110					10/01/18 11:37	10/08/18 17:08	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.159	U	0.187	0.188	5.00	0.316	pCi/L		10/24/18 15:54	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 490-546911/3

Matrix: Water

Analysis Batch: 546911

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.2992	J	3.00	0.200	mg/L			10/01/18 13:05	1
Fluoride	ND		1.00	0.0100	mg/L			10/01/18 13:05	1
Sulfate	0.3910	J	5.00	0.0300	mg/L			10/01/18 13:05	1

Lab Sample ID: LCS 490-546911/4

Matrix: Water

Analysis Batch: 546911

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.22		mg/L		102	80 - 120
Fluoride	1.00	1.045		mg/L		104	80 - 120
Sulfate	10.0	10.28		mg/L		103	80 - 120

Lab Sample ID: LCSD 490-546911/5

Matrix: Water

Analysis Batch: 546911

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.38		mg/L		104	80 - 120	2	20
Fluoride	1.00	1.058		mg/L		106	80 - 120	1	20
Sulfate	10.0	10.45		mg/L		104	80 - 120	2	20

Lab Sample ID: MB 490-547083/3

Matrix: Water

Analysis Batch: 547083

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3193	J	3.00	0.200	mg/L			10/02/18 13:01	1
Fluoride	ND		1.00	0.0100	mg/L			10/02/18 13:01	1
Sulfate	0.3966	J	5.00	0.0300	mg/L			10/02/18 13:01	1

Lab Sample ID: LCS 490-547083/4

Matrix: Water

Analysis Batch: 547083

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.18		mg/L		102	80 - 120
Fluoride	1.00	0.9875	J	mg/L		99	80 - 120
Sulfate	10.0	9.990		mg/L		100	80 - 120

Lab Sample ID: LCSD 490-547083/5

Matrix: Water

Analysis Batch: 547083

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.17		mg/L		102	80 - 120	0	20
Fluoride	1.00	0.9901	J	mg/L		99	80 - 120	0	20
Sulfate	10.0	10.01		mg/L		100	80 - 120	0	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-258539/1-A

Matrix: Water

Analysis Batch: 258758

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 258539

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0500	0.00959	mg/L		10/02/18 12:09	10/03/18 17:16	1

Lab Sample ID: LCS 180-258539/2-A

Matrix: Water

Analysis Batch: 258758

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 258539

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.9787		mg/L		98	80 - 120

Lab Sample ID: 490-160084-2 MS

Matrix: Water

Analysis Batch: 258758

Client Sample ID: MW-8

Prep Type: Total Recoverable

Prep Batch: 258539

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0375	J	1.00	1.030		mg/L		99	75 - 125

Lab Sample ID: 490-160084-2 MSD

Matrix: Water

Analysis Batch: 258758

Client Sample ID: MW-8

Prep Type: Total Recoverable

Prep Batch: 258539

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.0375	J	1.00	1.028		mg/L		99	75 - 125	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-258541/1-A

Matrix: Water

Analysis Batch: 258931

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.200	0.000270	mg/L		10/02/18 12:12	10/04/18 15:16	1
Calcium	0.1277	J	1.00	0.0412	mg/L		10/02/18 12:12	10/04/18 15:16	1
Iron	ND		0.0500	0.0141	mg/L		10/02/18 12:12	10/04/18 15:16	1
Magnesium	ND		1.00	0.0152	mg/L		10/02/18 12:12	10/04/18 15:16	1
Molybdenum	ND		0.0100	0.000873	mg/L		10/02/18 12:12	10/04/18 15:16	1
Potassium	ND		1000	136	ug/L		10/02/18 12:12	10/04/18 15:16	1
Sodium	ND		1.00	0.251	mg/L		10/02/18 12:12	10/04/18 15:16	1

Lab Sample ID: MB 180-258541/1-A

Matrix: Water

Analysis Batch: 259066

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		1.00	0.00339	mg/L		10/02/18 12:12	10/05/18 20:31	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-258541/2-A

Matrix: Water

Analysis Batch: 258931

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	2.00	2.157		mg/L		108	80 - 120
Calcium	50.0	49.86		mg/L		100	80 - 120
Iron	1.00	1.068		mg/L		107	80 - 120
Magnesium	50.0	50.96		mg/L		102	80 - 120
Molybdenum	1.00	1.036		mg/L		104	80 - 120
Potassium	50000	48320		ug/L		97	80 - 120
Sodium	50.0	51.57		mg/L		103	80 - 120

Lab Sample ID: LCS 180-258541/2-A

Matrix: Water

Analysis Batch: 259066

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	1.106		mg/L		111	80 - 120

Lab Sample ID: 490-160084-1 MS

Matrix: Water

Analysis Batch: 258931

Client Sample ID: MW-7

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	0.0645	J	2.00	2.324		mg/L		113	75 - 125
Calcium	41.6	B	50.0	95.82		mg/L		108	75 - 125
Iron	0.211		1.00	1.325		mg/L		111	75 - 125
Magnesium	8.35		50.0	60.69		mg/L		105	75 - 125
Molybdenum	0.00909	J	1.00	1.119		mg/L		111	75 - 125
Potassium	2520		50000	52370		ug/L		100	75 - 125
Sodium	43.7		50.0	96.31		mg/L		105	75 - 125

Lab Sample ID: 490-160084-1 MS

Matrix: Water

Analysis Batch: 259066

Client Sample ID: MW-7

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.299	J	1.00	1.486		mg/L		119	75 - 125

Lab Sample ID: 490-160084-1 MSD

Matrix: Water

Analysis Batch: 258931

Client Sample ID: MW-7

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.0645	J	2.00	2.297		mg/L		112	75 - 125	1	20
Calcium	41.6	B	50.0	93.07		mg/L		103	75 - 125	3	20
Iron	0.211		1.00	1.321		mg/L		111	75 - 125	0	20
Magnesium	8.35		50.0	59.59		mg/L		102	75 - 125	2	20
Molybdenum	0.00909	J	1.00	1.102		mg/L		109	75 - 125	2	20
Potassium	2520		50000	52020		ug/L		99	75 - 125	1	20
Sodium	43.7		50.0	93.30		mg/L		99	75 - 125	3	20

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 490-160084-1 MSD

Matrix: Water

Analysis Batch: 259066

Client Sample ID: MW-7

Prep Type: Total Recoverable

Prep Batch: 258541

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.299	J	1.00	1.228		mg/L		93	75 - 125	19	20

