


# 2023 Annual Groundwater Monitoring and Corrective Action Report

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for Compliance with the Coal Combustion  
Residuals (CCR) Rule

Gibbons Creek Steam Electric Station

*Gibbons Creek Environmental Redevelopment  
Group, LLC*



January 31, 2024



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A handwritten signature in blue ink, appearing to read "D. Vogt", written over the right side of the seal.

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## Table of Abbreviations and Acronyms

Abbreviation	Definition
AMSL	Above Mean Sea Level
AP	Ash Ponds
ASD	Alternate Source Demonstration
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
cm/s	centimeters per second
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
ERCOT	Electric Reliability Council of Texas
GCERG	Gibbons Creek Environmental Redevelopment Group, LLC.
GCSSES	Gibbons Creek Steam Electric Station
GWPS	Groundwater Protection Standard
LCL	Lower Confidence Limit
LLDPE	Low-Linear Density Polyethylene
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
RCL	Recompacted Clay Liner
RL	Reporting Limit
RPD	Relative Percent Difference
SFL	Site F Landfill
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
SSP	Scrubber Sludge Pond
TAC	Texas Administrative Code
TCEQ	Texas Commission of Environmental Quality
TMPA	Texas Municipal Power Agency



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Summary of 40 CFR Section § 257.90(e)(6) Groundwater Monitoring System Requirements and Site-Specific Compliance – Gibbons Creek Steam Electric Station		
<p><b>§ 257.90(e)(6)</b> A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:</p>		<p><b>Site F Landfill, Scrubber Sludge Pond, Ash Ponds</b></p>
§257.90(e)(6)(i)	<p>At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.</p>	<p>Assessment Monitoring Program</p>
§257.90(e)(6)(ii)	<p>At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95.</p>	<p>Assessment Monitoring Program</p>
§257.90(e)(6)(iii)	<p>If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):</p>	<p>Yes</p>
§257.90(e)(6)(iii)(A)	<p>Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase.</p> <p><b>Note:</b> Site F Landfill – Shallow, Site F Landfill – Deep, Scrubber Sludge Pond and Ash Ponds monitoring networks were all monitored under the Assessment Monitoring program during the 2023 calendar year; therefore, Appendix IV constituents with statistically significant increases over background have been included in addition to Appendix III constituents.</p>	<p><b>Site F Landfill - Shallow</b> SFL MW-2  <ul style="list-style-type: none"> <li>• Boron, pH</li> </ul> SFL MW-3  <ul style="list-style-type: none"> <li>• Boron, Lead</li> </ul> SFL MW-5  <ul style="list-style-type: none"> <li>• Boron</li> </ul> MNW-15  <ul style="list-style-type: none"> <li>• Boron, pH, Cadmium, Cobalt</li> </ul> <b>Site F Landfill - Deep</b>  SFL MW-4  <ul style="list-style-type: none"> <li>• Boron, Chloride, TDS</li> </ul> SFL MW-7  <ul style="list-style-type: none"> <li>• Boron, Chloride</li> </ul> <b>Scrubber Sludge Pond &amp; Ash Ponds</b>  SSP MW-2  <ul style="list-style-type: none"> <li>• Calcium, Chloride, pH, Beryllium, Cadmium, Cobalt</li> </ul> SSP MW-3  <ul style="list-style-type: none"> <li>• Boron, Chloride, pH, Beryllium, Cadmium, Cobalt, Mercury, Radium 226+228, Thallium</li> </ul> SSP MW-4  <ul style="list-style-type: none"> <li>• Chromium, Molybdenum, Selenium</li> </ul> AP MW-1D  <ul style="list-style-type: none"> <li>• Boron, Fluoride, Arsenic, Cobalt, Molybdenum</li> </ul> AP MW-3  <ul style="list-style-type: none"> <li>• Boron, pH, Beryllium, Cadmium, Cobalt, Mercury</li> </ul> AP MW-4  <ul style="list-style-type: none"> <li>• Boron</li> </ul> AP MW-5  <ul style="list-style-type: none"> <li>• Boron, Fluoride, pH, Arsenic, Beryllium, Cadmium, Cobalt, Mercury, Thallium</li> </ul> </p>



Summary of 40 CFR Section § 257.90(e)(6) Groundwater Monitoring System Requirements and Site-Specific Compliance – Gibbons Creek Steam Electric Station		
	<b>§ 257.90(e)(6)</b> A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:	<b>Site F Landfill, Scrubber Sludge Pond, Ash Ponds</b>
§257.90(e)(6)(iii)(B)	Provide the date when the assessment monitoring program was initiated for the CCR unit.	March 2018
§257.90(e)(6)(iv)	If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to § 257.95(g) include all of the following:	Yes – Alternate Source Demonstration (ASD) provided as part of both the 2019 and 2021 Annual Groundwater Monitoring & Corrective Action Annual Reports. ASD updated and submitted September 29, 2023, resulting in the Site F Landfill monitoring network being split into a shallow and deep monitoring network in addition to evaluation of area geochemical characteristics.
§257.90(e)(6)(iv)(A)	Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase.	<p><b>Site F Landfill - Shallow</b> SFL MW-3</p> <ul style="list-style-type: none"> <li>• Lead</li> </ul> <p>MNW-15</p> <ul style="list-style-type: none"> <li>• Cadmium, Cobalt</li> </ul> <p><b>Site F Landfill - Deep</b> None</p> <p><b>Scrubber Sludge Pond &amp; Ash Ponds</b></p> <p>SSP MW-2</p> <ul style="list-style-type: none"> <li>• Beryllium, Cobalt</li> </ul> <p>SSP MW-3</p> <ul style="list-style-type: none"> <li>• Beryllium, Cadmium, Cobalt, Radium 226+228, Thallium</li> </ul> <p>AP MW-1D</p> <ul style="list-style-type: none"> <li>• Cobalt</li> </ul> <p>AP MW-3</p> <ul style="list-style-type: none"> <li>• Cobalt</li> </ul> <p>AP MW-5</p> <ul style="list-style-type: none"> <li>• Beryllium, Cadmium, Cobalt, Thallium</li> </ul>
§257.90(e)(6)(iv)(B)	Provide the date when the assessment of corrective measures was initiated for the CCR unit.	N/A – Currently monitored under assessment monitoring.
§257.90(e)(6)(iv)(C)	Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.	N/A – Currently monitored under assessment monitoring.
§257.90(e)(6)(iv)(D)	Provide the date when the assessment of corrective measures was completed for the CCR unit.	N/A – Currently monitored under assessment monitoring.
§257.90(e)(6)(v)	Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection.	N/A – Currently monitored under assessment monitoring.
§257.90(e)(6)(vi)	Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.	N/A – Currently monitored under assessment monitoring.

# 1 Introduction

On April 17, 2015, the United States Environmental Protection Agency (EPA) published the final rule for the regulation and management of coal combustion residual (CCR) under Subtitle D of the Resource Conservation and Recovery Act. The CCR rule is formally promulgated in the U.S. Code of Federal Regulations (CFR), Title 40, Part 257. The rule – effective on October 19, 2015 – applies to electric utilities and independent power producers that fall within North American Industry Codes System code 221112, and facilities that produce or store CCR materials in surface impoundments or landfills (EPA, 2015). The CCR rule defines a set of requirements for the disposal and handling of CCR within units (defined as either landfills or surface impoundments).

The former Gibbons Creek Steam Electric Station (GCSES or Site) is the site of a former coal-fired power generation facility located in Anderson, Texas (**Figure 0**). The Texas Municipal Power Agency (TMPA) operated GCSES between 1982 and 2019. The Gibbons Creek Environmental Redevelopment Group, LLC (GCERG) acquired the TMPA property in 2021. At the GCSES, one CCR landfill identified as the Site F Landfill (SFL), and two CCR surface impoundments, the Scrubber Sludge Pond (SSP) and Ash Ponds (AP), are subject to the regulations under 40 CFR §257 Subpart D and Texas Commission of Environmental Quality's (TCEQ) Title 30, Texas Administrative Code (30 TAC), Chapter 352. On June 1, 2021, the EPA signed a Federal Register notice approving of the state permit program for the management of CCR in the state of Texas. The locations of the CCR units are shown on **Figure 1** and **Figure 2**.

In accordance with 40 CFR §257.91 and TCEQ TAC 30 Chapter 352, TMPA installed a groundwater monitoring system around both the SFL and the SSP/AP CCR units. GCERG has continued implementation of the federal CCR Rule groundwater monitoring program, as required by 40 CFR §257.90-95, as a continuation of the TMPA monitoring program.

## 2 Facility Description

The GCSES is located at 12824 FM 244 Road, Anderson, Texas 77830. The GCSES was a single unit, 470-megawatt, coal-fired power plant. The GCSES initially operated by burning lignite from the adjacent Gibbons Creek Lignite Mine in 1982. In 1996, the GCSES converted to Powder River Basin coal and the lignite mine was closed. The GCSES was retired from the Electric Reliability Council of Texas (ERCOT) System on October 30, 2019. The Site was obtained by GCERG in 2021.

The APs were clean closed in 2022. The APs were an unlined, interconnected, three-cell impoundment area which was separated by earthen dikes, constructed in 1977 to 1978 as part of the original GCSES construction. These ponds were approximately 260 ft wide, 1,800 ft long and 20 ft deep. The top of the perimeter berms/dikes were at an elevation of approximately 270 feet above mean sea level (AMSL). See **Figure 2** for location of the former APs.

The SSP was clean closed in 2022. The former SSP is located to the west of the APs and was a single impoundment constructed from 1977 to 1978. A liner was added to the bottom of the pond in 1983. The pond measurements were approximately 260 feet and 350 feet wide and 615 feet and 635 feet long (measured at the bottom of the impoundment). See **Figure 2** for location of the former SSP.

GCERG has completed the clean closure process of the SSP & AP CCR units by dewatering and removing all CCR material and soil material beneath the CCR units. The CCR clean closure is documented in the Closure Completion CCR Surface Impoundments, submitted on June 2, 2022. (HDR, 2022b). The CCR material removed from the SSP/AP CCR units was placed within the SFL CCR unit. In addition, the SFL Pond 3 is currently being cleaned out, all stormwater control ditches around the area of the coal pile and coal pile runoff pond have been excavated, and the coal pile itself has been removed. These excavated materials are being dewatered and placed within the SFL CCR unit.

The SFL, located northeast of the decommissioned power generating plant and constructed in 1990, is approximately 114 acres in area and received solid CCR generated by the GCSES. The SFL CCR unit is currently being closed with the following capping system:

- 6-inches of erosion layer;
- Underlain by 18-inches of infiltration layer;
- Underlain by a geocomposite;
- Underlain by a 40-mil low-linear density polyethylene (LLDPE) geomembrane layer;
- Underlain by 2-feet of recompacted clay liner (RCL) with a hydraulic conductivity of  $1 \times 10^{-5}$  centimeters per second (cm/sec) or slower;
- Underlain by 1-foot of intermediate cover.

Closure activities associated with the SFL stormwater pond cleanout and SFL CCR unit is anticipated to be completed by end of year 2024.

## 3 Hydrogeology

### 3.1 GCSES Area Hydrogeology

Geologically, the GCSES is located on an outcrop of the middle member of the Wellborn Formation of the Jackson-Yegua Group of the Tertiary-aged System. The Wellborn Formation is described as fine to very fine quartz sand interbedded with brown, lignitic clay and lignite, with abundant fossil wood and imprints of marine megafossils. Moving south of the GCSES Site, the Manning Formation overlies the Wellborn Formation. The Manning Formation is a lignite-bearing formation which is described as a fine to medium-grained, lignitic, quartz sand, interbedded with sandy, lignitic clay, and lignite, with abundant fossil wood. The Manning Formation has well developed lignite seams. The Gibbons Creek Lignite Mine was located in the Manning Formation located approximately two miles south of GCSES. Quaternary-aged alluvium and terrace deposits are present in the Brazos River, Navasota River, and Gibbons Creek valleys (Horbaczewski, 2011).

The geological formation of the GCSES area is based on the cyclothem model in which the sea transgressed over land and then regressed. Sedimentary rock was stacked over time in a pattern that was indicative of the presence and absence of the sea. This depositional process is described in more detail in the Field Guidebook Minesoil and Acid Seep Workshop document for the Gibbons Creek Lignite Mine (Horbaczewski, 2011). The GCSES area is located in the Texas Coastal Plain region which was developed by this depositional process.

Lignite mining has been conducted in eastern and east-central Texas along the lignite belt depositional area. This lignite belt follows the Tertiary-aged coastal region. The GCSES Site is located in the lignite belt region.

Borings conducted at the site indicate a subsurface stratigraphy consisting of stratified, heterogeneous layers of clays, silts, and sands. The clay and silt intervals consisted of high plasticity material. Silty sand intervals generally consisted of fine, poorly graded sands with occasional high plasticity clay and silt lenses. Occasional sandstone layers were detected in select borings across the Site. Lignite and lignitic clay seams have been identified in soil borings at the Site. Bedrock material is sandstone (ERM, 2005).

The topography of the GCSES and locations of the CCR units are generally flat with surface elevation decreasing from north to south and southwest. Surface water drainage is generally to the south and southwest. Gibbons Creek Reservoir is located immediately adjacent to the GCSES and CCR units on the east and south sides. The reservoir was established as a cooling pond for the GCSES. Impoundment of Gibbons Creek Reservoir began in spring 1981. Discharge from the reservoir feeds into Gibbons Creek which is a tributary of the Navasota River which is a tributary of the Brazos River.

The uppermost groundwater at GCSES CCR units ranges from approximately 220 to 250 feet AMSL. The uppermost groundwater aquifer at the Site is considered confined to semi-confined due to the stratified nature of the sedimentary sediments and influences of weathering and erosion. General groundwater flow direction at the Site is from the northwest to southeast. The groundwater flow generally follows topography with the flow towards the Gibbons Creek Reservoir and the Gibbons Creek valley.

### 3.2 GCSES Area Geochemistry – Pyrite and pH

As noted in the 2019 ASD (Wood, 2019) and 2023 ASD (HDR, 2023) the elevated concentrations of constituents of concern were primarily related to the low pH measured in the groundwater samples. The low pH was attributed to the weathering of naturally present pyrite in sediments at the site. The presence of pyrite at and in the general area of GCSES is attributed to the geological formation of the region. Marine environments promote the formation of pyrite. Anoxic conditions can develop in marine sediments as organic material (i.e., buried coastal vegetation due to sea transgression) is broken down by bacteria. For this process to occur, electron acceptors are used by the bacteria. The consumption of electron acceptors generally follows the following order:

1. Aerobic processes
2. Nitrate reduction processes
3. Manganese reduction processes
4. Iron reduction processes
5. Sulfate reduction processes
6. Methane generation processes

Iron and sulfate are relatively high in seawater and the solubility product of iron sulfides is extremely low (Horbaczewski, 2011). Thus, if ferrous iron and sulfide ions, which are products of

iron reduction and sulfate reduction processes, respectively, are in close proximity, iron sulfide will precipitate. This process eventually forms pyrite (iron disulfide). Framboidal pyrite is commonly found in coastal sediments or sedimentary sediments formed from marine sediments. Framboidal pyrite is present in Texas lignite formations. Pyrite was noted on select boring logs from site monitoring wells (AFWEI, 2017).

When the process is reversed and pyrite is exposed to an aerobic state, it is oxidized. This oxidation forms ferrous iron and sulfuric acid in aqueous solutions. This release of sulfuric acid can cause acidification of natural waters. The pyrite that is present in the Jackson-Yegua Formation located at the Site provides sulfide constituents that can be oxidized. Natural acid seeps have been observed in the general area of the Site as a result of dissolution of pyrite in lignite (Horbaczewski, 2007). Based on data obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS's) Web Soil Survey database, shallow soil sediments at the Site generally are acidic with pH measurements in the range from 3.5 to 6.5. Shallow groundwater in unconfined or semiconfined aquifers that is in contact with lignite and has a positive oxidation-reduction potential (ORP) generally exhibit a low pH. This has been observed in shallow screened monitoring wells at the Site. Generally, groundwater from deeper screen interval elevations, which are confined to semi-confined (approximately 209.8 to 249.7 feet AMSL), had relatively higher pH and lower ORP, while groundwater from shallow screen interval elevations which are semi-confined to unconfined (approximately 230.3 to 269.0 feet AMSL) had relatively lower pH and higher ORP (HDR, 2023).

## 4 Monitoring Well Network

The CCR Rule requires, at a minimum, one upgradient and three downgradient monitoring wells per CCR unit to be completed in the uppermost aquifer. Section 40 CFR §257.90 of the Rule states that the operator: "...may install a multiunit groundwater monitoring system instead of separate groundwater monitoring systems for each CCR unit." In addition, the Rule states that downgradient monitoring wells should be installed to: "accurately represent the quality of groundwater passing the waste boundary of the CCR unit. The downgradient monitoring system must be installed at the waste boundary that ensures detection of groundwater contamination in the uppermost aquifer." Following the 2023 ASD, the Certified Monitoring Network was updated to include the split monitoring network at the SFL (HDR, 2024).

### 4.1 Site F Landfill

The SFL CCR unit monitoring well network (as shown on **Figure 1**) consists of both monitoring wells and piezometers installed by Amec Foster Wheeler in 2016 and 2017, and wells installed by Black and Veatch in 1988.

The SFL monitoring network has historically consisted of the following wells:

- Background Well: MNW-18
- Compliance Wells: SFL MW-2, SFL MW-3, SFL MW-4, SFL MW-5, SFL MW-6, SFL MW-7, and MNW-15
- Piezometers: MNW-11, MNW-16, and MNW-17

During the 2023 ASD [HDR, 2023], a review of boring logs at the Site and interpretation of

historic monitoring data determined that multiple groundwater units are being monitored at the Site. Compound this with differences in pH and ORP of the shallow groundwater versus deeper monitored groundwater; background and compliance monitoring wells were deemed to not be monitoring the same groundwater unit.

For the Site F Landfill, monitoring well MNW-18 has historically been considered the up-gradient / background monitoring well used for the SFL CCR unit. The screen interval for monitoring well MNW-18 is across a confined portion of the aquifer. Compliance and water level only monitoring wells that are in the same aquifer unit as MNW-18 are MNW-11, MNW-16, MNW-17, SFL MW-4, and SFL MW-7. These monitoring wells had pH measurements that averaged greater than or equal to 6.2 and ORP, if data was available, averaged less than or equal to 22.1 millivolts (mV). The monitored groundwater at these wells was less oxidized and pH was less likely to be impacted by weathered pyrite.

Monitoring wells SFL MW-2, SFL MW-3, SFL MW-5, SFL MW-6, and MNW-15 monitor the shallower groundwater at the Site F Landfill. Based on the December 2022 groundwater elevation measurements, the water column relative to the top of screen (TOS) ranged from approximately -0.7 to 16.2 feet. These monitoring wells had pH measurements that averaged less than or equal to 6.2 and ORP averaged greater than or equal to 209.4 mV. The oxidized groundwater at these monitoring wells has lower pH due to the weathering of pyrite at the Site.

Based on the differences in chemistry measured at the SFL CCR unit, monitoring wells that monitor deeper groundwater versus shallower groundwater, the monitoring network was refined to accurately monitor down-gradient groundwater relative to the CCR unit. For the deeper monitoring network, groundwater generally flows south to southwest, and MNW-18 is still an up-gradient monitoring point relative to the CCR unit. For the shallow monitoring network, groundwater generally flows south to southeast and monitoring well SFL MW-6 is generally up-gradient to the CCR unit.

The shallow monitoring well network includes:

- Background Well: SFL MW-6
- SFL Landfill-Shallow Compliance Wells: SFL MW-2, SFL MW-3, SFL MW-5 and MNW-15

The deep monitoring well network includes:

- Background Well: MNW-18
- SFL Landfill-Deep Compliance Wells: SFL MW-4, SFL MW-7
- Piezometers: MNW-11, MNW-16, MNW-17

## 4.2 Scrubber Sludge Pond / Ash Ponds

The SSP/AP CCR unit monitoring well networks (as shown on **Figure 2**) consist of both monitoring wells and piezometers. The piezometers are used for water level data collection only, groundwater quality samples are only collected from monitoring wells. The monitoring well network includes:

- Background Well: SSP/AP MW-1 (used as background for both AP CCR unit and SSP CCR unit networks)
- Scrubber Sludge Pond Compliance Wells: SSP MW-2, SSP MW-3 and SSP MW-4

- Ash Ponds Compliance Wells: AP MW-1D, AP MW-3, AP MW-4 and AP MW-5
- Piezometers: SSP MW-1, AP MW-1, AP MW-6, AP MW-2, AP PZ-1, AP PZ-2, AP PZ-3 and AP PZ-4

## 5 Groundwater Monitoring

TMPA initiated sample collection for background monitoring in June 2016 and completed the eighth round of background sampling, as required by the CCR Rule, in August 2017. In accordance with 40 CFR §257.94(b), one round of detection monitoring was completed in October 2017. A statistical evaluation of the groundwater quality data set for Appendix III constituents resulting from detection monitoring in accordance with 40 CFR § 257.94 was completed in January 2018. The data set used in the evaluation resulted from the collection and laboratory analysis of eight independent samples from background and downgradient wells in accordance with 40 CFR § 257.94(b). The statistical evaluation was completed using the prediction limit method outlined in 40 CFR § 257.93(f)(3) for the monitoring data obtained at the SFL CCR unit and the SSP/AP CCR units. The statistical evaluation concluded initial statistically significant increases (SSIs) over background levels for Appendix III constituents at the SFL CCR unit and the SSP/AP CCR units (Wood, 2019). Based upon the results of the statistical evaluation, an assessment monitoring program was implemented in March 2018.

The first two initial rounds of the assessment monitoring program were conducted in March 2018 and June 2018. Groundwater samples were collected from monitoring wells at the SFL CCR unit and the SSP/AP CCR units. During the initial assessment monitoring sampling event (March 2018), the groundwater samples were analyzed for all Appendix III and Appendix IV constituents. During the second assessment monitoring sampling event (June 2018), the groundwater samples were analyzed for all Appendix III constituents and those Appendix IV constituents that were detected at each CCR unit during the March 2018 monitoring event.

Assessment monitoring was continued in 2019, at which point multiple statistically significant levels (SSLs) of Appendix IV constituents were determined to be above their respective groundwater protection standard (GWPS) (Wood, 2020). As part of the 2019 Annual Groundwater Monitoring and Corrective Action Annual Report, an alternate source demonstration (ASD) was submitted (Wood, 2020). This ASD describes the natural conditions in and around the Site, as well as the impact of naturally occurring lignite within the area of the Site and its impact on the groundwater system. As documented in the 2019 ASD evaluation, potential SSLs identified for Appendix IV constituents are attributed to an alternate source under the CCR rule; therefore, no corrective action measures were required and groundwater monitoring under the assessment monitoring program was continued.

Assessment monitoring continued with both semiannual sampling events within both 2021 and 2022. Multiple Appendix IV constituents were observed as SSLs during 2021 and 2022. These constituents were discussed in an expansion of the 2019 ASD and were deemed to share the same applicability as those 2019 ASD constituents. A new ASD was developed and submitted to TCEQ during September 2023 as discussed in **Section 4.1**. Following TCEQ approval of the 2023 ASD, the certified groundwater network was updated and submitted during January 2024 (HDR, 2024). The 2023 reporting period consisted of two rounds of semiannual groundwater sampling for assessment monitoring on the certified monitoring well networks. **Table 1** provides





the well identification number, well gradient or use, the dates the samples were collected, and whether the sample was required by the CCR Rule for the background sampling, detection monitoring or assessment monitoring programs.

**Table 1. Dates of groundwater samples collected for each well in 2023 and the required monitoring programs for the GCSES facility (40 CFR §257.90(e)(3))**

Monitoring Well I.D.	Well Location	Dates Monitored	CCR Rule Monitoring Purpose
AP MW-1	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
AP MW-1D	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
AP MW-2	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
AP MW-3	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
AP MW-4	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
AP MW-5	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
AP MW-6	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
AP PZ-1	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
AP PZ-2	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
AP PZ-3	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
AP PZ-4	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
SSP/AP MW-1	Background/Upgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SSP MW-1	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
SSP MW-2	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SSP MW-3	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SSP MW-4	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SFL MW-2	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SFL MW-3	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SFL MW-4	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SFL MW-5	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SFL MW-6	Background/Upgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
SFL MW-7	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
MNW-11	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
MNW-15	Downgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring
MNW-16	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
MNW-17	Water Level Only	June 26-27, 2023 November 14-15, 2023	Water Level Monitoring
MNW-18	Background/Upgradient	June 26-27, 2023 November 14-15, 2023	Assessment Monitoring



## 5.1 Water Levels and Sample Collection

Water levels were collected at each well following the Groundwater Monitoring Plan (AFWEI, 2017). Water levels were measured before well purging began. Wells were purged until field parameters (pH, turbidity, conductivity, dissolved oxygen, temperature, and oxidation reduction potential) stabilized. Purging and sampling was conducted using either a peristaltic pump and dedicated tubing or submersible bladder pump with disposal bladder and disposable tubing, depending on the depth of water. The results of field measurements were recorded on field data forms (**Appendix B**), which are maintained as part of the field records. After field parameters stabilized, samples were collected and analyzed for the parameters listed in **Table 2**. Two rounds of assessment monitoring samples were collected from each well in 2023. For quality control, one field duplicate sample (DUP-1) was collected during each sampling event. Groundwater samples for the first and second semiannual 2023 events were delivered under Chain of Custody to Eurofins TestAmerica Laboratories in Pittsburgh, Pennsylvania.

## 5.2 Analytical Testing

Samples were obtained for semiannual assessment monitoring in June 2023 and November 2023 and were analyzed for all Appendix III and Appendix IV parameters, as listed in **Table 2**.

**Table 2. Constituents of Interest**

Appendix III Constituents	Appendix IV Constituents	
Boron	Antimony	Lead
Calcium	Arsenic	Lithium
Chloride	Barium	Mercury
Fluoride	Beryllium	Molybdenum
pH <sup>1</sup>	Cadmium	Selenium
Sulfate	Chromium	Thallium
Total Dissolved Solids (TDS)	Cobalt	Radium 226 and 228-Combined
	Fluoride	

**Note:** <sup>1</sup> pH measured with field instrument during sampling.

## 5.3 Data Validation and Data Management

Data validation was conducted to eliminate data that did not meet validation criteria and designate a data qualifier for any data quality limitation discovered. All samples and quality control were reviewed and evaluated, and no samples were rejected. Most quality control analyses were within reportable limits; however, when quality control was outside limit controls, samples were reported as estimated.

According to the *Practical Guide for Ground-Water Sampling*: “Duplicate sample values which differ by less than ±50% relative percent difference indicates good error control” (Barcelona, 1985). All relative percent difference (RPD) values for both the first and second semiannual 2023 sampling events are below the recommended 50 percent.

Laboratory qualifiers were evaluated to determine whether data was acceptable for further analysis. The following qualifiers were noted for some parameters in the Eurofins TestAmerica laboratory report but did not impact the use of data for further analysis.

- ^- – Continuing Calibration Verification is outside of acceptable limits, low biased.
  - Boron – SFL MW-2, SFL MW-3, SFL MW-4, SFL MW-7, MNW-15
- ^+ – Continuing Calibration Verification is outside of acceptable limits, high biased.
  - Antimony – SFL MW-2, SFL MW-3, SFL MW-4, SFL MW-5, SFL MW-6, MNW-15, MNW-18, SSP MW-2, FB-2
  - Barium – MNW-18, FB-2, EQ-1
  - Beryllium – SFL MW-7, MNW-18, FB-2
  - Boron – AP MW-4, AP MW-5, SSP MW-4
  - Molybdenum - SFL MW-3, SFL MW-4, SFL MW-5, SFL MW-6, SFL MW-7, MNW-15, MNW-18, SSP MW-2, FB02
  - Selenium – AP MW-3, AP MW-3, AP MW-4, SSP/AP MW-1, DUP-1, EQ-1
- 4 – MS, MSD: The analysis present in the original sample is 4 times the matrix spike concentration; therefore, control limits are not acceptable.
- B – Compound was found in the blank and sample.
  - Antimony – SSP/AP MW-1, AP MW-3, AP MW-4, AP MW-5, AP MW-1D, SSP MW-4
  - TDS – SSP MW-2, MNW-18, FB-2
- J – Result is less than the reporting limit (RL) but greater than or equal to the laboratory method detection limit (MDL) and the concentration is an approximate value. Detections with J-flags are not considered as statistically significant results during analysis.
- ^2 – Calibration Blank (ICB and/or CCB) is outside acceptable limits.
  - Boron – AP MW-4, AP MW-5, SSP MW-4, EQ-1
- ^6+ – Interference Check Standard (ICSA and/or ICSABB) is outside acceptance limits, high biased.
  - Boron – AP MW-4, AP MW-5, SSP MW-4, EQ-1
- ^5- – Linear Range Check (LRC) is outside acceptance limits, low biased.
  - Boron – SSP/AP MW-1, AP MW-3, AP MW-4, AP MW-5, AP MW-1D, DUP-1, EQ-1
  - Iron – MNW-18, SSP MW-2
- ^5+ – Linear Range Check (LRC) is outside acceptance limits, high biased.
  - Barium – SFL MW-2, SFL MW-3, SFL MW-4, SFL MW-5, SFL MW-7, SSP MW-2
- E – Results exceeded calibration range.
  - Boron – SFL MW-5, AP MW-5
- F1 – Matrix Spike (MS) and or Matrix Spike Duplicate (MSD) recovery exceeds control limits.
  - Antimony – SFL MW-3
  - Boron – AP MW-1D
- F2 – MS/MSD RPD exceeds control limits.
  - Boron – AP MW-1D
- U – Result is less than the sample detection limit.
  - For Radium results only.



## 6 Monitoring Results

### 6.1 Water Levels and Groundwater Flow Direction

Site water levels at the monitoring wells are provided in **Table 6**. Potentiometric surface maps (**Appendix A - Figures 1A-1D** and **Figure 2A-2B**) were developed based on water levels measured in June 2023 and November 2023. The maps display the groundwater elevations at the monitoring wells/piezometers and the groundwater contours for both the SFL (shallow and deep) and the SSP/AP CCR units for both June 2023 and November 2023. Groundwater elevation ranges for both the SSP/AP CCR unit area and the SFL CCR unit area are provided below in **Table 3**, **Table 4** and **Table 5**. Note that groundwater elevation ranges include compliance monitoring wells and piezometers.

**Table 3. Site F Landfill (Shallow) – Groundwater Elevation Ranges**

Sampling Event	Minimum Elevation (feet AMSL)	Maximum Elevation (feet AMSL)
June 2023	252.50 (MNW-15)	268.08 (SFL MW-6)
November 2023	250.42 (MNW-15)	268.68 (SFL MW-6)

**Table 4. Site F Landfill (Deep) – Groundwater Elevation Ranges**

Sampling Event	Minimum Elevation (feet AMSL)	Maximum Elevation (feet AMSL)
June 2023	247.35 (MNW-11)	261.79 (MNW-18)
November 2023	247.13 (MNW-16)	259.72 (MNW-18)

**Table 5. Scrubber Sludge Pond & Ash Ponds – Groundwater Elevation Ranges**

Sampling Event	Minimum Elevation (feet AMSL)	Maximum Elevation (feet AMSL)
June 2023	252.41 (AP PZ-3)	263.97 (SSP MW-1)
November 2023	250.96 (AP PZ-3)	262.73 (SSP MW-1)

Based on the variations in chemistry measured at the SFL CCR unit monitoring wells that monitor deeper groundwater versus shallower groundwater, the monitoring network was refined as part of the 2023 ASD to accurately monitor down-gradient groundwater relative to the SFL CCR unit. For the deeper monitoring network, groundwater generally flows south to southwest, and MNW-18 is still an up-gradient monitoring point relative to the SFL CCR unit. For the shallow monitoring network, groundwater generally flows south to southeast and monitoring well SFL MW-6 is generally up-gradient to the SFL CCR unit.

Groundwater in the area of the SSP/AP CCR units continued to display a groundwater divide between the SSP CCR unit and the AP CCR unit for both the June 2023 and November 2023 sampling events. Based on the June 2023 and November 2023 groundwater sampling events, the general groundwater flow patterns observed are consistent with historical observations for the SSP CCR unit (flow to the south-southwest) and the AP CCR unit (flow to the east).



**Table 6. Groundwater Elevations Measured in 2023**

Well ID	TOC Elevation (ft AMSL)	Groundwater Elevation (ft AMSL) June 26-27, 2023	Groundwater Elevation (ft AMSL) November 14-15, 2023
AP PZ-1 <sup>1</sup>	265.67	257.86	254.79
AP PZ-2 <sup>1</sup>	274.91	256.60	253.60
AP PZ-3 <sup>1</sup>	259.11	252.41	250.96
AP PZ-4 <sup>1</sup>	273.65	259.20	259.82
AP MW-1 <sup>1</sup>	271.56	254.34	253.34
AP MW-1D	272.04	253.96	252.86
AP MW-2 <sup>1</sup>	274.97	263.68	260.90
AP MW-3	274.68	261.02	259.06
AP MW-4	274.16	257.91	256.99
AP MW-5	274.13	256.62	255.75
AP MW-6 <sup>1</sup>	277.95	258.85	258.25
SSP/AP MW-1	272.53	261.27	261.40
SSP MW-1 <sup>1</sup>	281.18	263.97	262.73
SSP MW-2	283.66	259.86	258.18
SSP MW-3	283.97	256.82	254.82
SSP MW-4	283.86	258.65	257.97
SFL MW-2	268.31	258.61	257.29
SFL MW-3	275.00	257.28	256.81
SFL MW-4	269.53	254.94	253.52
SFL MW-5	276.25	261.82	260.47
SFL MW-6	286.66	268.08	268.68
SFL MW-7	264.63	250.57	248.57
MNW-11 <sup>1</sup>	267.95	247.35	247.74
MNW-15	257.331	252.50	250.42
MNW-16 <sup>1</sup>	263.191	248.14	247.13
MNW-17 <sup>1</sup>	293.724	259.09	248.48
MNW-18	270.755	261.78	259.72

**Note:** <sup>1</sup> Wells are Water Level Only and are not sampled as part of the CCR monitoring networks.

## 6.2 Water Quality

In June 2023, semiannual assessment monitoring samples were collected from the certified monitoring network wells for both the SFL CCR unit (shallow and deep) and the SSP/AP CCR units. All samples were analyzed for all Appendix III and Appendix IV constituents. Water quality data tables are included in **Appendix C** and laboratory reports are provided in **Appendix D**. In accordance with 40 CFR §257.95(e), downgradient well concentrations from the first semiannual assessment monitoring event were compared against background values, and some concentrations were found to be above their respective background values. In accordance with 40 CFR §257.95(f), detected Appendix IV concentrations in downgradient wells were



compared against their respective GWPS. To determine if an exceedance of a GWPS was observed at a statistically significant level, the 95% lower confidence limit (LCL) was calculated for each of the downgradient wells for each of the Appendix IV constituents. The data set used to calculate the LCL included the most recent eight (8) Appendix IV results from samples collected at each specific well.

### 6.2.1 Site F Landfill CCR Unit – Shallow

The following section provides the comparison of June 2023 and November 2023 results compared to background for determination of SSIs over background and the LCLs compared to GWPS for determination of SSLs for the SFL CCR Unit - Shallow. For comparison of the most recent results (June 2023 and November 2023) compared to background, see **Table 7** and **Table 9**. For comparison of LCLs to GWPS, see **Table 8** and **Table 10**.

**Table 7. Evaluation for SSIs over Background – June 2023 (Site F Landfill - Shallow)**

	BTV	Units	SFL MW-2	SFL MW-3	SFL MW-5	MNW-15	SFL MW-6
<i>Appendix III Constituents – Analytical Detections</i>							
Boron	0.62	mg/L	0.479	<b><u>4.81</u></b>	<b><u>5.56</u></b>	<b><u>8.34</u></b>	0.258
Calcium	1,510	mg/L	1,020	578	338	310	363
Chloride	4,070	mg/L	3,300	809	2,800	633	3,960
Fluoride*	1.16	mg/L	0.25	0.61	0.17	0.66	1.03
pH	<b>**3.5-4.46***</b>	SU	<b><u>5.50</u></b>	3.52	3.98	<b><u>3.34</u></b>	3.82
Sulfate	2,890	mg/L	2,050	2,450	2,380	1,410	2,530
TDS	14,400	mg/L	7,990	4,900	7,820	3,190	10,000
<i>Appendix IV Constituents – Analytical Detections</i>							
Antimony	0.00108	mg/L	<0.000967	<0.000967	<0.000967	<0.000967	<0.000967
Arsenic	0.0431	mg/L	0.00182	0.00318	0.00176	0.00752	0.045
Barium	0.0826	mg/L	0.0281	0.0131	0.0175	0.016	0.0356
Beryllium	0.0933	mg/L	0.00737	0.0288	0.0111	0.0769	0.0534
Cadmium	0.0144	mg/L	0.0032	0.00523	0.00482	<b><u>0.0349</u></b>	0.00321
Chromium	0.011	mg/L	<0.00153	<0.00153	<0.00153	<0.00153	0.00313
Cobalt	0.136	mg/L	0.0186	0.0585	0.054	<b><u>0.34</u></b>	0.129
Lead	0.0171	mg/L	0.000782J	<b><u>0.0173</u></b>	0.000716J	0.000483J	0.00519
Lithium	1.34	mg/L	0.445	0.245	0.624	0.0895	0.644
Mercury	0.00158	mg/L	<0.000130	0.000635	<0.000130	<0.000130	0.00158
Molybdenum	0.00061	mg/L	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610
Radium 226+228	32.6	pCi/L	8.49	3.96	14.3	0.408	13.4
Selenium	0.0525	mg/L	<0.000739	0.00107J	<0.000739	<0.000739	<0.000739
Thallium	0.00552	mg/L	0.000881J	0.00541	0.00128	0.000884J	0.00475

SFL MW-6 is the background well for the Site F Landfill CCR Unit - Shallow. The results shown for SFL MW-6 are the results from the June 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSI over background. BTV's updated following the June 2023 sampling event.

J qualifier indicates that the detection is an estimated concentration above the laboratory's MDL and below the laboratory's RL. J flags concentrations are not considered statistically significant detections.

\* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CRF Part 257)

\*\* Indicates the lower bound of the range is the lower prediction limit (LPL).

\*\*\* Indicates the upper bound is the upper prediction limit (UPL).



As shown in **Table 7**, results of the June 2023 sampling event indicated eight (8) SSIs for the SFL CCR Unit - Shallow for boron, pH, cadmium, cobalt and lead in various downgradient wells.

**Table 8. Evaluation for SSLs over GWPS – June 2023 (Site F Landfill - Shallow)**

	GWPS <sup>[1]</sup>	Units	SFL MW-2	SFL MW-3	SFL MW-5	MNW-15	SFL MW-6
<i>Appendix IV Constituents – Lower Confidence Levels</i>							
Antimony	0.006	mg/L	0.000967	0.000967	0.000967	0.000967	0.000967
Arsenic	0.0431 <sup>[2]</sup>	mg/L	0.00147	0.00303	0.00145	0.006463	0.009115
Barium	2	mg/L	0.02081	0.013	0.0157	0.0159	0.02901
Beryllium	0.0933 <sup>[2]</sup>	mg/L	0.001634	0.03034	0.009426	0.07969	0.0463
Cadmium	0.0144 <sup>[2]</sup>	mg/L	0.001331	0.005341	0.003999	<b>0.03117</b>	0.006251
Chromium	0.1	mg/L	0.00153	0.00153	0.00153	0.00153	0.002668
Cobalt	0.136 <sup>[2]</sup>	mg/L	0.01176	0.05432	0.04538	<b>0.3104</b>	0.1013
Fluoride	4	mg/L	0.19	0.4415	0.122	0.6025	0.527
Lead	0.0171 <sup>[2]</sup>	mg/L	-0.0002823	<b>0.01743</b>	0.000555	0.0003603	0.008222
Lithium	1.34 <sup>[2]</sup>	mg/L	0.4356	0.2612	0.6172	0.09346	0.614
Mercury	0.002	mg/L	0.00013	0.001015	0.00013	0.00013	0.00013
Molybdenum	0.1	mg/L	0.00061	0.00061	0.00061	0.00061	0.00061
Radium 226+228	32.6 <sup>[2]</sup>	pCi/L	6.665	3.344	10.59	0.1405	11.8
Selenium	0.0525 <sup>[2]</sup>	mg/L	0.000739	0.0005634	0.000739	0.000739	0.000739
Thallium	0.00552 <sup>[2]</sup>	mg/L	0.0006371	0.004994	0.001152	0.000739	0.002988

SFL MW-6 is the background well for the Site F Landfill CCR Unit - Shallow. The results shown for SFL MW-6 are the results from the June 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSL over the GWPS.

<sup>[1]</sup> GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2); unless otherwise specified.

<sup>[2]</sup> GWPS is established as the background threshold value (BTv) when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

As shown in **Table 8**, results of the June 2023 sampling event indicated three (3) SSLs for the SFL CCR Unit - Shallow for cadmium, cobalt and lead in various downgradient wells. The SSLs were previously detected SSLs. These SSLs were discussed in the 2019 ASD completed by Wood Environment & Infrastructure Solutions, Inc. (Wood) as part of the 2019 Annual Groundwater Monitoring and Corrective Action Report (Wood, 2020) and within the 2023 ASD completed by HDR (HDR, 2023).



**Table 9. Evaluation for SSIs over Background – November 2023 (Site F Landfill - Shallow)**

	BTV	Units	SFL MW-2	SFL MW-3	SFL MW-5	MNW-15	SFL MW-6
<i>Appendix III Constituents – Analytical Detections</i>							
Boron	0.62	mg/L	<b><u>0.965</u></b>	<b><u>4.82</u></b>	<b><u>4.53</u></b>	<b><u>10.30</u></b>	0.428
Calcium	1,510	mg/L	892	561	931	311	1,470
Chloride	4,070	mg/L	2,420	747	2,650	609	7,020
Fluoride*	1.16	mg/L	0.20	0.38	0.0841J	0.42	1.4
pH	**3.5-4.46***	SU	<b><u>6.14</u></b>	3.73	4.45	3.53	4.11
Sulfate	2,890	mg/L	1,570	2,480	2,180	1,450	2,260
TDS	14,400	mg/L	6,290	4,880	7,540	3,180	11,200
<i>Appendix IV Constituents – Analytical Detections</i>							
Antimony	0.00108	mg/L	<0.000967	<0.000967	<0.000967	<0.000967	<0.000967
Arsenic	0.0431	mg/L	0.00213	0.00297	0.00231	0.00706	0.0433
Barium	0.0826	mg/L	0.0211	0.0239	0.0172	0.0174	0.051J
Beryllium	0.0933	mg/L	0.00179	0.0309	0.00893J	0.00464	0.0964
Cadmium	0.0144	mg/L	0.00122	0.00507	0.0042	<b><u>0.033</u></b>	0.00213
Chromium	0.011	mg/L	<0.00153	<0.00153	<0.00153	<0.00153	0.0154J
Cobalt	0.136	mg/L	0.0219	0.0518	0.0455	<b><u>0.322</u></b>	0.234
Lead	0.0171	mg/L	0.00118	0.0131	0.000434J	<0.000376	0.00264
Lithium	1.34	mg/L	0.492	0.29	0.751	0.104	1.43
Mercury	0.00158	mg/L	<0.000130	0.000904	<0.000130	<0.000130	<0.000130
Molybdenum	0.00061	mg/L	0.00076J	<0.000610	<0.000610	<0.000610	<0.000610
Radium 226+228	32.6	pCi/L	7.92	3.74	14	0.104	23.1
Selenium	0.0525	mg/L	<0.000739	0.00118J	<0.000739	0.000868J	<0.000739
Thallium	0.00552	mg/L	0.000658J	0.00407	0.000992J	<0.000472	0.00437

SFL MW-6 is the background well for the Site F Landfill CCR Unit - Shallow. The results shown for SFL MW-6 are the results from the November 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSI over background. BTV's updated following the June 2023 sampling event.

J qualifier indicates that the detection is an estimated concentration above the laboratory's MDL and below the laboratory's RL. J flags concentrations are not considered statistically significant detections.

\* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CRF Part 257)

\*\* Indicates the lower bound of the range is the lower prediction limit (LPL).

\*\*\* Indicates the upper bound is the upper prediction limit (UPL).

As shown in **Table 9**, results of the November 2023 sampling event indicated seven (7) SSIs for the SFL CCR Unit - Shallow for boron, pH, cadmium, and cobalt at various downgradient wells.





**Table 10. Evaluation for SSLs over GWPS – November 2023 (Site F Landfill - Shallow)**

	GWPS <sup>[1]</sup>	Units	SFL MW-2	SFL MW-3	SFL MW-5	MNW-15	SFL MW-6
<i>Appendix IV Constituents – Lower Confidence Levels</i>							
Antimony	0.006	mg/L	0.000967	0.000967	0.000967	0.000967	0.000967
Arsenic	0.0431 <sup>[2]</sup>	mg/L	0.001454	0.00297	0.001386	0.006495	0.009181
Barium	2	mg/L	0.02115	0.013	0.01664	0.01603	0.02935
Beryllium	0.0933 <sup>[2]</sup>	mg/L	0.001094	0.02999	0.009174	0.07233	0.0463
Cadmium	0.0144 <sup>[2]</sup>	mg/L	0.0009228	0.0052	0.003894	<b><u>0.03336</u></b>	0.004362
Chromium	0.1	mg/L	0.00153	0.00153	0.00153	0.00153	0.002688
Cobalt	0.136 <sup>[2]</sup>	mg/L	0.01176	0.05289	0.04474	<b><u>0.3083</u></b>	0.104
Fluoride	4	mg/L	0.19	0.4281	0.0841	0.5192	0.4911
Lead	0.0171 <sup>[2]</sup>	mg/L	0.0002499	0.01577	0.000499	0.000376	0.005724
Lithium	1.34 <sup>[2]</sup>	mg/L	0.4396	0.2668	0.618	0.09708	0.614
Mercury	0.002	mg/L	0.00013	0.0008913	0.00013	0.00013	0.00013
Molybdenum	0.1	mg/L	0.00061	0.00061	0.00061	0.00061	0.00061
Radium 226+228	32.6 <sup>[2]</sup>	pCi/L	6.724	3.232	10.89	0.1895	13.4
Selenium	0.0525 <sup>[2]</sup>	mg/L	0.000739	0.0005756	0.000739	0.000739	0.000739
Thallium	0.00552 <sup>[2]</sup>	mg/L	0.0006204	0.004843	0.001094	0.0005092	0.003375

SFL MW-6 is the background well for the Site F Landfill CCR Unit - Shallow. The results shown for SFL MW-6 are the results from the November 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSL over the GWPS.

<sup>[1]</sup> GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2); unless otherwise specified.

<sup>[2]</sup> GWPS is established as the background threshold value (BTv) when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

As shown in **Table 10**, results of the November 2023 sampling event indicated two (2) SSLs for the SFL CCR Unit – Shallow for cadmium and cobalt in various downgradient wells. The SSLs were previously detected SSLs. These SSLs were discussed in the 2019 ASD completed by Wood Environment & Infrastructure Solutions, Inc. (Wood) as part of the 2019 Annual Groundwater Monitoring and Corrective Action Report (Wood, 2020) and within the 2023 ASD completed by HDR (HDR, 2023).



### 6.2.2 Site F Landfill CCR Unit – Deep

The following section provides the comparison of June 2023 and November 2023 results compared to background for determination of SSIs and the LCL compared to GWPS for determination of SSLs for the SFL CCR Unit – Deep. For comparison of most recent results (June 2023 and November 2023) compared to background, see **Table 11** and **Table 13**. For comparison of LCLs to GWPS, see **Table 12** and **Table 14**.

**Table 11. Evaluation for SSIs over Background – June 2023 (Site F Landfill - Deep)**

	BTV	Units	SFL MW-4	SFL MW-7	MNW-18
<i>Appendix III Constituents – Analytical Detections</i>					
Boron	0.598	mg/L	0.494	<b>0.759</b>	0.262
Calcium	538	mg/L	371	431	142
Chloride	650	mg/L	<b>1,310</b>	<b>2,000</b>	208
Fluoride*	0.25	mg/L	0.12	0.099J	0.139J
pH	**6.01-7.67***	SU	6.69	6.43	7.2
Sulfate	2,980	mg/L	1,720	667	741
TDS	4,920	mg/L	474	4,440	1,650
<i>Appendix IV Constituents – Analytical Detections</i>					
Antimony	0.002	mg/L	<0.000967	<0.000967	0.0014J
Arsenic	0.00282	mg/L	0.0013	0.000308J	0.00136
Barium	0.06	mg/L	0.0281	0.0497	0.00421J
Beryllium	0.000274	mg/L	<0.000274	<0.000274	<0.000274
Cadmium	0.000217	mg/L	<0.000217	<0.000217	<0.000217
Chromium	0.00617	mg/L	<0.00153	<0.00153	<0.00153
Cobalt	0.00226	mg/L	<0.000261	<0.000261	<0.000261
Lead	0.01	mg/L	<0.000376	<0.000376	<0.000376
Lithium	0.543	mg/L	0.236	0.372	0.196
Mercury	0.00013	mg/L	<0.000130	<0.000130	<0.000130
Molybdenum	0.00061	mg/L	0.0017J	<0.000610	<0.000610
Radium 226+228	9.82	pCi/L	0.216	2.62	0.456
Selenium	0.01	mg/L	<0.000739	<0.000739	<0.000739
Thallium	0.002	mg/L	<0.000472	<0.000472	<0.000472

MNW-18 is the background well for the Site F Landfill CCR Unit - Deep. The results shown for MNW-18 are the results from the June 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSI over background. BTV's updated following the June 2023 sampling event.

J qualifier indicates that the detection is an estimated concentration above the laboratory's MDL and below the laboratory's RL. J flags concentrations are not considered statistically significant detections.

\* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CRF Part 257)

\*\* Indicates the lower bound of the range is the lower prediction limit (LPL).

\*\*\* Indicates the upper bound is the upper prediction limit (UPL).

As shown in **Table 11**, results of the June 2023 sampling event indicated three (3) SSIs for the SFL CCR Unit - Deep for boron and chloride in various downgradient wells.



**Table 12. Evaluation for SSLs over GWPS – June 2023 (Site F Landfill - Deep)**

	GWPS <sup>[1]</sup>	Units	SFL MW-4	SFL MW-7	MNW-18
<i>Appendix IV Constituents – Lower Confidence Levels</i>					
Antimony	<u>0.006</u>	mg/L	0.000534	0.000579	0.0014
Arsenic	<u>0.01</u>	mg/L	0.000786	0.000282	0.001008
Barium	<u>2</u>	mg/L	0.02094	0.0342	0.00404
Beryllium	<u>0.004</u>	mg/L	0.000274	0.000274	0.000184
Cadmium	<u>0.005</u>	mg/L	0.000217	0.000217	0.000217
Chromium	<u>0.1</u>	mg/L	0.00153	0.00153	0.00153
Cobalt	<u>0.006</u>	mg/L	0.000261	0.000261	0.000261
Fluoride	<u>4</u>	mg/L	0.123	0.0599	0.1072
Lead	<u>0.015</u>	mg/L	0.000376	0.000208	0.000183
Lithium	<u>0.543<sup>[2]</sup></u>	mg/L	0.322	0.3766	0.2412
Mercury	<u>0.002</u>	mg/L	0.00013	0.00013	0.00013
Molybdenum	<u>0.1</u>	mg/L	0.001319	0.00061	0.00061
Radium 226+228	<u>9.82<sup>[2]</sup></u>	pCi/L	0.7273	1.939	0.2575
Selenium	<u>0.05</u>	mg/L	0.000739	0.000739	0.000739
Thallium	<u>0.002</u>	mg/L	0.000472	0.000472	0.000472

MNW-18 is the background well for the Site F Landfill CCR Unit - Deep. The results shown for MNW-18 are the results from the June 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSL over the GWPS.

<sup>[1]</sup> GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2); unless otherwise specified.

<sup>[2]</sup> GWPS is established as the background threshold value (BTV) when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

As shown in **Table 12**, the June 2023 sampling event resulted in no SSLs for the SFL CCR Unit – Deep.



**Table 13. Evaluation for SSIs over Background – November 2023 (Site F Landfill - Deep)**

	BTV	Units	SFL MW-4	SFL MW-7	MNW-18
<i>Appendix III Constituents – Analytical Detections</i>					
Boron	0.598	mg/L	<b><u>0.797</u></b>	<b><u>0.812</u></b>	0.321
Calcium	538	mg/L	160	450	159
Chloride	650	mg/L	<b><u>1,440</u></b>	<b><u>1,930</u></b>	216
Fluoride*	0.25	mg/L	0.0824J	0.0928J	0.185J
pH	<b>**6.01-7.67***</b>	SU	6.15	6.47	6.97
Sulfate	2,980	mg/L	2,010	626	748
TDS	4,920	mg/L	<b><u>5,360</u></b>	4,220	1,710
<i>Appendix IV Constituents – Analytical Detections</i>					
Antimony	0.002	mg/L	<0.000967	0.00102J	0.00158J
Arsenic	0.00282	mg/L	0.000601J	<0.000282	0.00114
Barium	0.06	mg/L	0.00488J	0.0253	0.00541J
Beryllium	0.000274	mg/L	<0.000274	<0.000274	<0.000274
Cadmium	0.000217	mg/L	<0.000217	<0.000217	<0.000217
Chromium	0.00617	mg/L	<0.00153	<0.00153	<0.00153
Cobalt	0.00226	mg/L	0.00037J	<0.000261	<0.000261
Lead	0.01	mg/L	<0.000376	<0.000376	<0.000376
Lithium	0.543	mg/L	0.453	0.389	0.252
Mercury	0.00013	mg/L	<0.000130	<0.000130	<0.000130
Molybdenum	0.00061	mg/L	<0.000610	<0.000610	<0.000610
Radium 226+228	9.82	pCi/L	2.43	2.26	0.759
Selenium	0.01	mg/L	0.00124J	<0.000739	<0.000739
Thallium	0.002	mg/L	<0.000472	<0.000472	<0.000472

MNW-18 is the background well for the Site F Landfill CCR Unit - Deep. The results shown for MNW-18 are the results from the November 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSI over background. BTV's updated following the June 2023 sampling event.

J qualifier indicates that the detection is an estimated concentration above the laboratory's MDL and below the laboratory's RL. J flags concentrations are not considered statistically significant detections.

\* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CRF Part 257)

\*\* Indicates the lower bound of the range is the lower prediction limit (LPL).

\*\*\* Indicates the upper bound is the upper prediction limit (UPL).

As shown in **Table 13**, results of the November 2023 sampling event indicated five (5) SSIs for the SFL CCR Unit - Deep for boron, chloride and TDS in various downgradient wells.



**Table 14. Evaluation for SSLs over GWPS – November 2023 (Site F Landfill - Deep)**

	GWPS <sup>[1]</sup>	Units	SFL MW-4	SFL MW-7	MNW-18
<i>Appendix IV Constituents – Lower Confidence Levels</i>					
Antimony	0.006	mg/L	0.000534	0.000579	0.0014
Arsenic	0.01	mg/L	0.0005679	0.000282	0.001011
Barium	2	mg/L	0.01694	0.02852	0.00404
Beryllium	0.004	mg/L	0.000274	0.000274	0.000184
Cadmium	0.005	mg/L	0.000217	0.000217	0.000217
Chromium	0.1	mg/L	0.00153	0.00153	0.00153
Cobalt	0.006	mg/L	0.000261	0.000261	0.000261
Fluoride	4	mg/L	0.02079	0.0599	0.1109
Lead	0.015	mg/L	0.000376	0.000208	0.000183
Lithium	0.543 <sup>[2]</sup>	mg/L	0.335	0.3733	0.2245
Mercury	0.002	mg/L	0.00013	0.00013	0.00013
Molybdenum	0.1	mg/L	0.0006474	0.00061	0.00061
Radium 226+228	9.82 <sup>[2]</sup>	pCi/L	0.6797	1.951	0.2575
Selenium	0.05	mg/L	0.000739	0.000739	0.000739
Thallium	0.002	mg/L	0.000472	0.000472	0.000472

MNW-18 is the background well for the Site F Landfill CCR Unit - Deep. The results shown for MNW-18 are the results from the November 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSL over the GWPS.

<sup>[1]</sup> GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2); unless otherwise specified.

<sup>[2]</sup> GWPS is established as the background threshold value (BTW) when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

As shown in **Table 14**, the November 2023 sampling event resulted in no SSLs for the SFL CCR Unit – Deep.



### 6.2.3 Scrubber Sludge Pond CCR Unit & Ash Ponds CCR Unit

The following section provides the comparison of June 2023 and November 2023 results compared to background for determination of SSIs and the LCL compared to GWPS for determination of SSLs for the SSP CCR Unit and APs CCR Unit. For comparison of most recent results (June 2023 and November 2023) compared to background, see **Table 15** and **Table 17**. For comparison of LCLs to GWPS, see **Table 16** and **Table 18**.

**Table 15. Evaluation for SSIs over Background – June 2023 (Scrubber and Ash Ponds)**

BTV	Units	SSP MW-2	SSP MW-3	SSP MW-4	AP MW-1D	AP MW-3	AP MW-4	AP MW-5	SSP/AP MW-1	
<i>Appendix III Constituents – Analytical Detections</i>										
Boron	1.41	mg/L	0.426	<b>2.22</b>	1.020	<b>5.32</b>	<b>5.02</b>	1.31	<b>3.87</b>	0.662
Calcium	745	mg/L	<b>876</b>	722	264	74.6	147	109	549	262
Chloride	1,750	mg/L	<b>2,440</b>	<b>1,770</b>	696	116	145	51	570	1560
Fluoride*	0.5	mg/L	0.268	0.423	<0.0650	<b>0.931</b>	0.0623J	0.0556J	<b>2.28</b>	0.149
pH	**5.25-6.32***	SU	<b>4.36</b>	<b>4.21</b>	6.09	6.03	<b>5.01</b>	6.04	<b>3.33</b>	5.67
Sulfate	3,330	mg/L	2,110	2,440	592	422	599	707	2,790	3,190
TDS	8,340	mg/L	7,100	8,070	2,470	1,090	1,340	1,270	5,090	7,690
<i>Appendix IV (Constituents – Analytical Detections)</i>										
Antimony	0.00157	mg/L	<0.000967	<0.000967	<0.000967	<0.000967	<0.000967	<0.000967	<0.000967	<0.000967
Arsenic	0.01	mg/L	0.00446	0.0065	0.000811J	<b>0.0121</b>	0.00165	0.00117	<b>0.0147</b>	0.00152
Barium	0.19	mg/L	0.0197	0.0251	0.025	0.0127	0.0197	0.0149	0.0101	0.0289
Beryllium	0.002	mg/L	<b>0.0471</b>	<b>0.0927</b>	<0.000274	<0.000274	<b>0.00253</b>	<0.000274	<b>0.0945</b>	0.000506J
Cadmium	0.000217	mg/L	0.000544J	<b>0.0829</b>	<0.000217	0.000358J	<b>0.00304</b>	<0.000217	<b>0.0115</b>	<0.000217
Chromium	0.00248	mg/L	<0.00153	0.00221	<b>0.337</b>	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153
Cobalt	0.00174	mg/L	<b>0.0478</b>	<b>0.561</b>	<0.000261	<b>0.0100</b>	<b>0.0206</b>	0.00117	<b>0.222</b>	0.000482J
Lead	0.0106	mg/L	0.000481J	0.00414	<0.000376	<0.000376	<0.000376	<0.000376	0.00203	0.000431J
Lithium	1.69	mg/L	0.711	0.568	0.402	0.0193	0.0422	0.18	0.487	0.6
Mercury	0.00013	mg/L	<0.000130	0.00015J	<0.000130	<0.000130	<b>0.00127</b>	<0.000130	<b>0.000369</b>	<0.000130
Molybdenum	0.00199	mg/L	<0.000610	0.00142J	<b>0.202</b>	<b>0.0332</b>	<0.000610	0.000987J	<0.000610	0.000884J
Radium 226+228	3.9	pCi/L	3.42	<b>31</b>	1.69	1.07	0.805	0.21	2.11	1.08
Selenium	0.000739	mg/L	<0.000739	0.000792J	<b>0.00711</b>	0.00179J	0.000776J	<0.000739	<0.000739	<0.000739
Thallium	0.000472	mg/L	<0.000472	<b>0.00974</b>	<0.000472	<0.000472	<0.000472	<0.000472	<b>0.00266</b>	<0.000472

SSP/AP MW-1 is the background well for both the Scrubber Sludge Pond CCR Unit and the Ash Ponds CCR Unit. The results shown for SSP/AP MW-1 are the results from the June 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSI over background. BTV's updated following the June 2023 sampling event.

J qualifier indicates that the detection is an estimated concentration above the laboratory's MDL and below the laboratory's RL. J flags concentrations are not considered statistically significant detections.

\* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CFR Part 257)

\*\* Indicates the lower bound of the range is the lower prediction limit (LPL).

\*\*\* Indicates the upper bound is the upper prediction limit (UPL).

As shown in **Table 15**, results of the June 2023 sampling event indicated 36 SSIs for the SSP & AP CCR Units for boron, calcium, chloride, fluoride, pH, arsenic, beryllium, cadmium, chromium, cobalt, mercury, molybdenum, radium 226+228, selenium and thallium in various downgradient wells.



**Table 16. Evaluation for SSLs over GWPS – June 2023 (Scrubber Sludge and Ash Ponds)**

GWPS <sup>[1]</sup>	Units	SSP MW-2	SSP MW-3	SSP MW-4	AP MW-1D	AP MW-3	AP MW-4	AP MW-5	SSP/AP MW-1	
<i>Appendix IV Constituents – Lower Confidence Levels</i>										
Antimony	0.006	mg/L	0.000967	0.000967	0.000415	0.000967	0.000967	0.000967	0.000529	0.000518
Arsenic	0.01	mg/L	0.004457	0.004584	0.0004955	0.007942	0.001029	0.0004916	0.007566	0.001524
Barium	2	mg/L	0.017	0.02021	0.02	0.01072	0.01984	0.0135	0.005783	0.184
Beryllium	0.004	mg/L	<b>0.04739</b>	<b>0.09335</b>	0.000274	0.000274	0.002435	0.000204	<b>0.05071</b>	0.00113
Cadmium	0.005	mg/L	0.0007946	<b>0.06847</b>	0.000217	0.00034	0.003628	0.000217	<b>0.005737</b>	0.000217
Chromium	0.1	mg/L	0.00153	0.002147	0.002	0.00153	0.00153	0.00153	0.00153	0.00153
Cobalt	0.006	mg/L	<b>0.04805</b>	<b>0.509</b>	0.000261	<b>0.01108</b>	<b>0.024</b>	0.0005	<b>0.1182</b>	0.000261
Fluoride	4	mg/L	0.2433	0.4107	0.0585	0.5433	0.054	0.0488	1.321	0.0712
Lead	0.015	mg/L	0.0005849	0.003708	0.000161	0.000256	0.000219	0.000276	0.001577	0.0004265
Lithium	1.69 <sup>[2]</sup>	mg/L	0.5677	0.537	0.6145	0.02145	0.04398	0.2906	0.3618	0.9086
Mercury	0.002	mg/L	0.00013	0.00015	0.00013	0.00013	0.0002	0.00013	0.0002852	0.00013
Molybdenum	0.1	mg/L	0.00061	0.00061	0.000765	0.01856	0.00061	0.000686	0.00061	0.00061
Radium 226+228	5	pCi/L	1.956	<b>29.57</b>	1.578	0.8991	1.378	0.6055	1.102	0.9499
Selenium	0.05	mg/L	0.000739	0.000739	0.000739	0.00154	0.000739	0.000739	0.000739	0.000739
Thallium	0.002	mg/L	0.000472	<b>0.008374</b>	0.000472	0.00031	0.000267	0.000172	<b>0.002116</b>	0.000206

SSP/AP MW-1 is the background well for both the Scrubber Sludge Pond CCR Unit and the Ash Ponds CCR Unit. The results shown for SSP/AP MW-1 are the results from the June 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSL over the GWPS.

<sup>[1]</sup> GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2); unless otherwise specified.

<sup>[2]</sup> GWPS is established as the background threshold value (BTW) when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

As shown in **Table 16**, results of the June 2023 sampling event indicated 13 SSLs for the SSP & AP CCR Units for beryllium, cadmium, cobalt, radium 226+228 and thallium in various downgradient wells. These SSLs were discussed in the 2019 ASD completed by Wood Environment & Infrastructure Solutions, Inc. (Wood) as part of the 2019 Annual Groundwater Monitoring and Corrective Action Report (Wood, 2020) and within the 2023 ASD completed by HDR (HDR, 2023).



**Table 17. Evaluation for SSIs over Background – November 2023 (Scrubber and Ash Ponds)**

	BTV	Units	SSP MW-2	SSP MW-3	SSP MW-4	AP MW-1D	AP MW-3	AP MW-4	AP MW-5	SSP/AP MW-1
<i>Appendix III Constituents – Analytical Detections</i>										
Boron	1.41	mg/L	0.559	<b>3.62</b>	0.903	<b>4.83</b>	<b>5.38</b>	<b>2.46</b>	<b>3.53</b>	0.735
Calcium	745	mg/L	718	641	276	73.3	152	502	600	623
Chloride	1,750	mg/L	<b>2.280</b>	1,430	843	113	156	435	670	1,610
Fluoride*	0.5	mg/L	0.191	0.348	0.0444J	<b>0.868</b>	0.0566J	0.0603J	<b>3.09</b>	0.0325J
pH	**5.25-6.32***	SU	<b>4.47</b>	<b>4.34</b>	6.04	6.02	<b>4.91</b>	5.54	<b>3.42</b>	5.49
Sulfate	3,330	mg/L	2,210	2,320	700	362	574	2,160	1,370	3,050
TDS	8,340	mg/L	6,400	5,470	2,910	998	1,320	3,970	5,080	7,170
<i>Appendix IV (Constituents – Analytical Detections)</i>										
Antimony	0.00157	mg/L	<0.000967	<0.000967	0.00136J	0.00168J	0.00153J	0.0013J	0.00118J	0.00161J
Arsenic	0.01	mg/L	0.00541	0.00631	<0.000282	<b>0.0121</b>	0.00109	<0.000282	<b>0.0234</b>	0.0015
Barium	0.19	mg/L	0.0216	0.022	0.0184	0.0131	0.0229	0.023	0.0109	0.0249
Beryllium	0.002	mg/L	<b>0.0568</b>	<b>0.101</b>	<0.000274	<0.000274	<b>0.00312</b>	0.000307J	<b>0.11</b>	0.000779J
Cadmium	0.000217	mg/L	<b>0.00192</b>	<b>0.0477</b>	<0.000217	0.000224J	<b>0.00487</b>	<0.000217	<b>0.0128</b>	<0.000217
Chromium	0.00248	mg/L	<0.00153	<0.00153	<b>0.233</b>	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153
Cobalt	0.00174	mg/L	<b>0.0643</b>	<b>0.445</b>	<0.000261	<b>0.00998</b>	<b>0.0387</b>	<0.000261	<b>0.236</b>	0.000479J
Lead	0.0106	mg/L	0.000451J	0.00292	<0.000376	<0.000376	<0.000376	<0.000376	0.0019	0.000404J
Lithium	1.69	mg/L	0.809	0.533	0.542	0.0218	0.048	0.827	0.592	1.33
Mercury	0.00013	mg/L	<0.000130	<b>0.000218</b>	<0.000130	<0.000130	<b>0.00385</b>	<0.000130	<b>0.000954</b>	<0.000130
Molybdenum	0.00199	mg/L	<0.000610	<0.000610	<b>0.108</b>	<b>0.0337</b>	<0.000610	<0.000610	<0.000610	0.000644J
Radium 226+228	3.9	pCi/L	3.52	<b>31.3</b>	2.56	0.706	1.92	0.956	1.57	0.927
Selenium	0.000739	mg/L	<0.000739	<0.000739	0.00456J	0.00167J	<0.000739	<0.000739	<0.000739	<0.000739
Thallium	0.000472	mg/L	<0.000472	<b>0.00576</b>	<0.000472	<0.000472	<0.000472	<0.000472	<b>0.00293</b>	<0.000472

SSP/AP MW-1 is the background well for both the Scrubber Sludge Pond CCR Unit and the Ash Ponds CCR Unit. The results shown for SSP/AP MW-1 are the results from the November 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSI over background. BTV's updated following the June 2023 sampling event.

J qualifier indicates that the detection is an estimated concentration above the laboratory's MDL and below the laboratory's RL. J flags concentrations are not considered statistically significant detections.

\* Fluoride is listed in both Appendix III and Appendix IV of the CCR Final Rule (40 CFR Part 257)

\*\* Indicates the lower bound of the range is the lower prediction limit (LPL).

\*\*\* Indicates the upper bound is the upper prediction limit (UPL).

As shown in **Table 17**, results of the November 2023 sampling event indicated 36 SSIs for the SSP & AP CCR Units for boron, chloride, pH, arsenic, beryllium, cadmium, chromium, cobalt, fluoride, mercury, molybdenum, radium 226+228 and thallium in various downgradient wells.





**Table 18. Evaluation for SSLs over GWPS – November 2023 (Scrubber Sludge and Ash Ponds)**

GWPS <sup>[1]</sup>	Units	SSP MW-2	SSP MW-3	SSP MW-4	AP MW-1D	AP MW-3	AP MW-4	AP MW-5	SSP/AP MW-1	
<i>Appendix IV Constituents – Lower Confidence Levels</i>										
Antimony	0.006	mg/L	0.000967	0.000967	0.000415	0.000967	0.000967	0.000967	0.000529	0.0005288
Arsenic	0.01	mg/L	0.004533	0.005026	0.0003204	0.008002	0.001103	0.000282	0.009905	0.001379
Barium	2	mg/L	0.017	0.02037	0.0184	0.0127	0.02048	0.0135	0.005924	0.0249
Beryllium	0.004	mg/L	<b>0.0475</b>	<b>0.09261</b>	0.000274	0.000274	0.002522	0.000204	<b>0.05616</b>	0.0004597
Cadmium	0.005	mg/L	0.001009	<b>0.05979</b>	0.000217	0.0002726	0.003615	0.000217	<b>0.006298</b>	0.000217
Chromium	0.1	mg/L	0.00153	0.001579	0.002	0.00153	0.00153	0.00153	0.00153	0.00153
Cobalt	0.006	mg/L	<b>0.05021</b>	<b>0.4818</b>	0.000261	<b>0.01019</b>	<b>0.02654</b>	0.000261	<b>0.1261</b>	0.000261
Fluoride	4	mg/L	0.2346	0.388	0.0444	0.5948	0.054	0.0488	1.394	0.04439
Lead	0.015	mg/L	0.0003755	0.003317	0.000161	0.000256	0.000219	0.000276	0.00149	0.0002978
Lithium	1.69 <sup>[2]</sup>	mg/L	0.5868	0.5265	0.5372	0.0203	0.04435	0.314	0.3837	0.906
Mercury	0.002	mg/L	0.00013	0.00015	0.00013	0.00013	0.0002904	0.00013	0.0004915	0.00013
Molybdenum	0.1	mg/L	0.00061	0.00061	0.001099	0.02178	0.00061	0.00061	0.00061	0.00061
Radium 226+228	5	pCi/L	2.287	<b>29.21</b>	1.648	0.7037	1.358	0.5773	1.177	0.9108
Selenium	0.05	mg/L	0.000739	0.000739	0.000739	0.00154	0.000739	0.000739	0.000739	0.000739
Thallium	0.002	mg/L	0.000472	<b>0.008095</b>	0.000472	0.00031	0.000267	0.000172	<b>0.002106</b>	0.000206

SSP/AP MW-1 is the background well for both the Scrubber Sludge Pond CCR Unit and the Ash Ponds CCR Unit. The results shown for SSP/AP MW-1 are the results from the November 2023 sampling event and are not compared against background.

**Bold and underlined** concentration indicates an SSL over the GWPS.

<sup>[1]</sup> GWPS is established as the U.S. EPA Maximum Contaminant Level (MCL) or the GWPS specified in §257.95(h)(2); unless otherwise specified.

<sup>[2]</sup> GWPS is established as the background threshold value (BTW) when the background level is higher than the U.S. EPA MCL or the GWPS specified in §257.95(h)(2).

As shown in **Table 18**, results of the November 2023 sampling event indicated 13 SSLs for the SSP & AP CCR Units for beryllium, cadmium, cobalt, radium 226+228 and thallium in various downgradient wells. These SSLs were discussed in the 2019 ASD completed by Wood Environment & Infrastructure Solutions, Inc. (Wood) as part of the 2019 Annual Groundwater Monitoring and Corrective Action Report (Wood, 2020) and within the 2023 ASD completed by HDR (HDR, 2023).

## 7 Summary

The following observations are based on CCR Rule compliance groundwater monitoring program development during 2023:

- GCERG completed clean closure of the SSP/AP CCR units by completing dewatering of the CCR units and conducting ash and soil removal. Certification of clean closure submitted on June 2, 2022.
- Removal of coal from the coal pile storage area, excavation of coal pile stormwater runoff devices and cleaning out of the SFL Pond 3 have been completed as of December 31, 2022.
- Placement of CCR material removed from the SSP/AP CCR units, coal from the coal pile storage area, excavated material from the coal pile stormwater runoff devices and material removed from the SFL Pond 3 has been placed within the SFL CCR unit, which

is currently being closed as described in **Section 2**. The final closure of the site is anticipated to be complete at the end of year 2024.

- Water levels were measured at all monitoring wells in June 2023 and November 2023. Potentiometric surfaces were contoured for the SFL CCR unit (shallow and deep) and the SSP/AP CCR units for both June 2023 and November 2023. Potentiometric surface maps are provided in **Appendix A**.
- All 16 wells of the certified well network for both the SFL CCR unit (shallow and deep) and SSP/AP CCR units were sampled in June 2023 for the assessment monitoring event. Assessment monitoring data was statistically evaluated, and SSLs above the GWPS were observed at multiple monitoring wells as provided in **Table 8, Table 12** and **Table 16**.
- All 16 wells of the certified well network for both the SFL CCR unit (shallow and deep) and SSP/AP CCR units were sampled in November 2023 for the assessment monitoring event. Assessment monitoring data was statistically evaluated, and SSLs above the GWPS were observed at multiple monitoring wells as provided in **Table 10, Table 14** and **Table 18**.
- No new SSLs have been observed during the 2023 reporting period.
- The status of the GCSES at the end of 2023 is assessment monitoring. The next semiannual sampling event is anticipated to occur in April 2024.
- The SSP/AP CCR unit will continue to be monitored to satisfy regulations set forth by TCEQ.

## 8 References

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- Wood, 2019. *2018 Annual Groundwater Monitoring and Corrective Action Annual Report*. Gibbons Creek Steam Electric Station. January 31, 2019.
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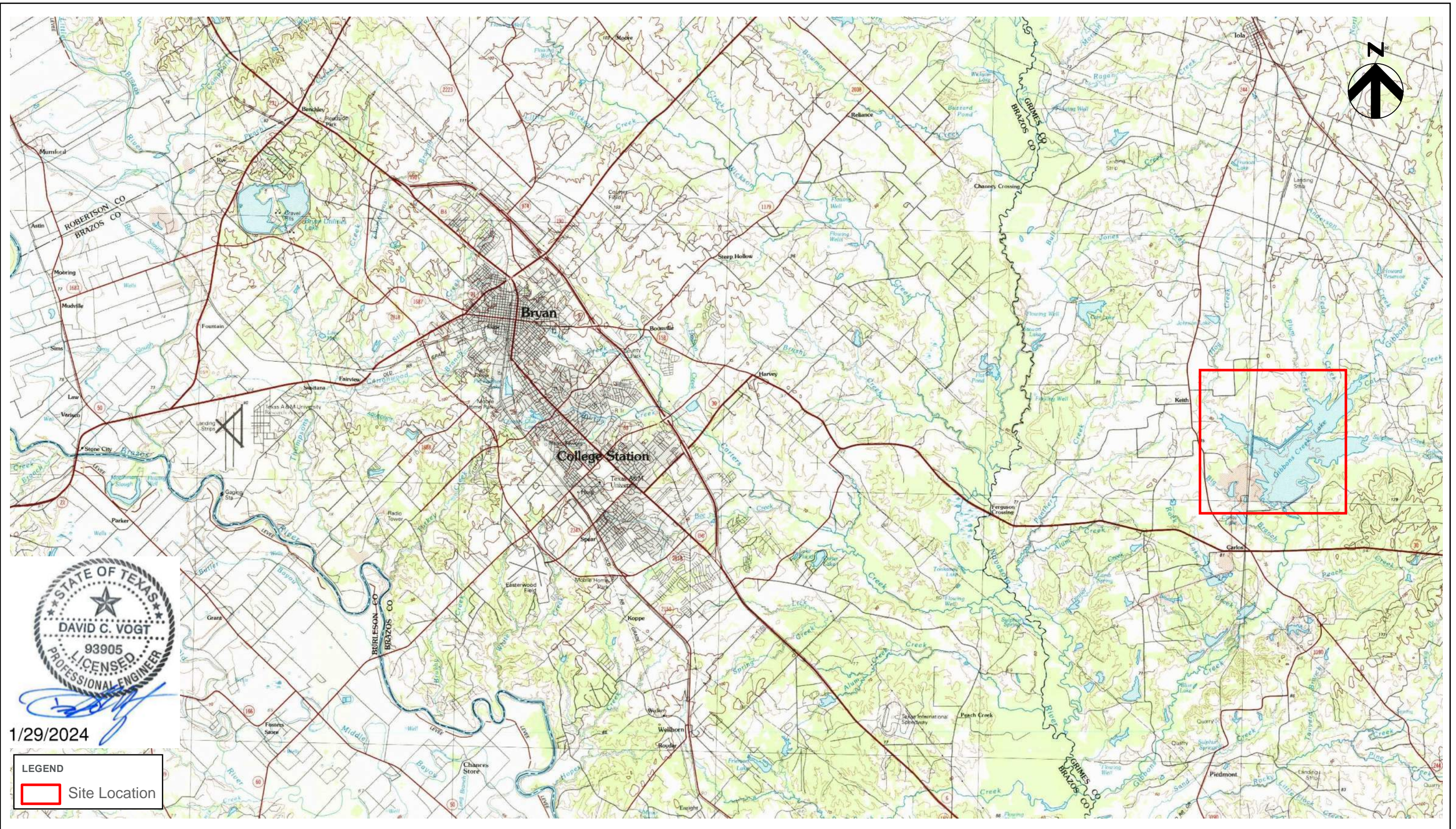


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## **Appendix A**

### **Monitoring Networks & Potentiometric Surface Maps**

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1/29/2024

**LEGEND**

Site Location

**GIBBONS CREEK STEAM ELECTRIC STATION  
GC ENVIRONMENTAL REDEVELOPMENT GROUP  
SITE LOCATION MAP**

2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

DATE  
JANUARY 2024

FIGURE  
FIGURE 0



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C:\pwworking\central01\382043\Figure 1 - SITE F LANDFILL MONITORING NETWORK.dwg, Layout1, 11/30/2023 8:35:08 AM, WNICHOLSON



**LEGEND:**

-  MONITORING WELL
-  WASTE BOUNDARY



1/29/2024



**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
MONITORING NETWORK - SITE F LANDFILL**

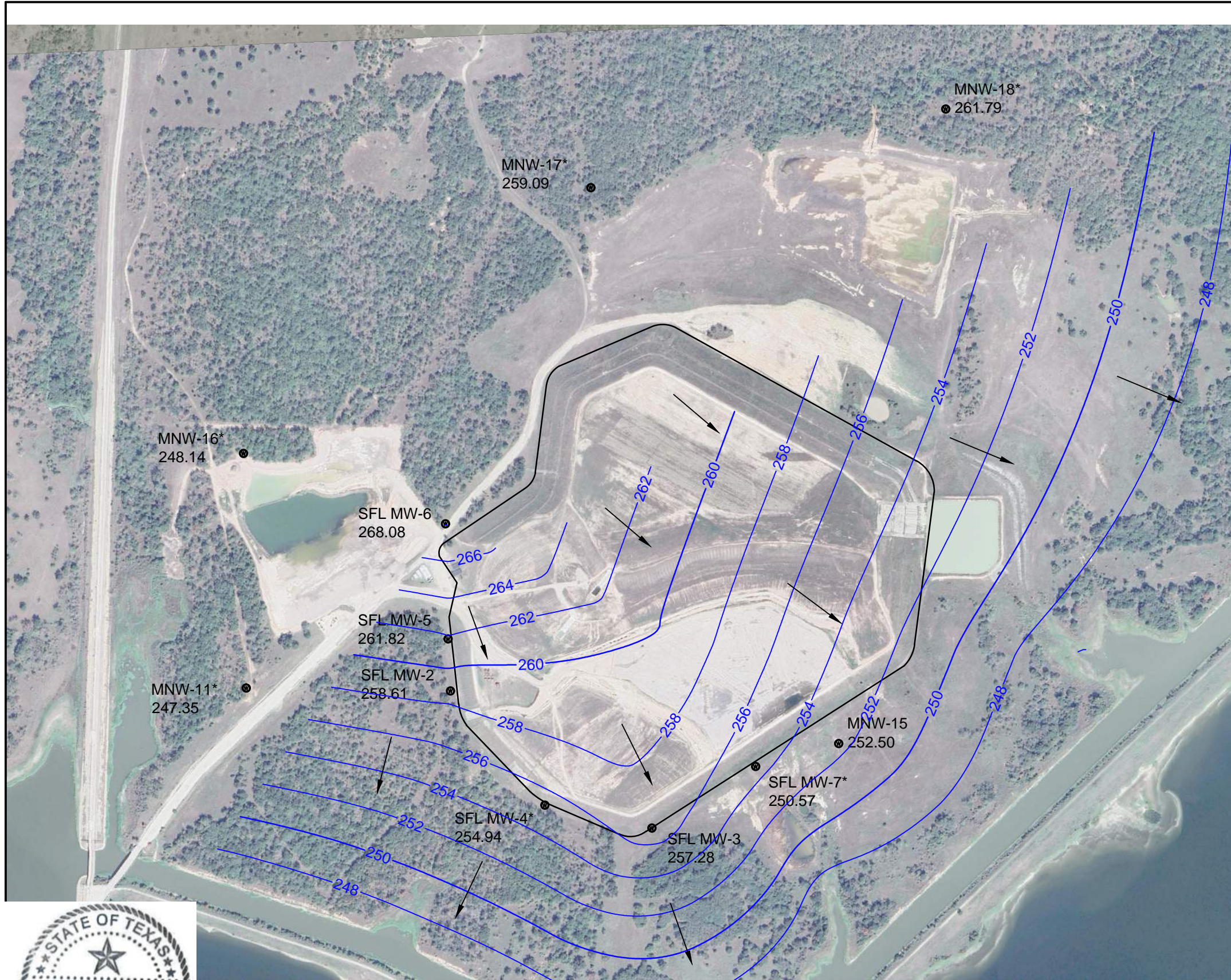
2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

DATE  
JANUARY 2024






FIGURE  
FIGURE 1

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C:\pwworking\central01\03820433\Figure 1A - SITE F LANDFILL Groundwater Contours\_SHALLOW - JUNE.dwg, Layout1, 1/23/2024 7:45:38 AM, WNICHOLSON



**LEGEND:**

-  MONITORING WELL
-  WASTE BOUNDARY
-  GROUNDWATER CONTOUR
-  INFERRED GROUNDWATER CONTOUR
-  FLOW DIRECTION

**NOTES:**

1. ALL ELEVATIONS RECORDED AS ABOVE MEAN SEA LEVEL.
2. " \* " DENOTES STATIC WATER LEVEL WAS NOT UTILIZED IN GENERATION OF GROUNDWATER CONTOUR MAP DUE TO WELLS SCREENED BELOW CONFINING LAYER.
3. WELLS USED FOR GENERATION OF CONTOURS ARE SCREENED ABOVE THE CONFINING LAYER. WELLS UTILIZED ARE:
  - SFL MW-2
  - SFL MW-3
  - SFL MW-5
  - SFL MW-6
  - MNW-15
4. GROUNDWATER CONTOURS ARE DEVELOPED IN CONJUNCTION WITH SURFACE WATER ELEVATIONS OF THE GIBBONS CREEK RESERVOIR. DATA OBTAINED FROM WATER DATA FOR TEXAS.ORG. SURFACE WATER ELEVATION = 246 FEET AMSL.



1/29/2024



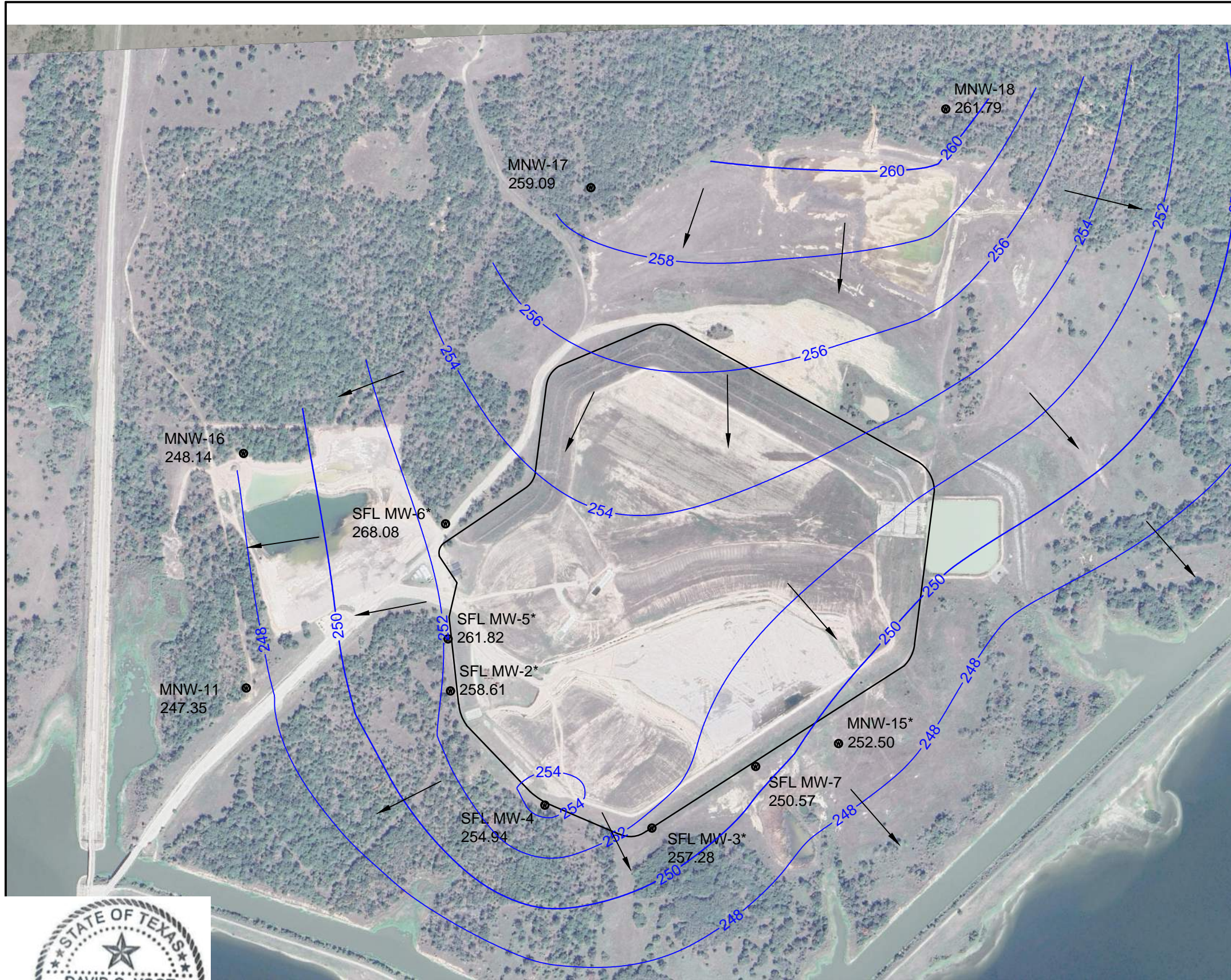
**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
SITE F LANDFILL - JUNE 2023 CONTOUR MAP - SHALLOW**

2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

DATE  
JANUARY 2024  
FIGURE  
FIGURE 1A

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C:\pwworking\central01\43820433\Figure 1B - SITE F LANDFILL Groundwater Contours\_DEEP - JUNE.dwg, Layout1, 1/23/2024 7:47:12 AM, WNICHOLSON



**LEGEND:**

- ⊙ MONITORING WELL
- WASTE BOUNDARY
- GROUNDWATER CONTOUR
- - - INFERRED GROUNDWATER CONTOUR
- ← FLOW DIRECTION

**NOTES:**

1. ALL ELEVATIONS RECORDED AS ABOVE MEAN SEA LEVEL.
2. " \* " DENOTES STATIC WATER LEVEL WAS NOT UTILIZED IN GENERATION OF GROUNDWATER CONTOUR MAP DUE TO WELLS SCREENED ABOVE CONFINING LAYER.
3. WELLS USED FOR GENERATION OF CONTOURS ARE SCREENED BELOW THE CONFINING LAYER. WELLS UTILIZED ARE:
  - SFL MW-4
  - SFL MW-7
  - MNW-11
  - MNW-16
  - MNW-17
  - MWN-18
4. GROUNDWATER CONTOURS ARE DEVELOPED IN CONJUNCTION WITH SURFACE WATER ELEVATIONS OF THE GIBBONS CREEK RESERVOIR. DATA OBTAINED FROM WATER DATA FOR TEXAS.ORG. SURFACE WATER ELEVATION = 246 FEET AMSL.



1/29/2024



**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
SITE F LANDFILL - JUNE 2023 CONTOUR MAP - DEEP**

2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

DATE  
JANUARY 2024






FIGURE  
FIGURE 1B

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C:\pwworking\central01\03820433\Figure 1C - SITE F LANDFILL Groundwater Contours\_SHALLOW - NOVEMBER.dwg\_Layout1, 1/23/2024 7:50:12 AM, WNICHOLSON



**LEGEND:**

-  MONITORING WELL
-  WASTE BOUNDARY
-  GROUNDWATER CONTOUR
-  INFERRED GROUNDWATER CONTOUR
-  FLOW DIRECTION

**NOTES:**

1. ALL ELEVATIONS RECORDED AS ABOVE MEAN SEA LEVEL.
2. " \* " DENOTES STATIC WATER LEVEL WAS NOT UTILIZED IN GENERATION OF GROUNDWATER CONTOUR MAP DUE TO WELLS SCREENED BELOW CONFINING LAYER.
3. WELLS USED FOR GENERATION OF CONTOURS ARE SCREENED ABOVE THE CONFINING LAYER. WELLS UTILIZED ARE:
  - SFL MW-2
  - SFL MW-3
  - SFL MW-5
  - SFL MW-6
  - MNW-15
4. GROUNDWATER CONTOURS ARE DEVELOPED IN CONJUNCTION WITH SURFACE WATER ELEVATIONS OF THE GIBBONS CREEK RESERVOIR. DATA OBTAINED FROM WATER DATA FOR TEXAS.ORG. SURFACE WATER ELEVATION = 243 FEET AMSL.



1/29/2024



**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
SITE F LANDFILL - NOVEMBER 2023 CONTOUR MAP - SHALLOW**

2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT






DATE  
JANUARY 2024  
FIGURE  
FIGURE 1C

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**LEGEND:**

-  MONITORING WELL
-  WASTE BOUNDARY
-  GROUNDWATER CONTOUR
-  INFERRED GROUNDWATER CONTOUR
-  FLOW DIRECTION

**NOTES:**

1. ALL ELEVATIONS RECORDED AS ABOVE MEAN SEA LEVEL.
2. " \* " DENOTES STATIC WATER LEVEL WAS NOT UTILIZED IN GENERATION OF GROUNDWATER CONTOUR MAP DUE TO WELLS SCREENED ABOVE CONFINING LAYER.
3. WELLS USED FOR GENERATION OF CONTOURS ARE SCREENED BELOW THE CONFINING LAYER. WELLS UTILIZED ARE:
  - SFL MW-4
  - SFL MW-7
  - MNW-11
  - MNW-16
  - MNW-17
  - MWN-18
4. GROUNDWATER CONTOURS ARE DEVELOPED IN CONJUNCTION WITH SURFACE WATER ELEVATIONS OF THE GIBBONS CREEK RESERVOIR. DATA OBTAINED FROM WATER DATA FOR TEXAS.ORG. SURFACE WATER ELEVATION = 243 FEET AMSL.



1/29/2024



**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
SITE F LANDFILL - NOVEMBER 2023 CONTOUR MAP - DEEP**

2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

DATE  
JANUARY 2024  
FIGURE  
FIGURE 1D

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C:\pwworking\central01\03820433\Figure 2 - ASH POND\_SCRUBBER SLUDGE MONITORING NETWORK.dwg, Layout1, 11/30/2023 8:36:18 AM, WNICHOLSON



**LEGEND:**

-  MONITORING WELL
-  POND BOUNDARIES



1/29/2024



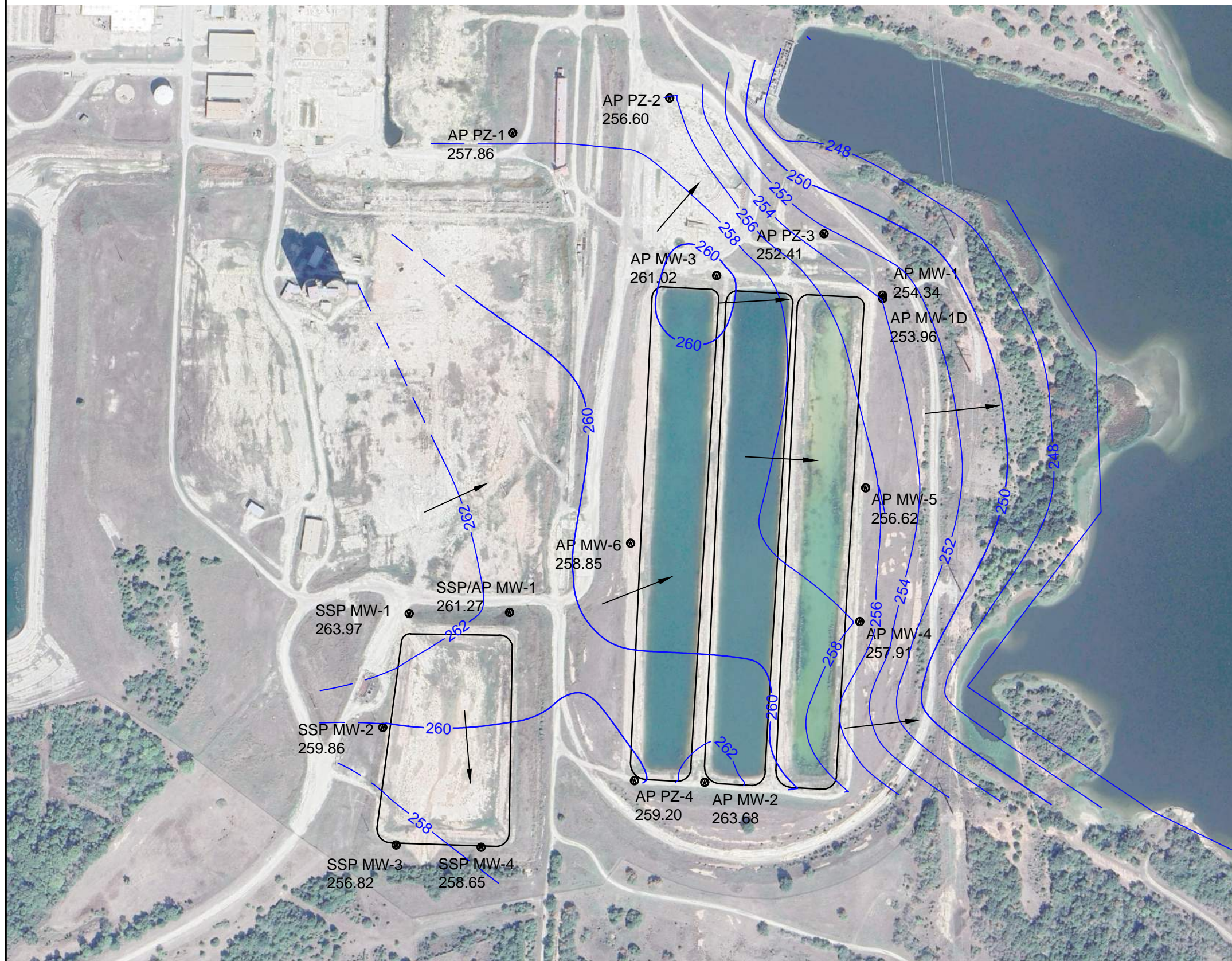
**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
MONITORING NETWORK - ASH PONDS/SCRUBBER SLUDGE**

2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT






DATE  
JANUARY 2024  
FIGURE  
FIGURE 2

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C:\pwworking\central01\43820433\Figure 2A - ASH POND\_SCRUBBER SLUDGE Groundwater Contours - JUNE.dwg, Layout1, 1/23/2024 8:39:04 AM, WNICHOLOSON



**LEGEND:**

-  MONITORING WELL
-  POND BOUNDARIES
-  GROUNDWATER CONTOUR
-  INFERRED GROUNDWATER CONTOUR
-  FLOW DIRECTION

**NOTES:**

1. ALL ELEVATIONS RECORDED AS ABOVE MEAN SEA LEVEL.
2. " \* " DENOTES STATIC WATER LEVEL WAS NOT UTILIZED IN GENERATION OF GROUNDWATER CONTOUR MAP DUE TO ANOMALOUS VALUE COMPARED TO SURROUNDING WELLS.
3. GROUNDWATER CONTOURS ARE DEVELOPED IN CONJUNCTION WITH SURFACE WATER ELEVATIONS OF THE GIBBONS CREEK RESERVOIR. DATA OBTAINED FROM WATER DATA TEXAS.ORG. SURFACE WATER ELEVATION = 246 FEET AMSL.