Method: 9040C - pH

Lab Sample ID: LCS 490-546518/1

Matrix: Water

Analysis Batch: 546518

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.050		SU		101	98 - 103

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 490-546566/5

Matrix: Water

Analysis Batch: 546566

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	ND		10.0	5.00	mg/L			09/29/18 14:34	1

Lab Sample ID: LCS 490-546566/6

Matrix: Water

Analysis Batch: 546566

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	94.17		mg/L		94	90 - 110

Lab Sample ID: LCSD 490-546566/24

Matrix: Water

Analysis Batch: 546566

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	100	92.72		mg/L		93	90 - 110	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 490-543841/1

Matrix: Water

Analysis Batch: 543841

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10.0	7.00	mg/L			10/03/18 23:20	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 490-543841/2

Matrix: Water

Analysis Batch: 543841

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	100	98.00		mg/L		98	90 - 110

Lab Sample ID: LCSD 490-543841/3

Matrix: Water

Analysis Batch: 543841

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	100	93.00		mg/L		93	90 - 110	5	20

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-392237/24-A

Matrix: Water

Analysis Batch: 396712

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 392237

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2447		0.0837	0.0866	1.00	0.0735	pCi/L	10/01/18 11:09	10/23/18 07:39	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	10/01/18 11:09	10/23/18 07:39	1

Lab Sample ID: LCS 160-392237/1-A

Matrix: Water

Analysis Batch: 396705

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 392237

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	11.46		1.16	1.00	0.0768	pCi/L	101	68 - 137

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	102		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-392247/24-A

Matrix: Water

Analysis Batch: 393580

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 392247

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1399	U	0.192	0.193	1.00	0.321	pCi/L	10/01/18 11:37	10/08/18 17:09	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	10/01/18 11:37	10/08/18 17:09	1
Y Carrier	82.2		40 - 110	10/01/18 11:37	10/08/18 17:09	1

TestAmerica Nashville

QC Sample Results

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-392247/1-A

Matrix: Water

Analysis Batch: 393579

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 392247

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	10.9	11.21		1.23	1.00	0.327	pCi/L	103	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	102		40 - 110						
Y Carrier	82.6		40 - 110						

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

HPLC/IC

Analysis Batch: 546911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total/NA	Water	9056A	
490-160084-2	MW-8	Total/NA	Water	9056A	
490-160084-3	MW-9	Total/NA	Water	9056A	
490-160084-4	MW-10	Total/NA	Water	9056A	
490-160084-5	DUPE	Total/NA	Water	9056A	
490-160084-6	FIELD BLANK	Total/NA	Water	9056A	
MB 490-546911/3	Method Blank	Total/NA	Water	9056A	
LCS 490-546911/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-546911/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Analysis Batch: 547083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-2	MW-8	Total/NA	Water	9056A	
490-160084-2	MW-8	Total/NA	Water	9056A	
490-160084-4	MW-10	Total/NA	Water	9056A	
490-160084-5	DUPE	Total/NA	Water	9056A	
490-160084-5	DUPE	Total/NA	Water	9056A	
MB 490-547083/3	Method Blank	Total/NA	Water	9056A	
LCS 490-547083/4	Lab Control Sample	Total/NA	Water	9056A	
LCSD 490-547083/5	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 258539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total Recoverable	Water	3005A	
490-160084-2	MW-8	Total Recoverable	Water	3005A	
490-160084-3	MW-9	Total Recoverable	Water	3005A	
490-160084-4	MW-10	Total Recoverable	Water	3005A	
490-160084-5	DUPE	Total Recoverable	Water	3005A	
490-160084-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-258539/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-258539/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-160084-2 MS	MW-8	Total Recoverable	Water	3005A	
490-160084-2 MSD	MW-8	Total Recoverable	Water	3005A	

Prep Batch: 258541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total Recoverable	Water	3005A	
490-160084-2	MW-8	Total Recoverable	Water	3005A	
490-160084-3	MW-9	Total Recoverable	Water	3005A	
490-160084-4	MW-10	Total Recoverable	Water	3005A	
490-160084-5	DUPE	Total Recoverable	Water	3005A	
490-160084-6	FIELD BLANK	Total Recoverable	Water	3005A	
MB 180-258541/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-258541/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
490-160084-1 MS	MW-7	Total Recoverable	Water	3005A	
490-160084-1 MSD	MW-7	Total Recoverable	Water	3005A	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Metals (Continued)

Analysis Batch: 258758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total Recoverable	Water	6010C	258539
490-160084-2	MW-8	Total Recoverable	Water	6010C	258539
490-160084-3	MW-9	Total Recoverable	Water	6010C	258539
490-160084-4	MW-10	Total Recoverable	Water	6010C	258539
490-160084-5	DUPE	Total Recoverable	Water	6010C	258539
490-160084-6	FIELD BLANK	Total Recoverable	Water	6010C	258539
MB 180-258539/1-A	Method Blank	Total Recoverable	Water	6010C	258539
LCS 180-258539/2-A	Lab Control Sample	Total Recoverable	Water	6010C	258539
490-160084-2 MS	MW-8	Total Recoverable	Water	6010C	258539
490-160084-2 MSD	MW-8	Total Recoverable	Water	6010C	258539

Analysis Batch: 258931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total Recoverable	Water	6020A	258541
490-160084-2	MW-8	Total Recoverable	Water	6020A	258541
490-160084-3	MW-9	Total Recoverable	Water	6020A	258541
490-160084-4	MW-10	Total Recoverable	Water	6020A	258541
490-160084-5	DUPE	Total Recoverable	Water	6020A	258541
490-160084-6	FIELD BLANK	Total Recoverable	Water	6020A	258541
MB 180-258541/1-A	Method Blank	Total Recoverable	Water	6020A	258541
LCS 180-258541/2-A	Lab Control Sample	Total Recoverable	Water	6020A	258541
490-160084-1 MS	MW-7	Total Recoverable	Water	6020A	258541
490-160084-1 MSD	MW-7	Total Recoverable	Water	6020A	258541