1/29/2024



**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
ASH PONDS/SCRUBBER SLUDGE - JUNE 2023 CONTOUR MAP**

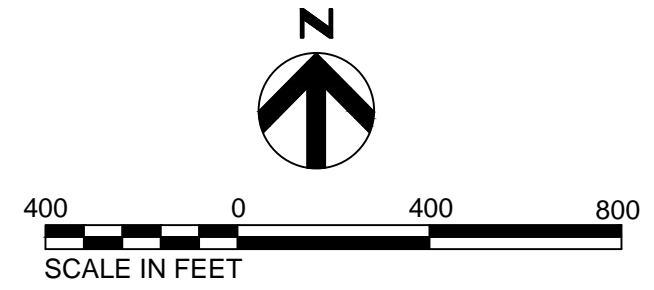
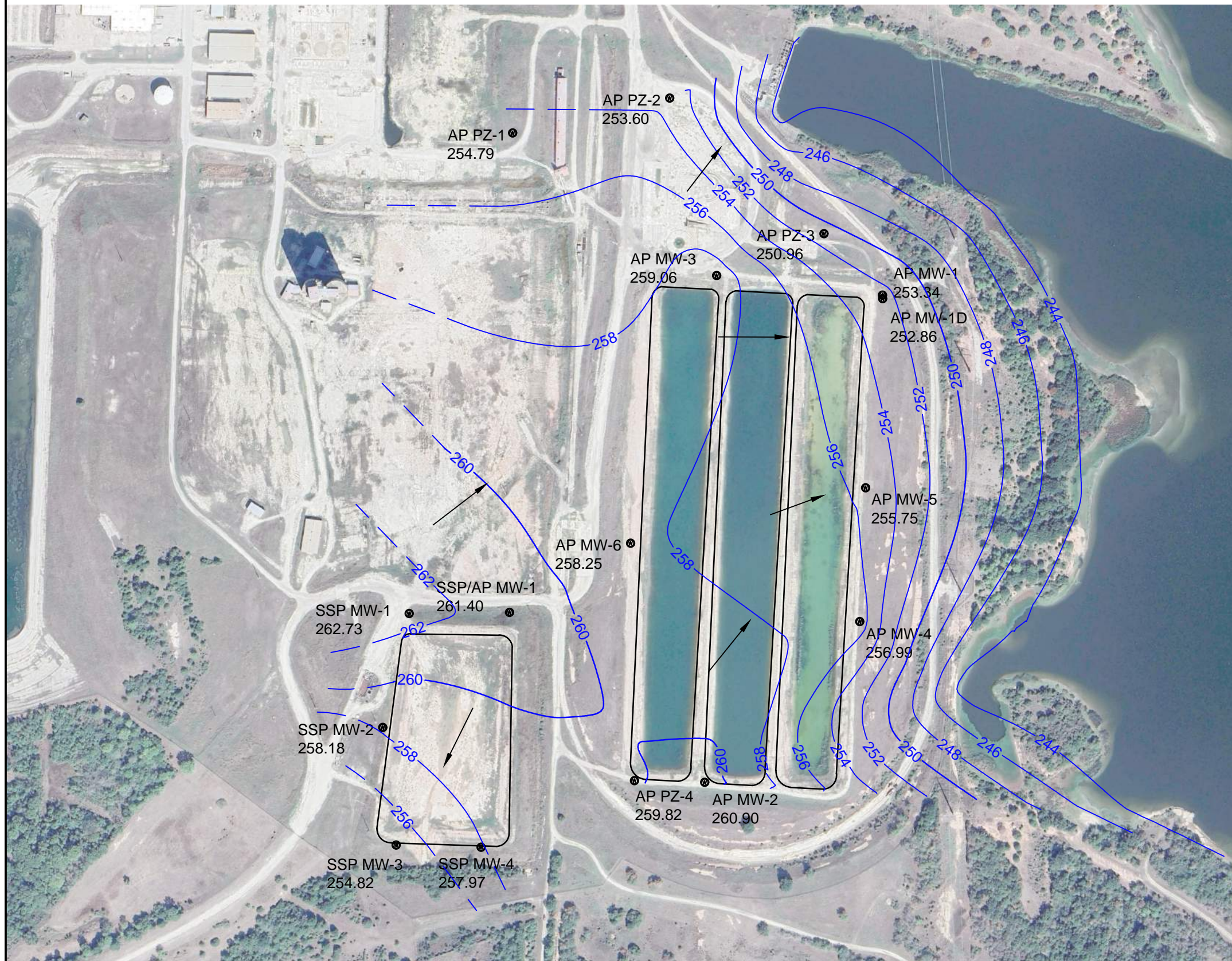
2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

DATE  
JANUARY 2024






FIGURE  
FIGURE 2A

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C:\pwworking\central01\03820433\Figure 2B - ASH POND\_SCRUBBER SLUDGE Groundwater Contours - NOVEMBER.dwg, Layout1, 1/23/2024 8:39:34 AM, WNICHOLSON



**LEGEND:**

-  MONITORING WELL
-  POND BOUNDARIES
-  GROUNDWATER CONTOUR
-  INFERRED GROUNDWATER CONTOUR
-  FLOW DIRECTION

**NOTES:**

1. ALL ELEVATIONS RECORDED AS ABOVE MEAN SEA LEVEL.
2. " \* " DENOTES STATIC WATER LEVEL WAS NOT UTILIZED IN GENERATION OF GROUNDWATER CONTOUR MAP DUE TO ANOMALOUS VALUE COMPARED TO SURROUNDING WELLS.
3. GROUNDWATER CONTOURS ARE DEVELOPED IN CONJUNCTION WITH SURFACE WATER ELEVATIONS OF THE GIBBONS CREEK RESERVOIR. DATA OBTAINED FROM WATER DATA TEXAS.ORG. SURFACE WATER ELEVATION = 243 FEET AMSL.



1/29/2024



**GIBBONS CREEK STEAM ELECTRIC STATION  
GCSES ENVIRONMENTAL REDEVELOPMENT GROUP  
ASH PONDS/SCRUBBER SLUDGE - DECEMBER 2022 CONTOUR MAP**

2023 GROUNDWATER MONITORING & CORRECTIVE ACTION REPORT

DATE  
JANUARY 2024  
FIGURE  
FIGURE 2B

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# **Appendix B**

## **Field Forms**


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June 2023

Gibbons Creek Steam Electric Station  
Site Water LevelsSampler: Will NicholsonDate: 6/26/2023 - 6/27/2023Equipment: Geotech 100'Decontamination: Alconox with DI Rinse

Well	Water Level below TOC	Bottom of Casing	Prevoius Water Level Below TOC (12/12/2022)	Prevoius Water Level Below TOC (07/12/2022)	Notes
AP PZ-1	7.81		7.66	9.75	
AP PZ-2	18.31		20.45	19.33	
AP PZ-3	6.70		9.55	8.44	
AP PZ-4	14.45		16.22	17.72	
AP MW-1	17.22		20.99	20.18	
AP MW-1D	18.08		21.58	20.82	
AP MW-2	11.29		16.68	17.4	
AP MW-3	13.66		21.55	20.81	
AP MW-4	16.25		23.06	23.5	
AP MW-5	17.51		24.42	24.82	
AP MW-6	19.10		22.17	22.65	
SSP/AP MW-1	11.76		10.84	10.31	
SSP MW-1	17.21		17.73	17.24	
SSP MW-2	4.70 25.80		24.74	24.96	
SSP MW-3	27.15		28.08	28.66	
SSP MW-4	25.21		25.48	25.8	
SFL MW-2	4.70		11.04	10.51	
SFL MW-3	17.72		17.19	16.74	
SFL MW-4	14.59		15.35	15.13	
SFL MW-5	14.43		16.14	15.88	
SFL MW-6	18.58		18.37	18.81	
SFL MW-7	14.06		14.41	15.4	
MNW-11	20.60		20.16	20.64	
MNW-15	4.83		5.86	5.4	
MNW-16	15.05		14.88	13.89	
MNW-17	34.63		29.55	37.12	
MNW-18	8.97		9.56	9.69	

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SSA/AP MW-1	Date/Time: 6/26/2023 1135
	Sample Number: 1	PID Readings: N/A
	Weather Conditions: 90° F SUNNY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No        | 5. Standing/Ponded Water: <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No |
| 2. Collision/Vandalism Damage: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No | 6. Frost Heaving: <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No         |
| 3. Casing Degradation: <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No         | 7. Lock in Place: <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No         |
| 4. Well Subsidence: <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No            |   |

**Ground Water Measurements/Purge data:**

- |   |   |
|---|---|
| 1. Static Water Level (±0.01 feet [ft.]) <u>11.26</u> | 7. Purge Rate (mL/min) <u>300</u>   |
| 2. Intake Depth (±0.01 ft.) <u>20</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>  |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>  |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No       |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>  |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u>  |
| Color <u>CLEAR</u>                                    |   |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1136	900	23.5	8983	241.1	5.48	3.11	5.70	12.61	
1141	900	23.5	8976	258.4	5.44	2.79	5.70	13.22	
1144	1800	23.4	8978	232.8	5.11	4.70	5.70	14.00	
1147	2700	23.7	8980	214.9	4.66	7.34	5.69	14.54	
1150	3600	23.5	8986	162.4	4.35	8.27	5.68	14.97	
1153	4500	23.5	8978	142.0	4.15	7.64	5.67	14.99	

- |   |  |  |                |             |                |                |  |  |  |  |
|---|--|--|----------------|-------------|----------------|----------------|--|--|--|--|
| 1. Well evacuated to dryness? <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>  |                |             |                |                |  |  |  |  |
| 2. Sample Filtered? <input type="checkbox"/> Yes / <input checked="" type="checkbox"/> No           | 8. Sample Time: <u>1155</u>                          | 12. Instrument type: YSI ProDSS  |                |             |                |                |  |  |  |  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>  | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>   |                |             |                |                |  |  |  |  |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u>   |  | Calibration Time: <u>LAB</u>   |                |             |                |                |  |  |  |  |
| 5. Sample Rate (mL/min) <u>300</u>  |  | <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"></td> <td style="width:33%; text-align: center;"><u>Std.</u></td> <td style="width:33%; text-align: center;"><u>Reading</u></td> <td style="width:33%; text-align: center;"><u>Adjust.</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> |                | <u>Std.</u> | <u>Reading</u> | <u>Adjust.</u> |  |  |  |  |
|   | <u>Std.</u>  | <u>Reading</u>   | <u>Adjust.</u> |             |                |                |  |  |  |  |
|   |  |  |                |             |                |                |  |  |  |  |
| 6. Sample Appearance:   | 10. Other Information: _____                         | pH _____   |                |             |                |                |  |  |  |  |
| Turbidity <u>LOW</u>  |  | Conduct. _____   |                |             |                |                |  |  |  |  |
| Color <u>CLEAR</u>  |  | ORP _____  |                |             |                |                |  |  |  |  |
| Odor <u>NONE</u>  |  | D.O. _____   |                |             |                |                |  |  |  |  |
|   |  | Turbidity _____  |                |             |                |                |  |  |  |  |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: <b>Gibbons Creek Steam Electric Station</b>	Sampler Name(s): <b>Will Nicholson/Justin Macmanus</b>
	MW Identification: <b>SFL MW-6</b>	Date/Time: <b>6/26/2023 1230</b>
	Sample Number: <b>3</b>	PID Readings: <b>N/A</b>
	Weather Conditions: <b>95° F SUNNY</b>	
	Wellhead Inspection: <b>NO COMMENT</b>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes</u> / No        | 5. Standing/Ponded Water: Yes / <u>No</u> |
| 2. Collision/Vandalism Damage: Yes / <u>No</u> | 6. Frost Heaving: Yes / <u>No</u>         |
| 3. Casing Degradation: Yes / <u>No</u>         | 7. Lock in Place: <u>Yes</u> / No         |
| 4. Well Subsidence: Yes / <u>No</u>            |   |

**Ground Water Measurements/Purge data:**


- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>18.58</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) Yes / <u>No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>3000</u>     | 11. Immiscible layer observed Yes / <u>No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW-MID</u>             | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>LIGHT BROWN</u>                              |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1237	-	25.8	16824	225	1.24	15.33	3.70	19.05	
1240	900	25.0	16787	245.2	0.33	5.93	3.65	19.45	
1243	1800	24.8	14976	226.7	0.21	7.30	3.62	19.71	
1246	2700	24.9	13845	125.0	0.17	7.35	3.81	20.95	
1249	3600	24.7	13673	114.6	0.13	6.52	3.82	20.99	

- |   |  |  |             |                |                |  |  |  |
|---|--|--|-------------|----------------|----------------|--|--|--|
| 1. Well evacuated to dryness? Yes / No                  | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>  |             |                |                |  |  |  |
| 2. Sample Filtered? Yes / <u>No</u>                     | 8. Sample Time: <u>1250</u>                          | 12. Instrument type: <u>YSI ProDSS</u>   |             |                |                |  |  |  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>   |             |                |                |  |  |  |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>   |             |                |                |  |  |  |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%; text-align: center;"><u>Std.</u></td> <td style="width:33%; text-align: center;"><u>Reading</u></td> <td style="width:33%; text-align: center;"><u>Adjust.</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table> | <u>Std.</u> | <u>Reading</u> | <u>Adjust.</u> |  |  |  |
| <u>Std.</u>   | <u>Reading</u>                                       | <u>Adjust.</u>   |             |                |                |  |  |  |
|   |  |  |             |                |                |  |  |  |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH   |             |                |                |  |  |  |
| Turbidity <u>LOW</u>                                    |  | Conduct.   |             |                |                |  |  |  |
| Color <u>CLEAR</u>                                      |  | ORP  |             |                |                |  |  |  |
| Odor <u>NONE</u>  |  | D.O.   |             |                |                |  |  |  |
|   |  | Turbidity  |             |                |                |  |  |  |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL-MW-5	Date/Time: 6/26/2023 1300
	Sample Number: 4	PID Readings: N/A
	Weather Conditions: 95° F SUNNY	
	Wellhead Inspection: #2 PAD LOOSE	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**


- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>14.43</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>20</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1309	-	24.8	10888	223.3	1.73	3.16	4.04	14.90	
1312	900	23.6	10680	263.2	0.32	6.31	4.00	15.50	
1315	1600	23.6	10661	290.0	0.20	12.97	4.00	15.88	
1318	2700	23.5	10651	304.1	0.16	20.13	4.00	16.21	
1321	3000	23.6	10671	334.2	0.14	21.95	3.99	16.35	
1324	4500	23.4	10450	360.1	0.14	29.14	3.98	16.61	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1325</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity _____   |

FB-1 @  
1325

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-2	Date/Time: 6/26/2023 1345
	Sample Number: 5	PID Readings: N/A
	Weather Conditions: 98°F Sunny	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes</u> / No        | 5. Standing/Ponded Water: Yes / <u>No</u> |
| 2. Collision/Vandalism Damage: Yes / <u>No</u> | 6. Frost Heaving: Yes / <u>No</u>         |
| 3. Casing Degradation: Yes / <u>No</u>         | 7. Lock in Place: <u>Yes</u> / No         |
| 4. Well Subsidence: Yes / <u>No</u>            |   |

**Ground Water Measurements/Purge data:**


- |  |   |
|--|---|
| 1. Static Water Level (±0.01 feet [ft.]) <u>9.70</u> | 7. Purge Rate (mL/min) <u>300</u>                               |
| 2. Intake Depth (±0.01 ft.) <u>15</u>                | 8. Water Level Measuring Equip. <u>GEOTECH</u>                  |
| 3. Bottom of casing (±0.01 ft.) _____                | 9. Purge Equipment Used <u>PERISTALTIC</u>                      |
| 4. Casing Diameter (inches) <u>2</u>                 | 10. Dedicated? (Yes/No) Yes / <u>No</u>                         |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>    | 11. Immiscible layer observed Yes / <u>No</u>                   |
| 6. Purge Water Characteristics:                      | 12. Thickness of immiscible layer <u>N/A</u>                    |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN</u> / <u>N/A</u> |
| Color <u>CLEAR</u>                                   |   |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1353	-	24.6	11035	256.4	1.37	3.46	5.66	10.72	
1356	900	24.5	11246	247.1	0.80	17.39	5.49	11.09	
1359	1800	24.7	11298	242.1	0.60	11.11	5.47	11.23	
1402	2700	24.4	11351	237.5	0.50	9.02	5.48	11.36	
1405	3600	24.7	11419	234.4	0.46	9.81	5.49	11.42	
1408	4500	24.7	11427	227.3	0.42	9.73	5.50	11.54	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? Yes / <u>No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? Yes / <u>No</u>                     | 8. Sample Time: <u>1410</u>                          | 12. Instrument type: <u>YSI ProDSS</u>                  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity _____   |

DUP-1 HERE  
@ 1445

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-4	Date/Time: 6/26/2023 1440
	Sample Number: 6	PID Readings: N/A
	Weather Conditions: 90F SUNNY	
	Wellhead Inspection: NO COMMENTS	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: Yes / <u>No</u>        | 5. Standing/Ponded Water: Yes / <u>No</u> |
| 2. Collision/Vandalism Damage: Yes / <u>No</u> | 6. Frost Heaving: Yes / <u>No</u>         |
| 3. Casing Degradation: Yes / <u>No</u>         | 7. Lock in Place: Yes / <u>No</u>         |
| 4. Well Subsidence: Yes / <u>No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>14.59</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) _____                     | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>2</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) Yes / <u>No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed Yes / <u>No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |


Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1443	-	25.9	536	106.3	5.93	0.81	7.23	15.43	
1446	900	24.4	321.7	126.0	5.56	1.43	6.82	16.07	
1449	1800	24.6	316.2	136.7	5.56	1.13	6.74	16.45	
1552	2700	24.9	315.9	139.8	5.54	0.83	6.72	16.64	
1555	3600	24.7	315.6	141.0	5.54	0.84	6.70	16.70	
1556	4500	24.6	315.6	141.7	5.53	0.79	6.69	16.73	

- |   |  |                                       |
|---|--|---------------------------------------|
| 1. Well evacuated to dryness? Yes / <u>No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: _____ |
| 2. Sample Filtered? Yes / <u>No</u>                     | 8. Sample Time: <u>1608</u>                          | <b>Alconox/DI Rinse</b>               |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | 12. Instrument type: YSI ProDSS       |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Date: _____ <b>LAB</b>    |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Calibration Time: _____ <b>LAB</b>    |
| 6. Sample Appearance:                                   |  | Std.    Reading    Adjust.            |
| Turbidity <u>LOW</u>                                    | 10. Other Information: _____                         | pH                                    |
| Color <u>CLEAR</u>                                      | _____  | Conduct.                              |
| Odor <u>NONE</u>  | _____  | ORP                                   |
|   | _____  | D.O                                   |
|   | _____  | Turbidity _____                       |

See attached Lab Form for Calibration Data



**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: <u>SFL MW-3</u>	Date/Time: <u>6/26/2023 1520</u>
	Sample Number: <u>7</u>	PID Readings: N/A
	Weather Conditions: <u>98°F SUNNY</u>	
	Wellhead Inspection: <u>NO COMMENT</u>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>17.72</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>PERISTALTIC</u>       |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>GEOTECH</u>                   |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
<u>1526</u>	<u>-</u>	<u>25.0</u>	<u>5897</u>	<u>407.4</u>	<u>1.44</u>	<u>11.34</u>	<u>3.59</u>	<u>18.02</u>	
<u>1529</u>	<u>900</u>	<u>24.3</u>	<u>5896</u>	<u>451.0</u>	<u>0.31</u>	<u>11.97</u>	<u>3.53</u>	<u>18.11</u>	
<u>1532</u>	<u>1800</u>	<u>24.1</u>	<u>5896</u>	<u>436.1</u>	<u>0.70</u>	<u>7.12</u>	<u>3.52</u>	<u>18.15</u>	
<u>1535</u>	<u>2700</u>	<u>24.0</u>	<u>5909</u>	<u>435.1</u>	<u>0.15</u>	<u>8.53</u>	<u>3.52</u>	<u>18.17</u>	
<u>1538</u>	<u>3600</u>	<u>24.0</u>	<u>5910</u>	<u>436.6</u>	<u>0.13</u>	<u>9.98</u>	<u>3.52</u>	<u>18.18</u>	
<u>1541</u>	<u>4500</u>	<u>24.0</u>	<u>5915</u>	<u>429.0</u>	<u>0.10</u>	<u>8.78</u>	<u>3.52</u>	<u>18.18</u>	

- |   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
|---|--|--|----------------|-------------|----------------|----------------|----|--|--|--|----------|--|--|--|-----|--|--|--|------|--|--|--|-----------|--|--|--|
| 1. Well evacuated to dryness? <u>Yes / No</u>       | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 2. Sample Filtered? <u>Yes / No</u>                 | 8. Sample Time: <u>1545</u>                          | 12. Instrument type: <u>YSI ProDSS</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>          | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 4. Drive Gas (Air/Nitrogen) <u>AIR/NITROGEN/N/A</u> |  | Calibration Time: <u>LAB</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 5. Sample Rate (mL/min) <u>300</u>                  |  | <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"></td> <td style="width:33%; text-align: center;"><u>Std.</u></td> <td style="width:33%; text-align: center;"><u>Reading</u></td> <td style="width:33%; text-align: center;"><u>Adjust.</u></td> </tr> <tr> <td>pH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Conduct.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>ORP</td> <td></td> <td></td> <td></td> </tr> <tr> <td>D.O.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Turbidity</td> <td></td> <td></td> <td></td> </tr> </table> |                | <u>Std.</u> | <u>Reading</u> | <u>Adjust.</u> | pH |  |  |  | Conduct. |  |  |  | ORP |  |  |  | D.O. |  |  |  | Turbidity |  |  |  |
|   | <u>Std.</u>  | <u>Reading</u>   | <u>Adjust.</u> |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| pH  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Conduct.  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| ORP   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| D.O.  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Turbidity   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 6. Sample Appearance:                               | 10. Other Information:                               |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Turbidity <u>LOW</u>                                |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Color <u>CLEAR</u>                                  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Odor <u>NONE</u>                                    |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-7	Date/Time: 6/26/2023
	Sample Number: 8	PID Readings: N/A
	Weather Conditions: 97° F SUNNY	
	Wellhead Inspection: HOUSING CAP BROKEN	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: Yes / <input checked="" type="radio"/> No        | 5. Standing/Ponded Water: Yes / <input checked="" type="radio"/> No |
| 2. Collision/Vandalism Damage: Yes / <input checked="" type="radio"/> No | 6. Frost Heaving: Yes / <input checked="" type="radio"/> No         |
| 3. Casing Degradation: Yes / <input checked="" type="radio"/> No         | 7. Lock in Place: Yes / <input checked="" type="radio"/> No         |
| 4. Well Subsidence: Yes / <input checked="" type="radio"/> No            |   |


**Ground Water Measurements/Purge data:**

- |   |   |
|---|---|
| 1. Static Water Level (±0.01 feet [ft.]) <u>14.06</u> | 7. Purge Rate (mL/min) <u>300</u>   |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>  |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>  |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) Yes / <input checked="" type="radio"/> No                         |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed Yes / <input checked="" type="radio"/> No                   |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>  |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / <input checked="" type="radio"/> N/A</u> |
| Color <u>CLEAR</u>                                    |   |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1602	-	24.5	5503	312.4	4.42	0.38	6.51	14.75	
1605	900	24.1	5432	296.6	4.20	0.39	6.76	14.97	
1608	1800	24.1	5430	277.7	4.12	0.44	6.88	15.18	
1611	2700	24.1	6670	266.6	0.99	1.12	6.50	15.27	
1614	3600	24.1	6776	257.1	0.41	0.60	6.44	15.32	
1617	4500	24.1	6614	246.1	0.28	0.62	6.43	15.36	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? Yes / <input checked="" type="radio"/> No | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? Yes / <input checked="" type="radio"/> No           | 8. Sample Time: <u>1620</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>                              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u>                 |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:   | 10. Other Information: _____                         | pH _____  |
| Turbidity <u>LOW</u>  |  | Conduct. _____  |
| Color <u>CLEAR</u>  |  | ORP <u>See attached Lab Form for Calibration Data</u>   |
| Odor <u>NONE</u>  |  | D.O. _____  |
|   |  | Turbidity _____   |

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: <u>SFE MNW-1S</u>	Date/Time: <u>6/26/2023 1635</u>
	Sample Number: <u>9</u>	PID Readings: N/A
	Weather Conditions: <u>95° F SUNNY</u>	
	Wellhead Inspection: <u>ANT INFESTATION</u>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes</u> / No        | 5. Standing/Ponded Water: Yes / <u>No</u> |
| 2. Collision/Vandalism Damage: Yes / <u>No</u> | 6. Frost Heaving: Yes / <u>No</u>         |
| 3. Casing Degradation: Yes / <u>No</u>         | 7. Lock in Place: <u>Yes</u> / No         |
| 4. Well Subsidence: Yes / <u>No</u>            |   |

**Ground Water Measurements/Purge data:**

- |  |   |
|--|---|
| 1. Static Water Level (±0.01 feet [ft.]) <u>4.83</u> | 7. Purge Rate (mL/min) <u>300</u>                               |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                | 8. Water Level Measuring Equip. <u>GEOTECH</u>                  |
| 3. Bottom of casing (±0.01 ft.) _____                | 9. Purge Equipment Used <u>PERISTALTIC</u>                      |
| 4. Casing Diameter (inches) <u>2</u>                 | 10. Dedicated? (Yes/No) Yes / <u>No</u>                         |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>    | 11. Immiscible layer observed Yes / <u>No</u>                   |
| 6. Purge Water Characteristics:                      | 12. Thickness of immiscible layer <u>N/A</u>                    |
| Odor <u>NONE</u> Turbidity <u>NONE</u>               | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN</u> / <u>N/A</u> |
| Color <u>CLEAR</u>                                   |   |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
<u>1639</u>	<u>-</u>	<u>26.4</u>	<u>4263</u>	<u>289.3</u>	<u>1.25</u>	<u>2.06</u>	<u>3.45</u>	<u>5.32</u>	
<u>1642</u>	<u>900</u>	<u>25.3</u>	<u>4170</u>	<u>321.3</u>	<u>0.16</u>	<u>7.03</u>	<u>3.34</u>	<u>5.46</u>	
<u>1645</u>	<u>1800</u>	<u>25.3</u>	<u>4176</u>	<u>317.0</u>	<u>0.12</u>	<u>7.01</u>	<u>3.34</u>	<u>5.47</u>	
<u>1648</u>	<u>2700</u>	<u>25.1</u>	<u>4165</u>	<u>314.5</u>	<u>0.08</u>	<u>2.62</u>	<u>3.34</u>	<u>5.48</u>	
<u>1651</u>	<u>3600</u>	<u>25.2</u>	<u>4155</u>	<u>310.1</u>	<u>0.06</u>	<u>2.17</u>	<u>3.34</u>	<u>5.48</u>	
<u>1654</u>	<u>4500</u>	<u>25.2</u>	<u>4154</u>	<u>307.1</u>	<u>0.05</u>	<u>2.73</u>	<u>3.34</u>	<u>5.48</u>	

- |   |  |   |      |         |         |
|---|--|---|------|---------|---------|
| 1. Well evacuated to dryness? Yes / <u>No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>   |      |         |         |
| 2. Sample Filtered? Yes / <u>No</u>                     | 8. Sample Time: <u>1635</u>                          | 12. Instrument type: <u>YSI ProDSS</u>  |      |         |         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: _____ LAB   |      |         |         |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: _____ LAB   |      |         |         |
| 5. Sample Rate (mL/min) _____                           |  | <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%; border-bottom: 1px solid black;">Std.</td> <td style="width:33%; border-bottom: 1px solid black;">Reading</td> <td style="width:33%; border-bottom: 1px solid black;">Adjust.</td> </tr> </table> | Std. | Reading | Adjust. |
| Std.  | Reading  | Adjust.   |      |         |         |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH _____  |      |         |         |
| Turbidity <u>LOW</u>                                    |  | Conduct. _____  |      |         |         |
| Color <u>CLEAR</u>                                      |  | ORP _____   |      |         |         |
| Odor <u>NONE</u>  |  | D.O. _____  |      |         |         |
|   |  | Turbidity _____   |      |         |         |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: AP MW-3	Date/Time: 6/27/2025 0700
	Sample Number: 10	PID Readings: N/A
	Weather Conditions: 79°F SUNNY	
	Wellhead Inspection: SN NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes</u> / No        | 5. Standing/Ponded Water: Yes / <u>No</u> |
| 2. Collision/Vandalism Damage: Yes / <u>No</u> | 6. Frost Heaving: Yes / <u>No</u>         |
| 3. Casing Degradation: Yes / <u>No</u>         | 7. Lock in Place: <u>Yes</u> / No         |
| 4. Well Subsidence: Yes / <u>No</u>            |   |

**Ground Water Measurements/Purge data:**


- |  |  |
|--|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>13.666</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                  | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                  | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                   | 10. Dedicated? (Yes/No) Yes / <u>No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>      | 11. Immiscible layer observed Yes / <u>No</u>            |
| 6. Purge Water Characteristics:                        | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                  | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                     |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0705	23.1	23.1	1710	188.1	5.21	2.87	5.04	14.04	
0706	900	23.2	1680	214.5	4.67	5.01	5.02	14.09	
0709	1800	23.3	1677	251.7	4.56	5.11	5.02	14.13	
0712	2700	23.4	1672	339.6	4.45	4.19	5.02	14.19	
0715	3600	23.4	1676	402.6	4.43	4.37	5.01	14.20	
0718	4500	23.5	1675	430.1	4.38	4.54	5.01	14.21	

- |   |  |  |             |                |                |
|---|--|--|-------------|----------------|----------------|
| 1. Well evacuated to dryness? Yes / <u>No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>  |             |                |                |
| 2. Sample Filtered? Yes / <u>No</u>                     | 8. Sample Time: <u>0720</u>                          | 12. Instrument type: YSI ProDSS  |             |                |                |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>   |             |                |                |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>   |             |                |                |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"><u>Std.</u></td> <td style="width:33%;"><u>Reading</u></td> <td style="width:33%;"><u>Adjust.</u></td> </tr> </table> | <u>Std.</u> | <u>Reading</u> | <u>Adjust.</u> |
| <u>Std.</u>   | <u>Reading</u>                                       | <u>Adjust.</u>   |             |                |                |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH _____   |             |                |                |
| Turbidity <u>LOW</u>                                    |  | Conduct. _____   |             |                |                |
| Color <u>CLEAR</u>                                      |  | ORP _____  |             |                |                |
| Odor <u>NONE</u>  |  | D.O. _____   |             |                |                |
|   |  | Turbidity _____  |             |                |                |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: AP MW-10	Date/Time: 6/27/2023 0940
	Sample Number: 11	PID Readings: N/A
	Weather Conditions: 82° F SUNNY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**


- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>18.08</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>NONE</u>                | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0743	-	24.2	1356	219.3	6.10	0.80	6.02	18.40	
0746	900	23.7	1332	206.7	5.31	0.86	6.05	18.40	
0749	1800	23.7	1379	207.0	5.24	0.80	6.04	18.48	
0752	2700	23.8	1330	208.5	5.23	0.79	6.03	18.49	
0755	3600	23.8	1329	211.5	5.19	0.85	6.03	18.49	
0758	4500	23.8	1330	211.9	5.18	0.84	6.03	18.49	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>0800</u>                          | 12. Instrument type: YSI ProdSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

FB-2 HERE @  
0800

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: AP-MW-5	Date/Time: 6/27/2023 0820
	Sample Number: 12	PID Readings: N/A
	Weather Conditions: 84° F SUNNY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |


**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>17.51</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0826	-	23.6	4197	464.9	2.15	0.25	3.19	17.89	
0829	900	23.3	4230	512.3	0.58	0.33	3.16	17.96	
0832	1500	23.2	4227	518.7	0.47	0.64	3.16	17.98	
0835	2700	23.3	4240	445.0	0.35	1.40	3.17	18.00	
0838	3600	23.4	4303	370.9	0.13	2.18	3.34	18.05	
0841	4500	23.4	4307	361.5	0.10	2.17	3.33	18.04	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>0845</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP <u>See attached Lab Form for</u>                    |
| Odor <u>NONE</u>  |  | D.O. <u>Calibration Data</u>                            |
|   |  | Turbidity _____   |

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: AP MW- 4	Date/Time: 6/27/2023 0905
	Sample Number: 13	PID Readings: N/A
	Weather Conditions: 88°F SUNNY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>16.25</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GSOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0909	-	23.7	1694	1108.4	6.06	1.08	6.26	16.74	
0912	900	23.3	1665	183.4	5.99	1.07	6.31	16.87	
0915	1800	23.2	1661	192.7	5.96	1.23	6.32	16.95	
0918	2700	23.4	1661	196.8	5.92	1.44	6.32	17.03	
0921	3600	23.3	1663	201.5	5.89	1.29	6.31	17.07	
0924	4500	23.3	1662	179.8	4.06	1.37	6.04	17.10	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>0925</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH _____  |
| Turbidity <u>LOW</u>                                    |  | Conduct. _____  |
| Color <u>CLEAR</u>                                      |  | ORP <u>See attached Lab Form for Calibration Data</u>   |
| Odor <u>NONE</u>  |  | D.O. _____  |
|   |  | Turbidity _____   |

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: 35P MW-4	Date/Time: 6/27/2023 1010
	Sample Number: 14	PID Readings: N/A
	Weather Conditions: 88°F SUNNY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

1. Survey Mark Present: <u>Yes / No</u>	5. Standing/Ponded Water: <u>Yes / No</u>
2. Collision/Vandalism Damage: <u>Yes / No</u>	6. Frost Heaving: <u>Yes / No</u>
3. Casing Degradation: <u>Yes / No</u>	7. Lock in Place: <u>Yes / No</u>
4. Well Subsidence: <u>Yes / No</u>	

**Ground Water Measurements/Purge data:**

1. Static Water Level (±0.01 feet [ft.]) <u>25.21</u>	7. Purge Rate (mL/min) <u>300</u>
2. Intake Depth (±0.01 ft.) <u>40</u>	8. Water Level Measuring Equip. <u>GEOTECH</u>
3. Bottom of casing (±0.01 ft.) _____	9. Purge Equipment Used <u>BLADDER</u>
4. Casing Diameter (inches) <u>2</u>	10. Dedicated? (Yes/No) <u>Yes / No</u>
5. Actual Volume of Water Purged (mL) <u>4500</u>	11. Immiscible layer observed <u>Yes / No</u>
6. Purge Water Characteristics:	12. Thickness of immiscible layer <u>N/A</u>
Odor <u>NONE</u> Turbidity <u>LOW</u>	13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u>
Color <u>CLEAR</u>	

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1018	-	25.1	5041	50.2	4.76	5.33	6.05	25.42	
1021	900	23.7	5547	27.2	0.60	9.53	5.90	26.70	
1024	1600	23.6	5540	4.9	0.23	6.61	5.92	28.14	
1027	2700	23.4	5532	-1.8	0.21	7.99	5.93	29.34	
1030	3600	23.4	5495	-15.0	0.19	2.86	5.95	30.51	
1033	4500	23.3	5249	-33.3	0.24	3.70	6.09	32.45	

1. Well evacuated to dryness? <u>Yes / No</u>	7. Time to recharge (min): <u>N/A</u>	11. Decontamination Procedures: <u>Alconox/DI Rinse</u>																								
2. Sample Filtered? <u>Yes / No</u>	8. Sample Time: <u>1035</u>	12. Instrument type: YSI ProdSS																								
3. Sampling Equip. Used <u>BLADDER</u>	9. Parameter/Container/Pres. <u>See Attached COC</u>	Calibration Date: <u>LAB</u>																								
4. Drive Gas (Air/Nitrogen) <u>AIR/NITROGEN/N/A</u>		Calibration Time: <u>LAB</u>																								
5. Sample Rate (mL/min) <u>300</u>		<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"></td> <td style="width:33%; text-align: center;"><u>Std.</u></td> <td style="width:33%; text-align: center;"><u>Reading</u></td> <td style="width:33%; text-align: center;"><u>Adjust.</u></td> </tr> <tr> <td></td> <td style="text-align: center;">pH</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Conduct.</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">ORP</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">D.O.</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Turbidity</td> <td></td> <td></td> </tr> </table>		<u>Std.</u>	<u>Reading</u>	<u>Adjust.</u>		pH				Conduct.				ORP				D.O.				Turbidity		
	<u>Std.</u>	<u>Reading</u>	<u>Adjust.</u>																							
	pH																									
	Conduct.																									
	ORP																									
	D.O.																									
	Turbidity																									
6. Sample Appearance:	10. Other Information:	See attached Lab Form for Calibration Data																								
Turbidity <u>LOW</u>																										
Color <u>CLEAR</u>																										
Odor <u>NONE</u>																										

EQ-1 HERE @  
1200 1035



**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SSP MW-3	Date/Time: 6/27/2023 1110
	Sample Number: 15	PID Readings: N/A
	Weather Conditions: 88°F SUNNY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>27.15</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>42</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>BLADDER</u>                   |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1115	-	27.9	2678	32.2	6.16	1.98	5.55	27.50	
1118	900	24.8	6167	113.7	1.22	1.90	4.70	27.81	
1121	1800	24.4	6618	125.3	0.36	5.21	4.46	28.20	
1124	2700	24.4	7614	1165.8	0.19	3.59	4.27	28.43	
1127	3600	24.3	7953	194.5	0.18	4.01	4.25	28.55	
1130	4500	24.3	8144	222.0	0.13	5.04	4.21	28.65	

- |   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
|---|--|--|----------------|-------------|----------------|----------------|----|--|--|--|----------|--|--|--|-----|--|--|--|------|--|--|--|-----------|--|--|--|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1130</u>                          | 12. Instrument type: YSI ProDSS  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 3. Sampling Equip. Used <u>BLADDER</u>                  | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"></td> <td style="width:33%; text-align: center;"><u>Std.</u></td> <td style="width:33%; text-align: center;"><u>Reading</u></td> <td style="width:33%; text-align: center;"><u>Adjust.</u></td> </tr> <tr> <td>pH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Conduct.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>ORP</td> <td></td> <td></td> <td></td> </tr> <tr> <td>D.O.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Turbidity</td> <td></td> <td></td> <td></td> </tr> </table> |                | <u>Std.</u> | <u>Reading</u> | <u>Adjust.</u> | pH |  |  |  | Conduct. |  |  |  | ORP |  |  |  | D.O. |  |  |  | Turbidity |  |  |  |
|   | <u>Std.</u>  | <u>Reading</u>   | <u>Adjust.</u> |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| pH  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Conduct.  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| ORP   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| D.O.  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Turbidity   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 6. Sample Appearance:                                   | 10. Other Information:                               |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Turbidity <u>LOW</u>                                    |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Color <u>CLEAR</u>                                      |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Odor <u>NONE</u>  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |

**Low Stress Groundwater Sampling Data Sheet**



Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
MW Identification: SSP MW-2	Date/Time: 6/27/2023 150
Sample Number: 16	PID Readings: N/A
Weather Conditions: 88° F SUNNY	
Wellhead Inspection: HOUSING LOOSE	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |


**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>23.80</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25 30</u>              | 8. Water Level Measuring Equip. <u>GSOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                 | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) _____           | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1153	-	24.9	8706	331.0	4.03	3.72	4.03	25.15	
1156	900	23.6	8327	352.0	3.43	5.59	4.02	25.48	
1159	1800	23.4	8314	526.7	5.59	3.24	4.05	26.39	
1202	2700	23.7	8982	295.1	1.56	3.63	4.32	27.18	
1205	3600	25.5	8514	303.4	0.22	3.06	4.33	27.92	
1208	4500	25.0	8968	295.0	0.23	2.42	4.36	28.14	

- |   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
|---|--|--|----------------|-------------|----------------|----------------|----|--|--|--|----------|--|--|--|-----|--|--|--|------|--|--|--|-----------|--|--|--|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1210</u>                          | 12. Instrument type: <u>YSI ProDSS</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>   |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"></td> <td style="width:33%; text-align: center;"><u>Std.</u></td> <td style="width:33%; text-align: center;"><u>Reading</u></td> <td style="width:33%; text-align: center;"><u>Adjust.</u></td> </tr> <tr> <td>pH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Conduct.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>ORP</td> <td></td> <td></td> <td></td> </tr> <tr> <td>D.O.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Turbidity</td> <td></td> <td></td> <td></td> </tr> </table> |                | <u>Std.</u> | <u>Reading</u> | <u>Adjust.</u> | pH |  |  |  | Conduct. |  |  |  | ORP |  |  |  | D.O. |  |  |  | Turbidity |  |  |  |
|   | <u>Std.</u>  | <u>Reading</u>   | <u>Adjust.</u> |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| pH  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Conduct.  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| ORP   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| D.O.  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Turbidity   |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| 6. Sample Appearance:                                   | 10. Other Information:                               |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Turbidity <u>LOW</u>                                    |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Color <u>CLEAR</u>                                      |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |
| Odor <u>NONE</u>  |  |  |                |             |                |                |    |  |  |  |          |  |  |  |     |  |  |  |      |  |  |  |           |  |  |  |

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: <u>MNW-18</u>	Date/Time: <u>6/27/2023 1820</u>
	Sample Number: <u>2</u>	PID Readings: <u>N/A</u>
	Weather Conditions: <u>90°F SUNNY</u>	
	Wellhead Inspection: <u>NO COMPLAINT</u>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |  |  |
|--|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>8.97</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>20</u>                | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) _____                | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                 | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>    | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                      | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                   |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µS/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
<u>1330</u>	<u>-</u>	<u>22.6</u>	<u>2594</u>	<u>19.4</u>	<u>7.39</u>	<u>0.72</u>	<u>6.77</u>	<u>9.20</u>	
<u>1333</u>	<u>500</u>	<u>23.4</u>	<u>2331</u>	<u>17.7</u>	<u>7.33</u>	<u>0.46</u>	<u>7.13</u>	<u>9.45</u>	
<u>1336</u>	<u>1000</u>	<u>23.6</u>	<u>2326</u>	<u>132.3</u>	<u>7.31</u>	<u>0.64</u>	<u>7.19</u>	<u>9.99</u>	
<u>1339</u>	<u>2700</u>	<u>23.3</u>	<u>2325</u>	<u>135.0</u>	<u>7.32</u>	<u>0.70</u>	<u>7.20</u>	<u>10.34</u>	
<u>1342</u>	<u>3400</u>	<u>23.0</u>	<u>2305</u>	<u>135.9</u>	<u>7.32</u>	<u>0.62</u>	<u>7.20</u>	<u>10.75</u>	
<u>1345</u>	<u>4500</u>	<u>23.3</u>	<u>2335</u>	<u>137.6</u>	<u>7.31</u>	<u>0.71</u>	<u>7.20</u>	<u>11.15</u>	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1345</u>                          | 12. Instrument type: <u>YSI ProDSS</u>                  |
| 3. Sampling Equip. Used <u>N/A</u>                      | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <u>Std. Reading Adjust.</u>                             |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH _____  |
| Turbidity <u>LOW</u>                                    |  | Conduct. _____  |
| Color <u>CLEAR</u>                                      |  | ORP _____   |
| Odor <u>NONE</u>  |  | D.O. _____  |
|   |  | Turbidity _____   |

See attached Lab Form for Calibration Data



Calibrated at Geotech's Texas service center

1600 North I 35E Suite 114

Carrollton, TX 75006

(800) 276-5325 Fax: (972) 245-8889

# YSI Pro DSS Calibration Certificate

Unit Number: 7038

Calibration Date 6/22/2023

Serial Number: 20F161181

Technician: Isaiah Lastra-Gonzale

Installed Probes

- Conductivity
- PH/ORP
- DO
- TURB

- Display is clear, and free of damage
- Cable and accessories are free of damage
- Firmware version is up to date.

Display Battery 100 % **Pass**  
 Cable Flex Test: **Pass**

Cable Length	10M	pH/ORP Serial #	17K102171
Cable Lot #	20E103277	DO Probe Serial #	20F160853
Cond Probe Lot #	22K102568	Turb Probe Serial #	22B101148
Bath Temp	20.5 °C		
Meter Temp	20.5 °C		
Variance	0.00	<b>Pass</b>	

Cond					
<u>Calibration</u>	<u>Reading</u>		<u>Buffer Lot #</u>	<u>Exp. Date</u>	
1.413 mS	1.413 mS	<b>Pass</b>	2GH818	8/23	<b>Pass</b>

pH							
<u>Point Test</u>	<u>Calibration</u>	<u>Reading</u>	<u>mV</u>	<u>Slope</u>	<u>Buffer Lot #</u>	<u>Exp. Date</u>	
2 Point	pH 7.00	pH 7.00	-34.3 mV		.	8/24	<b>Pass</b>
	pH 4.00	pH 4.00	130.9 mV	165.2	<b>Pass</b>	2GH570	8/24 <b>Pass</b>

ORP					
<u>Calibration</u>	<u>Reading</u>		<u>Buffer Lot #</u>	<u>Exp. Date</u>	
220 mV	220 mV	<b>Pass</b>	3GB1247	11/23	<b>Pass</b>

Turbidity									
<u>Zero</u>	<u>Reading</u>	<u>Variance</u>		<u>Cal</u>	<u>Reading</u>	<u>Variance</u>	<u>Buffer Lot #</u>	<u>Exp. Date</u>	
0 ntu	0 ntu	0 ntu	<b>Pass</b>	124 ntu	124 ntu	0.0%	<b>Pass</b>	23C24000442	3/24 <b>Pass</b>


DO						
<u>Barometer</u>	<u>Calibration</u>	<u>Reading</u>	<u>Variance</u>		<u>Test Fluid</u>	
745.5 mmHg	98.1 %	98.1 %	0.0%	<b>Pass</b>	Water Saturated Air	
Time:	<u>Min.</u>	<u>Sec.</u>	<u>Reading</u>		<u>Nitrogen Lot #</u>	
	1	27	1 %	<b>Pass</b>		

Geotech Environmental Equipment, Inc. takes pride in ensuring this instrument is tested to function as specified by the manufacturer and was calibrated in accordance to manufacturer specifications. All calibration standards used are NIST traceable. With the provided lot numbers we can provide NIST documents on request. Call us at (800) 833-7958 and we will be glad to help.