Analysis Batch: 259066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total Recoverable	Water	6020A	258541
490-160084-2	MW-8	Total Recoverable	Water	6020A	258541
490-160084-3	MW-9	Total Recoverable	Water	6020A	258541
490-160084-4	MW-10	Total Recoverable	Water	6020A	258541
490-160084-5	DUPE	Total Recoverable	Water	6020A	258541
490-160084-6	FIELD BLANK	Total Recoverable	Water	6020A	258541
MB 180-258541/1-A	Method Blank	Total Recoverable	Water	6020A	258541
LCS 180-258541/2-A	Lab Control Sample	Total Recoverable	Water	6020A	258541
490-160084-1 MS	MW-7	Total Recoverable	Water	6020A	258541
490-160084-1 MSD	MW-7	Total Recoverable	Water	6020A	258541

General Chemistry

Analysis Batch: 543841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total/NA	Water	SM 2540C	
490-160084-2	MW-8	Total/NA	Water	SM 2540C	
490-160084-3	MW-9	Total/NA	Water	SM 2540C	
490-160084-4	MW-10	Total/NA	Water	SM 2540C	
490-160084-5	DUPE	Total/NA	Water	SM 2540C	
490-160084-6	FIELD BLANK	Total/NA	Water	SM 2540C	
MB 490-543841/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 490-543841/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 490-543841/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

TestAmerica Nashville

QC Association Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

General Chemistry (Continued)

Analysis Batch: 546518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total/NA	Water	9040C	
490-160084-2	MW-8	Total/NA	Water	9040C	
490-160084-3	MW-9	Total/NA	Water	9040C	
490-160084-4	MW-10	Total/NA	Water	9040C	
490-160084-5	DUPE	Total/NA	Water	9040C	
490-160084-6	FIELD BLANK	Total/NA	Water	9040C	
LCS 490-546518/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 546566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total/NA	Water	SM 2320B	
490-160084-2	MW-8	Total/NA	Water	SM 2320B	
490-160084-3	MW-9	Total/NA	Water	SM 2320B	
490-160084-4	MW-10	Total/NA	Water	SM 2320B	
490-160084-5	DUPE	Total/NA	Water	SM 2320B	
490-160084-6	FIELD BLANK	Total/NA	Water	SM 2320B	
MB 490-546566/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 490-546566/6	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 490-546566/24	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Rad

Prep Batch: 392237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total/NA	Water	PrecSep-21	
490-160084-2	MW-8	Total/NA	Water	PrecSep-21	
490-160084-3	MW-9	Total/NA	Water	PrecSep-21	
490-160084-4	MW-10	Total/NA	Water	PrecSep-21	
490-160084-5	DUPE	Total/NA	Water	PrecSep-21	
490-160084-6	FIELD BLANK	Total/NA	Water	PrecSep-21	
MB 160-392237/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-392237/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 392247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-160084-1	MW-7	Total/NA	Water	PrecSep_0	
490-160084-2	MW-8	Total/NA	Water	PrecSep_0	
490-160084-3	MW-9	Total/NA	Water	PrecSep_0	
490-160084-4	MW-10	Total/NA	Water	PrecSep_0	
490-160084-5	DUPE	Total/NA	Water	PrecSep_0	
490-160084-6	FIELD BLANK	Total/NA	Water	PrecSep_0	
MB 160-392247/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-392247/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: MW-7

Date Collected: 09/26/18 08:40

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			546911	10/01/18 14:03	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258539	10/02/18 12:09	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			258758	10/03/18 17:37	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			258931	10/04/18 15:33	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259066	10/05/18 20:50	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546518	09/29/18 14:57	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	546566	09/29/18 14:49	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543841	10/03/18 23:20	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.91 mL	1.0 g	392237	10/01/18 11:09	JLC	TAL SL
Total/NA	Analysis	903.0		1			396712	10/23/18 07:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			999.91 mL	1.0 g	392247	10/01/18 11:37	JLC	TAL SL
Total/NA	Analysis	904.0		1			393581	10/08/18 17:04	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: MW-8

Date Collected: 09/26/18 10:25

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			546911	10/01/18 14:14	P1B	TAL NSH
Total/NA	Analysis	9056A		5			547083	10/02/18 13:44	SW1	TAL NSH
Total/NA	Analysis	9056A		50			547083	10/02/18 13:55	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258539	10/02/18 12:09	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			258758	10/03/18 17:42	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			258931	10/04/18 15:44	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259066	10/05/18 21:08	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546518	09/29/18 14:57	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	546566	09/29/18 14:55	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	543841	10/03/18 23:20	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.34 mL	1.0 g	392237	10/01/18 11:09	JLC	TAL SL
Total/NA	Analysis	903.0		1			396712	10/23/18 07:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.34 mL	1.0 g	392247	10/01/18 11:37	JLC	TAL SL
Total/NA	Analysis	904.0		1			393581	10/08/18 17:04	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			397140	10/24/18 15:54	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: MW-9

Date Collected: 09/26/18 11:50

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			546911	10/01/18 14:26	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258539	10/02/18 12:09	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			258758	10/03/18 18:04	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			258931	10/04/18 15:47	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259066	10/05/18 21:13	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546518	09/29/18 14:57	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	546566	09/29/18 15:02	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543841	10/03/18 23:20	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.12 mL	1.0 g	392237	10/01/18 11:09	JLC	TAL SL
Total/NA	Analysis	903.0		1			396712	10/23/18 07:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.12 mL	1.0 g	392247	10/01/18 11:37	JLC	TAL SL
Total/NA	Analysis	904.0		1			393581	10/08/18 17:05	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: MW-10

Date Collected: 09/26/18 13:00

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			546911	10/01/18 14:37	P1B	TAL NSH
Total/NA	Analysis	9056A		10			547083	10/02/18 14:18	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258539	10/02/18 12:09	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			258758	10/03/18 18:09	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			258931	10/04/18 15:49	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259066	10/05/18 21:17	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546518	09/29/18 14:57	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	546566	09/29/18 15:10	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543841	10/03/18 23:20	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			999.75 mL	1.0 g	392237	10/01/18 11:09	JLC	TAL SL
Total/NA	Analysis	903.0		1			396712	10/23/18 07:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			999.75 mL	1.0 g	392247	10/01/18 11:37	JLC	TAL SL
Total/NA	Analysis	904.0		1			393581	10/08/18 17:05	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			397140	10/24/18 15:54	RTM	TAL SL