Sampler: Will NICHOLSONDate: 11/14/23 - 11/15/23Equipment: GEOTECH 100'Decontamination: Alconox with DI Rinse

Well	Water Level below TOC	Bottom of Casing	Prevoius Water Level Below TOC (6/26/2023)	Prevoius Water Level Below TOC (12/12/2022)	Notes
AP PZ-1	10.88		7.81	7.66	
AP PZ-2	21.31		18.31	20.45	
AP PZ-3	8.15		6.7	9.55	
AP PZ-4	13.83		14.45	16.22	
AP MW-1	18.22		17.22	20.99	
AP MW-1D	19.18		18.08	21.58	
AP MW-2	14.07		11.29	16.68	
AP MW-3	15.62		13.66	21.55	
AP MW-4	17.17		16.25	23.06	
AP MW-5	18.38		17.51	24.42	
AP MW-6	19.70		19.1	22.17	
SSP/AP MW-1	11.13		11.26	10.84	
SSP MW-1	18.45		17.21	17.73	
SSP MW-2	25.48		23.8	24.74	
SSP MW-3	29.15		27.15	28.08	
SSP MW-4	25.89		25.21	25.48	
SFL MW-2	11.02		9.7	11.04	
SFL MW-3	18.19		17.72	17.19	
SFL MW-4	16.01		14.59	15.35	
SFL MW-5	15.78		14.43	16.14	
SFL MW-6	17.98		18.58	18.37	
SFL MW-7	16.06		14.06	14.41	
MNW-11	20.21		20.6	20.16	
MNW-15	6.91		4.83	5.86	
MNW-16	16.17 16.06		15.05	14.88	
MNW-17	45.24		34.63	29.55	
MNW-18	11.04		8.97	9.56	

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: <u>AP MW-10</u>	Date/Time: <u>11/14/23 1215</u>
	Sample Number: <u>3</u>	PID Readings: N/A
	Weather Conditions: <u>70° F OVERCAST</u>	
	Wellhead Inspection: <u>NO COMMENT</u>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**


- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>19.18</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
<u>1220</u>	<u>-</u>	<u>22.3</u>	<u>1301</u>	<u>244.5</u>	<u>2.28</u>	<u>1.21</u>	<u>6.08</u>	<u>19.55</u>	
<u>1223</u>	<u>900</u>	<u>22.3</u>	<u>1297</u>	<u>229.1</u>	<u>1.17</u>	<u>1.29</u>	<u>6.05</u>	<u>19.59</u>	
<u>1226</u>	<u>1900</u>	<u>22.2</u>	<u>1283</u>	<u>227.5</u>	<u>0.43</u>	<u>1.30</u>	<u>6.03</u>	<u>19.63</u>	
<u>1229</u>	<u>2700</u>	<u>22.4</u>	<u>1282</u>	<u>216.9</u>	<u>0.32</u>	<u>1.37</u>	<u>6.02</u>	<u>19.64</u>	
<u>1232</u>	<u>3600</u>	<u>22.4</u>	<u>1281</u>	<u>214.3</u>	<u>0.28</u>	<u>1.41</u>	<u>6.02</u>	<u>19.64</u>	
<u>1235</u>	<u>4500</u>	<u>22.3</u>	<u>1283</u>	<u>210.4</u>	<u>0.26</u>	<u>1.38</u>	<u>6.02</u>	<u>19.65</u>	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1240</u>                          | 12. Instrument type: <u>YSI ProDSS</u>                  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <u>Std.</u> <u>Reading</u> <u>Adjust.</u>               |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

AP MW-1 - 18.22

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: AP MW-3	Date/Time: 11/14/23 1135
	Sample Number: 2	PID Readings: N/A
	Weather Conditions: 70°F PARTLY CLOUDY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**


- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>15.62</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>20</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1141	-	24.4	1867	223.7	1.80	2.07	5.03	15.97	
1144	900	24.1	1813	301.7	1.77	6.11	4.97	16.07	
1147	1800	24.0	1713	333.1	0.68	7.65	4.94	16.11	
1150	2700	23.8	1713	366.1	0.57	14.10	4.94	16.14	
1153	3600	23.5	1699	397.2	0.50	12.94	4.92	16.15	
1156	4500	23.5	1694	465.0	0.31	6.14	4.91	16.15	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1200</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH _____  |
| Turbidity <u>LOW</u>                                    |  | Conduct. _____  |
| Color <u>CLEAR</u>                                      |  | ORP _____   |
| Odor <u>NONE</u>  |  | D.O _____   |
|   |  | Turbidity _____   |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: AP MW-4	Date/Time: 11/14/23 1330
	Sample Number: 5	PID Readings: N/A
	Weather Conditions: 68°F CLOUDY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>17.17</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1335	-	21.7	1801	222.9	4.24	1.70	5.82	17.62	
1338	900	21.4	1746	114.9	0.52	3.11	5.84	17.95	
1341	1800	21.2	1886	73.5	0.46	7.00	5.83	18.08	
1344	2700	21.3	2357	74.3	0.31	18.73	5.69	18.17	
1347	3600	21.4	2763	76.0	0.27	20.11	5.68	18.23	
1350	4500	21.3	4394	96.8	0.21	20.07	5.54	18.28	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1350</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <u>Std.</u> <u>Reading</u> <u>Adjust.</u>               |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

DUP-1 HERE @ 1600



**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: AP MW-5	Date/Time: 12SS
	Sample Number: 4	PID Readings: N/A
	Weather Conditions: 68° F CLOUDY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |


**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>18.38</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1258	-	21.6	5206	386.6	3.41	2.55	3.46	18.72	
1301	900	22.0	5662	380.2	0.54	9.23	3.42	18.84	
1304	1800	21.9	5326	379.8	0.35	5.21	3.42	18.88	
1307	2700	22.0	5645	379.7	0.28	5.56	3.42	18.90	
1310	3600	21.9	5620	372.3	0.31	5.97	3.42	18.92	
1313	4500	22.0	5636	370.8	0.23	6.03	3.42	18.93	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1315</u>                          | 12. Instrument type: <u>YSI ProDSS</u>                  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <u>Std.</u> <u>Reading</u> <u>Adjust.</u>               |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |
- See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: MNW-15	Date/Time: 11/15/23 1225
	Sample Number: 15	PID Readings: N/A
	Weather Conditions: 75° F CLEAR	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |                                |                 |                           |                 |
|--------------------------------|-----------------|---------------------------|-----------------|
| 1. Survey Mark Present:        | <u>Yes</u> / No | 5. Standing/Ponded Water: | Yes / <u>No</u> |
| 2. Collision/Vandalism Damage: | Yes / <u>No</u> | 6. Frost Heaving:         | Yes / <u>No</u> |
| 3. Casing Degradation:         | Yes / <u>No</u> | 7. Lock in Place:         | <u>Yes</u> / No |
| 4. Well Subsidence:            | Yes / <u>No</u> |                           |                 |

**Ground Water Measurements/Purge data:**

- |   |                       |                                    |                             |
|---|-----------------------|------------------------------------|-----------------------------|
| 1. Static Water Level (±0.01 feet [ft.]): | <u>6.91</u>           | 7. Purge Rate (mL/min):            | <u>300</u>                  |
| 2. Intake Depth (±0.01 ft.):              | <u>20</u>             | 8. Water Level Measuring Equip.:   | <u>GEOTECH</u>              |
| 3. Bottom of casing (±0.01 ft.):          | <u>-</u>              | 9. Purge Equipment Used:           | <u>PERISTALTIC</u>          |
| 4. Casing Diameter (inches):              | <u>2</u>              | 10. Dedicated? (Yes/No):           | Yes / <u>No</u>             |
| 5. Actual Volume of Water Purged (mL):    | <u>4500</u>           | 11. Immiscible layer observed:     | Yes / <u>No</u>             |
| 6. Purge Water Characteristics:           |                       | 12. Thickness of immiscible layer: | <u>N/A</u>                  |
| Odor: <u>NONE</u>                         | Turbidity: <u>LOW</u> | 13. Drive Gas (Air/Nitrogen):      | <u>AIR / NITROGEN / N/A</u> |
| Color: <u>CLEAR</u>                       |                       |                                    |                             |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1230	-	26.1	4193	299.0	2.01	6.31	3.77	7.33	
1233	900	25.8	4047	311.7	0.36	6.73	3.58	7.51	
1236	1800	25.5	4049	308.9	0.24	6.10	3.56	7.54	
1239	2700	25.3	4046	305.3	0.23	6.17	3.56	7.55	
1242	3600	25.2	4035	303.8	0.21	6.31	3.55	7.54	
1245	4500	25.0	4043	283.7	0.19	6.27	3.83	7.54	

- |                               |                             |                               |                         |                                 |                         |         |
|-------------------------------|-----------------------------|-------------------------------|-------------------------|---------------------------------|-------------------------|---------|
| 1. Well evacuated to dryness? | Yes / <u>No</u>             | 7. Time to recharge (min):    | <u>N/A</u>              | 11. Decontamination Procedures: | <u>Alconox/DI Rinse</u> |         |
| 2. Sample Filtered?           | Yes / <u>No</u>             | 8. Sample Time:               | <u>1245</u>             | 12. Instrument type: YSI ProDSS |                         |         |
| 3. Sampling Equip. Used:      | <u>PERISTALTIC</u>          | 9. Parameter/Container/Pres.: | <u>See Attached COC</u> | Calibration Date:               | <u>LAB</u>              |         |
| 4. Drive Gas (Air/Nitrogen):  | <u>AIR / NITROGEN / N/A</u> |                               |                         | Calibration Time:               | <u>LAB</u>              |         |
| 5. Sample Rate (mL/min):      | <u>300</u>                  |                               |                         | Std.                            | Reading                 | Adjust. |
| 6. Sample Appearance:         |                             | 10. Other Information:        |                         | pH                              |                         |         |
| Turbidity:                    | <u>LOW</u>                  |                               |                         | Conduct.                        |                         |         |
| Color:                        | <u>CLEAR</u>                |                               |                         | ORP                             |                         |         |
| Odor:                         | <u>NONE</u>                 |                               |                         | D.O                             |                         |         |
|                               |                             |                               |                         | Turbidity                       |                         |         |

See attached Lab Form for Calibration Data

FB-2 HERE  
Ⓢ 1245

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: <u>MNW-18</u>	Date/Time: <u>11/15/23 1335</u>
	Sample Number: <u>16</u>	PID Readings: <u>N/A</u>
	Weather Conditions: <u>75°F CLEAR</u>	
	Wellhead Inspection: <u>NO COMMENT</u>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>11.04</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
<u>1339</u>	<u>-</u>	<u>22.7</u>	<u>2410</u>	<u>96.3</u>	<u>5.95</u>	<u>1.21</u>	<u>6.86</u>	<u>11.36</u>	
<u>1342</u>	<u>900</u>	<u>22.4</u>	<u>2383</u>	<u>121.4</u>	<u>5.38</u>	<u>1.78</u>	<u>6.98</u>	<u>12.10</u>	
<u>1343</u>	<u>1800</u>	<u>22.3</u>	<u>2379</u>	<u>127.4</u>	<u>5.35</u>	<u>1.22</u>	<u>6.98</u>	<u>12.46</u>	
<u>1348</u>	<u>2700</u>	<u>22.3</u>	<u>2378</u>	<u>134.6</u>	<u>5.31</u>	<u>1.30</u>	<u>6.97</u>	<u>12.94</u>	
<u>1351</u>	<u>3600</u>	<u>22.2</u>	<u>2374</u>	<u>137.6</u>	<u>5.30</u>	<u>1.32</u>	<u>6.97</u>	<u>13.51</u>	
<u>1354</u>	<u>4500</u>	<u>22.2</u>	<u>2373</u>	<u>141.6</u>	<u>5.35</u>	<u>1.40</u>	<u>6.97</u>	<u>14.22</u>	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1335</u>                          | 12. Instrument type: <u>YSI ProDSS</u>                  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <u>Std.</u> <u>Reading</u> <u>Adjust.</u>               |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SSP/AP MW-1	Date/Time: 11/14/23 1050
	Sample Number: 1	PID Readings: N/A
	Weather Conditions: 70°F PARTLY CLOUDY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>11.13</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1100	-	22.8	8824	213.3	1.79	19.30	5.44	12.58	
1103	900	22.8	8919	187.7	0.36	13.26	5.47	13.71	
1106	1800	22.7	8917	183.5	0.29	19.73	5.47	14.27	
1109	2700	22.9	8893	183.4	0.26	10.43	5.48	14.80	
1112	3600	23.2	8897	175.3	0.24	14.31	5.48	15.32	
1115	4500	23.2	8882	147.5	0.24	12.32	5.49	15.66	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1115</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <u>Std.</u> <u>Reading</u> <u>Adjust.</u>               |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SSP MW-2	Date/Time: 11/15/23 0650
	Sample Number: 8	PID Readings: N/A
	Weather Conditions: 59°F CLEAR	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**


- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>25.46</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>40</u>                 | 8. Water Level Measuring Equip. <u>BL GEOTECH</u>        |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>ISLANDER</u>                  |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0657	-	18.9	8768	249.0	2.95	3.03	4.21	26.30	
0700	900	20.6	9039	297.8	0.78	4.19	4.18	27.21	
0703	1800	20.9	9017	386.5	0.57	5.70	4.18	29.20	
0706	2700	21.0	8982	407.4	0.60	7.53	4.20	30.20	
0709	3600	21.0	8953	388.8	0.74	8.01	4.25	31.73	
0712	4500	21.2	8979	348.1	0.93	8.36	4.37	32.83	
0715	5400	21.1	8339	314.9	0.97	5.97	4.47	33.80	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>0715</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>BLADDER</u>                  | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: <u>S5P MW-3</u>	Date/Time: <u>11/14/23 1335</u>
	Sample Number: <u>7</u>	PID Readings: N/A
	Weather Conditions: <u>69°F CLOUDY</u>	
	Wellhead Inspection: <u>NO COMMENT</u>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>29.15</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>45</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>BLADDER</u>                   |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1542	-	21.6	6459	104.6	4.75	1.53	4.95	29.67	
1545	900	22.4	6430	158.6	0.60	2.32	4.65	30.37	
1548	1800	22.4	6366	189.7	0.45	5.12	4.51	30.71	
1551	2700	22.3	6831	206.8	0.41	5.73	4.48	30.79	
1554	3600	22.3	6995	230.7	0.36	5.88	4.40	30.93	
1557	4500	22.4	7111	256.8	0.32	5.91	4.34	31.08	

- |  |  |   |
|--|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>        | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                  | 8. Sample Time: <u>1600</u>                          | 12. Instrument type: <u>YSI ProDSS</u>                  |
| 3. Sampling Equip. Used <u>BLADDER</u>               | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR/NITROGEN/ N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                   |  | <u>Std.</u> <u>Reading</u> <u>Adjust.</u>               |
| 6. Sample Appearance:                                | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                 |  | Conduct.  |
| Color <u>CLEAR</u>                                   |  | ORP   |
| Odor <u>NONE</u>                                     |  | D.O.  |
|  |  | Turbidity   |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SSP MW-34	Date/Time: 11/14/23 1440
	Sample Number: 6	PID Readings: N/A
	Weather Conditions: 67° F CLOUDY	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |  |   |
|--|---|
| 1. Static Water Level (±0.01 feet [ft.]): <u>25.89</u> | 7. Purge Rate (mL/min): <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.): <u>40</u>                 | 8. Water Level Measuring Equip.: <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.): <u>-</u>              | 9. Purge Equipment Used: <u>BLADDER</u>                   |
| 4. Casing Diameter (inches): <u>2</u>                  | 10. Dedicated? (Yes/No): <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL): <u>4500</u>     | 11. Immiscible layer observed: <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                        | 12. Thickness of immiscible layer: <u>N/A</u>             |
| Odor: <u>NONE</u> Turbidity: <u>LOW</u>                | 13. Drive Gas (Air/Nitrogen): <u>AIR / NITROGEN / N/A</u> |
| Color: <u>CLEAR</u>                                    |   |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1450	-	22.0	5389	6.0	3.20	1.35	6.07	26.66	
1453	900	22.3	5423	-26.2	0.58	1.45	6.04	28.02	
1456	1800	22.7	5420	-37.5	0.47	1.72	6.04	29.34	
1459	2700	22.4	5142	-45.6	0.45	2.47	6.04	30.60	
1502	3600	22.4	5397	-50.2	0.45	3.97	6.04	32.35	
1505	4500	22.3	5351	-50.0	0.48	3.61	6.04	33.67	

- |  |   |   |
|--|---|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>        | 7. Time to recharge (min): <u>N/A</u>                 | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                  | 8. Sample Time: <u>1505</u>                           | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used: <u>BLADDER</u>              | 9. Parameter/Container/Pres.: <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen): <u>AIR/NITROGEN/N/A</u> |   | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min): _____                       |   | Std. Reading Adjust.                                    |
| 6. Sample Appearance:                                | 10. Other Information: _____                          | pH _____  |
| Turbidity: <u>LOW</u>                                |   | Conduct. _____  |
| Color: <u>CLEAR</u>                                  |   | ORP _____   |
| Odor: <u>NONE</u>                                    |   | D.O. _____  |
|  |   | Turbidity _____   |

FB-1 HERE @ 1505

EQ-1 HERE 1515 AFTER SAMPLE @

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-2	Date/Time: 11/15/23 0900
	Sample Number: 11	PID Readings: N/A
	Weather Conditions: 62°F CLEAR	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>11.02</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>~22</u>                | 8. Water Level Measuring Equip. <u>ESOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |


Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0907	-	22.8	9674	107.9	2.39	39.47	6.02	11.56	
0910	900	23.3	9134	88.1	0.54	16.03	6.19	12.14	
0913	1800	23.5	9146	108.2	0.39	10.25	6.17	12.35	
0916	2700	23.4	9168	123.5	0.31	2.50	6.15	12.60	
0919	3600	23.5	9172	125.1	0.31	3.18	6.15	12.79	
0922	4500	23.9	9186	135.6	0.27	3.11	6.14	12.86	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>0925</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | <u>Std.</u> <u>Reading</u> <u>Adjust.</u>               |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

See attached Lab Form for Calibration Data



**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-3	Date/Time: 11/15/23 1100
	Sample Number: 13	PID Readings: N/A
	Weather Conditions: 72°F CLEAR	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>18.19</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1107	-	22.7	5884	301.6	1.08	2.12	3.78	18.58	
1110	900	22.8	5815	327.4	0.40	2.17	3.74	18.65	
1113	1800	22.9	5809	333.8	0.32	3.17	3.74	18.66	
1116	2700	22.9	5809	339.6	0.28	6.13	3.74	18.67	
1119	3600	22.9	5791	344.8	0.23	3.85	3.73	18.69	
1122	4500	22.8	5821	353.9	0.24	3.96	3.73	18.67	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1125</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-4	Date/Time: 11/15/23 1020
	Sample Number: 12	PID Readings: N/A
	Weather Conditions: 70° F CLEAR	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>16.01</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>~25</u>                | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>Low</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1023	-	22.6	1550	39.1	5.70	8.85	6.45	16.60	
1026	900	22.5	4333	86.5	1.10	2.11	6.24	17.43	
1029	1800	22.5	5610	78.0	0.84	7.68	6.19	17.84	
1032	2700	22.5	6210	89.7	0.62	13.31	6.17	18.05	
1035	3600	22.5	6923	95.9	0.37	15.30	6.20	18.23	
1038	4500	22.5	6503	102.1	0.03	15.37	6.15	18.31	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>1040</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information: _____                         | pH _____  |
| Turbidity <u>Low</u>                                    |  | Conduct. _____  |
| Color <u>CLEAR</u>                                      |  | ORP _____   |
| Odor <u>NONE</u>  |  | D.O _____   |
|   |  | Turbidity _____   |

See attached Lab Form for Calibration Data

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-5	Date/Time: 11/15/23 0825
	Sample Number: 10	PID Readings: N/A
	Weather Conditions: 65° F CLEAR	
	Wellhead Inspection: NO COMMENT	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>15.76</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>~20</u>                | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0829	-	20.1	10743	137.2	4.05	2.83	4.56	16.84	
0832	800	21.3	10379	257.3	0.54	4.04	4.53	17.02	
0835	1600	21.6	10301	351.1	0.39	5.67	4.51	17.39	
0838	2700	21.8	10275	365.8	0.37	6.18	4.49	17.56	
0841	3600	21.8	10283	370.1	0.36	4.31	4.46	17.76	
0844	4500	21.6	10279	369.1	0.36	3.40	4.45	17.94	

- |   |  |  |
|---|--|--|
| 1. Well evacuated to dryness? <u>Yes / No</u>       | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u>    |
| 2. Sample Filtered? <u>Yes / No</u>                 | 8. Sample Time: <u>300-0845</u>                      | 12. Instrument type: YSI ProDSS                            |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>          | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                               |
| 4. Drive Gas (Air/Nitrogen) <u>AIR/NITROGEN/N/A</u> |  | Calibration Time: <u>LAB</u>                               |
| 5. Sample Rate (mL/min) <u>300</u>                  |  | Std.    Reading    Adjust.                                 |
| 6. Sample Appearance:                               | 10. Other Information: _____                         | pH _____   |
| Turbidity <u>LOW</u>                                |  | Conduct. <u>See attached Lab Form for Calibration Data</u> |
| Color <u>CLEAR</u>                                  |  | ORP _____  |
| Odor <u>NONE</u>                                    |  | D.O. _____   |
|   |  | Turbidity _____  |

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: <b>Gibbons Creek Steam Electric Station</b>	Sampler Name(s): <b>Will Nicholson/Justin Macmanus</b>
	MW Identification: <b>SFL MW-6</b>	Date/Time: <b>11/15/23 0735</b>
	Sample Number: <b>9</b>	PID Readings: <b>N/A</b>
	Weather Conditions: <b>SW F CLEAR</b>	
	Wellhead Inspection: <b>NO COMMENT</b>	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: <u>Yes / No</u>        | 5. Standing/Ponded Water: <u>Yes / No</u> |
| 2. Collision/Vandalism Damage: <u>Yes / No</u> | 6. Frost Heaving: <u>Yes / No</u>         |
| 3. Casing Degradation: <u>Yes / No</u>         | 7. Lock in Place: <u>Yes / No</u>         |
| 4. Well Subsidence: <u>Yes / No</u>            |   |


**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>17.98</u> | 7. Purge Rate (mL/min) <u>200</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>~20</u>                | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) <u>Yes / No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed <u>Yes / No</u>            |
| 6. Purge Water Characteristics: <u>1 Sulfur</u>       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>SLIGHT ORGANIC</u> Turbidity <u>LOW</u>       | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
0742	-	20.1	22,168	125.3	3.27	4.51	3.95	18.36	
0745	900	21.4	21,740	97.4	0.61	2.25	3.87	18.66	
0748	1800	21.7	21,898	94.0	0.42	1.86	3.88	19.06	
0751	2700	21.9	21,710	64.3	0.37	3.51	3.93	19.30	
0754	3600	22.0	21,137	27.5	0.40	3.57	4.04	19.57	
0757	4500	22.1	21,021	-0.5	0.37	2.78	4.11	19.85	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? <u>Yes / No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? <u>Yes / No</u>                     | 8. Sample Time: <u>0800</u>                          | 12. Instrument type: <u>YSI ProDSS</u>                  |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>200</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance: <u>LOW</u>                        | 10. Other Information: _____                         | pH _____  |
| Turbidity <u>CLEAR</u>                                  |  | Conduct. <u>See attached Lab Form for</u>               |
| Color <u>SULFUR</u>                                     |  | ORP <u>Calibration Data</u>                             |
| Odor <u>ORGANIC</u>                                     |  | D.O _____   |
|   |  | Turbidity _____   |

**Low Stress Groundwater Sampling Data Sheet**

	Facility Name: Gibbons Creek Steam Electric Station	Sampler Name(s): Will Nicholson/Justin Macmanus
	MW Identification: SFL MW-7	Date/Time: 11/15/23 1145
	Sample Number: 14	PID Readings: N/A
	Weather Conditions: 75° F CLEAR	
	Wellhead Inspection: NO COMMENT LID BROKEN	

**Visual Inspection:**

- |  |   |
|--|---|
| 1. Survey Mark Present: Yes / <u>No</u>        | 5. Standing/Ponded Water: Yes / <u>No</u> |
| 2. Collision/Vandalism Damage: <u>Yes</u> / No | 6. Frost Heaving: Yes / <u>No</u>         |
| 3. Casing Degradation: Yes / <u>No</u>         | 7. Lock in Place: <u>Yes</u> / No         |
| 4. Well Subsidence: Yes / <u>No</u>            |   |

**Ground Water Measurements/Purge data:**

- |   |  |
|---|--|
| 1. Static Water Level (±0.01 feet [ft.]) <u>16.06</u> | 7. Purge Rate (mL/min) <u>300</u>                        |
| 2. Intake Depth (±0.01 ft.) <u>25</u>                 | 8. Water Level Measuring Equip. <u>GEOTECH</u>           |
| 3. Bottom of casing (±0.01 ft.) <u>-</u>              | 9. Purge Equipment Used <u>PERISTALTIC</u>               |
| 4. Casing Diameter (inches) <u>2</u>                  | 10. Dedicated? (Yes/No) Yes / <u>No</u>                  |
| 5. Actual Volume of Water Purged (mL) <u>4500</u>     | 11. Immiscible layer observed Yes / <u>No</u>            |
| 6. Purge Water Characteristics:                       | 12. Thickness of immiscible layer <u>N/A</u>             |
| Odor <u>NONE</u> Turbidity <u>LOW</u>                 | 13. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |
| Color <u>CLEAR</u>                                    |  |

Time	Volume Purged (mL)	Temp (°C)	Conductivity (µs/cm)	ORP (mV)	D.O. (mg/L)	Turbidity (NTU)	pH	Drawdown	Notes
1150	-	23.5	6561	206.0	2.97	2.18	6.46	16.73	
1153	900	23.0	6684	182.3	0.72	1.78	6.48	17.18	
1156	1800	22.9	6773	171.8	0.48	2.03	6.47	17.32	
1159	2700	23.0	6791	166.7	0.38	2.26	6.47	17.40	
1202	3600	22.9	6799	163.1	0.32	2.39	6.47	17.44	
1205	4500	23.0	6817	158.2	0.27	2.97	6.47	17.49	

- |   |  |   |
|---|--|---|
| 1. Well evacuated to dryness? Yes / <u>No</u>           | 7. Time to recharge (min): <u>N/A</u>                | 11. Decontamination Procedures: <u>Alconox/DI Rinse</u> |
| 2. Sample Filtered? Yes / <u>No</u>                     | 8. Sample Time: <u>1205</u>                          | 12. Instrument type: YSI ProDSS                         |
| 3. Sampling Equip. Used <u>PERISTALTIC</u>              | 9. Parameter/Container/Pres. <u>See Attached COC</u> | Calibration Date: <u>LAB</u>                            |
| 4. Drive Gas (Air/Nitrogen) <u>AIR / NITROGEN / N/A</u> |  | Calibration Time: <u>LAB</u>                            |
| 5. Sample Rate (mL/min) <u>300</u>                      |  | Std.    Reading    Adjust.                              |
| 6. Sample Appearance:                                   | 10. Other Information:                               | pH  |
| Turbidity <u>LOW</u>                                    |  | Conduct.  |
| Color <u>CLEAR</u>                                      |  | ORP   |
| Odor <u>NONE</u>  |  | D.O.  |
|   |  | Turbidity   |

See attached Lab Form for Calibration Data



Calibrated at Geotech's Texas service center

1600 North I 35E Suite 114

Carrollton, TX 75006

(800) 276-5325 Fax: (972) 245-8889

# YSI Pro DSS Calibration Certificate

Unit Number: 7127

Calibration Date 11/6/2023

Serial Number: 20F161183

Technician: Justin Kolkmeier

Installed Probes

- Conductivity
- PH/ORP
- DO
- TURB

- Display is clear, and free of damage
- Cable and accessories are free of damage
- Firmware version is up to date.

Display Battery 100 % **Pass**  
 Cable Flex Test: **Pass**

Cable Length 10M pH/ORP Serial # 20J104455  
 Cable Lot # 20J101927 DO Probe Serial # 23F106855  
 Cond Probe Lot # 23F101911 Turb Probe Serial # 20H103765  
 Bath Temp 22.5 °C  
 Meter Temp 22.6 °C  
 Variance 0.10 **Pass**

Cond				
Calibration	Reading		Buffer Lot #	Exp. Date
1.413 mS	1.413 mS	<b>Pass</b>	3GG0695	7/24 <b>Pass</b>

pH						
Point Test	Calibration	Reading	mV	Slope	Buffer Lot #	Exp. Date
2 Point	pH 7.00	pH 7.00	-30 mV			2/25 <b>Pass</b>
	pH 4.00	pH 4.00	147 mV	177 <b>Pass</b>	3GB340	2/25 <b>Pass</b>

ORP				
Calibration	Reading		Buffer Lot #	Exp. Date
220 mV	220 mV	<b>Pass</b>	3GE0761	2/24 <b>Pass</b>

Turbidity									
Zero	Reading	Variance		Cal	Reading	Variance		Buffer Lot #	Exp. Date
0 ntu	0 ntu	0 ntu	<b>Pass</b>	124 ntu	123.8 ntu	0.2%	<b>Pass</b>	23A23030136	1/24 <b>Pass</b>

DO						
Barometer	Calibration	Reading	Variance		Test Fluid	
746.1 mmHg	98.2 %	98.3 %	0.1%	<b>Pass</b>	Water Saturated Air	
Time:	Min.	Sec.	Reading		Nitrogen Lot #	
	5	0	1 %	<b>Pass</b>		

Geotech Environmental Equipment, Inc. takes pride in ensuring this instrument is tested to function as specified by the manufacturer and was calibrated in accordance to manufacturer specifications. All calibration standards used are NIST traceable. With the provided lot numbers we can provide NIST documents on request. Call us at (800) 833-7958 and we will be glad to help.

# **Appendix C**

## **Lab Results Summary Tables**

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Sample Location:					MNW-18 (UPGRADIENT)																				
Compliance Phase:					Background									Initial A.M.			Assessment Monitoring								
Sample Dates:					5/3/2017	5/30/2017	6/13/2017	6/27/2017	7/19/2017	8/23/2017	8/31/2017	9/7/2017	3/20/2018	6/8/2018	1/16/2019	6/26/2019	12/17/2019	6/16/2020	2/9/2021	7/13/2021	7/19/2022	12/12/2022	8/27/2023	11/15/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Appendix III</b>																									
Boron	mg/L	N/A	0.598	0.0601	0.08	0.45	0.44	0.44	0.43	0.44	0.54	0.44	0.30	-	ND	ND	0.297	-	0.485	0.422	0.0451J	0.358	0.331	0.262	0.321
Calcium	mg/L	N/A	538	0.127	0.5	301	330	350	394	440	447	444	439	-	396	316	104.0	-	322	299	<0.127	299	139	142	159
Chloride	mg/L	N/A	650	1.78	2.5	547	590	543	534	544	529	521	529	-	491	504	146	-	437	369	383	386	188	208	216
Fluoride	mg/L	4	0.25	0.065	0.25	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	ND	ND	2.01	ND	0.138	ND	0.120J	0.158J	0.223J	0.105J	0.139J	0.185J
pH, Field	SU	N/A	6.01-7.67		7.39	7.16	6.95	6.84	6.68	6.70	6.55	6.47	6.86	6.75	6.94	6.56	7.0	6.4	6.8	6.69	6.89	7.27	7.20	7.20	6.97
Sulfate	mg/L	N/A	2,980	1.89	2.5	1,470	1,790	1,790	1,960	2,150	2,090	2,120	2,200	-	1,890	1,720	520	-	1,480	1,300	1,430	1,210	648	741	748
Total Dissolved Solids	mg/L	N/A	4,920	10	10	3,050	3,460	3,670	3,680	4,050	3,920	4,020	4,070	-	3,730	3,750	1,270	-	3,160	2,080	2,880	2,750	1,560	1,650	1,710
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.002	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	0.00184J	0.0014J	0.00158J
Arsenic	mg/L	0.01	0.00282	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0016	0.0014	0.00255	<0.000313	0.00282	0.00129	0.00136	0.00114
Barium	mg/L	2	0.06	0.00314	0.01	0.05	0.05	0.05	0.06	0.06	0.06	0.05	0.05	ND	-	-	-	0.0142	0.0477	0.0467	<0.00160	0.0432	0.00404J	0.00421J	0.00541J
Beryllium	mg/L	0.004	0.000274	0.000274	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	0.000184	<0.000182	<0.000274	<0.000274	<0.000274	<0.000274
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	ND	ND	ND	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217
Chromium	mg/L	0.1	0.00617	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	0.0	0.00249	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153
Cobalt	mg/L	0.006	0.00026	0.000261	0.0005	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ND	ND	ND	ND	ND	0.000561	0.00226	<0.000134	0.00135	<0.000261	<0.000261	<0.000261
Lead	mg/L	0.015	0.01	0.000376	0.001	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	ND	<0.000128	<0.000128	0.000183J	<0.000167	<0.000376	<0.000376
Lithium	mg/L	0.552	0.543	0.00129	0.005	0.39	0.41	0.48	0.45	0.44	0.44	0.4	0.36	0.443	0.417	0.403	0.2	0.197	0.365	0.332	<0.00339	0.333	0.213	0.196	0.252
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610
Radium-226/228	pCi/L	10.1	9.82	0.515	5	3.5	3.3	4.8	6.1	5.1	6.700	7.6	7.2	4.65	4.79	3.72	0.47	0.662	4.25	4.610	4.59	4.44	0.999	0.456	0.759
Selenium	mg/L	0.05	0.01	0.000739	0.005	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739
Thallium	mg/L	0.002	0.002	0.000472	0.001	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	ND	ND	ND	ND	<0.000148	<0.000148	<0.000472	<0.000472	<0.000472	<0.000472

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					SFL MW-4																				
Compliance Phase:					Background								Initial A.M.		Assessment Monitoring										
Sample Dates:					6/23/2016	8/25/2016	10/19/2016	12/22/2016	2/22/2017	5/2/2017	6/14/2017	8/22/2017	3/20/2018	6/12/2018	1/6/2019	6/26/2019	12/17/2019	6/16/2020	2/10/2021	7/13/2021	7/19/2022	12/12/2022	6/26/2023	11/15/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Appendix III</b>																									
Boron	mg/L	N/A	0.598	0.120	0.16	0.6	0.6	0.69	0.61	0.55	0.58	0.59	0.55	-	ND	ND	0.7	-	0.711	0.648	0.809	0.677	0.748	0.494	0.797
Calcium	mg/L	N/A	538	0.127	0.5	799	768	826	858	721	735	780	740	-	673	714	801	-	759	704	752	48.9	220	371	160
Chloride	mg/L	N/A	650	3.57	5	1,690	1,680	1,750	1,670	1,730	1,730	1,740	1,730	-	1,410	1,640	1,660	-	1,760	1,580	1,560	19.1	556	1,310	1,440
Fluoride	mg/L	4	0.25	0.026	0.1	0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	ND	ND	1.7	ND	ND	ND	<0.130	0.204J	0.484	0.315	0.123	0.0824J
pH, Field	SU	N/A	6.01-7.67			6.38	5.94	6.18	6.45	6.35	6.17	5.98	6.01	6.31	6.17	6.27	6.15	6.5	5.8	6.5	6.12	7.37	6.91	6.69	6.15
Sulfate	mg/L	N/A	2,980	3.78	5	2,150	2,100	2,190	2,100	2,230	2,280	2,280	2,240	-	2,010	2,220	2,080	-	2,320	1,870	2,390	174	791	1,720	2,010
Total Dissolved Solids	mg/L	N/A	4,920	10	10	6,200	6,160	5,850	6,000	6,000	5,700	5,700	5,900	-	6,470	6,170	5,310	-	6,010	5,720	5,770	411	1,110	474	5,360
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.002	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	0.000534J	0.000971J	<0.000967	<0.000967
Arsenic	mg/L	0.01	0.00282	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.000313	0.000786J	0.00106	0.0013	0.000601J	0.000601J
Barium	mg/L	2	0.06	0.00314	0.01	0.04	0.03	0.03	0.03	0.02	0.03	0.02	0.02	ND	-	-	-	0.023	0.024	0.0247	0.0262	0.0201	0.0275	0.0281	0.00488J
Beryllium	mg/L	0.004	0.000274	0.000274	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000182	<0.000182	<0.000274	<0.000274	<0.000274	<0.000274
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	ND	ND	ND	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217
Chromium	mg/L	0.1	0.00617	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00153	<0.00153	0.00379	<0.00153	<0.00153	<0.00153
Cobalt	mg/L	0.006	0.00026	0.000261	0.0005	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	ND	ND	ND	ND	ND	ND	<0.000134	<0.000134	<0.000261	<0.000261	<0.000261	0.00037J
Lead	mg/L	0.015	0.01	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	ND	<0.000128	<0.000128	<0.000167	<0.000167	<0.000167	<0.000376
Lithium	mg/L	0.552	0.543	0.00129	0.005	0.48	0.49	0.52	0.58	0.45	0.42	0.48	0.34	0.478	0.348	0.401	0.377	0.418	0.432	0.402	0.401	0.02	0.124	0.236	0.453
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	0.00106J	0.00208J	0.00196J	0.00234J	0.0017J	<0.000610
Radium-226/228	pCi/L	10.1	9.82	0.817	5	6.85	5.28	4.2	0.4	3.2	1,500	2.6	2.1	1.65	1.81	1.18	1.28	1.28	1.26	1.120	1.66	0.447U	0.752	0.216	2.43
Selenium	mg/L	0.05	0.01	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	0.00124J
Thallium	mg/L	0.002	0.002	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	ND	ND	ND	ND	ND	ND	<0.000148	<0.000148	<0.000472	<0.000472	<0.000472	<0.000472

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					SFL MW-7																					
Compliance Phase:					Background									Initial A.M.			Assessment Monitoring									
Sample Dates:					5/11/2017	5/31/2017	6/14/2014	6/28/2017	7/20/2017	8/23/2017	8/31/2017	9/7/2017	3/20/2018	6/12/2018	1/16/2019	6/26/2019	12/17/2019	6/16/2020	2/10/2021	7/13/2021	9/12/2022	12/12/2022	6/26/2023	11/15/2023		
Constituent	Unit	MCL	Site BTV	MDL	RDL																					
<b>Field Parameters</b>																										
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Appendix III</b>																										
Boron	mg/L	N/A	0.598	0.301	0.40	0.75	0.78	0.76	0.73	0.83	0.92	0.7	0.59	-	ND	ND	0.879	-	0.832	0.792	0.795	0.832	0.916	0.759	0.812	
Calcium	mg/L	N/A	538	0.127	0.5	678	654	662	620	664	693	628	613	-	591	523	588	-	643	400	395	475	451	431	450	
Chloride	mg/L	N/A	650	3.57	5	2,870	2,740	2,800	2,850	2,780	2,810	2,770	2,820	-	2,600	2,580	2,700	-	2,880	1,920	1,900	2,020	1,900	2,000	1,930	
Fluoride	mg/L	4	0.25	0.026	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	ND	ND	2.62	ND	ND	ND	ND	<0.130	0.190J	0.0599J	0.0881J	0.099J	0.0928J
pH, Field	SU	N/A	6.01-7.67		6.37	6.43	6.17	6.32	6.34	6.21	6.11	6.24	-	6.47	6.69	6.79	6.7	6.01	6.64	6.34	6.58	6.45	6.43	6.47		
Sulfate	mg/L	N/A	2,980	0.756	1	811	778	779	787	770	801	768	770	-	743	694	630	-	816	576	672	528	662	667	626	
Total Dissolved Solids	mg/L	N/A	4,920	40	40	7,260	6,810	6,460	6,620	6,640	6,230	6,650	6,810	-	6,840	6,090	5,410	-	5,830	4,430	4,200	4,120	4,160	4,440	4,220	
<b>Appendix IV</b>																										
Antimony	mg/L	0.006	0.002	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	0.000579J	<0.000378	0.000978J	<0.000506	<0.000967	0.00102J	
Arsenic	mg/L	0.01	0.00282	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.000313	0.000479J	<0.000282	0.000308J	<0.000282		
Barium	mg/L	2	0.06	0.00314	0.01	0.04	0.04	0.03	0.03	0.04	0.03	0.03	0.04	ND	-	-	-	0.037	0.0342	0.051	0.0476	0.102	0.053	0.0497	0.0253	
Beryllium	mg/L	0.004	0.000274	0.000274	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000182	<0.000274	<0.000274	<0.000274	<0.000274	<0.000274	
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	ND	ND	ND	<0.000217	<0.000217	0.000250J	<0.000217	<0.000217	<0.000217	
Chromium	mg/L	0.1	0.00617	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	
Cobalt	mg/L	0.006	0.00026	0.000261	0.0005	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ND	ND	ND	ND	ND	ND	<0.000134	<0.000134	<0.000261	<0.000261	<0.000261	<0.000261	
Lead	mg/L	0.015	0.01	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	ND	0.000211J	<0.000128	0.000208J	<0.000167	<0.000376	<0.000376	
Lithium	mg/L	0.552	0.543	0.00129	0.005	0.46	0.45	0.5	0.46	0.43	0.4	0.4	0.37	0.466	0.379	0.388	0.408	0.45	0.447	0.375	0.389	0.401	0.437	0.372	0.389	
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	<0.000610	<0.000610	0.00173J	<0.000610	<0.000610	<0.000610	
Radium-226/228	pCi/L	10.1	9.82	0.634	5	1.9	4.4	2.3	2.6	2.6	3.4	1.4	2.9	1.98	2	2.36	2.2	1.96	1.99	2.56	2.77	1.98	3.14	2.62	2.26	
Selenium	mg/L	0.05	0.01	0.000739	0.005	<0.01	0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739	
Thallium	mg/L	0.002	0.002	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	ND	ND	ND	ND	<0.000148	<0.000148	<0.000472	<0.000472	<0.000472	<0.000472	

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					SFL MW-6 (UPGRADIENT)																					
Compliance Phase:					Background									Initial A.M.		Assessment Monitoring										
Sample Dates:					8/23/2016	8/25/2016	10/19/2016	12/21/2016	2/22/2017	5/3/2017	6/13/2017	8/23/2017	3/20/2018	6/8/2018	1/15/2019	6/27/2019	12/17/2019	6/16/2020	2/9/2021	7/13/2021	7/19/2022	12/12/2022	6/26/2023	11/15/2023		
Constituent	Unit	MCL	Site BTV	MDL	RDL																					
<b>Field Parameters</b>																										
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	3.95	4.07	3.9	4.16	3.9	3.82	3.76	3.70	3.89	3.82	4.11
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	1,310	1,330	1,280	1,350	1,330	1,230	10,492	12,607	16,932	19,536	13,673	21,021
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.9	0	8.9	2.2	28.1	41.50	4.54	17.55	3.49	6.52	2.78
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.84	0	3.14	1.57	0.79	0.25	0.30	0.41	0.29	0.13	0.37
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	21.05	26.54	19.96	26	18.99	28.65	20.6	25.5	26.6	23.6	24.7	22.1
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	463	478	443	488	418	471	435.5	454.5	410.4	16.6	114.8	-0.5
<b>Appendix III</b>																										
Boron	mg/L	N/A	0.620	0.0601	0.08	0.5	0.39	0.41	0.4	0.24	0.3	0.16	0.35	-	ND	ND	0.29	-	0.384	0.329	0.38	0.32	0.554	0.258	0.428	
Calcium	mg/L	N/A	1,510	0.254	1.0	910	929	983	977	852	955	892	864	-	915	824	800	-	950	953	937	1400	1510	363	1470	
Chloride	mg/L	N/A	4,070	7.13	10	3,350	3,470	3,500	3,580	3,570	3,560	3,640	3,730	-	3,670	3,490	3,240	-	3,760	3,310	3,340	4,810	6,800	3,960	7,020	
Fluoride	mg/L	4	1.16	0.026	0.1	0.7	0.8	0.8	0.8	0.9	0.8	0.7	0.7	ND	ND	8.72	ND	ND	0.531J	0.527J	1.08	1.04	1.03	1.4		
pH, Field	SU	N/A	3.5-4.46			4.4	3.84	4.15	3.92	4.21	3.99	3.99	3.98	3.94	3.95	4.07	3.91	4.16	3.9	3.82	3.76	3.70	3.89	3.82	4.11	
Sulfate	mg/L	N/A	2,890	7.56	10	2,230	2,240	2,170	2,120	2,260	2,260	2,330	2,470	-	2,520	2,500	1,870	-	2,350	2,070	2,190	2,830	2,200	2,530	2,260	
Total Dissolved Solids	mg/L	N/A	14,400	100	100	8,650	8,850	8,170	8,640	8,790	8,020	9,200	8,260	-	6,330	8,850	7,040	-	11,000	8,350	7,420	12,000	14,300	10,000	11,200	
<b>Appendix IV</b>																										
Antimony	mg/L	0.006	0.00108	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	0.00108J	<0.000967	<0.000967	
Arsenic	mg/L	0.01	0.0431	0.000282	0.001	0.02	0.01	<0.01	<0.01	0.01	0.02	<0.01	0.01	ND	-	-	-	0.02	0.01	0.0135	0.0125	0.0214	0.0351	0.045	0.0433	
Barium	mg/L	2	0.0826	0.00314	0.01	0.30	0.08	0.06	0.05	0.04	0.03	0.04	0.04	ND	-	-	-	0.0247	0.0309	0.0537	0.0376	0.039	0.0487	0.0356	0.051J	
Beryllium	mg/L	0.004	0.0933	0.000274	0.001	0.028	0.049	0.051	0.047	0.056	0.054	0.047	0.056	0.0599	0.0449	0.0418	0.0496	0.052	0.0503	0.0489	0.0463	0.0646	0.0933	0.0534	0.0964	
Cadmium	mg/L	0.005	0.0144	0.000217	0.001	0.007	0.01	0.011	0.011	0.013	0.01	0.011	0.012	0.00875	0.00942	0.00955	0.01	0.0118	0.0104	0.0105	0.0104	0.0124	0.00497	0.00321	0.00213	
Chromium	mg/L	0.1	0.011	0.00153	0.002	0.01	<0.01	0.01	0.011	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.00797	ND	0.00757	0.00551	0.00895	0.00593	0.00313	0.0154J	
Cobalt	mg/L	0.006	0.136	0.000261	0.0005	0.11	0.12	0.12	0.12	0.13	0.11	0.11	0.12	0.104	0.1	0.112	0.105	0.104	0.109	0.116	0.111	0.173	0.242	0.129	0.234	
Lead	mg/L	0.015	0.0171	0.000376	0.001	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0054	ND	0.00549	0.0	0.0171	0.0115	0.015	0.0109	0.0135	0.0109	0.00519	0.00264	
Lithium	mg/L	0.552	1.34	0.00129	0.005	0.55	0.8	0.88	0.93	0.74	0.72	0.69	0.56	0.739	0.597	0.619	0.663	0.64	0.709	0.614	0.64	0.868	1.34	0.644	1.43	
Mercury	mg/L	0.002	0.00158	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	0.00158	<0.000130	
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	
Radium-226/228	pCi/L	10.1	32.6	0.538	5	11.6	28.8	10.8	14.3	6.8	8.6	9	3.9	9.22	9.02	10.1	11.8	28.3	17.8	14.6	13.7	16.0	14.5	13.4	23.1	
Selenium	mg/L	0.05	0.0525	0.000739	0.005	<0.01	0.01	0.02	<0.01	0.01	0.01	<0.01	<0.01	ND	-	-	-	0.0525	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739	
Thallium	mg/L	0.002	0.00552	0.000472	0.001	0.004	0.002	0.004	0.003	0.004	0.003	0.004	0.003	0.00322	0.00305	0.00315	0.00264	0.0041	0.00333	0.00339	0.00329	0.00495	0.00489	0.00475	0.00437	

Notes:  
µS/cm - micro Siemens per centimeter  
BTV - Background Threshold Value  
MDL - Method Detection Limit  
RDL - Reporting Detection Limit  
NTU - Nephelometric Turbidity Unit  
mV - milli Volt  
mg/L - milligrams per liter.  
SU - standard units; pH is a field parameter.  
pCi/L - picocuries per liter.  
J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
-- - not analyzed.  
All metals were analyzed as total unless otherwise specified.



Sample Location:					SFL MW-2																				
Compliance Phase:					Background								Initial A.M.			Assessment Monitoring									
Sample Dates:					6/23/2016	8/25/2016	10/19/2016	12/22/2016	2/22/2017	5/3/2017	6/14/2017	8/23/2017	3/20/2018	6/12/2018	1/16/2019	6/26/2019	12/17/2019	6/16/2020	2/9/2021	7/13/2021	7/19/2022	12/12/2022	6/26/2023	11/15/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Appendix III</b>																									
Boron	mg/L	N/A	0.620	0.301	0.4	0.52	0.60	0.57	0.54	0.55	0.55	0.51	0.57	-	ND	ND	0.515	-	0.489	0.464	0.552	0.945	0.677	0.479	0.965
Calcium	mg/L	N/A	1,510	0.254	1	797	890	944	692	578	806	829	833	-	805	585	937.0	-	944	691	946	945	711	1,020	892
Chloride	mg/L	N/A	4,070	7.13	10	2,900	2,810	2,790	2,590	2,480	2,760	2,910	2,910	-	2,650	2,450	3,140	-	3,250	2,100	3,290	3,220	2,330	3,300	2,420
Fluoride	mg/L	4	1.16	0.026	0.1	0.3	0.1	0.2	0.3	0.4	0.3	0.3	0.3	ND	ND	ND	ND	ND	ND	0.190J	0.433J	0.268	0.207	0.25	0.196
pH, Field	SU	N/A	3.5-4.46			6.32	5.61	6.40	6.80	6.80	6.19	6.05	6.09	6.25	5.96	6.69	6.54	6.6	5.6	6.6	5.74	5.60	6.42	5.50	6.14
Sulfate	mg/L	N/A	2,890	7.56	10	2,010	1,900	1,980	1,770	1,740	1,810	1,890	1,890	-	1,720	1,480	1,720	-	1,760	1,290	1,890	2,000	1,400	2,050	1,570
Total Dissolved Solids	mg/L	N/A	14,400	66.7	66.7	7,950	7,680	6,480	6,830	6,630	6,720	6,940	7,120	-	8,340	6,090	7,630	-	6,970	5,730	6,760	8,070	5,820	7,990	6,290
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.00108	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	0.000968J	<0.000967	<0.000967
Arsenic	mg/L	0.01	0.0431	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0015	0.0016	0.00227	0.00147	0.00161	0.0017	0.00182	0.00213
Barium	mg/L	2	0.0826	0.00314	0.01	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.02	ND	-	-	-	0.0235	0.0262	0.0235	0.0265	0.0222	0.0208	0.0281	0.0211
Beryllium	mg/L	0.004	0.0933	0.000274	0.001	0.002	0.002	0.002	0.001	<0.001	0.002	0.002	0.003	ND	0.00475	ND	0.00444	0.00247	0.00722	0.00132	0.00626	0.00961	0.00105	0.00737	0.00179
Cadmium	mg/L	0.005	0.0144	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	0.00	0.00185	0.00277	0.000761J	0.00285	0.00303	0.000649J	0.0032	0.00122
Chromium	mg/L	0.1	0.011	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153
Cobalt	mg/L	0.006	0.136	0.000261	0.0005	0.02	0.02	0.02	0.06	<0.02	<0.02	<0.02	0.02	0.0112	0.0178	0.0103	0.0187	0.0136	0.0214	0.011	0.0159	0.0211	0.0104	0.0186	0.0219
Lead	mg/L	0.015	0.0171	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	ND	0.00132	0.000272J	0.00104	0.000199J	0.000782J	0.00118
Lithium	mg/L	0.552	1.34	0.00129	0.005	0.51	0.53	0.58	0.6	0.49	0.53	0.59	0.33	0.476	0.378	0.408	0.4	0.449	0.487	0.476	0.475	0.421	0.487	0.445	0.492
Mercury	mg/L	0.002	0.00158	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	0.00202J	<0.000610	<0.000610	0.00155J	<0.000610	0.00076J
Radium-226/228	pCi/L	10.1	32.6	0.731	5	11	20.6	12.9	6.6	7.1	7.20	8.4	9	7.46	8.33	6.91	7.57	6.53	8.27	8.220	8.1	11.0	6.76	8.49	7.92
Selenium	mg/L	0.05	0.0525	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739
Thallium	mg/L	0.002	0.00552	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	ND	0.00103	ND	ND	0.000612J	0.000865J	0.00076J	0.000634J	0.000881J	0.000658J

Notes:  
µS/cm - micro Siemens per centimeter  
BTV - Background Threshold Value  
MDL - Method Detection Limit  
RDL - Reporting Detection Limit  
NTU - Nephelometric Turbidity Unit  
mV - milli Volt  
mg/L - milligrams per liter.  
SU - standard units; pH is a field parameter.  
pCi/L - picocuries per liter.  
J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
-- - not analyzed.  
All metals were analyzed as total unless otherwise specified.