TestAmerica Nashville

Lab Chronicle

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Client Sample ID: DUPE

Date Collected: 09/26/18 10:52

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			546911	10/01/18 14:49	P1B	TAL NSH
Total/NA	Analysis	9056A		5			547083	10/02/18 14:30	SW1	TAL NSH
Total/NA	Analysis	9056A		50			547083	10/02/18 14:42	SW1	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258539	10/02/18 12:09	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			258758	10/03/18 18:15	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			258931	10/04/18 15:52	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259066	10/05/18 21:22	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546518	09/29/18 14:57	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	546566	09/29/18 15:17	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	543841	10/03/18 23:20	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.18 mL	1.0 g	392237	10/01/18 11:09	JLC	TAL SL
Total/NA	Analysis	903.0		1			396712	10/23/18 07:40	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.18 mL	1.0 g	392247	10/01/18 11:37	JLC	TAL SL
Total/NA	Analysis	904.0		1			393581	10/08/18 17:05	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: FIELD BLANK

Date Collected: 09/26/18 13:26

Date Received: 09/28/18 09:55

Lab Sample ID: 490-160084-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1			546911	10/01/18 15:01	P1B	TAL NSH
Total Recoverable	Prep	3005A			50 mL	50 mL	258539	10/02/18 12:09	NAM	TAL PIT
Total Recoverable	Analysis	6010C		1			258758	10/03/18 18:20	RJG	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			258931	10/04/18 15:55	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	258541	10/02/18 12:12	NAM	TAL PIT
Total Recoverable	Analysis	6020A		1			259066	10/05/18 21:26	WTR	TAL PIT
Total/NA	Analysis	9040C		1			546518	09/29/18 14:57	MXX	TAL NSH
Total/NA	Analysis	SM 2320B		1	35 mL	35 mL	546566	09/29/18 15:22	MSP	TAL NSH
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	543841	10/03/18 23:20	AEC	TAL NSH
Total/NA	Prep	PrecSep-21			1000.01 mL	1.0 g	392237	10/01/18 11:09	JLC	TAL SL
Total/NA	Analysis	903.0		1			396712	10/23/18 07:41	CDR	TAL SL
Total/NA	Prep	PrecSep_0			1000.01 mL	1.0 g	392247	10/01/18 11:37	JLC	TAL SL
Total/NA	Analysis	904.0		1			393580	10/08/18 17:08	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			397140	10/24/18 15:54	RTM	TAL SL

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TestAmerica Nashville

Method Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL NSH
6010C	Metals (ICP)	SW846	TAL PIT
6020A	Metals (ICP/MS)	SW846	TAL PIT
9040C	pH	SW846	TAL NSH
SM 2320B	Alkalinity	SM	TAL NSH
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL NSH
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

Protocol References:

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 NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Kentucky (UST)	State Program	4	19	06-30-19
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.				
Analysis Method	Prep Method	Matrix	Analyte	
9040C		Water	pH	
9040C		Water	Temperature	
9056A		Water	Chloride	
9056A		Water	Fluoride	
9056A		Water	Sulfate	
SM 2320B		Water	Alkalinity	
SM 2540C		Water	Total Dissolved Solids	

Laboratory: TestAmerica Pittsburgh

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	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-19
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19
North Carolina (WW/SW)	State Program	4	434	12-31-18
Oregon	NELAP	10	PA-2151	01-28-19
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-19
Wisconsin	State Program	5	998027800	08-31-19

Laboratory: TestAmerica St. Louis

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
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD ELAP		L2305	04-06-19
Arizona	State Program	9	AZ0813	12-08-18 *
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-18

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

TestAmerica Nashville

Accreditation/Certification Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

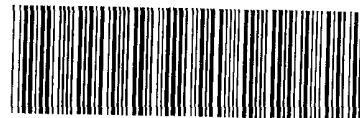
Laboratory: TestAmerica St. Louis (Continued)

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
Iowa	State Program	7	373	12-01-18 *
Kansas	NELAP	7	E-10236	10-31-18 *
Kentucky (DW)	State Program	4	90125	12-31-18
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA180017	12-31-18
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	10-31-18 *

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

TestAmerica Nashville



COOLER RECEIPT FORM

Cooler Received/Opened On 9/28/2018 @ 0955

Time Samples Removed From Cooler 1255 Time Samples Placed In Storage 1308 (2 Hour Window)

1. Tracking # 8800 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960357 pH Strip Lot NA Chlorine Strip Lot NA

2. Temperature of rep. sample or temp blank when opened: 0.5 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? 2 Front YES...NO...NA

If yes, how many and where: _____

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? GH YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) GH

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) GH

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) GH

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) GH

I certify that I attached a label with the unique LIMS number to each container (initial) GH

21. Were there Non-Conformance issues at login? YES...NO... Was a NCM generated? YES...NO...# _____

COOLER RECEIPT FORM

Cooler Received/Opened On 9/28/2018 @ 0955

Time Samples Removed From Cooler 1255 Time Samples Placed In Storage 1302 (2 Hour Window)

1. Tracking # 8876 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 17960357 pH Strip Lot NA Chlorine Strip Lot NA
 2. Temperature of rep. sample or temp blank when opened: 1.1 Degrees Celsius
 3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA
 4. Were custody seals on outside of cooler? 2 Front YES...NO...NA
If yes, how many and where: _____
 5. Were the seals intact, signed, and dated correctly? YES...NO...NA
 6. Were custody papers inside cooler? YES...NO...NA
- I certify that I opened the cooler and answered questions 1-6 (initial) GH
7. Were custody seals on containers: YES NO and Intact YES...NO...NA
Were these signed and dated correctly? YES...NO...NA
 8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None
 9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None
 10. Did all containers arrive in good condition (unbroken)? YES...NO...NA
 11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA
 12. Did all container labels and tags agree with custody papers? YES...NO...NA
 - 13a. Were VOA vials received? YES...NO...NA
 - b. Was there any observable headspace present in any VOA vial? YES...NO...NA



Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____
- I certify that I unloaded the cooler and answered questions 7-14 (initial) GH
- 15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA
 - b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA
 16. Was residual chlorine present? YES...NO...NA
- I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) GH
17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA
 18. Did you sign the custody papers in the appropriate place? YES...NO...NA
 19. Were correct containers used for the analysis requested? YES...NO...NA
 20. Was sufficient amount of sample sent in each container? YES...NO...NA
- I certify that I entered this project into LIMS and answered questions 17-20 (initial) GH
- I certify that I attached a label with the unique LIMS number to each container (initial) GH
21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# _____

Nashville, TN 37204-3719
phone 615.726.0177 fax 615.726.3404

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: Coal Combustion Residuals (CCR)

Client Contact: Greg Dick		Project Manager: Samantha Howard		Site Contact: Greg Dick		Date: 9/27/2018		Carrier: FedEx		COC No: 490-89395-25057.1	
Company: Big Rivers Electric Corporation		Tel/Fax: (270) 844-6027		Lab Contact: Roxanne Cisneros						1 of 1 COCs	
Address: PO Box 24		Analysis Turnaround Time								Sampler: Greg Dick	
City/State/Zip: Henderson, KY 42419		☐ CALENDAR DAYS ☐ WORKING DAYS								For Lab Use Only:	
(270) 844-6000		TAT if different from Below								Walk-in Client:	
(xxx) xxx-xxxx		☒ 2 weeks								Lab Sampling:	
Project Name: Reid/HMPL Impoundment GW CCR		☐ 1 week								Job / SDG No.:	
Site: Reid/HMPL Impoundment		☐ 2 days									
P O #: Purchase Order-see DOCS		☐ 1 day									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:				
MW-7		9/26/18	840	G	Water	6	Loc: 490				
MW-8		9/26/18	1025	G	Water	6	160084				
MW-9		9/26/18	1150	G	Water	6					
MW-10		9/26/18	1300	G	Water	6					
DUPE		9/26/18	1052	G	Water	6					
FIELD BLANK		9/26/18	1326	G	Water	6					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other, 7= None							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.											
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown							☐ Return to Client ☒ Disposal by Lab ☐ Archive for Months				
Special Instructions/QC Requirements & Comments: Standard TAT; Run samples per protocol/methodology prescribed in 40 CFR Part 257 (Federal CCR Regulations). See attached constituent list for analysis.											
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd:		Corr'd:		Therm ID No.:			
Relinquished by: Greg Dick		Company: BRE		Date/Time: 9/27/18 17:20		Received by: [Signature]		Company: TA-NA		Date/Time: 9-28-18/0955	
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:	

2 of 2

Reid/HMP&L Impoundment – 9/26/2018**40 CFR PART 257 Constituent List:****Appendix III to Part 257**

Boron

Calcium

Chloride

Fluoride

pH

Sulfate

Total Dissolved Solids (TDS)

Appendix IV to Part 257

Barium

Lithium

Molybdenum

Radium 226 & 228 combined

Additional Parameters:

Total Alkalinity

Iron

Magnesium

Potassium

Sodium

Aug Quab
PREC
9/27/2018
1720

Chain of Custody Record



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

[illegible]

Login Sample Receipt Checklist

Client: Big Rivers Electric Corporation

Job Number: 490-160084-2

Login Number: 160084

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 09/29/18 11:54 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	0.8, 18.0
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.	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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Big Rivers Electric Corporation
Project/Site: Reid/HMPL Impoundment GW CCR

TestAmerica Job ID: 490-160084-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba Carrier (40-110)
490-160084-1	MW-7	108
490-160084-2	MW-8	107
490-160084-3	MW-9	108
490-160084-4	MW-10	109
490-160084-5	DUPE	105
490-160084-6	FIELD BLANK	105
LCS 160-392237/1-A	Lab Control Sample	102
MB 160-392237/24-A	Method Blank	101

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
490-160084-1	MW-7	108	84.9
490-160084-2	MW-8	107	83.4
490-160084-3	MW-9	108	84.1
490-160084-4	MW-10	109	84.5
490-160084-5	DUPE	105	82.2
490-160084-6	FIELD BLANK	105	83.4
LCS 160-392247/1-A	Lab Control Sample	102	82.6
MB 160-392247/24-A	Method Blank	101	82.2

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier

Attachment C

GREEN STATION LANDFILL

GREEN LANDFILL STATISTICAL PROCEDURES AND RESULTS

Following receipt of the 2018 Assessment groundwater monitoring results conducted under the requirements of the CCR rule (40 CFR257.95), Appendix III and IV groundwater quality data were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient compliance monitoring wells to those present at a background monitoring well. For the Green landfill, monitoring well MW-1 is designated as the background well because it is located upgradient, whereas monitoring wells MW-2, MW-3A, MW-4, MW-5, and MW-6 are designated as compliance wells because they are located downgradient.

The statistical analyses were performed in accordance with the U.S. Environmental Protection Agency's Final CCR Rule 40 CFR Parts 257.93(f), 257.93(g), and 257.93(h) and the Groundwater Monitoring System and Statistical Methods Certification. Prediction limits (i.e., parametric or nonparametric) with 1 of 2 retesting were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented as one-half the detection limit. No outliers were identified in the background data. Analytical data from the background monitoring well collected between March 2016 and July 2018 were used to develop an upper prediction limit (UPL) for the Appendix III and IV background data at 95 percent confidence. Data from the downgradient monitoring wells for the same time period were compared to the UPL to identify statistically significant increases (SSIs) over background. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with SSIs. ProUCL Version 5.1 was used to store the data and run the statistical analyses. The results of the analyses, including the UPLs, are provided in Tables 1 and 2.

The statistical analysis results indicate that Appendix III constituents calcium, chloride, sulfate, and total dissolved solids (TDS) at monitoring wells MW-2, MW-3A, MW-4, MW-5, and MW-6 have SSIs over background that was confirmed by subsequent sampling events (Table 3). Boron, fluoride, and pH did not have any verified SSIs over background and pH did not have any verified SSIs below the background lower prediction limit (LPL). Based on these results, Assessment monitoring is required to continue at the landfill on a semi-annual basis.

Statistical analysis of the June 2018 Appendix IV assessment monitoring results also indicate that arsenic and barium at monitoring well MW-2, lithium at monitoring wells MW-3A, MW-4, MW-5, and MW-6, and mercury at monitoring well MW-4 have SSIs over background that were confirmed by a subsequent re-sampling event in July 2018 (Table 4).

The Appendix IV constituents with SSIs were further evaluated to determine whether they are present at statistically significant levels (SSLs) over the groundwater protection standards (GWPS) by calculating the lower confidence limit at 95% confidence (95LCL) for each well and constituent identified as a SSI using the baseline, detection, and assessment monitoring results collected to date. For a constituent to be present at a SSL over the GWPS, its LCL must be greater than the GWPS. Table 5 provides a summary of the LCLs and GWPS for arsenic, barium, lithium, and mercury at monitoring wells MW-2, MW-3A, MW-4, MW-5, and MW-6. The results indicate that lithium at monitoring wells MW-3A, MW-4, MW-5, and MW-6 (yellow highlight) is present as a SSL above the GWPS. The LCLs for the remaining wells and constituents (arsenic, barium, and mercury) are equal to or less than the GWPS and thus are not considered SSLs.