Sample Location:	SFL MW-3																						
Compliance Phase:	Background											Initial A.M.		Assessment Monitoring									
Sample Dates:	8/23/2016	8/25/2016	10/19/2016	12/22/2016	2/23/2017	5/2/2017	6/14/2017	8/22/2017	3/20/2018	6/12/2018	1/16/2019	6/26/2019	12/17/2019	6/16/2020	2/10/2021	7/13/2021	9/12/2022	12/12/2022	6/26/2023	11/15/2023			

Constituent	Unit	MCL	Site BTV	MDL	RDL	8/23/2016	8/25/2016	10/19/2016	12/22/2016	2/23/2017	5/2/2017	6/14/2017	8/22/2017	3/20/2018	6/12/2018	1/16/2019	6/26/2019	12/17/2019	6/16/2020	2/10/2021	7/13/2021	9/12/2022	12/12/2022	6/26/2023	11/15/2023			
<b>Field Parameters</b>																												
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	6,980	6,690	7,500	6,420	6,750	6,160	5,292	6,323	2,735	5,858	5,915	5,821			
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	40.6	25.8	9.5	1	0.3	0	1.01	4.04	21.02	3.02	8.78	3.96			
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0	0.48	0.97	0.52	0.54	0.06	0.00	0.00	0.55	0.22	0.10	0.24			
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	22.49	26.89	19.49	24.47	21.12	27.01	18.7	24.2	23.6	22.2	24.0	22.8			
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	410	407	345	392	3.57	432	335.4	402.0	343.8	303.6	429.0	353.9			
<b>Appendix III</b>																												
Boron	mg/L	N/A	0.620	0.601	0.8	2.40	2.50	2.87	2.81	2.54	2.49	2.93	2.64	-	3.8	3.06	3.850	-	3.67	3.75	3.87	5.00	4.88	4.81	4.82			
Calcium	mg/L	N/A	1,510	0.127	0.5	687	666	727	735	628	590	672	587	-	567	520	661.0	-	600	599	594	615	617	578	561			
Chloride	mg/L	N/A	4,070	0.713	1	1,560	1,490	1,480	1,480	1,440	1,390	1,440	1,390	-	1,040	1,140	1,090	-	1,090	897	946	829	794	809	747			
Fluoride	mg/L	4	1.16	0.026	0.1	0.8	0.7	0.5	0.6	0.6	0.6	0.6	0.6	ND	ND	1.49	ND	0.577	0.526	0.479J	0.427J	0.640	0.576	0.613	0.375			
pH, Field	SU	N/A	3.5-4.46			3.76	3.50	3.80	3.80	3.67	3.64	3.67	3.83	3.83	3.82	3.9	3.82	3.9	3.5	3.8	3.70	3.73	3.51	3.52	3.73			
Sulfate	mg/L	N/A	2,890	3.78	5	2,220	2,210	2,170	2,240	2,280	2,290	2,380	2,310	-	2,070	2,460	2,100	-	2,350	2,280	2,330	2,430	2,260	2,450	2,480			
Total Dissolved Solids	mg/L	N/A	14,400	40	40	5,940	5,660	5,010	5,640	5,440	5,130	4,710	5,260	-	5,540	5,240	4,480	-	5,180	5,040	4,990	4,920	4,760	4,900	4,880			
<b>Appendix IV</b>																												
Antimony	mg/L	0.006	0.00108	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	<0.000506	<0.000967	<0.000967			
Arsenic	mg/L	0.01	0.0431	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0056	0.0032	0.00317	0.00303	0.00610	0.00367	0.00318	0.00297			
Barium	mg/L	2	0.0826	0.00314	0.01	0.04	0.06	0.05	0.03	0.02	0.03	0.03	0.07	ND	-	-	-	0.0136	0.0131	0.013	0.0133	0.0140	0.0147	0.0131	0.0239			
Beryllium	mg/L	0.004	0.0933	0.000274	0.001	0.042	0.04	0.034	0.037	0.04	0.034	0.037	0.038	0.0386	0.0308	0.0289	0.0334	0.0357	0.0335	0.0316	0.0315	0.0319	0.0336	0.0288	0.0309			
Cadmium	mg/L	0.005	0.0144	0.000217	0.001	0.009	0.01	0.008	0.008	0.008	0.008	0.007	0.008	0.00648	0.00641	0.0072	0.01	0.0069	0.0062	0.00587	0.00608	0.00569	0.00552	0.00523	0.00507			
Chromium	mg/L	0.1	0.011	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0024	ND	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153			
Cobalt	mg/L	0.006	0.136	0.000261	0.0005	0.07	0.07	0.07	0.1	0.07	0.07	0.07	0.07	0.0558	0.0598	0.0614	0.0622	0.0556	0.0598	0.0601	0.0606	0.0530	0.0537	0.0585	0.0518			
Lead	mg/L	0.015	0.0171	0.000376	0.001	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.0191	0.0183	0.0183	0.0178	0.0192	0.0206	0.0185	0.29	0.0177	0.0186	0.0173	0.0131			
Lithium	mg/L	0.552	1.34	0.00129	0.005	0.4	0.41	0.44	0.47	0.35	0.29	0.4	0.25	0.322	0.263	ND	0.3	0.325	0.296	0.291	0.00144	0.283	0.31	0.245	0.29			
Mercury	mg/L	0.002	0.00158	0.00013	0.0002	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.002	0.00182	0.00162	0.00176	0.00338	2.73	0.00191	0.00204	<0.000610	0.00129	0.00192	0.000635	0.000904			
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	<0.000610	<0.00151	<0.000610	<0.000610	<0.000610	<0.000610			
Radium-226/228	pCi/L	10.1	32.6	0.493	5	8.19	16.6	10	5.8	7.6	6.900	5	6.1	4.4	4.48	4.62	5.43	3.74	3.65	4.220	4.97	5.74	3.04	3.96	3.74			
Selenium	mg/L	0.05	0.0525	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0	ND	<0.00151	0.427J	0.0410	0.00117J	0.00107J	0.00118J			
Thallium	mg/L	0.002	0.00552	0.000472	0.001	0.007	0.006	0.006	0.006	0.006	0.006	0.006	0.007	0.00549	0.00552	0.00605	0.0045	0.00634	0.00586	0.00556	0.00538	0.00581	0.00568	0.00541	0.00407			

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					SFL MW-5																					
Compliance Phase:					Background							Initial A.M.		Assessment Monitoring												
Sample Dates:					8/23/2016	8/25/2016	10/19/2016	12/21/2016	2/23/2017	5/3/2017	6/14/2017	8/23/2017	3/20/2018	6/8/2018	1/16/2019	6/26/2019	12/17/2019	6/16/2020	2/9/2021	7/13/2021	7/20/2022	12/12/2022	6/26/2023	11/15/2023		
Constituent	Unit	MCL	Site BTV	MDL	RDL																					
<b>Field Parameters</b>																										
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	4.7	4.43	4.64	4.4	4.91	4.27	4.64	4.24	4.30	4.45	3.98	4.45
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	1,140	1,160	1,150	1,070	1,170	1,110	8,840	10,864	10,698	10,393	10,650	10,279
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	7.3	0	0	8.6	4.5	11.01	4.88	3.00	3.28	29.14	3.40
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.69	3.03	2.97	0.74	0.41	0.19	0.00	0.70	0.31	0.14	0.36
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	21.98	27.13	18.52	24.09	21.37	25.3	21.4	23.3	23.7	22.5	23.4	21.6
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	367	388	359	363	308	356	353.9	400.4	408.9	138.8	360.1	369.1
<b>Appendix III</b>																										
Boron	mg/L	N/A	0.620	0.0601	0.08	3.5	3.6	3.74	3.93	2.98	3.97	4.18	4.12	-	4.42	4.08	6.04	-	5.35	4.34	5.1	2.8	4.42	5.56	4.53	
Calcium	mg/L	N/A	1,510	0.254	1.0	878	906	903	944	755	883	899	864	-	873	715	857	-	812	837	816	829	812	338	931	
Chloride	mg/L	N/A	4,070	7.1	10	2,990	2,950	3,070	3,160	3,020	3,040	3,160	3,190	-	3,010	2,880	3,180	-	3,000	2,340	2,930	2,890	2,680	2,800	2,650	
Fluoride	mg/L	4	1.16	0.026	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	ND	ND	5.89	ND	ND	ND	ND	<0.260	0.342J	0.122	0.126	0.17	0.0841J
pH, Field	SU	N/A	3.5-4.46			5.05	4.34	4.7	4.48	5.1	4.49	4.44	4.58	4.67	4.43	4.64	4.4	4.91	4.27	4.64	4.24	4.30	4.45	3.98	4.45	
Sulfate	mg/L	N/A	2,890	7.56	10	2,150	2,090	2,100	2,170	2,120	2,150	2,220	2,240	-	2,290	2,070	2,100	-	2,190	1,720	2,330	2,250	2,010	2,380	2,180	
Total Dissolved Solids	mg/L	N/A	14,400	66.7	66.7	8,350	7,960	7,530	7,910	7,530	7,380	7,600	7,520	-	7,470	7,300	6,890	-	7,250	7,820	8,110	7,930	7,540	7,820	7,540	
<b>Appendix IV</b>																										
Antimony	mg/L	0.006	0.00108	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	0.00118J	<0.000967	<0.000967	
Arsenic	mg/L	0.01	0.0431	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.00234	0.00145	0.0033	0.00151	0.00157	0.0021	0.00176	0.00231	
Barium	mg/L	2	0.0826	0.00314	0.01	0.04	0.08	0.06	0.03	0.02	0.03	0.02	0.02	ND	-	-	-	0.0209	0.0192	0.0212	0.0179	0.0157	0.0199	0.0175	0.0172	
Beryllium	mg/L	0.004	0.0933	0.000274	0.001	0.008	0.011	0.01	0.01	0.01	0.012	0.011	0.01	ND	0.0105	0.00885	0.0123	0.0101	0.0113	0.00918	0.0104	0.0103	0.00942	0.0111	0.00893J	
Cadmium	mg/L	0.005	0.0144	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.006	ND	0.00538	0.00531	0.00511	0.00509	0.00564	0.00385	0.0047	0.00426	0.00388	0.00482	0.0042	
Chromium	mg/L	0.1	0.011	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	0.00241	0.00441	0.0044	0.00327	0.00181J	<0.00153	<0.00153	
Cobalt	mg/L	0.006	0.136	0.000261	0.0005	0.07	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.0398	0.0486	0.0492	0.0559	0.0453	0.0512	0.045	0.0515	0.0493	0.0458	0.054	0.0455	
Lead	mg/L	0.015	0.0171	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	0.00459	0.00102	ND	0.000725J	0.000721J	0.000527J	0.000606J	0.000716J	0.000434J	
Lithium	mg/L	0.552	1.34	0.00129	0.005	0.66	0.79	0.9	0.99	0.72	0.79	0.92	0.62	0.685	0.629	0.643	0.643	0.67	0.704	0.677	0.645	0.594	0.696	0.624	0.751	
Mercury	mg/L	0.002	0.00158	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	0.00180J	<0.000610	<0.000610	0.00103J	<0.000610	<0.000610	
Radium-226/228	pCi/L	10.1	32.6	0.464	5	7.52	25.6	11.5	8.7	11.9	9.9	11.6	12.3	12.1	9.65	11.3	11.2	12.1	11.5	13.5	13.6	12.3	9.46	14.3	14	
Selenium	mg/L	0.05	0.0525	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.00989	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739	
Thallium	mg/L	0.002	0.00552	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	ND	0.00115	0.00136	0.00118	0.0012	0.00133	0.00115	0.00125	0.00128	0.000992J	

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					MNW-15																					
Compliance Phase:					Background									Initial A.M.		Assessment Monitoring										
Sample Dates:					5/2/2017	5/31/2017	6/14/2017	6/28/2017	7/20/2017	8/22/2017	8/31/2017	9/7/2017	3/20/2018	6/12/2018	1/16/2019	6/26/2019	12/17/2019	6/16/2020	2/9/2021	7/13/2021	9/12/2022	12/12/2022	6/26/2023	11/15/2023		
Constituent	Unit	MCL	Site BTV	MDL	RDL																					
<b>Field Parameters</b>																										
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Appendix III</b>																										
Boron	mg/L	N/A	0.620	1.2	1.6	9.51	8.75	8.62	9.67	9.38	9.22	9.43	9.26	-	11.8	8.56	9.64	-	8.30	9.06	8.44	12.8	9.76	8.34	10.3	
Calcium	mg/L	N/A	1,510	0.127	0.5	280	269	256	263	275	254	264	260	-	249	244	272	-	327	325	304	337	328	310	311	
Chloride	mg/L	N/A	4,070	0.713	1	730	704	688	734	704	718	721	740	-	581	667	578	-	654	584	669	652	632	633	609	
Fluoride	mg/L	4	1.16	0.026	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	ND	ND	1.04	0.718	1.03	0.794	0.84	0.617	0.738	0.608	0.657	0.419	
pH, Field	SU	N/A	3.5-4.46			3.7	3.64	3.53	3.48	3.46	3.42	3.32	3.48	3.61	3.65	3.7	3.44	3.78	3.21	3.63	3.57	3.59	3.34	3.34	3.53	
Sulfate	mg/L	N/A	2,890	3.78	5	1,270	1,230	1,190	1,290	1,240	1,250	1,260	1,280	-	1,250	1,310	1,210	-	1,370	1,350	1,480	1,450	1,350	1,410	1,450	
Total Dissolved Solids	mg/L	N/A	14,400	40	40	2,540	2,720	2,620	2,580	2,690	2,620	2,700	2,750	-	2,940	3,030	2,690	-	3,170	6,150	4,100	3,540	3,120	3,190	3,180	
<b>Appendix IV</b>																										
Antimony	mg/L	0.006	0.00108	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	<0.000506	<0.000967	<0.000967
Arsenic	mg/L	0.01	0.0431	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0114	0.00624	0.00774	0.00734	0.0153	0.00977	0.00752	0.00706
Barium	mg/L	2	0.0826	0.00314	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.03	ND	-	-	-	0.016	0.0171	0.0175	0.0159	0.0171	0.0179	0.016	0.0174	
Beryllium	mg/L	0.004	0.0933	0.000274	0.001	0.077	0.071	0.072	0.068	0.074	0.073	0.067	0.0792	0.0619	0.0606	0.0818	0.091	0.088	0.0902	0.0789	0.0884	0.0924	0.0769	0.00464		
Cadmium	mg/L	0.005	0.0144	0.000217	0.001	0.093	0.106	0.116	0.089	0.091	0.084	0.088	0.089	0.0895	0.0886	0.0945	0.03	0.0313	0.0388	0.0421	0.0393	0.0409	0.0414	0.0349	0.033	
Chromium	mg/L	0.1	0.011	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	0.0579	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	
Cobalt	mg/L	0.006	0.136	0.000261	0.0005	0.27	0.28	0.26	0.3	0.29	0.29	0.29	0.29	0.253	0.281	0.297	0.359	0.3	0.315	0.356	0.349	0.336	0.313	0.34	0.322	
Lead	mg/L	0.015	0.0171	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	0.00297	ND	ND	0.00225	0.000555J	0.000404J	0.000577J	0.000561J	0.000483J	<0.000376	
Lithium	mg/L	0.552	1.34	0.00129	0.005	0.09	0.07	0.11	0.08	0.06	0.05	0.05	0.05	ND	0.0701	ND	0.0898	0.108	0.106	0.111	0.102	0.104	0.113	0.0895	0.104	
Mercury	mg/L	0.002	0.00158	0.00013	0.0002	<0.001	<0.001	0.012	<0.001	<0.001	<0.001	<0.001	<0.001	0.000949	0.000396	0.000942	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	
Molybdenum	mg/L	0.1	0.00061	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	
Radium-226/228	pCi/L	10.1	32.6	0.636	5	0.7	0.3	1.2	1.5	0.8	0.3	2.1	1.9	0.446	0.39	0.619	0.29	0.414	0.167	0.577	0.525	1.44	0.977	0.408	0.104	
Selenium	mg/L	0.05	0.0525	0.000739	0.005	<0.01	0.03	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0345	ND	<0.00151	<0.00151	0.109	<0.000739	<0.000739	0.000866J	
Thallium	mg/L	0.002	0.00552	0.000472	0.001	<0.002	0.002	0.002	<0.002	<0.002	0.002	<0.002	0.002	0.00232	0.00233	0.00248	ND	ND	ND	0.000739J	0.000901J	0.00101	0.000976J	0.000884J	<0.000472	

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.





Sample Location:					SSP/AP MW-1 (UPGRADIENT)																					
Compliance Phase:					Background								Initial A.M.				Assessment Monitoring									
Sample Dates:					6/21/2016	8/23/2016	10/17/2016	12/20/2016	2/21/2017	5/3/2017	6/12/2017	8/23/2017	3/21/2018	6/9/2018	1/15/2019	6/27/2019	12/18/2019	6/17/2020	2/9/2021	7/12/2021	7/19/2022	12/13/2022	6/26/2023	11/14/2023		
Constituent	Unit	MCL	Site BTV	MDL	RDL																					
<b>Field Parameters</b>																										
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Appendix III</b>																										
Boron	mg/L	N/A	1.41	0.0601	0.08	1.10	1.00	0.93	0.83	0.77	0.81	0.74	0.81	-	ND	1.43	0.81	-	0.8	0.69	0.757	0.686	0.793	0.662	0.735	
Calcium	mg/L	N/A	745	0.254	1	659	683	673	685	617	681	666	653	-	647	563	659	-	643	667	619	722	638	262	623	
Chloride	mg/L	N/A	1,750	7.13	10	1390	1460	1540	1500	1530	1550	1600	1600	-	1480	1500	1640	-	1730	1520	1460	1530	1560	1560	1610	
Fluoride	mg/L	4	0.5	0.026	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	ND	ND	ND	ND	ND	ND	ND	<0.130	0.423J	0.105J	0.0712J	0.149	0.0325J
pH, Field	SU	N/A	5.25-6.32			5.9	5.93	6.03	6.01	5.56	5.80	5.73	5.80	5.69	5.73	5.9	5.97	6.06	5.42	5.77	5.60	5.80	5.60	5.67	5.49	
Sulfate	mg/L	N/A	3,300	7.56	10	2,890	2,950	2,960	2,760	2,900	3,050	3,060	3,070	-	3,160	3,070	2,980	-	3,210	2,920	3,050	3,060	3,080	3,190	3,050	
Total Dissolved Solids	mg/L	N/A	8,340	50	50	6,950	6,800	6,750	6,470	6,520	6,460	6,720	6,530	-	6,700	7,060	7,240	-	7,890	5,630	5,930	7,380	7,170	7,690	7,170	
<b>Appendix IV</b>																										
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	0.000721J	0.000732J	0.00157J	0.000582J	<0.000967	0.00161J
Arsenic	mg/L	0.01	0.01	0.000282	0.001	<0.01	<0.01	0.01	0	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	0.0	ND	0.0019	0.00169	0.00501	0.00415	0.00309	0.0022	0.00152	0.0015
Barium	mg/L	2	0.19	0.00314	0.01	0.05	0.05	<0.1	0.07	0.05	0.04	0.06	0.05	ND	-	-	-	0.025	0.0284	0.184	0.0638	0.068	0.0265	0.0289	0.0249	
Beryllium	mg/L	0.004	0.002	0.000274	0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.001	ND	ND	ND	ND	ND	ND	ND	0.00157	0.00101	0.000706J	0.000584J	0.000506J	0.000779J
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	ND	ND	ND	ND	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217
Chromium	mg/L	0.1	0.00248	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	0.00248	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ND	ND	ND	ND	ND	ND	ND	0.00174	0.000649	0.000521	<0.000261	0.000482J	0.000479J
Lead	mg/L	0.015	0.0106	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	ND	0.001	0.0106	0.00343	0.00378	0.000702J	0.000431J	0.000404J
Lithium	mg/L	0.552	1.69	0.00258	0.01	1.36	1.15	1.3	1.28	1.21	1.5	1.51	1.35	2.15	1.21	1.25	1.39	1.05	1.43	1.23	1.24	1.24	1.51	0.6	1.33	
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	-	-	-	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	0.00199J	0.000961J	0.00112J	<0.000610	0.000884J	0.000644J	
Radium-226/228	pCi/L	10.1	3.9	0.626	5	2.6	2.92	2.2	-0.06	0.6	1.5	1.7	1.7	1.51	1.22	1.81	1.07	1.47	1.33	3.380	2.09	2.90	1.58	1.08	0.93	
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739	
Thallium	mg/L	0.002	0.000472	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	ND	ND	ND	ND	0.000206J	0.000388J	<0.000472	<0.000472	<0.000472	<0.000472	

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit.  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					AP MW-1D																				
Compliance Phase:					Background								Initial A.M.			Assessment Monitoring									
Sample Dates:					6/22/2016	8/24/2016	10/18/2016	12/21/2016	2/21/2017	5/4/2017	6/13/2017	8/24/2017	3/21/2018	6/13/2018	1/15/2019	6/25/2019	12/18/2019	6/17/2020	2/10/2021	7/12/2021	7/19/2022	12/13/2022	6/27/2023	11/14/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Appendix III</b>																									
Boron	mg/L	N/A	1.41	1.2	1.6	4.9	4.81	4.62	4.8	4.88	4.72	4.59	4.28	-	5.67	4.35	4.84	-	4.46	6.27	5.15	5.19	5.63	5.32	4.83
Calcium	mg/L	N/A	745	0.127	0.5	88	78	77	77	77	74	70	-	76.1	81.4	93.3	-	108	96.5	77.1	93.9	83.7	74.6	73.3	
Chloride	mg/L	N/A	1,750	0.713	1	227	221	233	229	228	227	229	227	-	191	197	178	-	201	151	141	129	120	116	113
Fluoride	mg/L	4	0.5	0.026	0.1	0.6	0.7	0.6	0.6	0.7	0.7	0.6	0.8	ND	ND	0.904	0.532	0.529	0.626	0.606	0.764	0.801	0.869	0.931	0.868
pH, Field	SU	N/A	5.25-6.32		5.4	5.69	6	6.1	6.1	5.94	5.62	5.74	5.81	5.69	5.93	5.8	5.75	5.48	6.13	5.91	6.13	6.10	6.03	6.03	6.02
Sulfate	mg/L	N/A	3,300	0.756	1	664	621	590	546	543	527	525	517	-	523	532	511	-	552	456	430	431	422	422	362
Total Dissolved Solids	mg/L	N/A	8,340	10	10	1,490	1,440	1,410	1,360	1,310	1,240	1,310	1,270	-	1,360	1,350	1,410	-	1,400	1,250	1,140	1,150	1,110	1,090	998
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	<0.000506	<0.000967	0.00168J
Arsenic	mg/L	0.01	0.01	0.000282	0.001	<0.01	0.01	0.01	<0.01	0.01	0.01	<0.01	0.01	0.00935	0.00861	0.00884	0.00912	0.00756	0.00818	0.00953	0.00898	0.0101	0.00949	0.0121	0.0121
Barium	mg/L	2	0.19	0.00314	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	ND	-	-	-	0	0	0.0137	0.0137	0.0138	0.0129	0.0127	0.0131
Beryllium	mg/L	0.004	0.002	0.000274	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000182	<0.000182	<0.000274	<0.000274	<0.000274	<0.000274
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	ND	ND	ND	0.000408J	0.000343J	0.000498J	0.00034J	0.000358J	0.000224J
Chromium	mg/L	0.1	0.00248	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.0106	0.0129	0.0164	0.0143	0.0146	0.0163	0.0139	0.0177	0.0154	0.00996	0.01	0.00998
Lead	mg/L	0.015	0.0106	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.000128	0.000256J	<0.000167	<0.000167	<0.000376	<0.000376
Lithium	mg/L	0.552	1.69	0.00129	0.005	0.07	0.04	0.05	0.08	0.04	0.03	0.04	0.01	ND	ND	ND	0.0328	0.0346	0.0327	0.027	0.0242	0.0243	0.0233	0.0193	0.0218
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0	0.0144	0.0174	0.0177	0.0157	0.0201	0.0283	0.0304	0.0327	0.0302	0.0332	0.0337
Radium-226/228	pCi/L	10.1	3.9	0.768	5	2.07	3.83	2.8	2.5	0.6	2.5	0.7	1.8	0.971	1.72	1.71	1.66	2.5	1.86	1.100	2.69	1.17	0.918	1.07	0.706
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	0.00154J	0.00164J	0.00236J	0.00158J	0.00179J	0.00167J
Thallium	mg/L	0.002	0.000472	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	-	-	-	ND	ND	0.000310J	0.000636J	<0.000472	<0.000472	<0.000472	<0.000472

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					AP MW-3																				
Compliance Phase:					Background								Initial A.M.		Assessment Monitoring										
Sample Dates:					6/22/2016	8/24/2016	11/10/2016	12/21/2016	2/20/2017	5/3/2017	6/12/2017	8/22/2017	3/20/2018	6/8/2018	1/15/2019	6/25/2019	12/17/2019	6/17/2020	2/10/2021	7/12/2021	7/19/2022	12/13/2022	6/27/2023	11/14/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Appendix III</b>																									
Boron	mg/L	N/A	1.41	1.2	1.6	3.7	3.63	3.56	3.88	3.61	3.73	3.58	3.82	-	3.67	3.49	4.18	-	3.23	4.13	3.54	4.26	4.83	5.02	5.38
Calcium	mg/L	N/A	745	0.127	0.5	138	123	127	137	132	139	129	134	-	135	121	134	-	139	134	146	144	153	147	152
Chloride	mg/L	N/A	1,750	0.713	1	129	128	143	141	146	148	152	155	-	144	153	147	-	160	144	146	153	145	145	156
Fluoride	mg/L	4	0.5	0.026	0.1	0.2	0.2	0.1	0.1	<0.1	0.1	0.1	0.1	ND	ND	0.223	ND	ND	ND	0.0558J	0.0577J	0.0634J	0.054J	0.0623J	0.0566J
pH, Field	SU	N/A	5.25-6.32			5.38	5.09	5.4	5.11	5.05	5.02	5.12	4.79	5.09	5.12	5.22	5.14	4.99	4.34	5.18	4.96	5.05	4.95	5.01	4.91
Sulfate	mg/L	N/A	3,300	0.756	1	700	731	733	729	720	739	740	751	-	673	653	637	-	807	645	722	596	583	599	574
Total Dissolved Solids	mg/L	N/A	8,340	10	10	1,390	1,400	1,370	1,400	1,400	1,300	1,400	1,360	-	1,770	1,360	1,390	-	1,330	1,370	1,420	1,410	1,340	1,340	1,320
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	<0.000506	<0.000967	0.00153J
Arsenic	mg/L	0.01	0.01	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	0.00129	0.00154	0.00129	0.00169	0.0014	0.00165	0.00109
Barium	mg/L	2	0.19	0.00314	0.01	0.04	0.03	0.02	0.03	0.02	0.02	0.02	0.02	ND	-	-	-	0.0243	0.0238	0.0236	0.0294	0.0211	0.0231	0.0197	0.0229
Beryllium	mg/L	0.004	0.002	0.000274	0.001	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	ND	ND	0.00269	0.00241	0.00301	0.00236	0.00264	0.00286	0.00291	0.00301	0.00253	0.00312
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	0.00482	0.00	0.00424	0.00432	0.00382	0.00469	0.00437	0.00438	0.00304	0.00487
Chromium	mg/L	0.1	0.00248	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	0.00173J	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	0.05	0.05	0.05	0.05	0.04	0.05	0.04	0.04	0.0351	0.0396	0.0428	0.024	0.0306	0.0358	0.0476	0.0392	0.0328	0.0331	0.0206	0.0387
Lead	mg/L	0.015	0.0106	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	0.00121	0.000456J	0.0514	0.000219J	<0.000167	<0.000376	<0.000376
Lithium	mg/L	0.552	1.69	0.00129	0.005	0.06	0.06	0.07	0.07	0.06	0.05	0.06	0.04	ND	0.047	ND	0.0461	0.0546	0.0531	0.053	0.00149	0.0431	0.0488	0.0422	0.048
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	0.00025	ND	0.000324	0.000455	<0.000610	0.00158	0.00141	0.00127	0.00385
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	ND	ND	ND	ND	ND	0.000848J	<0.000151	<0.000610	<0.000610	<0.000610	<0.000610
Radium-226/228	pCi/L	10.1	3.9	0.511	5	1.11	7.54	1.7	2.9	2.4	2.9	2.5	4.8	1.82	1.89	2.09	2.07	2.17	1.6	1.870	2.7	5.13U	2.58	0.805	1.92
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00151	0.0577J	0.00135J	<0.000739	0.000776J	<0.000739
Thallium	mg/L	0.002	0.000472	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	-	-	-	ND	ND	0.000267J	0.000271J	0.000529J	<0.000472	<0.000472	<0.000472

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					AP MW-4																					
Compliance Phase:					Background								Initial A.M.		Assessment Monitoring											
Sample Dates:					6/22/2016	8/24/2016	10/18/2016	12/21/2016	2/21/2017	5/4/2017	6/12/2017	8/24/2017	3/21/2018	6/13/2018	1/15/2019	6/27/2019	12/18/2019	6/17/2020	2/10/2021	7/13/2021	7/19/2022	12/13/2022	6/27/2023	11/14/2023		
Constituent	Unit	MCL	Site BTV	MDL	RDL																					
<b>Field Parameters</b>																										
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>Appendix III</b>																										
Boron	mg/L	N/A	1.41	0.0601	0.08	2	2.1	2.1	2.11	1.89	2.07	1.95	1.96	-	2.39	2.17	2.45	-	2.18	2.58	2.41	0.566	0.677	1.31	2.46	
Calcium	mg/L	N/A	745	0.127	0.5	497	497	538	551	488	532	519	489	-	416	451	498	-	523	533	499	545	204	109	502	
Chloride	mg/L	N/A	1,750	0.713	1	485	485	511	507	503	505	526	543	-	427	465	435	-	472	436	434	524	191	50.7	435	
Fluoride	mg/L	4	0.5	0.026	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND	ND	ND	ND	ND	ND	<0.130	0.0996J	0.0488J	0.0719J	0.0556J	0.0603J	
pH, Field	SU	N/A	5.25-6.32		5.79	5.49	5.69	5.45	5.62	5.71	5.48	5.47	5.62	5.58	5.76	5.69	5.71	5.28	5.74	5.48	6.10	5.85	6.04	5.54		
Sulfate	mg/L	N/A	3,300	0.756	1	2,210	2,310	2,290	2,250	2,290	2,330	2,380	2,500	-	2,110	2,250	2,140	-	2,190	2,050	2,380	1,530	876	707	2,160	
Total Dissolved Solids	mg/L	N/A	8,340	10	10	4,130	4,140	4,150	4,120	4,130	3,930	4,130	4,000	-	4,270	4,010	4,080	-	3,780	4,040	4,200	3,370	1,790	1,270	3,970	
<b>Appendix IV</b>																										
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	<0.000378	<0.000378	<0.000506	<0.000506	<0.000967	0.0013J
Arsenic	mg/L	0.01	0.01	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	ND	0.000628J	<0.000313	0.00226	0.00156	0.00117	<0.000282
Barium	mg/L	2	0.19	0.00314	0.01	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.02	ND	-	-	-	0.0137	0.0155	0.0144	0.0135	0.0302	0.0197	0.0149	0.023	
Beryllium	mg/L	0.004	0.002	0.000274	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	ND	0.000436J	0.000204J	<0.000274	<0.000274	<0.000274	0.000307J
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	ND	ND	ND	ND	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217
Chromium	mg/L	0.1	0.00248	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	ND	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ND	ND	ND	0.00109	ND	ND	ND	<0.000134	<0.000134	0.00107	0.00286	0.00117	<0.000261
Lead	mg/L	0.015	0.0106	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	ND	0.000276J	<0.000128	0.000338J	<0.000167	<0.000376	<0.000376
Lithium	mg/L	0.552	1.69	0.00129	0.005	0.96	0.92	1.09	1.03	0.87	0.93	0.95	0.85	0.766	0.661	0.8	0.781	0.72	0.959	0.875	0.808	0.317	0.277	0.18	0.827	
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	ND	ND	ND	ND	ND	ND	<0.000610	<0.000610	0.000686J	0.000944J	0.000987J	<0.000610
Radium-226/228	pCi/L	10.1	3.9	0.723	5	1.98	3.67	2.3	3	1.2	2.4	2.2	2.6	0.678	1.13	0.759	1.26	1.27	1.11	1.720	1.07	0.791	0.743	0.21	0.956	
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739
Thallium	mg/L	0.002	0.000472	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	-	-	-	ND	ND	ND	0.000172J	<0.000148	<0.000472	<0.000472	<0.000472	<0.000472

Notes:  
µS/cm - micro Siemens per centimeter  
BTV - Background Threshold Value  
MDL - Method Detection Limit  
RDL - Reporting Detection Limit  
NTU - Nephelometric Turbidity Unit  
mV - milli Volt  
mg/L - milligrams per liter.  
SU - standard units; pH is a field parameter.  
pCi/L - picocuries per liter.  
J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
-- - not analyzed.  
All metals were analyzed as total unless otherwise specified.



Sample Location:					AP MW-5																				
Compliance Phase:					Background								Initial A.M.		Assessment Monitoring										
Sample Dates:					6/22/2016	8/24/2016	10/18/2016	12/21/2016	2/21/2017	5/4/2017	6/12/2017	8/24/2017	3/21/2018	6/13/2018	1/15/2019	6/25/2019	12/18/2019	6/17/2020	2/10/2021	7/12/2021	7/19/2022	12/13/2022	6/27/2023	11/14/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Appendix III</b>																									
Boron	mg/L	N/A	1.41	0.0601	0.08	3.3	3.4	3.33	3.66	3.32	3.39	3.38	3.26	-	4.2	3.38	3.57	-	3.25	3.53	3.48	3.25	3.79	3.87	3.53
Calcium	mg/L	N/A	745	0.127	0.5	387	468	503	575	494	522	512	498	-	476	601	369	-	362	354	491	615	578	549	600
Chloride	mg/L	N/A	1,750	0.713	1	410	469	451	480	480	472	479	473	-	404	460	368	-	361	322	373	491	494	570	670
Fluoride	mg/L	4	0.5	0.026	0.1	1.5	1.6	1.3	1.2	1.2	1.2	1	1.2	2.82	3.02	2.5	1.57	2.32	ND	1.18	1.7	2.66	2.39	2.28	3.09
pH, Field	SU	N/A	5.25-6.32			3.58	3.61	3.70	3.43	3.65	3.63	3.35	3.55	4.22	3.64	3.33	3.40	3.47	3.21	3.68	3.22	3.54	3.30	3.33	3.42
Sulfate	mg/L	N/A	3,300	3.78	5	2,640	2,960	2,630	2,960	2,880	2,930	2,900	2,960	-	2,780	2,590	2,180	-	2,030	1,670	2,580	2,810	2,730	2,790	1,370
Total Dissolved Solids	mg/L	N/A	8,340	40	40	4,170	4,770	5,040	4,940	4,860	4,530	4,830	4,720	-	4,730	4,600	4,380	-	3,430	3,380	4,170	5,030	4,960	5,090	5,080
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	ND	0.000664J	0.000529J	<0.000506	<0.000506	<0.000967	0.00118J
Arsenic	mg/L	0.01	0.01	0.000282	0.001	0.02	<0.01	0.01	0.01	0.01	0.02	0.01	0.01	ND	0.0139	0.0117	ND	0.0168	0.00859	0.0095	0.0122	0.0176	0.0206	0.0147	0.0234
Barium	mg/L	2	0.19	0.00314	0.01	0.01	0.03	0.02	<0.01	0.04	0.02	0.02	0.01	ND	-	-	-	ND	0.0249	0.0556	0.0232	0.0128	0.0126	0.0101	0.0109
Beryllium	mg/L	0.004	0.002	0.000274	0.001	0.077	0.088	0.087	0.088	0.089	0.084	0.081	0.084	0.0935	0.0746	0.0778	0.06	0.0743	0.0492	0.052	0.0711	0.112	0.119	0.0945	0.11
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	0.006	0.01	0.009	0.011	0.01	0.009	0.01	0.01	0.00843	0.00909	0.00985	0.00583	0.00879	0.00594	0.00523	0.00823	0.00959	0.0102	0.0115	0.0128
Chromium	mg/L	0.1	0.00248	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	0.00228	<0.00153	<0.00153	0.00157J	<0.00153	<0.00153
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	0.15	0.19	0.18	0.2	0.18	0.19	0.19	0.18	0.148	0.173	0.175	0.129	0.149	0.117	0.115	0.168	0.206	0.184	0.222	0.236
Lead	mg/L	0.015	0.0106	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.00149	0.00632	0.00473	0.00235	0.00203	0.00239	0.00203	0.0019
Lithium	mg/L	0.552	1.69	0.00129	0.005	0.49	0.57	0.6	0.66	0.53	0.5	0.59	0.45	0.478	0.374	0.446	0.36	0.416	0.395	0.381	0.413	0.522	0.585	0.487	0.592
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.000241	0.000224	ND	0.000878	0.736	0.000753	0.00643	0.00235	0.0026	0.000762	0.000369	0.000954
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	ND	ND	ND	ND	ND	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610
Radium-226/228	pCi/L	10.1	3.9	0.741	5	4.55	5.96	5.2	4.5	1.8	2.90	2.1	3.4	1.3	1.64	1.49	1.17	1.6	1.12	1.4	2.18	4.38	1.53	2.11	1.57
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	0.01	0.01	0.01	0.01	<0.01	<0.01	ND	-	-	-	0.0533	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739
Thallium	mg/L	0.002	0.000472	0.000472	0.001	<0.002	<0.002	<0.002	0.002	0.002	0.002	0.002	0.002	0.00221	-	-	-	0.00238	0.00224	0.00213	0.00212	0.00228	0.00248	0.00266	0.00293

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					SSP MW-2																					
Compliance Phase:					Background								Initial A.M.			Assessment Monitoring										
Sample Dates:					6/21/2016	8/23/2016	10/18/2016	12/20/2016	2/21/2017	5/3/2017	6/14/2017	8/24/2017	3/20/2018	6/9/2018	1/15/2019	6/28/2019	12/18/2019	6/17/2020	2/10/2021	7/13/2021	7/20/2022	12/13/2022	6/27/2023	11/15/2023		
Constituent	Unit	MCL	Site BTV	MDL	RDL																					
<b>Field Parameters</b>																										
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Appendix III</b>																										
Boron	mg/L	N/A	1.41	0.0601	0.08	0.8	0.6	0.6	0.53	0.47	0.5	0.46	0.45	-	ND	ND	1.14	-	1	0.81	0.585	0.689	0.72	0.426	0.559	
Calcium	mg/L	N/A	745	0.635	2.5	742	838	931	925	818	899	872	811	-	881	756	658	-	822	728	867	812	846	876	718	
Chloride	mg/L	N/A	1,750	7.13	10	2,070	2,470	2,610	2,550	2,550	2,520	2,640	2,790	-	2,560	2,500	1,640	-	2,650	1,810	2,300	2,150	2,300	2,440	2,280	
Fluoride	mg/L	4	0.5	0.026	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	ND	ND	2.56	ND	0.622	ND	0.509	0.293J	0.563	0.295	0.268	0.191	
pH, Field	SU	N/A	5.25-6.32			5.88	5.39	5.26	5.03	4.84	4.96	4.76	4.55	4.66	4.43	3.96	3.87	4.95	4.14	4	4.52	4.49	4.60	4.36	4.47	
Sulfate	mg/L	N/A	3,300	7.56	10	2,030	2,070	2,080	1,970	2,080	2,080	2,120	2,070	-	2,170	2,030	2,300	-	2,610	2,250	2,090	2,230	2,120	2,110	2,210	
Total Dissolved Solids	mg/L	N/A	8,340	66.7	66.7	6,690	7,070	7,370	6,990	6,990	5,960	6,940	6,910	-	6,630	6,790	6,100	-	5,850	6,120	6,410	6,700	6,700	7,100	6,400	
<b>Appendix IV</b>																										
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	<0.000378	<0.000378	<0.000506	<0.000506	<0.000967	<0.000967	
Arsenic	mg/L	0.01	0.01	0.000282	0.001	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0303	ND	0.00552	ND	0.00918	0.00622	0.00643	0.00498	0.00551	0.00539	0.00446	0.00541
Barium	mg/L	2	0.19	0.00314	0.01	0.39	0.04	0.06	0.14	0.03	0.06	0.03	0.06	ND	-	-	-	0.028	0.0261	0.0197	0.0497	0.017	0.0201	0.0197	0.0216	
Beryllium	mg/L	0.004	0.002	0.000274	0.001	0.009	0.006	0.016	0.025	0.026	0.03	0.03	0.04	0.231	0.0475	0.0475	0.0713	0.0587	0.0587	0.0704	0.0461	0.0548	0.0525	0.0471	0.0568	
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	0.00689	0.0046	0.0041	0.00446	0.00109	0.00294	0.00179	0.000544J	0.00192	
Chromium	mg/L	0.1	0.00248	0.00153	0.002	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	<0.00153	
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	0.06	0.05	0.07	0.07	0.06	0.06	0.06	0.06	0.0571	0.0539	0.0645	0.19	0.0922	0.0933	0.116	0.0539	0.0788	0.0569	0.0478	0.0643	
Lead	mg/L	0.015	0.0106	0.000376	0.001	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	0.00219	0.00539	0.00304	0.00597	0.00227	0.00108	0.00107	0.000841J	0.000481J	0.000451J	
Lithium	mg/L	0.552	1.69	0.00129	0.005	0.87	0.84	1.07	1.03	0.86	0.9	0.95	0.67	4.9	0.751	0.77	0.597	0.579	0.739	0.564	0.752	0.593	0.805	0.711	0.809	
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	-	-	-	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	<0.000610	
Radium-226/228	pCi/L	10.1	3.9	0.489	5	2.79	3.11	1.9	1.7	14.6	2.100	2.3	4.3	1.7	2.11	2.27	1.62	2.3	2.13	2.33	3.36	3.21	2.83	3.42	3.52	
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.025	ND	<0.00151	<0.00151	<0.000739	<0.000739	<0.000739	<0.000739	
Thallium	mg/L	0.002	0.000472	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	ND	0.00112	0.0013	ND	0.000516J	<0.000148	<0.000472	<0.000472	<0.000472	<0.000472	

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					SSP MW-3																				
Compliance Phase:					Background								Initial A.M.		Assessment Monitoring										
Sample Dates:					6/21/2016	8/23/2016	10/18/2016	12/20/2016	2/21/2017	5/4/2017	6/13/2017	8/24/2017	3/21/2018	6/11/2018	1/15/2019	6/27/2019	12/18/2019	6/17/2020	2/9/2021	7/13/2021	7/19/2022	12/13/2022	6/27/2023	11/14/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Appendix III</b>																									
Boron	mg/L	N/A	1.41	0.601	0.8	3.2	2.9	2.7	2.86	2.68	2.24	2.84	2.59	-	2.5	2.47	2.94	-	2.78	2.87	2.57	2.35	3.14	2.22	3.62
Calcium	mg/L	N/A	745	0.254	1	647	693	699	703	694	694	673	646	-	689	618	712	-	722	712	690	658	673	722	641
Chloride	mg/L	N/A	1,750	7.13	10	1,560	1,790	1,880	1,700	1,830	1,860	1,810	1,790	-	1,720	1,770	1,870	-	2,060	1,700	1,690	1,670	1,480	1,770	1,430
Fluoride	mg/L	4	0.5	0.026	0.1	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.8	ND	1.82	2.72	ND	0.551	ND	0.441J	0.466J	0.441	0.435	0.423	0.348
pH, Field	SU	N/A	5.25-6.32			4.4	4.3	4.31	4.16	4.45	4.34	4.16	4.20	4.26	4.29	4.15	4.25	4.73	3.6	4.29	4.18	4.42	4.17	4.21	4.34
Sulfate	mg/L	N/A	3,300	7.56	10	2,400	2,500	2,440	2,480	2,520	2,380	2,510	2,510	-	2,500	2,550	2,370	-	2,760	2,430	2,370	2,200	2,210	2,440	2,320
Total Dissolved Solids	mg/L	N/A	8,340	50	50	6,510	6,610	6,690	5,780	6,450	6,670	6,370	6,260	-	6,370	6,410	5,780	-	6,330	2,200	5,860	6,180	6,020	8,070	5,470
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	-	ND	<0.000378	<0.000378	0.00128J	<0.000506	<0.000967	<0.000967	<0.000967
Arsenic	mg/L	0.01	0.01	0.000282	0.001	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	0.00655	ND	0.00314	0.00695	0.00831	0.0065	0.00636	0.00829	0.0065	0.00631
Barium	mg/L	2	0.19	0.00314	0.01	0.03	0.05	0.04	0.09	0.03	0.03	0.02	0.03	ND	-	-	-	0.0192	0.0239	0.0218	0.0217	0.0221	0.0265	0.0251	0.022
Beryllium	mg/L	0.004	0.002	0.000274	0.001	0.122	0.118	0.12	0.121	0.121	0.12	0.116	0.113	0.139	0.11	0.101	0.107	0.0992	0.105	0.12	0.104	0.0904	0.116	0.0927	0.101
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	0.064	0.055	0.05	0.062	0.067	0.081	0.086	0.078	0.0686	0.0775	0.0877	0.0711	0.0788	0.0787	0.0736	0.0752	0.0698	0.0655	0.0829	0.0477
Chromium	mg/L	0.1	0.00248	0.00153	0.002	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.0	0.00616	0.00575	0.0135	0.00235	0.00319	0.00221	<0.00153
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	0.64	0.56	0.58	0.59	0.62	0.62	0.56	0.58	0.506	0.58	0.621	0.524	0.35	0.558	0.584	0.566	0.495	0.511	0.561	0.445
Lead	mg/L	0.015	0.0106	0.000376	0.001	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	0.00652	ND	0.00441	0.0044	0.00519	0.00545	0.00533	0.00468	0.0028	0.00582	0.00414	0.00292
Lithium	mg/L	0.552	1.69	0.00129	0.005	0.72	0.64	0.75	0.73	0.66	0.61	0.67	0.53	0.644	0.526	0.514	0.587	0.549	0.662	0.593	0.589	0.511	0.622	0.568	0.533
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	-	-	-	ND	ND	0.000162J	<0.000130	0.000669	0.000461	0.00015J	0.000218
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	<0.000610	0.000667J	0.0011J	<0.000610	0.00142J	<0.000610
Radium-226/228	pCi/L	10.1	3.9	0.59	5	24.5	49.8	24.7	37	27.8	23.2	28.4	32.2	30.8	29.2	35.4	33.4	34.3	32	40.2	34.2	27.3	36.6	31	31.3
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	0.00676	ND	<0.00151	<0.00151	0.000859J	<0.000739	0.000792J	<0.000739
Thallium	mg/L	0.002	0.000472	0.000472	0.001	0.009	0.008	0.01	0.01	0.01	0.01	0.01	0.01	0.00982	0.0097	0.0112	0.0076	0.00961	0.0102	0.0101	0.00971	0.00795	0.0094	0.00974	0.00576

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



Sample Location:					SSP MW-4																				
Compliance Phase:					Background								Initial A.M.			Assessment Monitoring									
Sample Dates:					6/21/2016	8/23/2016	10/18/2016	12/20/2016	2/21/2017	5/4/2014	6/14/2017	8/24/2017	3/21/2018	6/11/2018	1/15/2019	6/27/2019	12/18/2019	6/17/2020	2/10/2021	7/13/2021	7/20/2022	12/12/2022	6/27/2023	11/14/2023	
Constituent	Unit	MCL	Site BTV	MDL	RDL																				
<b>Field Parameters</b>																									
pH	SU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	°C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation Reduction Potential	mV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Appendix III</b>																									
Boron	mg/L	N/A	1.41	0.0601	0.08	1.3	1.3	1.31	1.28	1.24	1.47	1.31	1.15	-	1.35	ND	1.51	-	1.17	1.12	1.02	1.39	1.16	1.02	0.903
Calcium	mg/L	N/A	745	0.127	0.5	399	395	413	413	390	455	413	365	-	408	371	414	-	403	398	389	428	428	264	276
Chloride	mg/L	N/A	1,750	1.78	2.5	1,120	1,110	1,240	1,170	1,180	1,120	1,190	1,190	-	1,090	1,150	1,120	-	1,350	990	378	1,140	1,110	696	843
Fluoride	mg/L	4	0.5	0.065	0.25	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND	ND	2.84	ND	ND	ND	<0.130	0.227J	0.103J	0.0585J	<0.0650	0.0444J
pH, Field	SU	N/A	5.25-6.32			6.38	6.12	6.26	5.78	5.95	6.26	6.28	6.05	6.26	6.12	6.35	6.15	6.61	5.67	6.63	11.96	6.29	6.31	6.09	6.04
Sulfate	mg/L	N/A	3,300	1.89	2.5	1,190	1,140	1,210	1,140	1,240	1,180	1,200	1,170	-	1,220	1,170	1,060	-	1,340	982	82	1,090	1,080	592	700
Total Dissolved Solids	mg/L	N/A	8,340	20	20	3,940	3,880	3,930	3,850	3,890	3,390	3,660	3,630	-	3,870	3,790	4,040	-	3,880	2,890	3,080	3,740	3,660	2,470	2,910
<b>Appendix IV</b>																									
Antimony	mg/L	0.006	0.00157	0.000967	0.002	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	ND	-	-	ND	ND	<0.000378	0.000415J	<0.000506	<0.000506	<0.000967	0.00136J	
Arsenic	mg/L	0.01	0.01	0.000282	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	0.00203	ND	ND	0.00103	0.000941J	0.000344J	0.00084J	0.000497J	0.000811J	<0.000282
Barium	mg/L	2	0.19	0.00314	0.01	0.06	0.04	0.03	0.05	0.03	0.03	0.02	0.02	ND	-	-	-	0.0203	0.0273	0.027	0.103	0.0204	0.0212	0.025	0.0184
Beryllium	mg/L	0.004	0.002	0.000274	0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	ND	ND	ND	ND	ND	ND	<0.000182	<0.000182	<0.000274	<0.000274	<0.000274	<0.000274
Cadmium	mg/L	0.005	0.000217	0.000217	0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ND	ND	ND	ND	ND	ND	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217	<0.000217
Chromium	mg/L	0.1	0.00248	0.00153	0.002	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	0.00762	0.00259	0.176	0.00284	0.00493	0.337	0.233
Cobalt	mg/L	0.006	0.00174	0.000261	0.0005	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	ND	ND	ND	ND	ND	ND	0.000336J	<0.000134	<0.000261	0.000289J	<0.000261	<0.000261
Lead	mg/L	0.015	0.0106	0.000376	0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	ND	ND	ND	ND	ND	0.000161J	0.000276J	0.000234J	<0.000167	<0.000376	<0.000376
Lithium	mg/L	0.552	1.69	0.00129	0.005	0.94	0.87	1.02	1	0.87	0.87	0.95	0.78	1.01	0.81	0.858	0.919	0.706	0.911	0.727	0.146	0.767	0.875	0.402	0.542
Mercury	mg/L	0.002	0.00013	0.00013	0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ND	-	-	-	ND	ND	<0.000130	<0.000130	<0.000130	<0.000130	<0.000130	
Molybdenum	mg/L	0.1	0.00199	0.00061	0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND	-	-	-	ND	ND	0.00321J	0.0629	0.000864J	0.00594	0.202	0.108
Radium-226/228	pCi/L	10.1	3.9	0.604	5	5.38	6.82	2.3	3	3.5	4.4	3.2	2.7	3.19	2.77	2.82	2.02	3.07	2.6	1.62	1.46	2.68	3.08	1.69	2.56
Selenium	mg/L	0.05	0.000739	0.000739	0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND	-	-	-	ND	ND	<0.00151	0.00441J	<0.000739	<0.000739	0.00711	0.00456J
Thallium	mg/L	0.002	0.000472	0.000472	0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	ND	ND	ND	ND	ND	ND	<0.000148	<0.000148	<0.000472	<0.000472	<0.000472	

Notes:  
 µS/cm - micro Siemens per centimeter  
 BTV - Background Threshold Value  
 MDL - Method Detection Limit  
 RDL - Reporting Detection Limit  
 NTU - Nephelometric Turbidity Unit  
 mV - milli Volt  
 mg/L - milligrams per liter.  
 SU - standard units; pH is a field parameter.  
 pCi/L - picocuries per liter.  
 J - Value is below the Reporting Limit and above the Method Detection Limit; therefore, value is estimated and not considered significant.  
 MCL - Maximum Contaminant Level, EPA Drinking Water Standards and Health Advisories, April, 2012.  
 -- - not analyzed.  
 All metals were analyzed as total unless otherwise specified.