Table 1. Well MW-1 Appendix III Constituents Background Upper Prediction Limits

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background Limit (mg/L)
Boron (mg/L)	11	0	Yes/Yes	Parametric	2.17
Calcium (mg/L)	11	0	Yes/Yes	Parametric	35
Chloride (mg/L)	11	0	Yes/No	Parametric	9.3
Fluoride (mg/L)	11	0	No/No	Nonparametric	0.89
pH (std units)	11	0	Yes/Yes	Parametric	6.93/7.87
Sulfate (mg/L)	11	0	Yes/Yes	Parametric	29
TDS (mg/L)	11	0	Yes/Yes	Parametric	645

Note: pH has both a lower prediction limit (LPL) and upper prediction limit (UPL); all other constituents are represented as UPLs

Table 2. Well MW-1 Appendix IV Constituents Background Upper Prediction Limits

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background Limit (mg/L)
Antimony (mg/L)	10	30	No/No	Nonparametric	0.017
Arsenic (mg/L)	10	0	No/Yes	Parametric	0.003
Barium (mg/L)	10	0	Yes/Yes	Parametric	0.10
Beryllium (mg/L)	10	100	No/No	Nonparametric	0.002
Cadmium (mg/L)	10	100	No/No	Nonparametric	0.001
Chromium (mg/L)	10	70	No/No	Nonparametric	0.002
Cobalt (mg/L)	10	0	Yes/Yes	Parametric	0.002
Fluoride (mg/L)	10	0	No/No	Nonparametric	0.89
Lead (mg/L)	10	50	No/No	Nonparametric	0.0002
Lithium (mg/L)	10	0	Yes/Yes	Parametric	0.04
Mercury (mg/L)	10	100	No/No	Nonparametric	0.0002
Molybdenum (mg/L)	10	20	Yes/Yes	Parametric	0.002
Ra-226+228 (pCi/L)	10	0	Yes/Yes	Parametric	1.90
Selenium (mg/L)	10	90	No/No	Nonparametric	0.001
Thallium (mg/L)	10	70	No/No	Nonparametric	0.0001

Note: The UPL for constituents with 100 percent nondetects (Be, Cd, and Hg) is established as the laboratory analytical reporting limit.

Table 3 Big Rivers Green Landfill Appendix III SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-1	Upgradient	P	P	P	NP	P	P	P	P
MW-2	Downgradient								
MW-3A	Downgradient								
MW-4	Downgradient								
MW-5	Downgradient								
MW-6	Downgradient								

Notes:

SSIs determined using interwell prediction limits; MW-8 is upgradient background well

P = parametric prediction limit; NP = nonparametric prediction limit

	Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH
	Statistically significant increase (SSI) over background UPL or below background LPL for pH

Table 4 Big Rivers Green Landfill Appendix IV SSI Summary

Well	Location	Sb	As	Ba	Be	Cd	Cr	Co	F	Pb	Li	Hg	Mo	Ra-226+228	Se	Tl
MW-1	Upgradient	P	P	P	NP	NP	NP	P	NP	NP	P	NP	P	P	NP	NP
MW-2	Downgradient															
MW-3A	Downgradient															
MW-4	Downgradient															
MW-5	Downgradient															
MW-6	Downgradient															

Notes:

SSIs determined using interwell prediction limits; MW-8 is upgradient background well

P = parametric prediction limit; NP = nonparametric prediction limit

Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

Statistically significant increase (SSI) over background UPL or below background LPL for pH

Table 5 Summary of LCLs and GWPS for Arsenic, Barium, Lithium, and Mercury

Well	Parameter	95%LCL (mg/L)	GWPS (mg/L)
MW-2	Arsenic	0.007	0.01
MW-2	Barium	0.23	2.0
MW-3A	Lithium	0.64	0.04
MW-3A	Mercury	0.0003	0.002
MW-4	Lithium	1.23	0.04
MW-5	Lithium	0.30	0.04
MW-6	Lithium	0.053	0.04

95%LCL = lower confidence limit at 95% confidence. Yellow highlighted results exhibit a statistically significant level (SSL) above the GWPS.

GREEN STATION SURFACE IMPOUNDMENT

GREEN SURFACE IMPOUNDMENT STATISTICAL PROCEDURES AND RESULTS FOR MAY 2018

Following receipt of the Detection groundwater monitoring results collected on May 7, 2018 at the Big Rivers Green Surface Impoundment, the Appendix III groundwater quality monitoring data were statistically evaluated using an interwell approach that compared constituent concentrations at downgradient monitoring wells to those present at a background monitoring well. For the Green surface impoundment, monitoring well MW-11 is designated as the background well because it is located upgradient, whereas monitoring wells MW-12, MW-13, and MW-14 are designated as compliance wells because they are located downgradient.

The statistical analyses were performed in accordance with the U.S. Environmental Protection Agency's Final CCR Rule 40 CFR Parts 257.93(f), 257.93(g), and 257.93(h) and the Groundwater Monitoring System and Statistical Methods Certification. Prediction limits (i.e., parametric or nonparametric) with 1 of 2 retesting were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented as one-half the detection limit. No outliers were identified in the background data. Analytical data from the background monitoring well collected between April 2016 and October 2017 were used to develop an upper prediction limit (UPL) for the Appendix III background data at 95 percent confidence. Data from the downgradient monitoring wells for the same time period were compared to the UPL to identify statistically significant increases (SSIs) over background. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with SSIs. ProUCL Version 5.1 was used to store the data and run the statistical analyses. The results of the analyses, including the UPLs, are provided in Table 1.

The statistical analysis results indicate that none of the Appendix III constituents (boron, calcium, chloride, fluoride, pH, sulfate or total dissolved solids [TDS]) have verified SSIs over the background UPL (Table 2). None of the pH results have a verified SSI below its background lower prediction limit (LPL). pH at monitoring well MW-12 has an unverified SSI over its UPL which will need to be confirmed during the next detection monitoring sampling event. Based on these results, assessment monitoring is not currently required at the surface impoundment.

Table 1. Statistical Methods and Background Prediction Limits (UPLs) for MW-11

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background Prediction Limit
Boron (mg/L)	9	0	Yes/Yes	Parametric	0.92
Calcium (mg/L)	9	0	Yes/Yes	Parametric	398
Chloride (mg/L)	9	0	Yes/Yes	Parametric	2,508
Fluoride (mg/L)	9	0	Yes/Yes	Parametric	0.89
pH (std units)	9	0	No/No	Nonparametric	6.77/7.29
Sulfate (mg/L)	9	0	Yes/Yes	Parametric	1,506
TDS (mg/L)	9	0	Yes/Yes	Parametric	5,459

Note pH has both a LPL and UPL; all other constituents only have an UPL.

Table 2 Big Rivers Green Surface Impoundment SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-11	Upgradient	P	P	P	P	NP	NP	P	P
MW-12	Downgradient								
MW-13	Downgradient								
MW-14	Downgradient								

Notes:

SSIs determined using interwell prediction limits; MW-11 is upgradient background well

P = parametric prediction limit; NP = nonparametric prediction limit

 Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

 Unverified statistically significant increase (SSI) over background UPL or below background LPL for pH

 Verified SSI over background UPL or below background LPL for pH

GREEN SURFACE IMPOUNDMENT STATISTICAL PROCEDURES AND RESULTS FOR SEPTEMBER 2018

Following receipt of the Detection groundwater monitoring results collected on September 27, 2018 at the Big Rivers Green Surface Impoundment, the Appendix III groundwater quality monitoring data were statistically evaluated using an interwell approach that compared constituent concentrations at downgradient monitoring wells to those present at a background monitoring well. For the Green surface impoundment, monitoring well MW-11 is designated as the background well because it is located upgradient, whereas monitoring wells MW-12, MW-13, and MW-14 are designated as compliance wells because they are located downgradient.

The statistical analyses were performed in accordance with the U.S. Environmental Protection Agency's Final CCR Rule 40 CFR Parts 257.93(f), 257.93(g), and 257.93(h) and the Groundwater Monitoring System and Statistical Methods Certification. Prediction limits (i.e., parametric or nonparametric) with 1 of 2 retesting scheme were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented as one-half the detection limit. No outliers were identified in the background data. Analytical data from the background monitoring well collected between April 2016 and October 2017 were used to develop an upper prediction limit (UPL) for the Appendix III background data at 95 percent confidence, except for pH. pH was evaluated using a control chart method. Upper and lower control limits were calculated as the mean (7.09) $\pm$ 4.5 standard deviations using the background pH data for monitoring well MW-11. Starks 1988¹, EPA 2009², and ASTM 2017³ suggest using 4.5 standard deviations to develop control limits for groundwater detection monitoring. The upper and lower pH control limits are 7.89 and 6.30, respectively. Data from the downgradient monitoring wells for the same time period were compared to the UPL or control limits to identify statistically significant increases (SSIs) over background. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with SSIs. ProUCL Version 5.1 was used to store the data and run the statistical analyses. The results of the analyses, including the UPLs and control limits, are provided in Table 1.

The statistical analysis results indicate that none of the Appendix III constituents (boron, calcium, chloride, fluoride, sulfate or total dissolved solids [TDS]) have verified SSIs over the background UPL or control limits (Table 2). None of the pH results have a verified SSI above or below its control limit. Based on these results, assessment monitoring is not currently required at the surface impoundment.

¹ Starks, T.H., 1988, Evaluation of Control Chart Methodologies for RCRA Waste Sites, U.S. Environmental Protection Agency EPA/600/4-88/040, December, 40 pp.

² U.S. Environmental Protection Agency, 2009, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance, EPA-530-R-09-007, March, 884 pp.

³ ASTM (American Society of Testing and Materials), 2017, Designation D6312-17 Standard Guide for Developing Appropriate Statistical Approaches for Groundwater Detection Monitoring Programs at Waste Disposal Facilities, 15 pp.

Table 1. Background Prediction Limits (UPLs) or Control Limits for Well MW-11

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background Prediction Limit
Boron (mg/L)	9	0	Yes/Yes	Parametric	0.92
Calcium (mg/L)	9	0	Yes/Yes	Parametric	398
Chloride (mg/L)	9	0	Yes/Yes	Parametric	2,508
Fluoride (mg/L)	9	0	Yes/Yes	Parametric	0.89
pH (std units)	9	0	Yes/Yes	Control Chart	6.30/7.89
Sulfate (mg/L)	9	0	Yes/Yes	Parametric	1,506
TDS (mg/L)	9	0	Yes/Yes	Parametric	5,459

Note pH has both a lower and upper control limit; all other constituents only have an UPL.

Table 2 Big Rivers Green Surface Impoundment SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-11	Upgradient	P	P	P	P	NP	NP	P	P
MW-12	Downgradient								
MW-13	Downgradient								
MW-14	Downgradient								

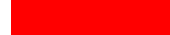
Notes:

SSIs determined using interwell prediction limits; MW-11 is upgradient background well

P = parametric prediction limit; NP = nonparametric prediction limit

 Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

 Unverified statistically significant increase (SSI) over background UPL or below background LPL for pH

 Verified SSI over background UPL or below background LPL for pH

REID/HMPL STATION SURFACE IMPOUNDMENT

REID/HMPL SURFACE IMPOUNDMENT STATISTICAL PROCEDURES AND RESULTS

Following receipt of the 2018 Assessment groundwater monitoring results conducted under the requirements of the CCR rule (40 CFR257.95), Appendix III and IV groundwater quality data at the Reid/HMPL Surface Impoundment were evaluated using an interwell approach that statistically compared constituent concentrations at downgradient monitoring wells to those present at a background monitoring well. For the Reid Surface Impoundment, monitoring well MW-7 is designated as the background well because it is located upgradient of the impoundment, whereas monitoring wells MW-8, MW-9, and MW-10 are designated as compliance wells because they are located downgradient of the impoundment.

The statistical analyses were performed in accordance with the U.S. Environmental Protection Agency's Final CCR Rule 40 CFR Parts 257.93(f), 257.93(g), and 257.93(h) and the Groundwater Monitoring System and Statistical Methods Certification. Prediction limits (i.e., parametric or nonparametric) with 1 of 2 retesting were developed for each constituent based on the frequency of non-detect values and whether the background data for that constituent exhibited a normal, lognormal, or nonparametric distribution. For the statistical analysis, non-detect values were represented as one-half the detection limit. No outliers were identified in the background data. Analytical data from the background monitoring well collected between March 2016 and June 2018 were used to develop an upper prediction limit (UPL) for the Appendix III and IV background data at 95 percent confidence. Data from the downgradient monitoring wells for the same time period were compared to the UPL to identify statistically significant increases (SSIs) over background. Mann-Kendall trend analysis was used to identify statistically significant increasing trends for constituents with SSIs. ProUCL Version 5.1 was used to store the data and run the statistical analyses. The results of the analyses, including the UPLs, are provided in Tables 1 and 2.