# **Appendix D**

## **Lab Reports**

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
HDR Inc  
17111 Preston Road  
Suite 200  
Dallas, Texas 75248-1232

Generated 11/7/2023 1:38:17 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-158520-1

## Eurofins Pittsburgh

### Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

### Authorization

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Authorized for release by  
Ken Hayes, Project Manager II  
Ken.Hayes@et.eurofinsus.com  
(615)301-5035

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## Case Narrative



### Job ID: 180-158520-1

Laboratory: Eurofins Pittsburgh

#### Narrative

Job Narrative  
180-158520-1

#### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

#### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 618896 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. AP MW-1D (180-158520-1), AP MW-3 (180-158520-2), SSP MW-3 (180-158520-3), FB-2 (180-158520-4), (LCS 160-618896/2-A), (MB 160-618896/1-A), (380-52750-A-1-A) and (380-52750-B-1-A DU)

Method 904.0: Radium-228 prep batch 160-618897 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. AP MW-1D (180-158520-1), AP MW-3 (180-158520-2), SSP MW-3 (180-158520-3), FB-2 (180-158520-4), (LCS 160-618897/2-A), (MB 160-618897/1-A), (380-52750-A-1-B) and (380-52750-B-1-B DU)

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

#### Rad

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

#### Narrative

Job Narrative  
180-158520-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following sample was diluted due to the nature of the sample matrix: SSP MW-3 (180-158520-3) at 10.0. Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 180-439238 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

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

## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

### Job ID: 180-158520-1 (Continued)

#### Laboratory: Eurofins Pittsburgh (Continued)

##### Metals

Method 6020B: The following sample was diluted to bring the concentration of calcium within the calibration range: SSP MW-3 (180-158520-3). Elevated reporting limits (RLs) are provided.

Method 6020B: The following samples were diluted to bring the concentration of boron to within the instrument's calibration range: AP MW-1D (180-158520-1), AP MW-3 (180-158520-2) and SSP MW-3 (180-158520-3). Elevated reporting limits (RLs) are provided.

Method 6020B: The following samples were diluted due to the nature of the sample matrix with the high levels of boron and its affect in the instrumentation: (LCS 180-451064/2-A ^5) and (LCS 180-451064/7-A ^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.

##### General Chemistry

Method 2540C\_Calcd: Sample did not reach a stable weight following 4 cycles of heating, cooling, and desiccation. Cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result. AP MW-1D (180-158520-1), AP MW-3 (180-158520-2) and SSP MW-3 (180-158520-3)

Method 2540C\_Calcd: Sample did not reach a stable weight following 4 cycles of heating, cooling, and desiccation. Cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result. FB-2 (180-158520-4)

Method 2540C\_Calcd: The associated Method Blank result was above the reporting limit; however, the sample result was neither below the reporting limit, nor greater than 10X the Method Blank result. The sample result is being reported per the client request. FB-2 (180-158520-4)

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

## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

### Qualifiers

#### HPLC/IC

Qualifier	Qualifier Description
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.

#### Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
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.

#### General Chemistry

Qualifier	Qualifier Description
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.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-15-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23 *
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-23 *
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-23 *
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23 *
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

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

Eurofins Pittsburgh

## Sample Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-158520-1	AP MW-1D	Water	06/27/23 08:00	06/28/23 09:30
180-158520-2	AP MW-3	Water	06/27/23 07:20	06/28/23 09:30
180-158520-3	SSP MW-3	Water	06/27/23 11:30	06/28/23 09:30
180-158520-4	FB-2	Water	06/27/23 08:00	06/28/23 09:30

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: AP MW-1D

Date Collected: 06/27/23 08:00

Date Received: 06/28/23 09:30

Lab Sample ID: 180-158520-1

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	EPA 9056A		1	1 mL	1 mL	439238	06/30/23 03:25	SNL	EET PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:23	RJR	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	451064	11/06/23 09:30	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		20			451218	11/07/23 10:54	RJR	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:00	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:23	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			751.89 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 07:52	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			751.89 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:29	SCB	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:26	SCB	EET SL
Instrument ID: NOEQUIP										

Client Sample ID: AP MW-3

Date Collected: 06/27/23 07:20

Date Received: 06/28/23 09:30

Lab Sample ID: 180-158520-2

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	EPA 9056A		1	1 mL	1 mL	439238	06/30/23 04:39	SNL	EET PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:32	RJR	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	451064	11/06/23 09:30	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		20			451218	11/07/23 10:57	RJR	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:00	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:24	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			941.71 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 07:52	FLC	EET SL
Instrument ID: GFPCBLUE										

Eurofins Pittsburgh

Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: AP MW-3

Date Collected: 06/27/23 07:20

Date Received: 06/28/23 09:30

Lab Sample ID: 180-158520-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			941.71 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:29	SCB	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:26	SCB	EET SL
Instrument ID: NOEQUIP										

Client Sample ID: SSP MW-3

Date Collected: 06/27/23 11:30

Date Received: 06/28/23 09:30

Lab Sample ID: 180-158520-3

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	EPA 9056A		1	1 mL	1 mL	439238	06/30/23 03:39	SNL	EET PIT
Instrument ID: CHICS2100B										
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	439238	06/30/23 03:54	SNL	EET PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:36	RJR	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			441132	07/21/23 19:42	KED	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	451064	11/06/23 09:30	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			451218	11/07/23 11:01	RJR	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:00	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:25	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			754.11 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 07:52	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			754.11 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:29	SCB	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:26	SCB	EET SL
Instrument ID: NOEQUIP										

Client Sample ID: FB-2

Date Collected: 06/27/23 08:00

Date Received: 06/28/23 09:30

Lab Sample ID: 180-158520-4

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	EPA 9056A		1	1 mL	1 mL	439238	06/30/23 04:53	SNL	EET PIT
Instrument ID: CHICS2100B										

Eurofins Pittsburgh



Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: FB-2

Lab Sample ID: 180-158520-4

Date Collected: 06/27/23 08:00

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:39	RJR	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	451064	11/06/23 09:30	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			451218	11/07/23 11:04	RJR	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:03	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:23	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439404	06/30/23 15:54	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			980.36 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 07:52	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			980.36 mL	1.0 g	618897	07/05/23 09:43	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:29	SCB	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:23	SCB	EET SL
Instrument ID: NOEQUIP										

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET PIT  
 Batch Type: Prep  
 MTW = Michael Wesoloski  
 S1Z = Sage Ziviello  
 SJM = Shannon Mueller  
 Batch Type: Analysis  
 KED = Katie Dacko  
 LWM = Leslie McIntire  
 MTW = Michael Wesoloski  
 RJR = Ron Rosenbaum  
 SNL = Sean Lordo  
 Lab: EET SL  
 Batch Type: Prep  
 KAC = Kevin Cox  
 Batch Type: Analysis  
 FLC = Fernando Cruz  
 SCB = Sarah Bernsen

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Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: AP MW-1D

Lab Sample ID: 180-158520-1

Date Collected: 06/27/23 08:00

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	116		1.00	0.713	mg/L		06/30/23 03:25	06/30/23 03:25	1
Fluoride	0.931		0.100	0.0260	mg/L		06/30/23 03:25	06/30/23 03:25	1
Sulfate	422		1.00	0.756	mg/L		06/30/23 03:25	06/30/23 03:25	1

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0121		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:28	1
Barium	0.0127		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:28	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:28	1
Boron	5.32		1.60	1.20	mg/L		11/06/23 09:30	11/07/23 10:54	20
Cadmium	0.000358	J	0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:28	1
Calcium	74.6		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:28	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:28	1
Cobalt	0.0100		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:28	1
Molybdenum	0.0332		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:28	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:28	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:28	1
Selenium	0.00179	J	0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:28	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:28	1
Lithium	0.0193		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:28	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 20:28	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 20:28	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1090		10.0	10.0	mg/L		06/30/23 14:59	06/30/23 14:59	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0107	U	0.162	0.162	1.00	0.335	pCi/L	07/05/23 09:33	07/27/23 07:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		30 - 110					07/05/23 09:33	07/27/23 07:52	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.08		0.549	0.558	1.00	0.768	pCi/L	07/05/23 09:40	07/25/23 12:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		30 - 110					07/05/23 09:40	07/25/23 12:29	1
Y Carrier	84.9		30 - 110					07/05/23 09:40	07/25/23 12:29	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: AP MW-1D

Lab Sample ID: 180-158520-1

Date Collected: 06/27/23 08:00

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	1.07		0.572	0.581	5.00	0.768	pCi/L		07/27/23 15:26	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: AP MW-3

Lab Sample ID: 180-158520-2

Date Collected: 06/27/23 07:20

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	145		1.00	0.713	mg/L		06/30/23 04:39	06/30/23 04:39	1
Fluoride	0.0623	J	0.100	0.0260	mg/L		06/30/23 04:39	06/30/23 04:39	1
Sulfate	599		1.00	0.756	mg/L		06/30/23 04:39	06/30/23 04:39	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00165		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:32	1
Barium	0.0197		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:32	1
Beryllium	0.00253		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:32	1
Boron	5.02		1.60	1.20	mg/L		11/06/23 09:30	11/07/23 10:57	20
Cadmium	0.00304		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:32	1
Calcium	147		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:32	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:32	1
Cobalt	0.0206		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:32	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:32	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:32	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:32	1
Selenium	0.000776	J	0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:32	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:32	1
Lithium	0.0422		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:32	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 20:32	1
Aluminum	0.0171	J	0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 20:32	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00127		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:24	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1340		10.0	10.0	mg/L		06/30/23 14:59	06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0463	U	0.101	0.101	1.00	0.185	pCi/L	07/05/23 09:33	07/27/23 07:52	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.7		30 - 110					07/05/23 09:33	07/27/23 07:52	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.758		0.370	0.377	1.00	0.511	pCi/L	07/05/23 09:40	07/25/23 12:29	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.7		30 - 110					07/05/23 09:40	07/25/23 12:29	1
Y Carrier	86.4		30 - 110					07/05/23 09:40	07/25/23 12:29	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: AP MW-3

Lab Sample ID: 180-158520-2

Date Collected: 06/27/23 07:20

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.805		0.384	0.390	5.00	0.511	pCi/L		07/27/23 15:26	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: SSP MW-3

Lab Sample ID: 180-158520-3

Date Collected: 06/27/23 11:30

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1770		10.0	7.13	mg/L		06/30/23 03:54	06/30/23 03:54	10
Fluoride	0.423		0.100	0.0260	mg/L		06/30/23 03:39	06/30/23 03:39	1
Sulfate	2440		10.0	7.56	mg/L		06/30/23 03:54	06/30/23 03:54	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00650		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:36	1
Barium	0.0251		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:36	1
Beryllium	0.0927		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:36	1
Boron	2.22		0.800	0.601	mg/L		11/06/23 09:30	11/07/23 11:01	10
Cadmium	0.0829		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:36	1
Calcium	722		1.00	0.254	mg/L		07/18/23 10:25	07/21/23 19:42	2
Chromium	0.00221		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:36	1
Cobalt	0.561		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:36	1
Molybdenum	0.00142	J	0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:36	1
Lead	0.00414		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:36	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:36	1
Selenium	0.000792	J	0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:36	1
Thallium	0.00974		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:36	1
Lithium	0.568		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:36	1
Iron	0.950		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 20:36	1
Aluminum	1.46		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 20:36	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000150	J	0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	8070		50.0	50.0	mg/L		06/30/23 14:59	06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	5.07		0.616	0.767	1.00	0.298	pCi/L	07/05/23 09:33	07/27/23 07:52	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.0		30 - 110					07/05/23 09:33	07/27/23 07:52	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	25.9		1.69	2.92	1.00	0.590	pCi/L	07/05/23 09:40	07/25/23 12:29	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.0		30 - 110					07/05/23 09:40	07/25/23 12:29	1
Y Carrier	85.2		30 - 110					07/05/23 09:40	07/25/23 12:29	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: SSP MW-3

Lab Sample ID: 180-158520-3

Date Collected: 06/27/23 11:30

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	31.0		1.80	3.02	5.00	0.590	pCi/L		07/27/23 15:26	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

Client Sample ID: FB-2

Lab Sample ID: 180-158520-4

Date Collected: 06/27/23 08:00

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L		06/30/23 04:53	06/30/23 04:53	1
Fluoride	<0.0260		0.100	0.0260	mg/L		06/30/23 04:53	06/30/23 04:53	1
Sulfate	<0.756		1.00	0.756	mg/L		06/30/23 04:53	06/30/23 04:53	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:39	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:39	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:39	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/06/23 09:30	11/07/23 11:04	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:39	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:39	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:39	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:39	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:39	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:39	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:39	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:39	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:39	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:39	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 20:39	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 20:39	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:26	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	18.0	B	10.0	10.0	mg/L		06/30/23 15:54	06/30/23 15:54	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0386	U	0.128	0.128	1.00	0.268	pCi/L	07/05/23 09:33	07/27/23 07:52	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.7		30 - 110					07/05/23 09:33	07/27/23 07:52	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.183	U	0.259	0.259	1.00	0.436	pCi/L	07/05/23 09:40	07/25/23 12:29	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.7		30 - 110					07/05/23 09:40	07/25/23 12:29	1
Y Carrier	87.5		30 - 110					07/05/23 09:40	07/25/23 12:29	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**Client Sample ID: FB-2**

**Lab Sample ID: 180-158520-4**

Date Collected: 06/27/23 08:00

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.145	U	0.289	0.289	5.00	0.436	pCi/L		07/27/23 15:26	1

**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**Method: EPA 9056A - Anions, Ion Chromatography**

**Lab Sample ID: MB 180-439238/69**

**Client Sample ID: Method Blank**

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			06/30/23 01:41	1
Fluoride	<0.0260		0.100	0.0260	mg/L			06/30/23 01:41	1
Sulfate	<0.756		1.00	0.756	mg/L			06/30/23 01:41	1

**Lab Sample ID: LCS 180-439238/70**

**Client Sample ID: Lab Control Sample**

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	50.54		mg/L		101	80 - 120
Fluoride	2.50	2.667		mg/L		107	80 - 120
Sulfate	50.0	49.95		mg/L		100	80 - 120

**Lab Sample ID: 180-158523-D-1 MS**

**Client Sample ID: Matrix Spike**

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Chloride	3.82		50.0	54.36		mg/L		101	80 - 120
Fluoride	0.216		2.50	2.717		mg/L		100	80 - 120
Sulfate	236		50.0	274.5	4	mg/L		78	80 - 120

**Lab Sample ID: 180-158523-D-1 MSD**

**Client Sample ID: Matrix Spike Duplicate**

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Chloride	3.82		50.0	54.94		mg/L		102	80 - 120	1	15
Fluoride	0.216		2.50	2.904		mg/L		108	80 - 120	7	15
Sulfate	236		50.0	277.7	4	mg/L		84	80 - 120	1	15

**Method: EPA 6020B - Metals (ICP/MS)**

**Lab Sample ID: MB 180-440656/1-A**

**Client Sample ID: Method Blank**

Matrix: Water

Prep Type: Total Recoverable

Analysis Batch: 440892

Prep Batch: 440656

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 19:45	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 19:45	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 19:45	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 19:45	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 19:45	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 19:45	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 19:45	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 19:45	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 19:45	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 19:45	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 19:45	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 19:45	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 19:45	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 19:45	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 19:45	1

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/31/23 20:23	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/31/23 20:23	1
Beryllium	<0.000274	^+	0.00100	0.000274	mg/L		07/18/23 10:25	07/31/23 20:23	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/31/23 20:23	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/31/23 20:23	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/31/23 20:23	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/31/23 20:23	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/31/23 20:23	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/31/23 20:23	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/31/23 20:23	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/31/23 20:23	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/31/23 20:23	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/31/23 20:23	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/31/23 20:23	1

Lab Sample ID: LCS 180-440656/2-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Arsenic	1.00	1.047		mg/L		105	80 - 120
Barium	1.00	1.047		mg/L		105	80 - 120
Beryllium	0.500	0.4986		mg/L		100	80 - 120
Cadmium	0.500	0.5210		mg/L		104	80 - 120
Calcium	25.0	27.43		mg/L		110	80 - 120
Chromium	0.500	0.5246		mg/L		105	80 - 120
Cobalt	0.500	0.5167		mg/L		103	80 - 120
Molybdenum	0.500	0.5255		mg/L		105	80 - 120
Lead	0.500	0.5342		mg/L		107	80 - 120
Antimony	0.250	0.2776		mg/L		111	80 - 120
Selenium	1.00	1.038		mg/L		104	80 - 120
Thallium	1.00	1.059		mg/L		106	80 - 120
Lithium	0.500	0.4901		mg/L		98	80 - 120
Iron	5.00	5.252		mg/L		105	80 - 120
Aluminum	5.00	4.931		mg/L		99	80 - 120

**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: LCS 180-440656/2-A  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Arsenic	1.00	1.004		mg/L		100	80 - 120
Barium	1.00	1.046		mg/L		105	80 - 120
Cadmium	0.500	0.5156		mg/L		103	80 - 120
Calcium	25.0	27.62		mg/L		110	80 - 120
Chromium	0.500	0.5284		mg/L		106	80 - 120
Molybdenum	0.500	0.5213		mg/L		104	80 - 120
Lead	0.500	0.5284		mg/L		108	80 - 120
Antimony	0.250	0.2731		mg/L		109	80 - 120
Selenium	1.00	1.032		mg/L		103	80 - 120
Thallium	1.00	1.061		mg/L		106	80 - 120
Lithium	0.500	0.5022		mg/L		100	80 - 120
Iron	5.00	5.266		mg/L		105	80 - 120
Aluminum	5.00	5.043		mg/L		101	80 - 120

Lab Sample ID: 180-158519-E-1-E MS  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Arsenic	0.0147		1.00	1.067		mg/L		105	75 - 125
Barium	0.0101		1.00	1.052		mg/L		104	75 - 125
Beryllium	0.0945		0.500	0.5563		mg/L		92	75 - 125
Cadmium	0.0115		0.500	0.5107		mg/L		100	75 - 125
Calcium	549		25.0	554.8	4	mg/L		22	75 - 125
Chromium	<0.00153		0.500	0.4991		mg/L		100	75 - 125
Cobalt	0.222		0.500	0.7191		mg/L		99	75 - 125
Molybdenum	<0.000610		0.500	0.5392		mg/L		108	75 - 125
Lead	0.00203		0.500	0.5304		mg/L		106	75 - 125
Antimony	<0.000967		0.250	0.2762		mg/L		110	75 - 125
Selenium	<0.000739		1.00	0.9531		mg/L		95	75 - 125
Thallium	0.00266		1.00	1.058		mg/L		106	75 - 125
Lithium	0.487		0.500	0.9123		mg/L		85	75 - 125
Iron	3.90		5.00	8.591		mg/L		94	75 - 125
Aluminum	44.1		5.00	47.18	4	mg/L		62	75 - 125

Lab Sample ID: 180-158519-E-1-E MS ^5  
Matrix: Water  
Analysis Batch: 441132

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Calcium	572		25.0	573.6	4	mg/L		6	75 - 125

Lab Sample ID: 180-158519-E-1-F MSD  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
				Result	Qualifier						
Arsenic	0.0147		1.00	1.054		mg/L		104	75 - 125	1	20
Barium	0.0101		1.00	1.050		mg/L		104	75 - 125	0	20

**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits	RPD		
Beryllium	0.0945		0.500	0.5527		mg/L		92	75 - 125	1	20	
Cadmium	0.0115		0.500	0.5047		mg/L		99	75 - 125	1	20	
Calcium	549		25.0	564.0	4	mg/L		59	75 - 125	2	20	
Chromium	<0.00153		0.500	0.4990		mg/L		100	75 - 125	0	20	
Cobalt	0.222		0.500	0.7199		mg/L		99	75 - 125	0	20	
Molybdenum	<0.000610		0.500	0.5450		mg/L		109	75 - 125	1	20	
Lead	0.00203		0.500	0.5321		mg/L		106	75 - 125	0	20	
Antimony	<0.000967		0.250	0.2790		mg/L		112	75 - 125	1	20	
Selenium	<0.000739		1.00	0.9496		mg/L		95	75 - 125	0	20	
Thallium	0.00266		1.00	1.058		mg/L		106	75 - 125	0	20	
Lithium	0.487		0.500	0.9239		mg/L		87	75 - 125	1	20	
Iron	3.90		5.00	8.698		mg/L		96	75 - 125	1	20	
Aluminum	44.1		5.00	47.92	4	mg/L		77	75 - 125	2	20	

Lab Sample ID: 180-158519-E-1-F MSD ^5 Matrix: Water Analysis Batch: 441132		Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 440656										
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Calcium	572		25.0	588.2	4	mg/L		65	75 - 125	3	20	

Lab Sample ID: MB 180-451064/1-A Matrix: Water Analysis Batch: 451218		Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 451064										
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac		
Boron	<0.0601		0.0800	0.0601	mg/L		11/06/23 09:30	11/07/23 10:45		1		

Lab Sample ID: LCS 180-451064/2-A ^5 Matrix: Water Analysis Batch: 451218		Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 451064										
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits					
Boron	1.25	1.149		mg/L		92	80 - 120					

Lab Sample ID: LCSD 180-451064/7-A ^5 Matrix: Water Analysis Batch: 451218		Client Sample ID: Lab Control Sample Dup Prep Type: Total Recoverable Prep Batch: 451064										
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Boron	1.25	1.222		mg/L		98	80 - 120	6	20			

**Method: EPA 7470A - Mercury (CVAA)**

Lab Sample ID: MB 180-439366/1-A Matrix: Water Analysis Batch: 439508		Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 439366										
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac		
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:09		1		

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**Method: EPA 7470A - Mercury (CVAA) (Continued)**

Lab Sample ID: LCS 180-439366/2-A Matrix: Water Analysis Batch: 439508		Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 439366										
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits					
Mercury	0.00250	0.002490		mg/L		100	80 - 120					

Lab Sample ID: 180-158526-E-1-B MS Matrix: Water Analysis Batch: 439508		Client Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 439366										
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits			
Mercury	<0.000130		0.00100	0.0008230		mg/L		82	75 - 125			

Lab Sample ID: 180-158526-E-1-C MSD Matrix: Water Analysis Batch: 439508		Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA Prep Batch: 439366										
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Mercury	<0.000130		0.00100	0.0007880		mg/L		79	75 - 125	4	20	

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

Lab Sample ID: MB 180-439399/1 Matrix: Water Analysis Batch: 439399		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	<10.0		10.0	10.0	mg/L			06/30/23 14:59		1		

Lab Sample ID: LCS 180-439399/2 Matrix: Water Analysis Batch: 439399		Client Sample ID: Lab Control Sample Prep Type: Total/NA										
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits					
Total Dissolved Solids	580	564.0		mg/L		97	85 - 115					

Lab Sample ID: 180-158532-C-1 DU Matrix: Water Analysis Batch: 439399		Client Sample ID: Duplicate Prep Type: Total/NA										
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	Analyzed	Dil	Fac		
Total Dissolved Solids	747		745.0		mg/L				0.3	10		

Lab Sample ID: MB 180-439404/1 Matrix: Water Analysis Batch: 439404		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	44.00		10.0	10.0	mg/L			06/30/23 15:54		1		

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

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

Lab Sample ID: LCS 180-439404/2  
Matrix: Water  
Analysis Batch: 439404

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	580	602.0		mg/L		104	85 - 115

Lab Sample ID: 180-158523-B-1 DU  
Matrix: Water  
Analysis Batch: 439404

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	515	B	560.0		mg/L		8	10

Lab Sample ID: 180-158595-1-1 DU  
Matrix: Water  
Analysis Batch: 439404

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	577	B	587.0		mg/L		2	10

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

Lab Sample ID: MB 160-618896/1-A  
Matrix: Water  
Analysis Batch: 621814

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618896

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04707	U	0.136	0.136	1.00	0.250	pCi/L	07/05/23 09:33	07/27/23 07:52	1

Carrier	%Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	07/05/23 09:33	07/27/23 07:52	1

Lab Sample ID: LCS 160-618896/2-A  
Matrix: Water  
Analysis Batch: 621814

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618896

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.812		1.13	1.00	0.182	pCi/L	87	75 - 125

Carrier	%Yield	LCS Qualifier	Limits
Ba Carrier	98.5		30 - 110

Lab Sample ID: 380-52750-B-1-A DU  
Matrix: Water  
Analysis Batch: 621813

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 618896

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.0847	U	0.02095	U	0.0935	1.00	0.187	pCi/L	0.31	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

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

Lab Sample ID: 380-52750-B-1-A DU  
Matrix: Water  
Analysis Batch: 621813

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 618896

Carrier	%Yield	DU Qualifier	Limits
Ba Carrier	86.9		30 - 110

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

Lab Sample ID: MB 160-618897/1-A  
Matrix: Water  
Analysis Batch: 621514

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618897

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.02315	U	0.253	0.253	1.00	0.480	pCi/L	07/05/23 09:40	07/25/23 12:28	1

Carrier	%Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	07/05/23 09:40	07/25/23 12:28	1
Y Carrier	86.0		30 - 110	07/05/23 09:40	07/25/23 12:28	1

Lab Sample ID: LCS 160-618897/2-A  
Matrix: Water  
Analysis Batch: 621514

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618897

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.01	7.893		1.09	1.00	0.441	pCi/L	99	75 - 125

Carrier	%Yield	LCS Qualifier	Limits
Ba Carrier	98.5		30 - 110
Y Carrier	87.1		30 - 110

Lab Sample ID: 380-52750-B-1-B DU  
Matrix: Water  
Analysis Batch: 621483

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 618897

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.442	U	0.2358	U	0.400	1.00	0.681	pCi/L	0.27	1

Carrier	%Yield	DU Qualifier	Limits
Ba Carrier	86.9		30 - 110
Y Carrier	86.0		30 - 110

Eurofins Pittsburgh



**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**HPLC/IC**

**Analysis Batch: 439238**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total/NA	Water	EPA 9056A	
180-158520-2	AP MW-3	Total/NA	Water	EPA 9056A	
180-158520-3	SSP MW-3	Total/NA	Water	EPA 9056A	
180-158520-3	SSP MW-3	Total/NA	Water	EPA 9056A	
180-158520-4	FB-2	Total/NA	Water	EPA 9056A	
MB 180-439238/69	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-439238/70	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-158523-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-158523-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 439366**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total/NA	Water	7470A	
180-158520-2	AP MW-3	Total/NA	Water	7470A	
180-158520-3	SSP MW-3	Total/NA	Water	7470A	
180-158520-4	FB-2	Total/NA	Water	7470A	
MB 180-439366/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-439366/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-158526-E-1-B MS	Matrix Spike	Total/NA	Water	7470A	
180-158526-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 439508**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total/NA	Water	EPA 7470A	439366
180-158520-2	AP MW-3	Total/NA	Water	EPA 7470A	439366
180-158520-3	SSP MW-3	Total/NA	Water	EPA 7470A	439366
180-158520-4	FB-2	Total/NA	Water	EPA 7470A	439366
MB 180-439366/1-A	Method Blank	Total/NA	Water	EPA 7470A	439366
LCS 180-439366/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	439366
180-158526-E-1-B MS	Matrix Spike	Total/NA	Water	EPA 7470A	439366
180-158526-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	439366

**Prep Batch: 440656**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total Recoverable	Water	3005A	
180-158520-2	AP MW-3	Total Recoverable	Water	3005A	
180-158520-3	SSP MW-3	Total Recoverable	Water	3005A	
180-158520-4	FB-2	Total Recoverable	Water	3005A	
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-158519-E-1-E MS	Matrix Spike	Total Recoverable	Water	3005A	
180-158519-E-1-E MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
180-158519-E-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
180-158519-E-1-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

**Analysis Batch: 440892**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total Recoverable	Water	EPA 6020B	440656
180-158520-2	AP MW-3	Total Recoverable	Water	EPA 6020B	440656

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

**Metals (Continued)**

**Analysis Batch: 440892 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-3	SSP MW-3	Total Recoverable	Water	EPA 6020B	440656
180-158520-4	FB-2	Total Recoverable	Water	EPA 6020B	440656
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440656
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-E MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440656

**Analysis Batch: 441132**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-3	SSP MW-3	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-E MS ^5	Matrix Spike	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440656

**Analysis Batch: 442055**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440656
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440656

**Prep Batch: 451064**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total Recoverable	Water	3005A	
180-158520-2	AP MW-3	Total Recoverable	Water	3005A	
180-158520-3	SSP MW-3	Total Recoverable	Water	3005A	
180-158520-4	FB-2	Total Recoverable	Water	3005A	
MB 180-451064/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-451064/2-A ^5	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 180-451064/7-A ^5	Lab Control Sample Dup	Total Recoverable	Water	3005A	

**Analysis Batch: 451218**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total Recoverable	Water	EPA 6020B	451064
180-158520-2	AP MW-3	Total Recoverable	Water	EPA 6020B	451064
180-158520-3	SSP MW-3	Total Recoverable	Water	EPA 6020B	451064
180-158520-4	FB-2	Total Recoverable	Water	EPA 6020B	451064
MB 180-451064/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	451064
LCS 180-451064/2-A ^5	Lab Control Sample	Total Recoverable	Water	EPA 6020B	451064
LCS 180-451064/7-A ^5	Lab Control Sample Dup	Total Recoverable	Water	EPA 6020B	451064

**General Chemistry**

**Analysis Batch: 439399**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total/NA	Water	SM 2540C	
180-158520-2	AP MW-3	Total/NA	Water	SM 2540C	
180-158520-3	SSP MW-3	Total/NA	Water	SM 2540C	
MB 180-439399/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-439399/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-158532-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	

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### QC Association Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158520-1

#### General Chemistry

Analysis Batch: 439404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-4	FB-2	Total/NA	Water	SM 2540C	
MB 180-439404/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-439404/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-158523-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
180-158595-1-1 DU	Duplicate	Total/NA	Water	SM 2540C	

#### Rad

Prep Batch: 618896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total/NA	Water	PrecSep-21	
180-158520-2	AP MW-3	Total/NA	Water	PrecSep-21	
180-158520-3	SSP MW-3	Total/NA	Water	PrecSep-21	
180-158520-4	FB-2	Total/NA	Water	PrecSep-21	
MB 160-618896/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-618896/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
380-52750-B-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 618897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158520-1	AP MW-1D	Total/NA	Water	PrecSep_0	
180-158520-2	AP MW-3	Total/NA	Water	PrecSep_0	
180-158520-3	SSP MW-3	Total/NA	Water	PrecSep_0	
180-158520-4	FB-2	Total/NA	Water	PrecSep_0	
MB 160-618897/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-618897/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
380-52750-B-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Eurofins Pittsburgh

### Eurofins TestAmerica, Pittsburgh

301 Alpha Drive RDC Park  
Pittsburgh, PA 15238  
Phone (412) 963-7058 Fax (412) 963-2488

#### Client Information

Company: HDR Inc  
Address: 17111 Preston Road, Suite 200  
City: Dallas  
State: TX  
Zip: 75248-1232  
Phone: 972-960-4461 (Tel)  
Email: david.vogt@hdrinc.com (william.nicholson@hdrinc.com)  
Project #: 18023511  
Site: Gibbons Creek Steam Electric Station

### Chain of Custody Record

Sample Identification	Sample Date	Sample Time	Sample Type (C-comp, G-grab)	Matrix (Water, Urine, Blood, etc.)	Preservation Code:	Field Filtered Sample (Yes or No)	Analysis Requested	Method of Shipments:
AP MW-1D	6/27/23	0800	G	Water	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Yes	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Return To Client
AP MW-3	6/27/23	0720	G	Water	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Yes	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Return To Client
SSP MW-3	6/27/23	1150	G	Water	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Yes	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Return To Client
FB-2	6/27/23	0800	G	Water	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Yes	9056A, 9056B, 9056C, 9056D, 9056E, 9056F, 9056G, 9056H, 9056I, 9056J, 9056K, 9056L, 9056M, 9056N, 9056O, 9056P, 9056Q, 9056R, 9056S, 9056T, 9056U, 9056V, 9056W, 9056X, 9056Y, 9056Z	Return To Client

**Sierra Worthington**

**From:** Ronald Rosenbaum jr  
**Sent:** Friday, November 3, 2023 4:59 AM  
**To:** Christina m Kovitch; Jayna Awalt; Ken Hayes; St. Louis - SampleReceiving; St. Louis - Radiochemistry Lead  
**Cc:** Pittsburgh - Sample Receiving  
**Subject:** RE: 180-158520 samples -1 thru -4 Any remaining nitric preserved volume needed back at Pittsburgh

**INFO:** INTERNAL EMAIL - Sent from your own Eurofins email domain.

Thank you, everyone!!

**Ron Rosenbaum**  
Metals Analyst

Phone: 412-963-2454

E-Mail: [Ron.Rosenbaum@ET.EurofinsUS.com](mailto:Ron.Rosenbaum@ET.EurofinsUS.com)  
[www.EurofinsUS.com](http://www.EurofinsUS.com)

**From:** Christina m Kovitch <Chris.Kovitch@et.eurofinsus.com>  
**Sent:** Thursday, November 2, 2023 2:22 PM  
**To:** Jayna Awalt <Jayna.Awalt@et.eurofinsus.com>; Ken Hayes <Ken.Hayes@et.eurofinsus.com>; St. Louis - SampleReceiving <St.Louis-SampleReceiving@et.eurofinsus.com>; St. Louis - Radiochemistry Lead <St.Louis-RadiochemistryLead@et.eurofinsus.com>  
**Cc:** Ronald Rosenbaum jr <Ron.Rosenbaum@et.eurofinsus.com>; Pittsburgh - Sample Receiving <Pittsburgh-SampleReceiving@et.eurofinsus.com>  
**Subject:** RE: 180-158520 samples -1 thru -4 Any remaining nitric preserved volume needed back at Pittsburgh

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Thank you we will look for them and let metals know when we receive them

Christina M. Kovitch  
Shipping and Receiving Department Manager

Eurofins Environment Testing US  
301 Alpha Drive  
Pittsburgh, Pa 15238

Direct: 412-963-2429

**COMMUNICATION ALERT: Change of e-mail addresses for all Eurofins Environment Testing businesses in the US effective April 4, 2022**  
Please update my e-mail address in your e-mail directory: [Chris.Kovitch@ET.EurofinsUS.com](mailto:Chris.Kovitch@ET.EurofinsUS.com)

[Chris.Kovitch@ET.EurofinsUS.com](mailto:Chris.Kovitch@ET.EurofinsUS.com)

*Thank You,*

**KEN HAYES**  
Project Manager II

Eurofins Environment Testing America-Pittsburgh  
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Pittsburgh, PA 15238  
USA  
Tel 615.301.5035

[Ken.Hayes@ET.EurofinsUS.com](mailto:Ken.Hayes@ET.EurofinsUS.com)  
[www.EurofinsUS.com](http://www.EurofinsUS.com)  
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*Received: R. Rosenbaum  
11-4-23  
0930  
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**Sierra Worthington**

**From:** Ronald Rosenbaum jr  
**Sent:** Friday, November 3, 2023 4:59 AM  
**To:** Christina m Kovitch; Jayna Awalt; Ken Hayes; St. Louis - SampleReceiving; St. Louis - Radiochemistry Lead  
**Cc:** Pittsburgh - Sample Receiving  
**Subject:** RE: 180-158520 samples -1 thru -4 Any remaining nitric preserved volume needed back at Pittsburgh

**INFO:** INTERNAL EMAIL - Sent from your own Eurofins email domain.

Thank you, everyone!!

**Ron Rosenbaum**  
Metals Analyst

Phone: 412-963-2454

E-Mail: [Ron.Rosenbaum@ET.EurofinsUS.com](mailto:Ron.Rosenbaum@ET.EurofinsUS.com)  
[www.EurofinsUS.com](http://www.EurofinsUS.com)

**From:** Christina m Kovitch <Chris.Kovitch@et.eurofinsus.com>  
**Sent:** Thursday, November 2, 2023 2:22 PM  
**To:** Jayna Awalt <Jayna.Awalt@et.eurofinsus.com>; Ken Hayes <Ken.Hayes@et.eurofinsus.com>; St. Louis - SampleReceiving <St.Louis-SampleReceiving@et.eurofinsus.com>; St. Louis - Radiochemistry Lead <St.Louis-RadiochemistryLead@et.eurofinsus.com>  
**Cc:** Ronald Rosenbaum jr <Ron.Rosenbaum@et.eurofinsus.com>; Pittsburgh - Sample Receiving <Pittsburgh-SampleReceiving@et.eurofinsus.com>  
**Subject:** RE: 180-158520 samples -1 thru -4 Any remaining nitric preserved volume needed back at Pittsburgh

**INFO:** INTERNAL EMAIL - Sent from your own Eurofins email domain.

Thank you we will look for them and let metals know when we receive them

Christina M. Kovitch  
Shipping and Receiving Department Manager

Eurofins Environment Testing US  
301 Alpha Drive  
Pittsburgh, Pa 15238

Direct: 412-963-2429

**COMMUNICATION ALERT: Change of e-mail addresses for all Eurofins Environment Testing businesses in the US effective April 4, 2022**  
Please update my e-mail address in your e-mail directory: [Chris.Kovitch@ET.EurofinsUS.com](mailto:Chris.Kovitch@ET.EurofinsUS.com)

[Chris.Kovitch@ET.EurofinsUS.com](mailto:Chris.Kovitch@ET.EurofinsUS.com)

- 1
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*Thank You,*

**KEN HAYES**  
Project Manager II

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[www.EurofinsUS.com](http://www.EurofinsUS.com)  
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*Received: [Signature]  
11-4-23  
0930  
EP.#NE*



**Login Sample Receipt Checklist**

Client: HDR Inc

Job Number: 180-158520-2

**Login Number: 158520**

**List Number: 1**

**Creator: Abernathy, Eric L**

**List Source: Eurofins Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\neq</math> 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?	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
 HDR Inc  
 17111 Preston Road  
 Suite 200  
 Dallas, Texas 75248-1232

Generated 10/16/2023 5:59:15 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-158528-1

**Job Notes**

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

**Authorization**



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Authorized for release by  
Ken Hayes, Project Manager II  
Ken.Hayes@et.eurofinsus.com  
(615)301-5035

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## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

### Job ID: 180-158528-1

Laboratory: Eurofins Pittsburgh

#### Narrative

Job Narrative  
180-158528-1

#### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 618896 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. SSP MW-2 (180-158528-1), MNW-18 (180-158528-2), (LCS 160-618896/2-A), (MB 160-618896/1-A), (380-52750-A-1-A) and (380-52750-B-1-A DU)

Method 904.0: Radium-228 prep batch 160-618897 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. SSP MW-2 (180-158528-1), MNW-18 (180-158528-2), (LCS 160-618897/2-A), (MB 160-618897/1-A), (380-52750-A-1-B) and (380-52750-B-1-B DU)

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

#### Rad

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

#### Narrative

Job Narrative  
180-158528-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following sample was diluted due to the nature of the sample matrix: MNW-18 (180-158528-2) at 2.5. 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

Method 6020B: The post digestion spike % recovery for antimony associated with batch 180-440892 was outside the control limits. The associated sample is: SSP MW-2 (180-158528-1).

## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

### Job ID: 180-158528-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

Method 6020B: The MS & MSD associated with sample SSP MW-2 (180-158528-1), (180-158528-E-1-C MS), (180-158528-E-1-D MSD) and (180-158528-E-1-B PDS) exceeded the linear range (LR) for lithium due to the spiking levels. Samples are reported, as is, with this narrative because the parent sample was under the LR.

Method 6020B: The following sample was diluted to bring the concentration of calcium within the calibration range: SSP MW-2 (180-158528-1). Elevated reporting limits (RLs) are provided.

Method 6020B: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples: (180-157730-A-22-A ^5), (180-157730-A-22-B MS ^5), (180-157730-A-22-C MSD ^5), (180-157730-A-22-A PDS ^5) and (180-157730-A-22-A SD ^25).

Method 6020B: The initial calibration verification low level (ICVL) result for batch 180-447301 was above the upper control limit. Sample results were non-detects or unable to be reanalyzed due to volume consumed by the laboratory for Aluminum. The data has been reported as qualified data.

Method 6020B: The linear range check (LRC) associated with batch 180-447301 recovered outside acceptance criteria for Iron. All associated samples are run within calibration curve range with standard 2 and 3. (LRC 180-447301/31)

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

#### General Chemistry

Method 2540C\_Calcd: The method blank for analytical batch 180-439404 contained Total Dissolved Solids above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank. SSP MW-2 (180-158528-1) and MNW-18 (180-158528-2)

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

## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

### 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
A1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
A5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
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.
E	Result exceeded calibration range.
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
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.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MLQ	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	09-14-23 *
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23 *
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-23 *
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh



## Accreditation/Certification Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-23 *
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23 *
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

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

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## Sample Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-158528-1	SSP MW-2	Water	06/27/23 12:10	06/28/23 09:30
180-158528-2	MNW-18	Water	06/27/23 13:45	06/28/23 09:30

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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## Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

### Client Sample ID: SSP MW-2

### Lab Sample ID: 180-158528-1

Date Collected: 06/27/23 12:10

Matrix: Water

Date Received: 06/28/23 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	EPA 9056A		1	1 mL	1 mL	439238	06/29/23 23:58	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	439238	06/30/23 00:13	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 23:31	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		5			441132	07/21/23 20:28	KED	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			447301	09/21/23 21:02	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:00	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:27	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	15 mL	100 mL	439404	06/30/23 15:54	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			959.71 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621941	07/27/23 07:55	FLC	EET SL
		Instrument ID: GFPCPURPLE								
Total/NA	Prep	PrecSep_0			959.71 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:30	SCB	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:28	SCB	EET SL
		Instrument ID: NOEQUIP								

### Client Sample ID: MNW-18

### Lab Sample ID: 180-158528-2

Date Collected: 06/27/23 13:45

Matrix: Water

Date Received: 06/28/23 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	EPA 9056A		2.5	1 mL	1 mL	439238	06/30/23 00:27	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 23:49	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			447301	09/21/23 21:17	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:00	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:28	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439404	08/30/23 15:54	LWM	EET PIT
		Instrument ID: NOEQUIP								

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

#### Client Sample ID: MNW-18

Date Collected: 06/27/23 13:45

Date Received: 06/28/23 09:30

#### Lab Sample ID: 180-158528-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			979.05 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621941	07/27/23 07:55	FLC	EET SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			979.05 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621483	07/25/23 12:41	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:23	SCB	EET SL
Instrument ID: NOEQUIP										

#### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

#### Analyst References:

Lab: EET PIT

##### Batch Type: Prep

MTW = Michael Wesoloski  
S1Z = Sage Ziviello  
SJM = Shannon Mueller

##### Batch Type: Analysis

KED = Katie Dacko  
LWM = Leslie McIntire  
MRG = Mismel Garcia  
MTW = Michael Wesoloski  
RJR = Ron Rosenbaum  
SNL = Sean Lordo

Lab: EET SL

##### Batch Type: Prep

KAC = Kevin Cox

##### Batch Type: Analysis

FLC = Fernando Cruz  
SCB = Sarah Bernsen

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### Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

#### Client Sample ID: SSP MW-2

Date Collected: 06/27/23 12:10

Date Received: 06/28/23 09:30

#### Lab Sample ID: 180-158528-1

Matrix: Water

#### Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2440		10.0	7.13	mg/L		06/30/23 00:13	06/30/23 00:13	10
Fluoride	0.268		0.100	0.0260	mg/L		06/29/23 23:58	06/29/23 23:58	1
Sulfate	2110		10.0	7.56	mg/L		06/30/23 00:13	06/30/23 00:13	10

#### Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00446		0.00100	0.000282	mg/L		07/18/23 11:30	07/19/23 23:31	1
Barium	0.0197		0.0100	0.00314	mg/L		07/18/23 11:30	07/19/23 23:31	1
Beryllium	0.0471		0.00100	0.000274	mg/L		07/18/23 11:30	07/19/23 23:31	1
Boron	0.426		0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 21:02	1
Cadmium	0.000544	J	0.00100	0.000217	mg/L		07/18/23 11:30	07/19/23 23:31	1
Calcium	876		2.50	0.635	mg/L		07/18/23 11:30	07/21/23 20:26	5
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	07/19/23 23:31	1
Cobalt	0.0478		0.000500	0.000261	mg/L		07/18/23 11:30	07/19/23 23:31	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	07/19/23 23:31	1
Lead	0.000481	J	0.00100	0.000376	mg/L		07/18/23 11:30	07/19/23 23:31	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	07/19/23 23:31	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/19/23 23:31	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	07/19/23 23:31	1
Lithium	0.711		0.00500	0.00129	mg/L		07/18/23 11:30	07/19/23 23:31	1
Iron	5.42	A5-	0.0500	0.0277	mg/L		09/18/23 10:05	09/21/23 21:02	1
Aluminum	1.16	A1+	0.0300	0.0155	mg/L		09/18/23 10:05	09/21/23 21:02	1

#### Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:27	1

#### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7100	B	66.7	66.7	mg/L		06/30/23 15:54	06/30/23 15:54	1

#### Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.811		0.236	0.247	1.00	0.209	pCi/L	07/05/23 09:33	07/27/23 07:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.5		30 - 110					07/05/23 09:33	07/27/23 07:55	1

#### Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.61		0.545	0.596	1.00	0.489	pCi/L	07/05/23 09:40	07/25/23 12:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.5		30 - 110					07/05/23 09:40	07/25/23 12:30	1
Y Carrier	84.5		30 - 110					07/05/23 09:40	07/25/23 12:30	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Client Sample ID: SSP MW-2

Lab Sample ID: 180-158528-1

Date Collected: 06/27/23 12:10

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	3.42		0.594	0.645	5.00	0.489	pCi/L		07/27/23 15:26	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Client Sample ID: MNW-18

Lab Sample ID: 180-158528-2

Date Collected: 06/27/23 13:45

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	208		2.50	1.78	mg/L			06/30/23 00:27	2.5
Fluoride	0.139	J	0.250	0.0650	mg/L			06/30/23 00:27	2.5
Sulfate	741		2.50	1.89	mg/L			06/30/23 00:27	2.5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00136		0.00100	0.000282	mg/L		07/18/23 11:30	07/19/23 23:49	1
Barium	0.00421	J	0.0100	0.00314	mg/L		07/18/23 11:30	07/19/23 23:49	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	07/19/23 23:49	1
Boron	0.262		0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 21:17	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	07/19/23 23:49	1
Calcium	142		0.500	0.127	mg/L		07/18/23 11:30	07/19/23 23:49	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	07/19/23 23:49	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	07/19/23 23:49	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	07/19/23 23:49	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	07/19/23 23:49	1
Antimony	0.00140	J	0.00200	0.000967	mg/L		07/18/23 11:30	07/19/23 23:49	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/19/23 23:49	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	07/19/23 23:49	1
Lithium	0.196		0.00500	0.00129	mg/L		07/18/23 11:30	07/19/23 23:49	1
Iron	0.0312	J ^5-	0.0500	0.0277	mg/L		09/18/23 10:05	09/21/23 21:17	1
Aluminum	<0.0155	^1+	0.0300	0.0155	mg/L		09/18/23 10:05	09/21/23 21:17	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1650	B	10.0	10.0	mg/L			06/30/23 15:54	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0158	U	0.106	0.106	1.00	0.208	pCi/L	07/05/23 09:33	07/27/23 07:55	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.2		30 - 110					07/05/23 09:33	07/27/23 07:55	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.440	U	0.335	0.337	1.00	0.515	pCi/L	07/05/23 09:40	07/25/23 12:41	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.2		30 - 110					07/05/23 09:40	07/25/23 12:41	1
Y Carrier	85.6		30 - 110					07/05/23 09:40	07/25/23 12:41	1

### Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Client Sample ID: MNW-18

Lab Sample ID: 180-158528-2

Date Collected: 06/27/23 13:45

Matrix: Water

Date Received: 06/28/23 09:30

Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.456	U	0.351	0.353	5.00	0.515	pCi/L		07/27/23 15:26	1

### QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-439238/30

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			06/29/23 16:05	1
Fluoride	<0.0260		0.100	0.0260	mg/L			06/29/23 16:05	1
Sulfate	<0.756		1.00	0.756	mg/L			06/29/23 16:05	1

Lab Sample ID: LCS 180-439238/31

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	51.41		mg/L		103	80 - 120
Fluoride	2.50	2.748		mg/L		110	80 - 120
Sulfate	50.0	51.35		mg/L		103	80 - 120

Lab Sample ID: 180-158515-D-1 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Chloride	17.4		50.0	66.89		mg/L		99	80 - 120
Fluoride	0.0748	J	2.50	2.650		mg/L		103	80 - 120
Sulfate	3.76		50.0	54.38		mg/L		101	80 - 120

Lab Sample ID: 180-158515-D-1 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 439238

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Chloride	17.4		50.0	67.65		mg/L		100	80 - 120	1	15
Fluoride	0.0748	J	2.50	2.826		mg/L		110	80 - 120	6	15
Sulfate	3.76		50.0	55.17		mg/L		103	80 - 120	1	15

Method: EPA 6020B - Metals (ICP/MS)

Lab Sample ID: MB 180-440646/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total Recoverable

Analysis Batch: 440892

Prep Batch: 440646

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 11:30	07/19/23 23:23	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 11:30	07/19/23 23:23	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	07/19/23 23:23	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	07/19/23 23:23	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 11:30	07/19/23 23:23	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	07/19/23 23:23	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	07/19/23 23:23	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	07/19/23 23:23	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	07/19/23 23:23	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	07/19/23 23:23	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/19/23 23:23	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	07/19/23 23:23	1

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-440646/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 11:30	07/19/23 23:23	1

Lab Sample ID: MB 180-440646/1-A  
Matrix: Water  
Analysis Batch: 446713

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 11:30	09/15/23 18:07	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 11:30	09/15/23 18:07	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	09/15/23 18:07	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	09/15/23 18:07	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 11:30	09/15/23 18:07	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	09/15/23 18:07	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	09/15/23 18:07	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	09/15/23 18:07	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	09/15/23 18:07	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	09/15/23 18:07	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	09/15/23 18:07	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	09/15/23 18:07	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 11:30	09/15/23 18:07	1

Lab Sample ID: MB 180-440646/1-A  
Matrix: Water  
Analysis Batch: 446713

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 11:30	09/15/23 18:27	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 11:30	09/15/23 18:27	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	09/15/23 18:27	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	09/15/23 18:27	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 11:30	09/15/23 18:27	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	09/15/23 18:27	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	09/15/23 18:27	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	09/15/23 18:27	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	09/15/23 18:27	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	09/15/23 18:27	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	09/15/23 18:27	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	09/15/23 18:27	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 11:30	09/15/23 18:27	1

Lab Sample ID: LCS 180-435862/2-C  
Matrix: Water  
Analysis Batch: 441132

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.9289		mg/L		93	80 - 120
Barium	1.00	1.024		mg/L		102	80 - 120
Beryllium	0.500	0.5030		mg/L		101	80 - 120
Cadmium	0.500	0.4967		mg/L		99	80 - 120

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-435862/2-C  
Matrix: Water  
Analysis Batch: 441132

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	25.0	26.26		mg/L		105	80 - 120
Chromium	0.500	0.5048		mg/L		101	80 - 120
Cobalt	0.500	0.4707		mg/L		94	80 - 120
Molybdenum	0.500	0.5009		mg/L		100	80 - 120
Lead	0.500	0.5041		mg/L		101	80 - 120
Antimony	0.250	0.2682		mg/L		107	80 - 120
Selenium	1.00	1.016		mg/L		102	80 - 120
Thallium	1.00	1.012		mg/L		101	80 - 120
Lithium	0.500	0.4775		mg/L		95	80 - 120

Lab Sample ID: LCS 180-440646/2-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.002		mg/L		100	80 - 120
Barium	1.00	1.035		mg/L		104	80 - 120
Beryllium	0.500	0.4685		mg/L		94	80 - 120
Cadmium	0.500	0.5160		mg/L		103	80 - 120
Calcium	25.0	26.66		mg/L		107	80 - 120
Chromium	0.500	0.5231		mg/L		105	80 - 120
Cobalt	0.500	0.4965		mg/L		99	80 - 120
Molybdenum	0.500	0.5194		mg/L		104	80 - 120
Lead	0.500	0.5293		mg/L		106	80 - 120
Antimony	0.250	0.2765		mg/L		111	80 - 120
Selenium	1.00	1.048		mg/L		105	80 - 120
Thallium	1.00	1.051		mg/L		105	80 - 120
Lithium	0.500	0.4435		mg/L		89	80 - 120

Lab Sample ID: LCS 180-440646/2-A  
Matrix: Water  
Analysis Batch: 446713

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.9908		mg/L		99	80 - 120
Barium	1.00	0.9581		mg/L		96	80 - 120
Beryllium	0.500	0.4146		mg/L		83	80 - 120
Cadmium	0.500	0.4772		mg/L		95	80 - 120
Calcium	25.0	27.69		mg/L		111	80 - 120
Chromium	0.500	0.4760		mg/L		95	80 - 120
Cobalt	0.500	0.4900		mg/L		98	80 - 120
Molybdenum	0.500	0.4968		mg/L		99	80 - 120
Lead	0.500	0.4964		mg/L		99	80 - 120
Antimony	0.250	0.2546		mg/L		102	80 - 120
Selenium	1.00	0.9387		mg/L		94	80 - 120
Thallium	1.00	0.9872		mg/L		99	80 - 120
Lithium	0.500	0.4113		mg/L		82	80 - 120

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Arsenic	1.00	0.9171		mg/L		92	80 - 120	1	20	
Barium	1.00	1.026		mg/L		103	80 - 120	0	20	
Beryllium	0.500	0.4988		mg/L		100	80 - 120	1	20	
Cadmium	0.500	0.4954		mg/L		99	80 - 120	0	20	
Calcium	25.0	26.18		mg/L		105	80 - 120	0	20	
Chromium	0.500	0.5047		mg/L		101	80 - 120	0	20	
Cobalt	0.500	0.4641		mg/L		93	80 - 120	1	20	
Molybdenum	0.500	0.4963		mg/L		99	80 - 120	1	20	
Lead	0.500	0.5075		mg/L		102	80 - 120	1	20	
Antimony	0.250	0.2671		mg/L		107	80 - 120	0	20	
Selenium	1.00	1.010		mg/L		101	80 - 120	1	20	
Thallium	1.00	1.014		mg/L		101	80 - 120	0	20	
Lithium	0.500	0.4773		mg/L		95	80 - 120	0	20	

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Beryllium	0.500	0.4639		mg/L		93	80 - 120	2	20	
Cadmium	0.500	0.4703		mg/L		94	80 - 120	0	20	
Chromium	0.500	0.4666		mg/L		93	80 - 120	0	20	

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Beryllium	0.0460		0.500	0.4858		mg/L		88	75 - 125			
Cadmium	0.000471	J	0.500	0.4674		mg/L		93	75 - 125			
Chromium	<0.00153		0.500	0.4663		mg/L		93	75 - 125			
Selenium	<0.000739		1.00	0.8711		mg/L		87	75 - 125			

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Arsenic	0.00446		1.00	1.050		mg/L		105	75 - 125			
Barium	0.0197		1.00	1.054		mg/L		103	75 - 125			
Beryllium	0.0471		0.500	0.4975		mg/L		90	75 - 125			
Cadmium	0.000544	J	0.500	0.4884		mg/L		98	75 - 125			
Chromium	<0.00153		0.500	0.4976		mg/L		100	75 - 125			
Cobalt	0.0478		0.500	0.5463		mg/L		100	75 - 125			
Molybdenum	<0.000610		0.500	0.5451		mg/L		109	75 - 125			
Lead	0.000481	J	0.500	0.5341		mg/L		107	75 - 125			
Antimony	<0.000967		0.250	0.2756		mg/L		110	75 - 125			
Selenium	<0.000739		1.00	0.9468		mg/L		95	75 - 125			
Thallium	<0.000472		1.00	1.069		mg/L		107	75 - 125			

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Lithium	0.711		0.500	1.112	E	mg/L		80	75 - 125	

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Arsenic	0.00421	J	1.00	0.9927		mg/L		99	75 - 125	
Barium	0.0200	J	1.00	1.029		mg/L		101	75 - 125	
Beryllium	0.0535		0.500	0.5703		mg/L		103	75 - 125	
Cadmium	<0.00109		0.500	0.4939		mg/L		99	75 - 125	
Calcium	876		25.0	855.1	4	mg/L		-82	75 - 125	
Chromium	<0.00765		0.500	0.5012		mg/L		100	75 - 125	
Cobalt	0.0460		0.500	0.5243		mg/L		96	75 - 125	
Molybdenum	<0.00305		0.500	0.5194		mg/L		104	75 - 125	
Lead	<0.00188		0.500	0.5148		mg/L		103	75 - 125	
Antimony	<0.00484		0.250	0.2725		mg/L		109	75 - 125	
Selenium	<0.00370		1.00	0.9907		mg/L		99	75 - 125	
Thallium	<0.00236		1.00	1.005		mg/L		100	75 - 125	
Lithium	0.862		0.500	1.299		mg/L		87	75 - 125	

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Beryllium	0.0460		0.500	0.4831		mg/L		87	75 - 125	1	20	
Cadmium	0.000471	J	0.500	0.4617		mg/L		92	75 - 125	1	20	
Chromium	<0.00153		0.500	0.4532		mg/L		91	75 - 125	3	20	
Selenium	<0.000739		1.00	0.8598		mg/L		86	75 - 125	1	20	

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits	RPD		
Arsenic	0.00446		1.00	1.039		mg/L		103	75 - 125	1	20	
Barium	0.0197		1.00	1.045		mg/L		103	75 - 125	1	20	
Beryllium	0.0471		0.500	0.4981		mg/L		90	75 - 125	0	20	
Cadmium	0.000544	J	0.500	0.4871		mg/L		97	75 - 125	0	20	
Chromium	<0.00153		0.500	0.4954		mg/L		99	75 - 125	0	20	
Cobalt	0.0478		0.500	0.5432		mg/L		99	75 - 125	1	20	
Molybdenum	<0.000610		0.500	0.5391		mg/L		108	75 - 125	1	20	
Lead	0.000481	J	0.500	0.5255		mg/L		105	75 - 125	2	20	
Antimony	<0.000967		0.250	0.2725		mg/L		109	75 - 125	1	20	
Selenium	<0.000739		1.00	0.9354		mg/L		94	75 - 125	1	20	
Thallium	<0.000472		1.00	1.054		mg/L		105	75 - 125	1	20	
Lithium	0.711		0.500	1.121	E	mg/L		82	75 - 125	1	20	

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-158528-1 MSD Matrix: Water Analysis Batch: 441132			Client Sample ID: SSP MW-2 Prep Type: Total Recoverable Prep Batch: 440646									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Arsenic	0.00421	J	1.00	0.9830		mg/L		98	75 - 125	1	20	
Barium	0.0200	J	1.00	1.018		mg/L		100	75 - 125	1	20	
Beryllium	0.0535		0.500	0.5614		mg/L		102	75 - 125	2	20	
Cadmium	<0.00109		0.500	0.4881		mg/L		98	75 - 125	1	20	
Calcium	876		25.0	865.1	4	mg/L		-42	75 - 125	1	20	
Chromium	<0.00765		0.500	0.4947		mg/L		99	75 - 125	1	20	
Cobalt	0.0460		0.500	0.5165		mg/L		94	75 - 125	1	20	
Molybdenum	<0.00305		0.500	0.5131		mg/L		103	75 - 125	1	20	
Lead	<0.00188		0.500	0.5071		mg/L		101	75 - 125	2	20	
Antimony	<0.00484		0.250	0.2635		mg/L		105	75 - 125	3	20	
Selenium	<0.00370		1.00	1.011		mg/L		101	75 - 125	2	20	
Thallium	<0.00236		1.00	0.9960		mg/L		100	75 - 125	1	20	
Lithium	0.862		0.500	1.308		mg/L		89	75 - 125	1	20	

Lab Sample ID: MB 180-446737/1-A Matrix: Water Analysis Batch: 447301			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 446737									
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Arsenic	<0.000282		0.00100	0.000282	mg/L		09/18/23 10:05	09/21/23 20:51	1			
Boron	<0.0601		0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 20:51	1			
Calcium	<0.127		0.500	0.127	mg/L		09/18/23 10:05	09/21/23 20:51	1			
Iron	<0.0277	*5-	0.0500	0.0277	mg/L		09/18/23 10:05	09/21/23 20:51	1			
Aluminum	<0.0155	*1+	0.0300	0.0155	mg/L		09/18/23 10:05	09/21/23 20:51	1			

Lab Sample ID: LCS 180-446737/2-A Matrix: Water Analysis Batch: 447301			Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 446737									
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits					
Boron	1.25	1.106		mg/L		88	80 - 120					
Iron	5.00	4.931	*5-	mg/L		99	80 - 120					
Aluminum	5.00	4.389	*1+	mg/L		88	80 - 120					

Lab Sample ID: 180-158528-1 MS Matrix: Water Analysis Batch: 447301			Client Sample ID: SSP MW-2 Prep Type: Total Recoverable Prep Batch: 446737									
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Arsenic	0.00902		1.00	1.041		mg/L		103	75 - 125			
Boron	0.426		1.25	1.543		mg/L		89	75 - 125			
Chromium	<0.00153		0.500	0.4600		mg/L		92	75 - 125			
Molybdenum	<0.000610		0.500	0.5327		mg/L		107	75 - 125			
Lead	0.000523	J	0.500	0.5104		mg/L		102	75 - 125			
Selenium	0.00198	J	1.00	0.9043		mg/L		90	75 - 125			
Thallium	<0.000472		1.00	1.009		mg/L		101	75 - 125			
Iron	5.42	*5-	5.00	10.14	*5-	mg/L		94	75 - 125			
Aluminum	1.16	*1+	5.00	5.661	*1+	mg/L		90	75 - 125			

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-158528-1 MSD Matrix: Water Analysis Batch: 447301			Client Sample ID: SSP MW-2 Prep Type: Total Recoverable Prep Batch: 446737									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Arsenic	0.00902		1.00	1.049		mg/L		104	75 - 125	1	20	
Boron	0.426		1.25	1.505		mg/L		86	75 - 125	2	20	
Chromium	<0.00153		0.500	0.4643		mg/L		93	75 - 125	1	20	
Molybdenum	<0.000610		0.500	0.5383		mg/L		108	75 - 125	1	20	
Lead	0.000523	J	0.500	0.5068		mg/L		101	75 - 125	1	20	
Selenium	0.00198	J	1.00	0.8950		mg/L		89	75 - 125	1	20	
Thallium	<0.000472		1.00	1.012		mg/L		101	75 - 125	0	20	
Iron	5.42	*5-	5.00	10.28	*5-	mg/L		97	75 - 125	1	20	
Aluminum	1.16	*1+	5.00	5.667	*1+	mg/L		90	75 - 125	0	20	

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-439366/1-A Matrix: Water Analysis Batch: 439508			Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 439366									
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:09	1			

Lab Sample ID: LCS 180-439366/2-A Matrix: Water Analysis Batch: 439508			Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 439366									
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits					
Mercury	0.00250	0.002490		mg/L		100	80 - 120					

Lab Sample ID: 180-158526-E-1-B MS Matrix: Water Analysis Batch: 439508			Client Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 439366									
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits			
Mercury	<0.000130		0.00100	0.0008230		mg/L		82	75 - 125			

Lab Sample ID: 180-158526-E-1-C MSD Matrix: Water Analysis Batch: 439508			Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA Prep Batch: 439366									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Mercury	<0.000130		0.00100	0.0007880		mg/L		79	75 - 125	4	20	

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

Lab Sample ID: MB 180-439404/1 Matrix: Water Analysis Batch: 439404			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	44.00		10.0	10.0	mg/L			06/30/23 15:54	1			

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

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

Lab Sample ID: LCS 180-439404/2 Client Sample ID: Lab Control Sample  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 439404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	580	602.0		mg/L		104	85 - 115

Lab Sample ID: 180-158595-I-1 DU Client Sample ID: Duplicate  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 439404

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	577	B	587.0		mg/L		2	10

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

Lab Sample ID: MB 160-618896/1-A Client Sample ID: Method Blank  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 621814 Prep Batch: 618896

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04707	U	0.136	0.136	1.00	0.250	pCi/L	07/05/23 09:33	07/27/23 07:52	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	07/05/23 09:33	07/27/23 07:52	1

Lab Sample ID: LCS 160-618896/2-A Client Sample ID: Lab Control Sample  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 621814 Prep Batch: 618896

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.812		1.13	1.00	0.182	pCi/L	87	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.5		30 - 110

Lab Sample ID: 380-52750-B-1-A DU Client Sample ID: Duplicate  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 621813 Prep Batch: 618896

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.0847	U	0.02095	U	0.0935	1.00	0.187	pCi/L	0.31	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	86.9		30 - 110

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

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

Lab Sample ID: MB 160-618897/1-A Client Sample ID: Method Blank  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 621514 Prep Batch: 618897

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.02315	U	0.253	0.253	1.00	0.480	pCi/L	07/05/23 09:40	07/25/23 12:28	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	07/05/23 09:40	07/25/23 12:28	1
Y Carrier	86.0		30 - 110	07/05/23 09:40	07/25/23 12:28	1

Lab Sample ID: LCS 160-618897/2-A Client Sample ID: Lab Control Sample  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 621514 Prep Batch: 618897

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.01	7.893		1.09	1.00	0.441	pCi/L	99	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.5		30 - 110
Y Carrier	87.1		30 - 110

Lab Sample ID: 380-52750-B-1-B DU Client Sample ID: Duplicate  
Matrix: Water Prep Type: Total/NA  
Analysis Batch: 621483 Prep Batch: 618897

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.442	U	0.2358	U	0.400	1.00	0.681	pCi/L	0.27	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	86.9		30 - 110
Y Carrier	86.0		30 - 110

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

**HPLC/IC**

**Analysis Batch: 439238**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total/NA	Water	EPA 9056A	
180-158528-1	SSP MW-2	Total/NA	Water	EPA 9056A	
180-158528-2	MNW-18	Total/NA	Water	EPA 9056A	
MB 180-439238/30	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-439238/31	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-158515-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-158515-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Filtration Batch: 435862**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-435862/2-C	Lab Control Sample	Total Recoverable	Water	Filtration	
LCSD 180-435862/3-C	Lab Control Sample Dup	Total Recoverable	Water	Filtration	

**Prep Batch: 439366**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total/NA	Water	7470A	
180-158528-2	MNW-18	Total/NA	Water	7470A	
MB 180-439366/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-439366/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-158526-E-1-B MS	Matrix Spike	Total/NA	Water	7470A	
180-158526-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 439508**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total/NA	Water	EPA 7470A	439366
180-158528-2	MNW-18	Total/NA	Water	EPA 7470A	439366
MB 180-439366/1-A	Method Blank	Total/NA	Water	EPA 7470A	439366
LCS 180-439366/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	439366
180-158526-E-1-B MS	Matrix Spike	Total/NA	Water	EPA 7470A	439366
180-158526-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	439366

**Filtration Batch: 440624**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 180-440624/3-C	Lab Control Sample Dup	Total Recoverable	Water	Filtration	

**Prep Batch: 440646**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total Recoverable	Water	3005A	
180-158528-2	MNW-18	Total Recoverable	Water	3005A	
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-435862/2-C	Lab Control Sample	Total Recoverable	Water	3005A	435862
LCS 180-440646/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 180-435862/3-C	Lab Control Sample Dup	Total Recoverable	Water	3005A	435862
LCSD 180-440624/3-C	Lab Control Sample Dup	Total Recoverable	Water	3005A	440624
180-158528-1 MS	SSP MW-2	Total Recoverable	Water	3005A	
180-158528-1 MSD	SSP MW-2	Total Recoverable	Water	3005A	

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158528-1

**Metals**

**Analysis Batch: 440765**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 180-440624/3-C	Lab Control Sample Dup	Total Recoverable	Water	EPA 6020B	440646
180-158528-1 MS	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646
180-158528-1 MSD	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646

**Analysis Batch: 440892**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646
180-158528-2	MNW-18	Total Recoverable	Water	EPA 6020B	440646
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440646
LCS 180-440646/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440646
180-158528-1 MS	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646
180-158528-1 MSD	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646

**Analysis Batch: 441132**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646
LCS 180-435862/2-C	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440646
LCSD 180-435862/3-C	Lab Control Sample Dup	Total Recoverable	Water	EPA 6020B	440646
180-158528-1 MS	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646
180-158528-1 MSD	SSP MW-2	Total Recoverable	Water	EPA 6020B	440646

**Analysis Batch: 446713**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440646
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440646
LCS 180-440646/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440646

**Prep Batch: 446737**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total Recoverable	Water	3005A	
180-158528-2	MNW-18	Total Recoverable	Water	3005A	
MB 180-446737/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-446737/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-158528-1 MS	SSP MW-2	Total Recoverable	Water	3005A	
180-158528-1 MSD	SSP MW-2	Total Recoverable	Water	3005A	

**Analysis Batch: 447301**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total Recoverable	Water	EPA 6020B	446737
180-158528-2	MNW-18	Total Recoverable	Water	EPA 6020B	446737
MB 180-446737/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	446737
LCS 180-446737/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	446737
180-158528-1 MS	SSP MW-2	Total Recoverable	Water	EPA 6020B	446737
180-158528-1 MSD	SSP MW-2	Total Recoverable	Water	EPA 6020B	446737

**General Chemistry**

**Analysis Batch: 439404**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158528-1	SSP MW-2	Total/NA	Water	SM 2540C	
180-158528-2	MNW-18	Total/NA	Water	SM 2540C	

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**Login Sample Receipt Checklist**

Client: HDR Inc

Job Number: 180-158528-2

**Login Number: 158528**

**List Number: 1**

**Creator: Abernathy, Eric L**

**List Source: Eurofins Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\neq</math> 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?	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
 HDR Inc  
 17111 Preston Road  
 Suite 200  
 Dallas, Texas 75248-1232

Generated 10/16/2023 5:19:38 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-158525-1



**Job Notes**

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

**Authorization**



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Authorized for release by  
Ken Hayes, Project Manager II  
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(615)301-5035

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## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Job ID: 180-158525-1**

**Laboratory: Eurofins Pittsburgh**

### Narrative

**Job Narrative  
180-158525-1**

### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): FB-1 (180-158525-4). The container labels list a sample id os FB-1, while the COC lists SFL MW-2. The id on the COC was used.

### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 618896 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. SSP/AP MW-1 (180-158525-1), SFL MW-6 (180-158525-2), SFL MW-5 (180-158525-3), (LCS 160-618896/2-A), (MB 160-618896/1-A), (380-52750-A-1-A) and (380-52750-B-1-A DU)

Method 903.0: Radium-226 batch 619107 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. FB-1 (180-158525-4), (LCS 160-619107/2-A), (MB 160-619107/1-A), (880-30170-A-9-A), (880-30170-D-9-A MS) and (880-30170-C-9-A MSD)

Method 904.0: Radium-228 batch 619109 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. FB-1 (180-158525-4), (LCS 160-619109/2-A), (MB 160-619109/1-A), (880-30170-A-9-B), (880-30170-D-9-B MS) and (880-30170-C-9-B MSD)

Method 904.0: Radium-228 prep batch 160-618897 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. SSP/AP MW-1 (180-158525-1), SFL MW-6 (180-158525-2), SFL MW-5 (180-158525-3), (LCS 160-618897/2-A), (MB 160-618897/1-A), (380-52750-A-1-B) and (380-52750-B-1-B DU)

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

### Rad

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

### Narrative

**Job Narrative  
180-158525-2**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Job ID: 180-158525-1 (Continued)**

**Laboratory: Eurofins Pittsburgh (Continued)**

### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): FB-1 (180-158525-4). The container labels list a sample id os FB-1, while the COC lists SFL MW-2. The id on the COC was used.

### HPLC/IC

Method 9056A\_ORGFM\_28D: The following samples were diluted due to the nature of the sample matrix: SSP/AP MW-1 (180-158525-1), SFL MW-6 (180-158525-2) and SFL MW-5 (180-158525-3) at 10.0, 10.0 and 10.0. Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 180-439572 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 9056A\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 180-439572 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

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

### Metals

Method 6020B: The MS & MSD associated with sample (180-158528-E-1-B), (180-158528-E-1-C MS), (180-158528-E-1-D MSD) and (180-158528-E-1-B PDS) exceeded the linear range (LR) for lithium due to the spiking levels. Samples are reported, as is, with this narrative because the parent sample was under the LR.

Method 6020B: The following samples were diluted to bring the concentration of calcium within the calibration range: SSP/AP MW-1 (180-158525-1), SFL MW-6 (180-158525-2) and SFL MW-5 (180-158525-3). Elevated reporting limits (RLs) are provided.

Method 6020B: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples: (180-157730-A-22-A ^5), (180-157730-A-22-B MS ^5), (180-157730-A-22-C MSD ^5), (180-157730-A-22-A PDS ^5) and (180-157730-A-22-A SD ^25).

Method 6020B: The native sample associated with preparation batch 180-446737 and analytical batch 180-447301 was above the instrument calibration range for boron. The lab has consumed all volume and insufficient sample is available for reanalysis. The data have been reported and qualified. SFL MW-5 (180-158525-3)

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

### General Chemistry

Method 2540C\_Calcd: Sample did not reach a stable weight following 4 cycles of heating, cooling, and desiccation. Cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result. SSP/AP MW-1 (180-158525-1), SFL MW-6 (180-158525-2), FB-1 (180-158525-4) and (LCS 180-439399/2)

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

## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

### Qualifiers

#### HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

#### Metals

Qualifier	Qualifier Description
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.
E	Result exceeded calibration range.
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.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	09-14-23 *
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23 *
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-23 *
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-23 *
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23 *
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

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

## Sample Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-158525-1	SSP/AP MW-1	Water	06/26/23 11:55	06/28/23 09:30
180-158525-2	SFL MW-6	Water	06/26/23 12:50	06/28/23 09:30
180-158525-3	SFL MW-5	Water	06/26/23 13:25	06/28/23 09:30
180-158525-4	FB-1	Water	06/26/23 14:10	06/28/23 09:30



## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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## Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: SSP/AP MW-1

Lab Sample ID: 180-158525-1

Date Collected: 06/26/23 11:55

Matrix: Water

Date Received: 06/28/23 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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 21:23	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	439572	07/05/23 21:38	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448011	09/30/23 23:58	KED	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448417	10/04/23 21:52	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 23:52	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			441132	07/21/23 20:52	KED	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			447301	09/21/23 21:19	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 10:59	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			747.22 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621941	07/27/23 07:54	FLC	EET SL
		Instrument ID: GFPCPURPLE								
Total/NA	Prep	PrecSep_0			747.22 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:29	SCB	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:26	SCB	EET SL
		Instrument ID: NOEQUIP								

Client Sample ID: SFL MW-6

Lab Sample ID: 180-158525-2

Date Collected: 06/26/23 12:50

Matrix: Water

Date Received: 06/28/23 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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 21:53	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	439572	07/05/23 22:08	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448011	10/01/23 00:01	KED	EET PIT
		Instrument ID: A								

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

#### Client Sample ID: SFL MW-6

Date Collected: 06/26/23 12:50

Date Received: 06/28/23 09:30

#### Lab Sample ID: 180-158525-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448417	10/04/23 21:55	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/20/23 00:03	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			441132	07/21/23 20:55	KED	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			447301	09/21/23 21:22	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 11:00	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			742.33 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621941	07/27/23 07:54	FLC	EET SL
		Instrument ID: GFPCPURPLE								
Total/NA	Prep	PrecSep_0			742.33 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:30	SCB	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:26	SCB	EET SL
		Instrument ID: NOEQUIP								

#### Client Sample ID: SFL MW-5

Date Collected: 06/26/23 13:25

Date Received: 06/28/23 09:30

#### Lab Sample ID: 180-158525-3

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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 22:52	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	439572	07/05/23 23:07	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448011	10/01/23 00:04	KED	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448417	10/04/23 21:53	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/20/23 00:10	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			447301	09/21/23 21:28	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 11:05	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
		Instrument ID: NOEQUIP								

Eurofins Pittsburgh

### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

#### Client Sample ID: SFL MW-5

Date Collected: 06/26/23 13:25

Date Received: 06/28/23 09:30

#### Lab Sample ID: 180-158525-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			441132	07/21/23 20:59	KED	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			447301	09/21/23 21:25	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 11:04	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	15 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			948.76 mL	1.0 g	618896	07/05/23 09:33	KAC	EET SL
Total/NA	Analysis	903.0		1			621941	07/27/23 07:54	FLC	EET SL
		Instrument ID: GFPCPURPLE								
Total/NA	Prep	PrecSep_0			948.76 mL	1.0 g	618897	07/05/23 09:40	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621514	07/25/23 12:30	SCB	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			621954	07/27/23 15:26	SCB	EET SL
		Instrument ID: NOEQUIP								

#### Client Sample ID: FB-1

Date Collected: 06/26/23 14:10

Date Received: 06/28/23 09:30

#### Lab Sample ID: 180-158525-4

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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 23:22	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448011	10/01/23 00:08	KED	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			448417	10/04/23 22:02	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	440646	07/18/23 11:30	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/20/23 00:10	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	446737	09/18/23 10:05	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			447301	09/21/23 21:28	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 11:05	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
		Instrument ID: NOEQUIP								

Eurofins Pittsburgh

### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Client Sample ID: FB-1**  
Date Collected: 06/26/23 14:10  
Date Received: 06/28/23 09:30

**Lab Sample ID: 180-158525-4**  
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1003.56 mL	1.0 g	619107	07/06/23 10:23	BMP	EET SL
Total/NA	Analysis	903.0		1			621992	07/28/23 07:45	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1003.56 mL	1.0 g	619109	07/06/23 10:34	BMP	EET SL
Total/NA	Analysis	904.0		1			621195	07/21/23 13:37	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			622125	07/28/23 16:23	SCB	EET SL
Instrument ID: NOEQUIP										

**Laboratory References:**

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

**Analyst References:**

- Lab: EET PIT
- Batch Type: Prep  
MTW = Michael Wesoloski  
S1Z = Sage Ziviello  
SJM = Shannon Mueller
- Batch Type: Analysis  
KED = Katie Dacko  
LWM = Leslie McIntire  
MRG = Mismel Garcia  
RJR = Ron Rosenbaum  
SNL = Sean Lordo
- Lab: EET SL
- Batch Type: Prep  
BMP = Bailey Pinette  
KAC = Kevin Cox
- Batch Type: Analysis  
FLC = Fernando Cruz  
SCB = Sarah Bernsen

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### Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Client Sample ID: SSP/AP MW-1**  
Date Collected: 06/26/23 11:55  
Date Received: 06/28/23 09:30

**Lab Sample ID: 180-158525-1**  
Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1560		10.0	7.13	mg/L		07/05/23 21:38	07/05/23 21:38	10
Fluoride	0.149		0.100	0.0260	mg/L		07/05/23 21:23	07/05/23 21:23	1
Sulfate	3190		10.0	7.56	mg/L		07/05/23 21:38	07/05/23 21:38	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00152		0.00100	0.000282	mg/L		07/18/23 11:30	07/19/23 23:52	1
Barium	0.0289		0.0100	0.00314	mg/L		07/18/23 11:30	07/19/23 23:52	1
Beryllium	0.000506	J	0.00100	0.000274	mg/L		07/18/23 11:30	07/19/23 23:52	1
Boron	0.662		0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 21:19	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	07/19/23 23:52	1
Calcium	262		1.00	0.254	mg/L		07/18/23 11:30	07/21/23 20:52	2
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	07/19/23 23:52	1
Cobalt	0.000482	J	0.000500	0.000261	mg/L		07/18/23 11:30	07/19/23 23:52	1
Molybdenum	0.000884	J	0.00500	0.000610	mg/L		07/18/23 11:30	07/19/23 23:52	1
Lead	0.000431	J	0.00100	0.000376	mg/L		07/18/23 11:30	07/19/23 23:52	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	07/19/23 23:52	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/19/23 23:52	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	07/19/23 23:52	1
Lithium	0.600		0.0100	0.00258	mg/L		07/18/23 11:30	07/21/23 20:52	2
Iron	2.67		0.0500	0.0277	mg/L		09/18/23 10:05	10/04/23 21:52	1
Aluminum	0.179		0.0300	0.0155	mg/L		09/18/23 10:05	09/30/23 23:58	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 10:59	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7690		50.0	50.0	mg/L		06/30/23 14:59	06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0858	U	0.155	0.155	1.00	0.272	pCi/L	07/05/23 09:33	07/27/23 07:54	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	108		30 - 110					07/05/23 09:33	07/27/23 07:54	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.990		0.459	0.468	1.00	0.626	pCi/L	07/05/23 09:40	07/25/23 12:29	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	108		30 - 110					07/05/23 09:40	07/25/23 12:29	1
Y Carrier	83.4		30 - 110					07/05/23 09:40	07/25/23 12:29	1

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Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: SSP/AP MW-1

Lab Sample ID: 180-158525-1

Date Collected: 06/26/23 11:55

Matrix: Water

Date Received: 06/28/23 09:30

Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	1.08		0.484	0.493	5.00	0.626	pCi/L		07/27/23 15:26	1

Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: SFL MW-6

Lab Sample ID: 180-158525-2

Date Collected: 06/26/23 12:50

Matrix: Water

Date Received: 06/28/23 09:30

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3960		10.0	7.13	mg/L			07/05/23 22:08	10
Fluoride	1.03		0.100	0.0260	mg/L			07/05/23 21:53	1
Sulfate	2530		10.0	7.56	mg/L			07/05/23 22:08	10

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0450		0.00100	0.000282	mg/L		07/18/23 11:30	07/20/23 00:03	1
Barium	0.0356		0.0100	0.00314	mg/L		07/18/23 11:30	07/20/23 00:03	1
Beryllium	0.0534		0.00100	0.000274	mg/L		07/18/23 11:30	07/20/23 00:03	1
Boron	0.258		0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 21:22	1
Cadmium	0.00321		0.00100	0.000217	mg/L		07/18/23 11:30	07/20/23 00:03	1
Calcium	363		1.00	0.254	mg/L		07/18/23 11:30	07/21/23 20:55	2
Chromium	0.00313		0.00200	0.00153	mg/L		07/18/23 11:30	07/20/23 00:03	1
Cobalt	0.129		0.000500	0.000261	mg/L		07/18/23 11:30	07/20/23 00:03	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	07/20/23 00:03	1
Lead	0.00519		0.00100	0.000376	mg/L		07/18/23 11:30	07/20/23 00:03	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	07/20/23 00:03	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/20/23 00:03	1
Thallium	0.00475		0.00100	0.000472	mg/L		07/18/23 11:30	07/20/23 00:03	1
Lithium	0.644		0.00500	0.00129	mg/L		07/18/23 11:30	07/20/23 00:03	1
Iron	28.0		0.0500	0.0277	mg/L		09/18/23 10:05	10/04/23 21:55	1
Aluminum	8.38		0.0300	0.0155	mg/L		09/18/23 10:05	10/01/23 00:01	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00158		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 11:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	10000		100	100	mg/L			06/30/23 14:59	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	3.80		0.519	0.622	1.00	0.273	pCi/L	07/05/23 09:33	07/27/23 07:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		30 - 110					07/05/23 09:33	07/27/23 07:54	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	9.64		1.02	1.35	1.00	0.538	pCi/L	07/05/23 09:40	07/25/23 12:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		30 - 110					07/05/23 09:40	07/25/23 12:30	1
Y Carrier	86.7		30 - 110					07/05/23 09:40	07/25/23 12:30	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: SFL MW-6

Lab Sample ID: 180-158525-2

Date Collected: 06/26/23 12:50

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	13.4		1.14	1.49	5.00	0.538	pCi/L		07/27/23 15:26	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: SFL MW-5

Lab Sample ID: 180-158525-3

Date Collected: 06/26/23 13:25

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2800		10.0	7.13	mg/L		07/05/23 23:07	07/05/23 23:07	10
Fluoride	0.170		0.100	0.0260	mg/L		07/05/23 22:52	07/05/23 22:52	1
Sulfate	2380		10.0	7.56	mg/L		07/05/23 23:07	07/05/23 23:07	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00176		0.00100	0.000282	mg/L		07/18/23 11:30	07/20/23 00:07	1
Barium	0.0175		0.0100	0.00314	mg/L		07/18/23 11:30	07/20/23 00:07	1
Beryllium	0.0111		0.00100	0.000274	mg/L		07/18/23 11:30	07/20/23 00:07	1
Boron	5.56	E	0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 21:25	1
Cadmium	0.00482		0.00100	0.000217	mg/L		07/18/23 11:30	07/20/23 00:07	1
Calcium	338		1.00	0.254	mg/L		07/18/23 11:30	07/21/23 20:59	2
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	07/20/23 00:07	1
Cobalt	0.0540		0.000500	0.000261	mg/L		07/18/23 11:30	07/20/23 00:07	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	07/20/23 00:07	1
Lead	0.000716	J	0.00100	0.000376	mg/L		07/18/23 11:30	07/20/23 00:07	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	07/20/23 00:07	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/20/23 00:07	1
Thallium	0.00128		0.00100	0.000472	mg/L		07/18/23 11:30	07/20/23 00:07	1
Lithium	0.624		0.00500	0.00129	mg/L		07/18/23 11:30	07/20/23 00:07	1
Iron	0.208		0.0500	0.0277	mg/L		09/18/23 10:05	10/04/23 21:58	1
Aluminum	0.748		0.0300	0.0155	mg/L		09/18/23 10:05	10/01/23 00:04	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 11:04	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7820		66.7	66.7	mg/L			06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	3.63		0.465	0.568	1.00	0.215	pCi/L	07/05/23 09:33	07/27/23 07:54	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	93.0		30 - 110					07/05/23 09:33	07/27/23 07:54	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	10.7		0.998	1.40	1.00	0.464	pCi/L	07/05/23 09:40	07/25/23 12:30	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	93.0		30 - 110					07/05/23 09:40	07/25/23 12:30	1
Y Carrier	84.9		30 - 110					07/05/23 09:40	07/25/23 12:30	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: SFL MW-5

Lab Sample ID: 180-158525-3

Date Collected: 06/26/23 13:25

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	14.3		1.10	1.51	5.00	0.464	pCi/L		07/27/23 15:26	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: FB-1

Lab Sample ID: 180-158525-4

Date Collected: 06/26/23 14:10

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L		07/05/23 23:22	07/05/23 23:22	1
Fluoride	<0.0260		0.100	0.0260	mg/L		07/05/23 23:22	07/05/23 23:22	1
Sulfate	<0.756		1.00	0.756	mg/L		07/05/23 23:22	07/05/23 23:22	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 11:30	07/20/23 00:10	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 11:30	07/20/23 00:10	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	07/20/23 00:10	1
Boron	0.0735	J	0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 21:28	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	07/20/23 00:10	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 11:30	07/20/23 00:10	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	07/20/23 00:10	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	07/20/23 00:10	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	07/20/23 00:10	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	07/20/23 00:10	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	07/20/23 00:10	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/20/23 00:10	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	07/20/23 00:10	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 11:30	07/20/23 00:10	1
Iron	<0.0277		0.0500	0.0277	mg/L		09/18/23 10:05	10/04/23 22:02	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		09/18/23 10:05	10/01/23 00:08	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 11:05	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	<10.0		10.0	10.0	mg/L			06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0323	U	0.0609	0.0610	1.00	0.109	pCi/L	07/06/23 10:28	07/28/23 07:46	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	95.2		30 - 110					07/06/23 10:28	07/28/23 07:46	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.681		0.340	0.346	1.00	0.462	pCi/L	07/06/23 10:34	07/21/23 13:37	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	95.2		30 - 110					07/06/23 10:34	07/21/23 13:37	1
Y Carrier	84.5		30 - 110					07/06/23 10:34	07/21/23 13:37	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Client Sample ID: FB-1  
Date Collected: 06/26/23 14:10  
Date Received: 06/28/23 09:30

Lab Sample ID: 180-158525-4  
Matrix: Water

Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.713		0.345	0.351	5.00	0.462	pCi/L		07/28/23 16:28	1

**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-439572/22  
Matrix: Water  
Analysis Batch: 439572

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			07/05/23 17:12	1
Fluoride	<0.0260		0.100	0.0260	mg/L			07/05/23 17:12	1
Sulfate	<0.756		1.00	0.756	mg/L			07/05/23 17:12	1

Lab Sample ID: LCS 180-439572/23  
Matrix: Water  
Analysis Batch: 439572

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	49.88		mg/L		100	80 - 120
Fluoride	2.50	2.561		mg/L		102	80 - 120
Sulfate	50.0	49.58		mg/L		99	80 - 120

Lab Sample ID: 180-158703-A-1 MS  
Matrix: Water  
Analysis Batch: 439572

Client Sample ID: Matrix Spike  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Chloride	8.19	F1 F2	50.0	42.69	F1	mg/L		69	80 - 120
Fluoride	0.106	F1 F2	2.50	1.881	F1	mg/L		71	80 - 120
Sulfate	14.6	F1 F2	50.0	49.49	F1	mg/L		70	80 - 120

Lab Sample ID: 180-158703-A-1 MSD  
Matrix: Water  
Analysis Batch: 439572

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Chloride	8.19	F1 F2	50.0	57.64	F2	mg/L		99	80 - 120	30	15
Fluoride	0.106	F1 F2	2.50	2.613	F2	mg/L		100	80 - 120	33	15
Sulfate	14.6	F1 F2	50.0	64.74	F2	mg/L		100	80 - 120	27	15

Method: EPA 6020B - Metals (ICP/MS)

Lab Sample ID: MB 180-440646/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 11:30	07/19/23 23:23	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 11:30	07/19/23 23:23	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	07/19/23 23:23	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	07/19/23 23:23	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 11:30	07/19/23 23:23	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	07/19/23 23:23	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	07/19/23 23:23	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	07/19/23 23:23	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	07/19/23 23:23	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	07/19/23 23:23	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	07/19/23 23:23	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	07/19/23 23:23	1

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-440646/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 11:30	07/19/23 23:23	1

Lab Sample ID: MB 180-440646/1-A  
Matrix: Water  
Analysis Batch: 446713

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 11:30	09/15/23 18:07	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 11:30	09/15/23 18:07	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	09/15/23 18:07	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	09/15/23 18:07	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 11:30	09/15/23 18:07	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	09/15/23 18:07	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	09/15/23 18:07	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	09/15/23 18:07	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	09/15/23 18:07	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	09/15/23 18:07	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	09/15/23 18:07	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	09/15/23 18:07	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 11:30	09/15/23 18:07	1

Lab Sample ID: MB 180-440646/1-A  
Matrix: Water  
Analysis Batch: 446713

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 11:30	09/15/23 18:27	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 11:30	09/15/23 18:27	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 11:30	09/15/23 18:27	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 11:30	09/15/23 18:27	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 11:30	09/15/23 18:27	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 11:30	09/15/23 18:27	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 11:30	09/15/23 18:27	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 11:30	09/15/23 18:27	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 11:30	09/15/23 18:27	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 11:30	09/15/23 18:27	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 11:30	09/15/23 18:27	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 11:30	09/15/23 18:27	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 11:30	09/15/23 18:27	1

Lab Sample ID: LCS 180-440646/2-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.002		mg/L		100	80 - 120
Barium	1.00	1.035		mg/L		104	80 - 120
Beryllium	0.500	0.4685		mg/L		94	80 - 120
Cadmium	0.500	0.5160		mg/L		103	80 - 120

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-440646/2-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	25.0	26.66		mg/L		107	80 - 120
Chromium	0.500	0.5231		mg/L		105	80 - 120
Cobalt	0.500	0.4965		mg/L		99	80 - 120
Molybdenum	0.500	0.5194		mg/L		104	80 - 120
Lead	0.500	0.5293		mg/L		106	80 - 120
Antimony	0.250	0.2765		mg/L		111	80 - 120
Selenium	1.00	1.048		mg/L		105	80 - 120
Thallium	1.00	1.051		mg/L		105	80 - 120
Lithium	0.500	0.4435		mg/L		89	80 - 120

Lab Sample ID: LCS 180-440646/2-A  
Matrix: Water  
Analysis Batch: 446713

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.9908		mg/L		99	80 - 120
Barium	1.00	0.9581		mg/L		96	80 - 120
Beryllium	0.500	0.4146		mg/L		83	80 - 120
Cadmium	0.500	0.4772		mg/L		95	80 - 120
Calcium	25.0	27.69		mg/L		111	80 - 120
Chromium	0.500	0.4760		mg/L		95	80 - 120
Cobalt	0.500	0.4900		mg/L		98	80 - 120
Molybdenum	0.500	0.4968		mg/L		99	80 - 120
Lead	0.500	0.4964		mg/L		99	80 - 120
Antimony	0.250	0.2546		mg/L		102	80 - 120
Selenium	1.00	0.9387		mg/L		94	80 - 120
Thallium	1.00	0.9872		mg/L		99	80 - 120
Lithium	0.500	0.4113		mg/L		82	80 - 120

Lab Sample ID: 180-158528-E-1-C MS  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 440646

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00446		1.00	1.050		mg/L		105	75 - 125
Barium	0.0197		1.00	1.054		mg/L		103	75 - 125
Beryllium	0.0471		0.500	0.4975		mg/L		90	75 - 125
Cadmium	0.000544	J	0.500	0.4884		mg/L		98	75 - 125
Chromium	<0.00153		0.500	0.4976		mg/L		100	75 - 125
Cobalt	0.0478		0.500	0.5463		mg/L		100	75 - 125
Molybdenum	<0.000610		0.500	0.5451		mg/L		109	75 - 125
Lead	0.000481	J	0.500	0.5341		mg/L		107	75 - 125
Antimony	<0.000967		0.250	0.2756		mg/L		110	75 - 125
Selenium	<0.000739		1.00	0.9468		mg/L		95	75 - 125
Thallium	<0.000472		1.00	1.069		mg/L		107	75 - 125
Lithium	0.711		0.500	1.112	E	mg/L		80	75 - 125

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: 180-158528-E-1-C MS ^5 Matrix: Water Analysis Batch: 441132			Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 440646						
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Calcium	876		25.0	855.1	4	mg/L		-82	75 - 125
Lithium	0.862		0.500	1.299		mg/L		87	75 - 125

Lab Sample ID: 180-158528-E-1-D MSD Matrix: Water Analysis Batch: 440892			Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 440646								
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.00446		1.00	1.039		mg/L		103	75 - 125	1	20
Barium	0.0197		1.00	1.045		mg/L		103	75 - 125	1	20
Beryllium	0.0471		0.500	0.4981		mg/L		90	75 - 125	0	20
Cadmium	0.000544	J	0.500	0.4871		mg/L		97	75 - 125	0	20
Chromium	<0.00153		0.500	0.4954		mg/L		99	75 - 125	0	20
Cobalt	0.0478		0.500	0.5432		mg/L		99	75 - 125	1	20
Molybdenum	<0.000610		0.500	0.5391		mg/L		108	75 - 125	1	20
Lead	0.000481	J	0.500	0.5255		mg/L		105	75 - 125	2	20
Antimony	<0.000967		0.250	0.2725		mg/L		109	75 - 125	1	20
Selenium	<0.000739		1.00	0.9354		mg/L		94	75 - 125	1	20
Thallium	<0.000472		1.00	1.054		mg/L		105	75 - 125	1	20
Lithium	0.711		0.500	1.121	E	mg/L		82	75 - 125	1	20

Lab Sample ID: 180-158528-E-1-D MSD ^5 Matrix: Water Analysis Batch: 441132			Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 440646								
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Calcium	876		25.0	865.1	4	mg/L		-42	75 - 125	1	20
Lithium	0.862		0.500	1.308		mg/L		89	75 - 125	1	20

Lab Sample ID: MB 180-446737/1-A Matrix: Water Analysis Batch: 447301			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 446737						
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.0601		0.0800	0.0601	mg/L		09/18/23 10:05	09/21/23 20:51	1

Lab Sample ID: MB 180-446737/1-A Matrix: Water Analysis Batch: 448011			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 446737						
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		09/18/23 10:05	10/01/23 00:14	1
Calcium	<0.127		0.500	0.127	mg/L		09/18/23 10:05	10/01/23 00:14	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		09/18/23 10:05	10/01/23 00:14	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		09/18/23 10:05	10/01/23 00:14	1
Thallium	<0.000472		0.00100	0.000472	mg/L		09/18/23 10:05	10/01/23 00:14	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		09/18/23 10:05	10/01/23 00:14	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-446737/1-A Matrix: Water Analysis Batch: 448417			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 446737						
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.0277		0.0500	0.0277	mg/L		09/18/23 10:05	10/04/23 22:09	1

Lab Sample ID: LCS 180-446737/2-A Matrix: Water Analysis Batch: 447301			Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 446737						
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Boron	1.25	1.106		mg/L		88	80 - 120		

Lab Sample ID: LCS 180-446737/2-A Matrix: Water Analysis Batch: 448011			Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 446737						
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Arsenic	1.00	0.9403		mg/L		94	80 - 120		
Calcium	25.0	25.49		mg/L		102	80 - 120		
Cobalt	0.500	0.4629		mg/L		93	80 - 120		
Molybdenum	0.500	0.4696		mg/L		94	80 - 120		
Lead	0.500	0.4728		mg/L		95	80 - 120		
Thallium	1.00	0.9169		mg/L		92	80 - 120		
Aluminum	5.00	4.746		mg/L		95	80 - 120		

Lab Sample ID: LCS 180-446737/2-A Matrix: Water Analysis Batch: 448417			Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 446737						
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Iron	5.00	5.379		mg/L		108	80 - 120		

Lab Sample ID: 180-158528-E-1-F MS Matrix: Water Analysis Batch: 447301			Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 446737						
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	0.426		1.25	1.543		mg/L		89	75 - 125
Chromium	<0.00153		0.500	0.4600		mg/L		92	75 - 125

Lab Sample ID: 180-158528-E-1-G MSD Matrix: Water Analysis Batch: 447301			Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 446737								
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	0.426		1.25	1.505		mg/L		86	75 - 125	2	20
Chromium	<0.00153		0.500	0.4643		mg/L		93	75 - 125	1	20

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Method: EPA 7470A - Mercury (CVAA)**

Lab Sample ID: MB 180-439674/1-A  
Matrix: Water  
Analysis Batch: 439934  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 10:51	1

Lab Sample ID: LCS 180-439674/2-A  
Matrix: Water  
Analysis Batch: 439934  
Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.002237		mg/L		89	80 - 120

Lab Sample ID: 180-158460-E-2-B MS  
Matrix: Water  
Analysis Batch: 439934  
Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000130		0.00100	0.0009020		mg/L		90	75 - 125

Lab Sample ID: 180-158460-E-2-C MSD  
Matrix: Water  
Analysis Batch: 439934  
Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	<0.000130		0.00100	0.0009240		mg/L		92	75 - 125	2	20

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

Lab Sample ID: MB 180-439399/1  
Matrix: Water  
Analysis Batch: 439399  
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	<10.0		10.0	10.0	mg/L			06/30/23 14:59	1

Lab Sample ID: LCS 180-439399/2  
Matrix: Water  
Analysis Batch: 439399  
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	580	564.0		mg/L		97	85 - 115

Lab Sample ID: 180-158454-A-1 DU  
Matrix: Water  
Analysis Batch: 439399  
Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	202		204.0		mg/L		1	10

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

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

Lab Sample ID: MB 160-618896/1-A  
Matrix: Water  
Analysis Batch: 621814  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618896