The statistical analysis results indicate that Appendix III constituents boron, calcium, chloride, fluoride, sulfate, and total dissolved solids (TDS) at monitoring well MW-8; calcium at monitoring well MW-9; and boron, chloride, fluoride, pH, sulfate, and TDS at monitoring well MW-10 have SSIs over background that were confirmed by subsequent sampling events (Table 3). Based on these results, Assessment monitoring is required to continue at the surface impoundment on a semi-annual basis.

Statistical analysis of the April 2018 Appendix IV assessment monitoring results also indicate that fluoride, lithium, and Ra-226+228 at monitoring well MW-8, barium and Ra-226+228 at monitoring well MW-9, and chromium, fluoride, and lithium at monitoring well MW-10 have SSIs over background that were confirmed by a subsequent re-sampling event in June 2018 (Table 4).

The Appendix IV constituents with SSIs were further evaluated to determine whether they are present at statistically significant levels (SSLs) over the groundwater protection standards (GWPS) by calculating the lower confidence limit at 95% confidence (95LCL) for each well and constituent identified as a SSI using the entire baseline, detection, and assessment monitoring results collected to date. For a constituent to be present at a SSL over the GWPS, its 95LCL must be greater than the GWPS. Table 5 provides a summary of the LCLs and GWPS for barium chromium, fluoride, lithium, and Ra-226+228 at monitoring wells MW-8, MW-9, and MW-10. The results indicate that lithium at monitoring well MW-10 (yellow highlight in Table 10) is the only Appendix IV constituent present at a SSL above the GWPS. The LCLs for the remaining wells and constituents are less than the GWPS and thus are not considered SSLs.

Table 1. Well MW-7 Appendix III Constituents Background Upper Prediction Limits

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background Limit
Boron (mg/L)	10	0	Yes/Yes	Parametric	0.34
Calcium (mg/L)	10	0	No/No	Nonparametric	48
Chloride (mg/L)	10	0	Yes/Yes	Parametric	7
Fluoride (mg/L)	11	0	Yes/Yes	Parametric	0.37
pH (std units)	10	0	Yes/Yes	Parametric	6.77/7.87
Sulfate (mg/L)	10	0	Yes/Yes	Parametric	28
TDS (mg/L)	10	0	Yes/Yes	Parametric	308

Note: pH has both a lower prediction limit (LPL) and upper prediction limit (UPL); all other constituents are represented as UPLs

Table 2. Well MW-7 Appendix IV Constituents Background Upper Prediction Limits

Parameter (Units)	Number of Samples	Percent Nondetects	Normal or Lognormal Distribution?	Statistical Test	Background Limit
Antimony (mg/L)	10	30	Yes/Yes	Parametric	0.0009
Arsenic (mg/L)	10	10	Yes/Yes	Parametric	0.003
Barium (mg/L)	10	0	Yes/Yes	Parametric	0.08
Beryllium (mg/L)	9	100	No/No	Nonparametric	0.002
Cadmium (mg/L)	9	100	No/No	Nonparametric	0.001
Chromium (mg/L)	10	80	No/No	Nonparametric	0.0017
Cobalt (mg/L)	10	0	No/Yes	Parametric	0.0017
Fluoride (mg/L)	11	0	Yes/Yes	Parametric	0.37
Lead (mg/L)	10	70	No/No	Nonparametric	0.0006
Lithium (mg/L)	10	90	No/No	Nonparametric	0.01
Mercury (mg/L)	9	89	No/No	Nonparametric	0.0001
Molybdenum (mg/L)	10	0	Yes/Yes	Parametric	0.019
Ra-226+228 (pCi/L)	11	9	Yes/Yes	Parametric	1.10
Selenium (mg/L)	9	90	No/No	Nonparametric	0.0016
Thallium (mg/L)	9	78	No/No	Nonparametric	0.0006

Note: The UPL for constituents with 100 percent nondetects (beryllium and cadmium) is established as the laboratory analytical reporting limit.

Table 3 Big Rivers Reid/HMPL Surface Impoundment Appendix III SSI Summary

Well	Location	B	Ca	Cl	F	pH (LPL/UPL)		SO4	TDS
MW-7	Upgradient	P	NP	P	P	P	P	P	P
MW-8	Downgradient								
MW-9	Downgradient								
MW-10	Downgradient								

Notes:

SSIs determined using interwell prediction limits; MW-8 is upgradient background well

P = parametric prediction limit; NP = nonparametric prediction limit

Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

Statistically significant increase (SSI) over background UPL or below background LPL for pH

Table 4 Big Rivers Reid/HMPL Surface Impoundment Appendix IV SSI Summary

Well	Location	Sb	As	Ba	Be	Cd	Cr	Co	F	Pb	Li	Hg	Mo	Ra-226+228	Se	Tl
MW-7	Upgradient	P	P	P	NP	NP	NP	P	P	NP	NP	NP	P	P	NP	NP
MW-8	Downgradient															
MW-9	Downgradient															
MW-10	Downgradient															

Notes:

SSIs determined using interwell prediction limits; MW-8 is upgradient background well

P = parametric prediction limit; NP = nonparametric prediction limit

Less than or equal to background upper prediction limit (UPL) or greater than lower prediction limit (LPL) for pH

Statistically significant increase (SSI) over background UPL or below background LPL for pH

Table 5 Summary of 95LCLs and GWPS for Barium, Chromium, Fluoride, Lithium, and Ra-226+228

Well	Parameter	95%LCL (mg/L)	GWPS (mg/L)
MW-8	F	0.42	4.0
MW-8	Li	0.033	0.04
MW-8	Ra	1.31	5.0
MW-9	Ba	0.54	2.0
MW-9	Ra	1.59	5.0
MW-10	Cr	0.001	0.1
MW-10	F	0.44	4.0
MW-10	Li	0.23	0.04

95LCL = lower confidence limit at 95% confidence. Yellow highlighted result exhibits a statistically significant level (SSL) above the GWPS.