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04707	U	0.136	0.136	1.00	0.250	pCi/L	07/05/23 09:33	07/27/23 07:52	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	07/05/23 09:33	07/27/23 07:52	1

Lab Sample ID: LCS 160-618896/2-A  
Matrix: Water  
Analysis Batch: 621814  
Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618896

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.812		1.13	1.00	0.182	pCi/L	87	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.5		30 - 110

Lab Sample ID: MB 160-619107/1-A  
Matrix: Water  
Analysis Batch: 621992  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 619107

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03563	U	0.0403	0.0404	1.00	0.108	pCi/L	07/06/23 10:28	07/28/23 07:46	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		30 - 110	07/06/23 10:28	07/28/23 07:46	1

Lab Sample ID: LCS 160-619107/2-A  
Matrix: Water  
Analysis Batch: 621992  
Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 619107

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.20		1.09	1.00	0.0967	pCi/L	90	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	92.7		30 - 110

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

Lab Sample ID: MB 160-618897/1-A  
Matrix: Water  
Analysis Batch: 621514  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618897

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.02315	U	0.253	0.253	1.00	0.480	pCi/L	07/05/23 09:40	07/25/23 12:28	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

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

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	07/05/23 09:40	07/25/23 12:28	1
Y Carrier	86.0		30 - 110	07/05/23 09:40	07/25/23 12:28	1

Lab Sample ID: LCS 160-618897/2-A  
Matrix: Water  
Analysis Batch: 621514

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618897

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.01	7.893		1.09	1.00	0.441	pCi/L	99	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.5		30 - 110
Y Carrier	87.1		30 - 110

Lab Sample ID: MB 160-619109/1-A  
Matrix: Water  
Analysis Batch: 621195

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 619109

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1988	U	0.276	0.276	1.00	0.463	pCi/L	07/06/23 10:34	07/21/23 13:35	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		30 - 110	07/06/23 10:34	07/21/23 13:35	1
Y Carrier	83.7		30 - 110	07/06/23 10:34	07/21/23 13:35	1

Lab Sample ID: LCS 160-619109/2-A  
Matrix: Water  
Analysis Batch: 621195

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 619109

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.02	7.880		1.12	1.00	0.505	pCi/L	98	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	92.7		30 - 110
Y Carrier	86.7		30 - 110

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**HPLC/IC**

**Analysis Batch: 439572**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total/NA	Water	EPA 9056A	
180-158525-1	SSP/AP MW-1	Total/NA	Water	EPA 9056A	
180-158525-2	SFL MW-6	Total/NA	Water	EPA 9056A	
180-158525-2	SFL MW-6	Total/NA	Water	EPA 9056A	
180-158525-3	SFL MW-5	Total/NA	Water	EPA 9056A	
180-158525-3	SFL MW-5	Total/NA	Water	EPA 9056A	
180-158525-4	FB-1	Total/NA	Water	EPA 9056A	
MB 180-439572/22	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-439572/23	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-158703-A-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-158703-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 439674**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total/NA	Water	7470A	
180-158525-2	SFL MW-6	Total/NA	Water	7470A	
180-158525-3	SFL MW-5	Total/NA	Water	7470A	
180-158525-4	FB-1	Total/NA	Water	7470A	
MB 180-439674/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-439674/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-158460-E-2-B MS	Matrix Spike	Total/NA	Water	7470A	
180-158460-E-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 439934**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total/NA	Water	EPA 7470A	439674
180-158525-2	SFL MW-6	Total/NA	Water	EPA 7470A	439674
180-158525-3	SFL MW-5	Total/NA	Water	EPA 7470A	439674
180-158525-4	FB-1	Total/NA	Water	EPA 7470A	439674
MB 180-439674/1-A	Method Blank	Total/NA	Water	EPA 7470A	439674
LCS 180-439674/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	439674
180-158460-E-2-B MS	Matrix Spike	Total/NA	Water	EPA 7470A	439674
180-158460-E-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	439674

**Prep Batch: 440646**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total Recoverable	Water	3005A	
180-158525-2	SFL MW-6	Total Recoverable	Water	3005A	
180-158525-3	SFL MW-5	Total Recoverable	Water	3005A	
180-158525-4	FB-1	Total Recoverable	Water	3005A	
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-440646/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-158528-E-1-C MS	Matrix Spike	Total Recoverable	Water	3005A	
180-158528-E-1-C MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
180-158528-E-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
180-158528-E-1-D MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Metals**

**Analysis Batch: 440892**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	440646
180-158525-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	440646
180-158525-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	440646
180-158525-4	FB-1	Total Recoverable	Water	EPA 6020B	440646
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440646
LCS 180-440646/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440646
180-158528-E-1-C MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	440646
180-158528-E-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440646

**Analysis Batch: 441132**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	440646
180-158525-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	440646
180-158525-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	440646
180-158528-E-1-C MS ^5	Matrix Spike	Total Recoverable	Water	EPA 6020B	440646
180-158528-E-1-D MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440646

**Analysis Batch: 446713**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440646
MB 180-440646/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440646
LCS 180-440646/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440646

**Prep Batch: 446737**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total Recoverable	Water	3005A	
180-158525-2	SFL MW-6	Total Recoverable	Water	3005A	
180-158525-3	SFL MW-5	Total Recoverable	Water	3005A	
180-158525-4	FB-1	Total Recoverable	Water	3005A	
MB 180-446737/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-446737/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-158528-E-1-F MS	Matrix Spike	Total Recoverable	Water	3005A	
180-158528-E-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

**Analysis Batch: 447301**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	446737
180-158525-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	446737
180-158525-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	446737
180-158525-4	FB-1	Total Recoverable	Water	EPA 6020B	446737
MB 180-446737/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	446737
LCS 180-446737/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	446737
180-158528-E-1-F MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	446737
180-158528-E-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	446737

**Analysis Batch: 448011**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	446737
180-158525-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	446737
180-158525-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	446737
180-158525-4	FB-1	Total Recoverable	Water	EPA 6020B	446737

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158525-1

**Metals (Continued)**

**Analysis Batch: 448011 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-446737/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	446737
LCS 180-446737/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	446737

**Analysis Batch: 448417**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	446737
180-158525-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	446737
180-158525-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	446737
180-158525-4	FB-1	Total Recoverable	Water	EPA 6020B	446737
MB 180-446737/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	446737
LCS 180-446737/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	446737

**General Chemistry**

**Analysis Batch: 439399**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total/NA	Water	SM 2540C	
180-158525-2	SFL MW-6	Total/NA	Water	SM 2540C	
180-158525-3	SFL MW-5	Total/NA	Water	SM 2540C	
180-158525-4	FB-1	Total/NA	Water	SM 2540C	
MB 180-439399/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-439399/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-158454-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

**Rad**

**Prep Batch: 618896**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total/NA	Water	PrecSep-21	
180-158525-2	SFL MW-6	Total/NA	Water	PrecSep-21	
180-158525-3	SFL MW-5	Total/NA	Water	PrecSep-21	
MB 180-618896/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 180-618896/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

**Prep Batch: 618897**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-1	SSP/AP MW-1	Total/NA	Water	PrecSep_0	
180-158525-2	SFL MW-6	Total/NA	Water	PrecSep_0	
180-158525-3	SFL MW-5	Total/NA	Water	PrecSep_0	
MB 180-618897/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 180-618897/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

**Prep Batch: 619107**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-4	FB-1	Total/NA	Water	PrecSep-21	
MB 180-619107/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 180-619107/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

**Prep Batch: 619109**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158525-4	FB-1	Total/NA	Water	PrecSep_0	
MB 180-619109/1-A	Method Blank	Total/NA	Water	PrecSep_0	

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**Login Sample Receipt Checklist**

Client: HDR Inc

Job Number: 180-158525-2

**Login Number: 158525**

**List Number: 1**

**Creator: Abernathy, Eric L**

**List Source: Eurofins Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\neq</math> 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?	True	
There are no discrepancies between the containers received and the COC.	False	
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
 HDR Inc  
 17111 Preston Road  
 Suite 200  
 Dallas, Texas 75248-1232

Generated 10/16/2023 4:57:34 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-158519-1

# Eurofins Pittsburgh

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

## Authorization



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Authorized for release by  
Ken Hayes, Project Manager II  
Ken.Hayes@et.eurofinsus.com  
(615)301-5035

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Laboratory Job ID: 180-158519-1

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## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

### Job ID: 180-158519-1

Laboratory: Eurofins Pittsburgh

#### Narrative

Job Narrative  
180-158519-1

#### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C

#### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 618894 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. AP MW-5 (180-158519-1), AP MW-4 (180-158519-2), SSP MW-4 (180-158519-3), EQ-1 (180-158519-4), (LCS 160-618894/2-A), (MB 160-618894/1-A), (860-52284-A-9-A), (860-52284-A-9-B MS) and (860-52284-A-9-C MSD)

Method 904.0: Radium-228 Prep Batch 160-618895 The following sample(s) were prepared at a reduced aliquot due to matrix. All of the selected samples were slightly cloudy.

Method 904.0: Radium-228 batch 618895 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. AP MW-5 (180-158519-1), AP MW-4 (180-158519-2), SSP MW-4 (180-158519-3), EQ-1 (180-158519-4), (LCS 160-618895/2-A), (MB 160-618895/1-A), (860-52284-A-9-D), (860-52284-A-9-E MS) and (860-52284-A-9-F MSD)

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

#### Rad

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

#### Narrative

Job Narrative  
180-158519-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/28/2023 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following samples were diluted due to the nature of the sample matrix: AP MW-5 (180-158519-1) and SSP MW-4 (180-158519-3) at 5.0 and 2.5. Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical

## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

### Job ID: 180-158519-1 (Continued)

Laboratory: Eurofins Pittsburgh (Continued)

batch 180-439238 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

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

#### Metals

Method 6020B: The post digestion spike % recovery for antimony associated with batch 180-440892 was outside the control limits. The associated sample is: AP MW-5 (180-158519-1).

Method 6020B: The ICVL, ICV, and CCV associated with batch 180-440892 recovered above the upper control limit for Boron. the laboratory has consumed all of the sample and unable to reanalyze, therefore, the samples associated with the CCV have been reported.

Method 6020B: The ICSAB for batch 180-440892 was outside the acceptance limits for element: Boron.

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

#### General Chemistry

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



## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

### Qualifiers

#### HPLC/IC

Qualifier	Qualifier Description
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.

#### Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
^6+	Interference Check Standard (ICSA and/or ICSAB) is outside acceptance limits, high biased.
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.
E	Result exceeded calibration range.
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.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	08-07-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	08-01-23
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	09-14-23
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-14-23

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23 *
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-23 *
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-23 *
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23 *
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

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

## Sample Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-158519-1	AP MW-5	Water	06/27/23 08:45	06/28/23 09:30
180-158519-2	AP MW-4	Water	06/27/23 09:25	06/28/23 09:30
180-158519-3	SSP MW-4	Water	06/27/23 10:35	06/28/23 09:30
180-158519-4	EQ-1	Water	06/27/23 10:35	06/28/23 09:30

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: AP MW-5

Lab Sample ID: 180-158519-1

Date Collected: 06/27/23 08:45

Matrix: Water

Date Received: 06/28/23 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	EPA 9056A		1	1 mL	1 mL	439238	06/30/23 00:42	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	439238	06/30/23 00:57	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 19:52	RJR	EET PIT
		Instrument ID: DORY								
Total/NA	Prep	7470A			25 mL	25 mL	439347	06/30/23 10:15	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 09:38	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			744.83 mL	1.0 g	618894	07/05/23 09:28	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:57	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			744.83 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621404	07/24/23 13:22	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
		Instrument ID: NOEQUIP								

Client Sample ID: AP MW-4

Lab Sample ID: 180-158519-2

Date Collected: 06/27/23 09:25

Matrix: Water

Date Received: 06/28/23 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	EPA 9056A		1	1 mL	1 mL	439238	06/30/23 05:08	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:10	RJR	EET PIT
		Instrument ID: DORY								
Total/NA	Prep	7470A			25 mL	25 mL	439347	06/30/23 10:15	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 09:42	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			745.04 mL	1.0 g	618894	07/05/23 09:28	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:57	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			745.04 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621404	07/24/23 13:22	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
		Instrument ID: NOEQUIP								

### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: SSP MW-4

Date Collected: 06/27/23 10:35

Date Received: 06/28/23 09:30

Lab Sample ID: 180-158519-3

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	EPA 9056A		2.5	1 mL	1 mL	439238	06/30/23 02:55	SNL	EET PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:14	RJR	EET PIT
Instrument ID: DORY										
Total/NA	Prep	7470A			25 mL	25 mL	439347	06/30/23 10:15	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 09:43	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			982.12 mL	1.0 g	618894	07/05/23 09:23	KAC	EET SL
Total/NA	Analysis	903.0		1			621941	07/27/23 09:57	FLC	EET SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			982.12 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621404	07/24/23 13:22	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
Instrument ID: NOEQUIP										

Client Sample ID: EQ-1

Date Collected: 06/27/23 10:35

Date Received: 06/28/23 09:30

Lab Sample ID: 180-158519-4

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	EPA 9056A		1	1 mL	1 mL	439238	06/30/23 03:10	SNL	EET PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:25	RJR	EET PIT
Instrument ID: DORY										
Total/NA	Prep	7470A			25 mL	25 mL	439347	06/30/23 10:15	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 09:44	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439399	06/30/23 14:59	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			977.97 mL	1.0 g	618894	07/05/23 09:23	KAC	EET SL
Total/NA	Analysis	903.0		1			621941	07/27/23 09:53	FLC	EET SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			977.97 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	621404	07/24/23 13:22	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
Instrument ID: NOEQUIP										

**Laboratory References:**

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

**Analyst References:**

Lab: EET PIT

Batch Type: Prep

MTW = Michael Wesoloski

S1Z = Sage Ziviello

Batch Type: Analysis

LWM = Leslie McIntire

MTW = Michael Wesoloski

RJR = Ron Rosenbaum

SNL = Sean Lordo

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

FLC = Fernando Cruz

SCB = Sarah Bernsen

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: AP MW-5

Lab Sample ID: 180-158519-1

Date Collected: 06/27/23 08:45

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	570		1.00	0.713	mg/L		06/30/23 00:42	06/30/23 00:42	1
Fluoride	2.28		0.100	0.0260	mg/L		06/30/23 00:42	06/30/23 00:42	1
Sulfate	2790		5.00	3.78	mg/L		06/30/23 00:57	06/30/23 00:57	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0147		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 19:52	1
Barium	0.0101		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 19:52	1
Beryllium	0.0945		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 19:52	1
Boron	3.87	A <sup>1+</sup> A <sup>2+</sup> E <sup>6+</sup> E <sup>A+</sup>	0.0800	0.0601	mg/L		07/18/23 10:25	07/19/23 19:52	1
Cadmium	0.0115		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 19:52	1
Calcium	549		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 19:52	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 19:52	1
Cobalt	0.222		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 19:52	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 19:52	1
Lead	0.00203		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 19:52	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 19:52	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 19:52	1
Thallium	0.00266		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 19:52	1
Lithium	0.487		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 19:52	1
Iron	3.90		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 19:52	1
Aluminum	44.1		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 19:52	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000369		0.000200	0.000130	mg/L		06/30/23 10:15	07/03/23 09:38	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	5090		40.0	40.0	mg/L		06/30/23 14:59	06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.00		0.271	0.286	1.00	0.246	pCi/L	07/05/23 09:28	07/27/23 09:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.7		30 - 110					07/05/23 09:28	07/27/23 09:57	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.10		0.541	0.551	1.00	0.741	pCi/L	07/05/23 09:31	07/24/23 13:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.7		30 - 110					07/05/23 09:31	07/24/23 13:22	1
Y Carrier	83.7		30 - 110					07/05/23 09:31	07/24/23 13:22	1

Eurofins Pittsburgh

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: AP MW-5

Lab Sample ID: 180-158519-1

Date Collected: 06/27/23 08:45

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL 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	2.11		0.605	0.621	5.00	0.741	pCi/L		07/27/23 14:39	1

Eurofins Pittsburgh

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: AP MW-4

Lab Sample ID: 180-158519-2

Date Collected: 06/27/23 09:25

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	50.7		1.00	0.713	mg/L		06/30/23 05:08	06/30/23 05:08	1
Fluoride	0.0556	J	0.100	0.0260	mg/L		06/30/23 05:08	06/30/23 05:08	1
Sulfate	707		1.00	0.756	mg/L		06/30/23 05:08	06/30/23 05:08	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00117		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:10	1
Barium	0.0149		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:10	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:10	1
Boron	1.31	^1+ ^2 ^6+ ^+	0.0800	0.0601	mg/L		07/18/23 10:25	07/19/23 20:10	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:10	1
Calcium	109		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:10	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:10	1
Cobalt	0.00117		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:10	1
Molybdenum	0.000987	J	0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:10	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:10	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:10	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:10	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:10	1
Lithium	0.180		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:10	1
Iron	1.84		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 20:10	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 20:10	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 10:15	07/03/23 09:42	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1270		10.0	10.0	mg/L		06/30/23 14:59	06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.101	U	0.173	0.173	1.00	0.300	pCi/L	07/05/23 09:28	07/27/23 09:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		30 - 110					07/05/23 09:28	07/27/23 09:57	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.109	U	0.400	0.400	1.00	0.723	pCi/L	07/05/23 09:31	07/24/23 13:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		30 - 110					07/05/23 09:31	07/24/23 13:22	1
Y Carrier	87.1		30 - 110					07/05/23 09:31	07/24/23 13:22	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: AP MW-4

Lab Sample ID: 180-158519-2

Date Collected: 06/27/23 09:25

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL 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	0.210	U	0.436	0.436	5.00	0.723	pCi/L		07/27/23 14:39	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: SSP MW-4

Lab Sample ID: 180-158519-3

Date Collected: 06/27/23 10:35

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	696		2.50	1.78	mg/L			06/30/23 02:55	2.5
Fluoride	<0.0650		0.250	0.0650	mg/L			06/30/23 02:55	2.5
Sulfate	592		2.50	1.89	mg/L			06/30/23 02:55	2.5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000811	J	0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:14	1
Barium	0.0250		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:14	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:14	1
Boron	1.02	^1+ ^2 ^6+ ^+	0.0800	0.0601	mg/L		07/18/23 10:25	07/19/23 20:14	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:14	1
Calcium	264		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:14	1
Chromium	0.337		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:14	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:14	1
Molybdenum	0.202		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:14	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:14	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:14	1
Selenium	0.00711		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:14	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:14	1
Lithium	0.402		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:14	1
Iron	0.147		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 20:14	1
Aluminum	0.331		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 20:14	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 10:15	07/03/23 09:43	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2470		20.0	20.0	mg/L			06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.483		0.176	0.181	1.00	0.194	pCi/L	07/05/23 09:28	07/27/23 09:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		30 - 110					07/05/23 09:28	07/27/23 09:57	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.20		0.468	0.481	1.00	0.604	pCi/L	07/05/23 09:31	07/24/23 13:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.5		30 - 110					07/05/23 09:31	07/24/23 13:22	1
Y Carrier	89.0		30 - 110					07/05/23 09:31	07/24/23 13:22	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: SSP MW-4

Lab Sample ID: 180-158519-3

Date Collected: 06/27/23 10:35

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL 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	1.69		0.500	0.514	5.00	0.604	pCi/L		07/27/23 14:39	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: EQ-1

Lab Sample ID: 180-158519-4

Date Collected: 06/27/23 10:35

Matrix: Water

Date Received: 06/28/23 09:30

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L			06/30/23 03:10	1
Fluoride	<0.0260		0.100	0.0260	mg/L			06/30/23 03:10	1
Sulfate	<0.756		1.00	0.756	mg/L			06/30/23 03:10	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:25	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:25	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:25	1
<b>Boron</b>	<b>0.224</b>	<b>^1+ ^2 ^6+ ^+</b>	0.0800	0.0601	mg/L		07/18/23 10:25	07/19/23 20:25	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:25	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:25	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:25	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:25	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:25	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:25	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:25	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:25	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:25	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:25	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/19/23 20:25	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/19/23 20:25	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 10:15	07/03/23 09:44	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	<10.0		10.0	10.0	mg/L			06/30/23 14:59	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00662	U	0.0925	0.0925	1.00	0.183	pCi/L	07/05/23 09:28	07/27/23 09:58	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.7		30 - 110					07/05/23 09:28	07/27/23 09:58	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.193	U	0.325	0.325	1.00	0.557	pCi/L	07/05/23 09:31	07/24/23 13:22	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.7		30 - 110					07/05/23 09:31	07/24/23 13:22	1
Y Carrier	88.2		30 - 110					07/05/23 09:31	07/24/23 13:22	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Client Sample ID: EQ-1

Lab Sample ID: 180-158519-4

Date Collected: 06/27/23 10:35

Matrix: Water

Date Received: 06/28/23 09:30

**Method: TAL-STL 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	0.199	U	0.338	0.338	5.00	0.557	pCi/L		07/27/23 14:39	1

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-439238/30  
Matrix: Water  
Analysis Batch: 439238

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

Analyte	Result	MB MB Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713 mg/L			06/29/23 16:05	1
Fluoride	<0.0260		0.100	0.0260 mg/L			06/29/23 16:05	1
Sulfate	<0.756		1.00	0.756 mg/L			06/29/23 16:05	1

Lab Sample ID: MB 180-439238/69  
Matrix: Water  
Analysis Batch: 439238

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

Analyte	Result	MB MB Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713 mg/L			06/30/23 01:41	1
Fluoride	<0.0260		0.100	0.0260 mg/L			06/30/23 01:41	1
Sulfate	<0.756		1.00	0.756 mg/L			06/30/23 01:41	1

Lab Sample ID: LCS 180-439238/31  
Matrix: Water  
Analysis Batch: 439238

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

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	51.41	mg/L		103	80 - 120
Fluoride	2.50	2.748	mg/L		110	80 - 120
Sulfate	50.0	51.35	mg/L		103	80 - 120

Lab Sample ID: LCS 180-439238/70  
Matrix: Water  
Analysis Batch: 439238

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

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.54	mg/L		101	80 - 120
Fluoride	2.50	2.667	mg/L		107	80 - 120
Sulfate	50.0	49.95	mg/L		100	80 - 120

Lab Sample ID: 180-158515-D-1 MS  
Matrix: Water  
Analysis Batch: 439238

Client Sample ID: Matrix Spike  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS Result Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	17.4		50.0	66.89	mg/L		99	80 - 120
Fluoride	0.0748	J	2.50	2.650	mg/L		103	80 - 120
Sulfate	3.76		50.0	54.38	mg/L		101	80 - 120

Lab Sample ID: 180-158515-D-1 MSD  
Matrix: Water  
Analysis Batch: 439238

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD Result Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	17.4		50.0	67.65	mg/L		100	80 - 120	1	15
Fluoride	0.0748	J	2.50	2.826	mg/L		110	80 - 120	6	15
Sulfate	3.76		50.0	55.17	mg/L		103	80 - 120	1	15

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

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

Lab Sample ID: 180-158523-D-1 MS  
Matrix: Water  
Analysis Batch: 439238

Client Sample ID: Matrix Spike  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS Result Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.82		50.0	54.36	mg/L		101	80 - 120
Fluoride	0.216		2.50	2.717	mg/L		100	80 - 120
Sulfate	236		50.0	274.5	4 mg/L		78	80 - 120

Lab Sample ID: 180-158523-D-1 MSD  
Matrix: Water  
Analysis Batch: 439238

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD Result Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3.82		50.0	54.94	mg/L		102	80 - 120	1	15
Fluoride	0.216		2.50	2.904	mg/L		108	80 - 120	7	15
Sulfate	236		50.0	277.7	4 mg/L		84	80 - 120	1	15

Method: EPA 6020B - Metals (ICP/MS)

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Result	MB MB Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282 mg/L		07/18/23 10:25	07/19/23 19:45	1
Barium	<0.00314		0.0100	0.00314 mg/L		07/18/23 10:25	07/19/23 19:45	1
Beryllium	<0.000274		0.00100	0.000274 mg/L		07/18/23 10:25	07/19/23 19:45	1
Boron	<0.0601	<sup>^1+</sup> <sup>^6+</sup> <sup>^+</sup>	0.0800	0.0601 mg/L		07/18/23 10:25	07/19/23 19:45	1
Cadmium	<0.000217		0.00100	0.000217 mg/L		07/18/23 10:25	07/19/23 19:45	1
Calcium	<0.127		0.500	0.127 mg/L		07/18/23 10:25	07/19/23 19:45	1
Chromium	<0.00153		0.00200	0.00153 mg/L		07/18/23 10:25	07/19/23 19:45	1
Cobalt	<0.000261		0.000500	0.000261 mg/L		07/18/23 10:25	07/19/23 19:45	1
Molybdenum	<0.000610		0.00500	0.000610 mg/L		07/18/23 10:25	07/19/23 19:45	1
Lead	<0.000376		0.00100	0.000376 mg/L		07/18/23 10:25	07/19/23 19:45	1
Antimony	<0.000967		0.00200	0.000967 mg/L		07/18/23 10:25	07/19/23 19:45	1
Selenium	<0.000739		0.00500	0.000739 mg/L		07/18/23 10:25	07/19/23 19:45	1
Thallium	<0.000472		0.00100	0.000472 mg/L		07/18/23 10:25	07/19/23 19:45	1
Lithium	<0.00129		0.00500	0.00129 mg/L		07/18/23 10:25	07/19/23 19:45	1
Iron	<0.0277		0.0500	0.0277 mg/L		07/18/23 10:25	07/19/23 19:45	1
Aluminum	<0.0155		0.0300	0.0155 mg/L		07/18/23 10:25	07/19/23 19:45	1

Lab Sample ID: LCS 180-440656/2-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.047	mg/L		105	80 - 120
Barium	1.00	1.047	mg/L		105	80 - 120
Beryllium	0.500	0.4986	mg/L		100	80 - 120
Boron	1.25	1.224	<sup>^1+</sup> <sup>^6+</sup> <sup>^+</sup> mg/L		98	80 - 120
Cadmium	0.500	0.5210	mg/L		104	80 - 120
Calcium	25.0	27.43	mg/L		110	80 - 120
Chromium	0.500	0.5246	mg/L		105	80 - 120

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
Cobalt	0.500	0.5167		mg/L		103	80 - 120	
Molybdenum	0.500	0.5255		mg/L		105	80 - 120	
Lead	0.500	0.5342		mg/L		107	80 - 120	
Antimony	0.250	0.2776		mg/L		111	80 - 120	
Selenium	1.000	1.038		mg/L		104	80 - 120	
Thallium	1.000	1.059		mg/L		106	80 - 120	
Lithium	0.500	0.4901		mg/L		98	80 - 120	
Iron	5.000	5.252		mg/L		105	80 - 120	
Aluminum	5.000	4.931		mg/L		99	80 - 120	

Lab Sample ID: 180-158519-1 MS  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: AP MW-5  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Arsenic	0.0147		1.000	1.067		mg/L		105	75 - 125	
Barium	0.0101		1.000	1.052		mg/L		104	75 - 125	
Beryllium	0.0945		0.500	0.5563		mg/L		92	75 - 125	
Boron	3.87	<sup>1</sup> + <sup>2</sup> <sup>6</sup> + E <sup>1</sup> +	1.25	4.884	<sup>1</sup> + <sup>6</sup> + E <sup>1</sup> +	mg/L		81	75 - 125	
Cadmium	0.0115		0.500	0.5107		mg/L		100	75 - 125	
Calcium	549		25.0	554.8	4	mg/L		22	75 - 125	
Chromium	<0.00153		0.500	0.4991		mg/L		100	75 - 125	
Cobalt	0.222		0.500	0.7191		mg/L		99	75 - 125	
Molybdenum	<0.000610		0.500	0.5392		mg/L		108	75 - 125	
Lead	0.00203		0.500	0.5304		mg/L		106	75 - 125	
Antimony	<0.000967		0.250	0.2762		mg/L		110	75 - 125	
Selenium	<0.000739		1.000	0.9531		mg/L		95	75 - 125	
Thallium	0.00266		1.000	1.058		mg/L		106	75 - 125	
Lithium	0.487		0.500	0.9123		mg/L		85	75 - 125	
Iron	3.90		5.000	8.591		mg/L		94	75 - 125	
Aluminum	44.1		5.000	47.18	4	mg/L		62	75 - 125	

Lab Sample ID: 180-158519-1 MSD  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: AP MW-5  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Arsenic	0.0147		1.000	1.054		mg/L		104	75 - 125	1 20
Barium	0.0101		1.000	1.050		mg/L		104	75 - 125	0 20
Beryllium	0.0945		0.500	0.5527		mg/L		92	75 - 125	1 20
Boron	3.87	<sup>1</sup> + <sup>2</sup> <sup>6</sup> + E <sup>1</sup> +	1.25	5.127	<sup>1</sup> + <sup>6</sup> + E <sup>1</sup> +	mg/L		101	75 - 125	5 20
Cadmium	0.0115		0.500	0.5047		mg/L		99	75 - 125	1 20
Calcium	549		25.0	564.0	4	mg/L		59	75 - 125	2 20
Chromium	<0.00153		0.500	0.4990		mg/L		100	75 - 125	0 20
Cobalt	0.222		0.500	0.7199		mg/L		99	75 - 125	0 20
Molybdenum	<0.000610		0.500	0.5450		mg/L		109	75 - 125	1 20
Lead	0.00203		0.500	0.5321		mg/L		106	75 - 125	0 20
Antimony	<0.000967		0.250	0.2790		mg/L		112	75 - 125	1 20

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Selenium	<0.000739		1.000	0.9496		mg/L		95	75 - 125	0 20
Thallium	0.00266		1.000	1.058		mg/L		106	75 - 125	0 20
Lithium	0.487		0.500	0.9239		mg/L		87	75 - 125	1 20
Iron	3.90		5.000	8.698		mg/L		96	75 - 125	1 20
Aluminum	44.1		5.000	47.92	4	mg/L		77	75 - 125	2 20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-439347/1-A  
Matrix: Water  
Analysis Batch: 439508

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 439347

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Lab Sample ID: LCS 180-439347/2-A  
Matrix: Water  
Analysis Batch: 439508

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 439347

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
Mercury	0.00250	0.002493		mg/L		100	80 - 120	

Lab Sample ID: 180-158519-1 MS  
Matrix: Water  
Analysis Batch: 439508

Client Sample ID: AP MW-5  
Prep Type: Total/NA  
Prep Batch: 439347

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Mercury	0.000369		0.00100	0.001174		mg/L		81	75 - 125	

Lab Sample ID: 180-158519-1 MSD  
Matrix: Water  
Analysis Batch: 439508

Client Sample ID: AP MW-5  
Prep Type: Total/NA  
Prep Batch: 439347

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Mercury	0.000369		0.00100	0.001171		mg/L		80	75 - 125	0 20

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

Lab Sample ID: MB 180-439399/1  
Matrix: Water  
Analysis Batch: 439399

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

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Lab Sample ID: LCS 180-439399/2  
Matrix: Water  
Analysis Batch: 439399

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
Total Dissolved Solids	580	564.0		mg/L		97	85 - 115	

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

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

Lab Sample ID: 180-158532-C-1 DU		Client Sample ID: Duplicate	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 439399			
Analyte	Sample Result	Sample Qualifier	DU DU Result Qualifier Unit D RPD Limit
Total Dissolved Solids	747		745.0 0.124 mg/L 0.3 10

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

Lab Sample ID: MB 160-618894/1-A		Client Sample ID: Method Blank	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621813			
Prep Batch: 618894			

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.003107	U	0.0574	0.0574	1.00	0.124	pCi/L	07/05/23 09:28	07/27/23 09:51	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	101		30 - 110		07/05/23 09:28	07/27/23 09:51	1			

Lab Sample ID: LCS 160-618894/2-A		Client Sample ID: Lab Control Sample	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621813			
Prep Batch: 618894			

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits
Radium-226	11.3	11.08		1.23	1.00	0.131	pCi/L	98	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	90.5		30 - 110						

Lab Sample ID: 860-52284-A-9-B MS		Client Sample ID: Matrix Spike	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621814			
Prep Batch: 618894			

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits
Radium-226	0.205		12.1	10.74		1.21	1.00	0.207	pCi/L	87	60 - 140
Carrier	MS %Yield	MS Qualifier	Limits								
Ba Carrier	93.0		30 - 110								

Lab Sample ID: 860-52284-A-9-C MSD		Client Sample ID: Matrix Spike Duplicate	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621814			
Prep Batch: 618894			

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits	RER	Limit
Radium-226	0.205		11.4	10.59		1.18	1.00	0.140	pCi/L	91	60 - 140	0.06	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Ba Carrier	91.7		30 - 110										

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

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

Lab Sample ID: MB 160-618895/1-A		Client Sample ID: Method Blank	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621449			
Prep Batch: 618895			

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.2183	U	0.250	0.250	1.00	0.532	pCi/L	07/05/23 09:31	07/24/23 13:15	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	101		30 - 110		07/05/23 09:31	07/24/23 13:15	1			
Y Carrier	84.1		30 - 110		07/05/23 09:31	07/24/23 13:15	1			

Lab Sample ID: LCS 160-618895/2-A		Client Sample ID: Lab Control Sample	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621449			
Prep Batch: 618895			

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits
Radium-228	8.01	7.326		1.12	1.00	0.552	pCi/L	91	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	90.5		30 - 110						
Y Carrier	83.4		30 - 110						

Lab Sample ID: 860-52284-A-9-E MS		Client Sample ID: Matrix Spike	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621449			
Prep Batch: 618895			

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits
Radium-228	0.690		8.56	10.36		1.41	1.00	0.519	pCi/L	113	60 - 140
Carrier	MS %Yield	MS Qualifier	Limits								
Ba Carrier	93.0		30 - 110								
Y Carrier	85.6		30 - 110								

Lab Sample ID: 860-52284-A-9-F MSD		Client Sample ID: Matrix Spike Duplicate	
Matrix: Water		Prep Type: Total/NA	
Analysis Batch: 621449			
Prep Batch: 618895			

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	Limits	RER	Limit
Radium-228	0.690		8.08	9.761		1.34	1.00	0.516	pCi/L	112	60 - 140	0.22	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Ba Carrier	91.7		30 - 110										
Y Carrier	87.1		30 - 110										

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

**HPLC/IC**

**Analysis Batch: 439238**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total/NA	Water	EPA 9056A	
180-158519-1	AP MW-5	Total/NA	Water	EPA 9056A	
180-158519-2	AP MW-4	Total/NA	Water	EPA 9056A	
180-158519-3	SSP MW-4	Total/NA	Water	EPA 9056A	
180-158519-4	EQ-1	Total/NA	Water	EPA 9056A	
MB 180-439238/30	Method Blank	Total/NA	Water	EPA 9056A	
MB 180-439238/69	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-439238/31	Lab Control Sample	Total/NA	Water	EPA 9056A	
LCS 180-439238/70	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-158515-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-158515-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	
180-158523-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-158523-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 439347**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total/NA	Water	7470A	
180-158519-2	AP MW-4	Total/NA	Water	7470A	
180-158519-3	SSP MW-4	Total/NA	Water	7470A	
180-158519-4	EQ-1	Total/NA	Water	7470A	
MB 180-439347/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-439347/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-158519-1 MS	AP MW-5	Total/NA	Water	7470A	
180-158519-1 MSD	AP MW-5	Total/NA	Water	7470A	

**Analysis Batch: 439508**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total/NA	Water	EPA 7470A	439347
180-158519-2	AP MW-4	Total/NA	Water	EPA 7470A	439347
180-158519-3	SSP MW-4	Total/NA	Water	EPA 7470A	439347
180-158519-4	EQ-1	Total/NA	Water	EPA 7470A	439347
MB 180-439347/1-A	Method Blank	Total/NA	Water	EPA 7470A	439347
LCS 180-439347/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	439347
180-158519-1 MS	AP MW-5	Total/NA	Water	EPA 7470A	439347
180-158519-1 MSD	AP MW-5	Total/NA	Water	EPA 7470A	439347

**Prep Batch: 440656**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total Recoverable	Water	3005A	
180-158519-2	AP MW-4	Total Recoverable	Water	3005A	
180-158519-3	SSP MW-4	Total Recoverable	Water	3005A	
180-158519-4	EQ-1	Total Recoverable	Water	3005A	
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-158519-1 MS	AP MW-5	Total Recoverable	Water	3005A	
180-158519-1 MSD	AP MW-5	Total Recoverable	Water	3005A	

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158519-1

**Metals**

**Analysis Batch: 440892**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total Recoverable	Water	EPA 6020B	440656
180-158519-2	AP MW-4	Total Recoverable	Water	EPA 6020B	440656
180-158519-3	SSP MW-4	Total Recoverable	Water	EPA 6020B	440656
180-158519-4	EQ-1	Total Recoverable	Water	EPA 6020B	440656
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440656
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440656
180-158519-1 MS	AP MW-5	Total Recoverable	Water	EPA 6020B	440656
180-158519-1 MSD	AP MW-5	Total Recoverable	Water	EPA 6020B	440656

**General Chemistry**

**Analysis Batch: 439399**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total/NA	Water	SM 2540C	
180-158519-2	AP MW-4	Total/NA	Water	SM 2540C	
180-158519-3	SSP MW-4	Total/NA	Water	SM 2540C	
180-158519-4	EQ-1	Total/NA	Water	SM 2540C	
MB 180-439399/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-439399/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-158532-C-1 DU	Duplicate	Total/NA	Water	SM 2540C	

**Rad**

**Prep Batch: 618894**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total/NA	Water	PrecSep-21	
180-158519-2	AP MW-4	Total/NA	Water	PrecSep-21	
180-158519-3	SSP MW-4	Total/NA	Water	PrecSep-21	
180-158519-4	EQ-1	Total/NA	Water	PrecSep-21	
MB 160-618894/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-618894/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
860-52284-A-9-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
860-52284-A-9-C MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	

**Prep Batch: 618895**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158519-1	AP MW-5	Total/NA	Water	PrecSep_0	
180-158519-2	AP MW-4	Total/NA	Water	PrecSep_0	
180-158519-3	SSP MW-4	Total/NA	Water	PrecSep_0	
180-158519-4	EQ-1	Total/NA	Water	PrecSep_0	
MB 160-618895/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-618895/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
860-52284-A-9-E MS	Matrix Spike	Total/NA	Water	PrecSep_0	
860-52284-A-9-F MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
HDR Inc  
17111 Preston Road  
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Dallas, Texas 75248-1232  
Generated 10/16/2023 4:41:24 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-158460-1

## Eurofins Pittsburgh

### Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

### Authorization

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## Case Narrative

### Job ID: 180-158460-1

#### Laboratory: Eurofins Pittsburgh

#### Narrative

**Job Narrative**  
**180-158460-1**

#### Receipt

The samples were received on 6/27/2023 9:49 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C

#### Receipt Exceptions

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): The sample tech logged per the containers sample id of MW-2 date collected of 6/26/2023 at 14:10 pm. SFL MW-2 (180-158460-5)

#### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 618894 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. DUP-1 (180-158460-2), SFL MW-4 (180-158460-3), SFL MW-3 (180-158460-4), SFL MW-2 (180-158460-5), (LCS 160-618894/2-A), (MB 160-618894/1-A), (860-52284-A-9-A), (860-52284-A-9-B MS) and (860-52284-A-9-C MSD)

Method 904.0: Radium-228 Prep Batch 160-618895 The following sample(s) were prepared at a reduced aliquot due to matrix. All of the selected samples were slightly cloudy.

Method 904.0: Radium-228 batch 618895 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. DUP-1 (180-158460-2), SFL MW-4 (180-158460-3), SFL MW-3 (180-158460-4), SFL MW-2 (180-158460-5), (LCS 160-618895/2-A), (MB 160-618895/1-A), (860-52284-A-9-D), (860-52284-A-9-E MS) and (860-52284-A-9-F MSD)

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

#### Rad

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

#### Narrative

**Job Narrative**  
**180-158460-2**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/27/2023 9:49 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C

#### Receipt Exceptions

## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

### Job ID: 180-158460-1 (Continued)

#### Laboratory: Eurofins Pittsburgh (Continued)

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): The sample tech logged per the containers sample id of MW-2. date collected of 6/26/2023 at 14:10 pm. SFL MW-2 (180-158460-5)

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following samples were diluted due to the nature of the sample matrix: DUP-1 (180-158460-2), SFL MW-4 (180-158460-3), SFL MW-3 (180-158460-4) and SFL MW-2 (180-158460-5) at 10.0, 5.0, 5.0 and 10.0. Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 180-439572 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 9056A\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 180-439572 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) precision was within acceptance limits.

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

#### Metals

Method 6020B: The following samples were diluted to bring the concentration of calcium within the calibration range: DUP-1 (180-158460-2) and SFL MW-2 (180-158460-5). Elevated reporting limits (RLs) are provided.

Method 6020B: The continuing calibration verification (CCV) associated with batch 180-447301 recovered at 89% which was below the lower control limit of 90% for Boron. Sample has been consumed and insufficient sample available for reanalysis, therefore, the samples associated with the CCV have been reported. DUP-1 (180-158460-2), SFL MW-4 (180-158460-3), SFL MW-3 (180-153460-4) and SFL MW-2 (180-158460-5)

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

#### General Chemistry

Method 2540C\_Calcd: Sample did not reach a stable weight following 4 cycles of heating, cooling, and desiccation. Cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result. DUP-1 (180-158460-2) and SFL MW-2 (180-158460-5)

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

## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

### Qualifiers

#### HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

#### Metals

Qualifier	Qualifier Description
A-	Continuing Calibration Verification (CCV) is outside acceptance limits, low biased.
A+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
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.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### 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.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
SQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count



## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-15-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	09-14-23 *
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23 *
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-23 *
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-23 *
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23 *
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

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

Eurofins Pittsburgh

## Sample Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-158460-2	DUP-1	Water	06/26/23 14:45	06/27/23 09:49
180-158460-3	SFL MW-4	Water	06/26/23 16:02	06/27/23 09:49
180-158460-4	SFL MW-3	Water	06/26/23 15:45	06/27/23 09:49
180-158460-5	SFL MW-2	Water	06/26/23 14:10	06/27/23 09:49



## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

#### Client Sample ID: DUP-1

Date Collected: 06/26/23 14:45

Date Received: 06/27/23 09:49

#### Lab Sample ID: 180-158460-2

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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 18:53	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	439572	07/05/23 19:10	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:43	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			441132	07/21/23 19:43	KED	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			442055	07/31/23 21:21	CRL	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			447301	09/21/23 20:39	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 10:53	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	15 mL	100 mL	439174	06/28/23 16:49	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			753.13 mL	1.0 g	618894	07/05/23 09:23	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:57	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			753.13 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1			621404	07/24/23 13:19	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
		Instrument ID: NOEQUIP								

#### Client Sample ID: SFL MW-4

Date Collected: 06/26/23 16:02

Date Received: 06/27/23 09:49

#### Lab Sample ID: 180-158460-3

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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 19:55	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	439572	07/05/23 20:09	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:47	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			442055	07/31/23 21:25	CRL	EET PIT
		Instrument ID: DORY								

Eurofins Pittsburgh

### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

#### Client Sample ID: SFL MW-4

Date Collected: 06/26/23 16:02

Date Received: 06/27/23 09:49

#### Lab Sample ID: 180-158460-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			447301	09/21/23 20:42	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 10:56	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	439174	06/28/23 16:49	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			743.37 mL	1.0 g	618894	07/05/23 09:28	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:57	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			743.37 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1			621404	07/24/23 13:19	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
		Instrument ID: NOEQUIP								

#### Client Sample ID: SFL MW-3

Date Collected: 06/26/23 15:45

Date Received: 06/27/23 09:49

#### Lab Sample ID: 180-158460-4

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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 20:24	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	439572	07/05/23 20:39	SNL	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:50	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			447301	09/21/23 20:45	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 10:57	RJR	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	439174	06/28/23 16:49	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			991.52 mL	1.0 g	618894	07/05/23 09:28	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:57	FLC	EET SL
		Instrument ID: GFPCBLUE								

Eurofins Pittsburgh

**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

**Client Sample ID: SFL MW-3**

Date Collected: 06/26/23 15:45

Date Received: 06/27/23 09:49

**Lab Sample ID: 180-158460-4**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			991.52 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1			621404	07/24/23 13:23	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:33	SCB	EET SL
Instrument ID: NOEQUIP										

**Client Sample ID: SFL MW-2**

Date Collected: 06/26/23 14:10

Date Received: 06/27/23 09:49

**Lab Sample ID: 180-158460-5**

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	EPA 9056A		1	1 mL	1 mL	439572	07/05/23 20:54	SNL	EET PIT
Instrument ID: CHICS2100B										
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	439572	07/05/23 21:09	SNL	EET PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 20:54	RJR	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			441132	07/21/23 19:43	KED	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			442055	07/31/23 21:32	CRL	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		5			447301	09/21/23 20:43	MRG	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	439674	07/07/23 07:45	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439934	07/10/23 10:53	RJR	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	15 mL	100 mL	439174	06/28/23 16:49	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			751.51 mL	1.0 g	618894	07/05/23 09:23	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:57	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			751.51 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1			621404	07/24/23 13:23	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:33	SCB	EET SL
Instrument ID: NOEQUIP										

**Laboratory References:**

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Eurofins Pittsburgh

**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

**Analyst References:**

Lab: EET PIT

Batch Type: Prep

MTW = Michael Wesoloski

S1Z = Sage Ziviello

Batch Type: Analysis

CRL = Craig Tronzo

KED = Katie Dacko

LWM = Leslie McIntire

MRG = Mismel Garcia

RJR = Ron Rosenbaum

SNL = Sean Lordo

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

FLC = Fernando Cruz

SCB = Sarah Bernsen

Eurofins Pittsburgh

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: DUP-1

Date Collected: 06/26/23 14:45

Date Received: 06/27/23 09:49

Lab Sample ID: 180-158460-2

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3260		10.0	7.13	mg/L			07/05/23 19:10	10
Fluoride	0.171		0.100	0.0260	mg/L			07/05/23 18:56	1
Sulfate	2030		10.0	7.56	mg/L			07/05/23 19:10	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00163		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:43	1
Barium	0.0267		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:43	1
Beryllium	0.00747		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:43	1
Boron	0.413		0.160	0.120	mg/L		07/18/23 10:25	09/21/23 20:39	2
Cadmium	0.00296		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:43	1
Calcium	943		1.00	0.254	mg/L		07/18/23 10:25	07/21/23 19:46	2
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:43	1
Cobalt	0.0176		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:43	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:43	1
Lead	0.000865	J	0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:43	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:43	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:43	1
Thallium	0.000818	J	0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:43	1
Lithium	0.421		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:43	1
Iron	0.149		0.100	0.0554	mg/L		07/18/23 10:25	07/31/23 21:21	2
Aluminum	0.378		0.0600	0.0310	mg/L		07/18/23 10:25	07/31/23 21:21	2

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 10:53	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7910		66.7	66.7	mg/L			06/28/23 16:49	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.55		0.335	0.363	1.00	0.215	pCi/L	07/05/23 09:28	07/27/23 09:57	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	82.7		30 - 110					07/05/23 09:28	07/27/23 09:57	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	6.55		1.03	1.20	1.00	0.714	pCi/L	07/05/23 09:31	07/24/23 13:19	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	82.7		30 - 110					07/05/23 09:31	07/24/23 13:19	1
Y Carrier	86.0		30 - 110					07/05/23 09:31	07/24/23 13:19	1

Eurofins Pittsburgh

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: DUP-1

Date Collected: 06/26/23 14:45

Date Received: 06/27/23 09:49

Lab Sample ID: 180-158460-2

Matrix: Water

**Method: TAL-STL 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	8.10		1.08	1.25	5.00	0.714	pCi/L		07/27/23 14:39	1

Eurofins Pittsburgh

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: SFL MW-4

Lab Sample ID: 180-158460-3

Date Collected: 06/26/23 16:02

Matrix: Water

Date Received: 06/27/23 09:49

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1310		5.00	3.57	mg/L			07/05/23 20:09	5
Fluoride	0.123		0.100	0.0260	mg/L			07/05/23 19:55	1
Sulfate	1720		5.00	3.78	mg/L			07/05/23 20:09	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00130		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:47	1
Barium	0.0281		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:47	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:47	1
Boron	0.494	A	0.160	0.120	mg/L		07/18/23 10:25	09/21/23 20:42	2
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:47	1
Calcium	371		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:47	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:47	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:47	1
Molybdenum	0.00170	J	0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:47	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:47	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:47	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:47	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:47	1
Lithium	0.236		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:47	1
Iron	0.593		0.0500	0.0277	mg/L		07/18/23 10:25	07/31/23 21:25	1
Aluminum	0.0212	J	0.0300	0.0155	mg/L		07/18/23 10:25	07/31/23 21:25	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 10:56	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	474		10.0	10.0	mg/L			06/28/23 16:49	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0393	U	0.159	0.159	1.00	0.299	pCi/L	07/05/23 09:28	07/27/23 09:57	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		30 - 110	07/05/23 09:28	07/27/23 09:57	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.176	U	0.462	0.463	1.00	0.817	pCi/L	07/05/23 09:31	07/24/23 13:19	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		30 - 110	07/05/23 09:31	07/24/23 13:19	1
Y Carrier	87.5		30 - 110	07/05/23 09:31	07/24/23 13:19	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: SFL MW-4

Lab Sample ID: 180-158460-3

Date Collected: 06/26/23 16:02

Matrix: Water

Date Received: 06/27/23 09:49

**Method: TAL-STL 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	0.216	U	0.489	0.490	5.00	0.817	pCi/L		07/27/23 14:39	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: SFL MW-3

Lab Sample ID: 180-158460-4

Date Collected: 06/26/23 15:45

Matrix: Water

Date Received: 06/27/23 09:49

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	809		1.00	0.713	mg/L			07/05/23 20:24	1
Fluoride	0.613		0.100	0.0260	mg/L			07/05/23 20:24	1
Sulfate	2450		5.00	3.78	mg/L			07/05/23 20:39	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00318		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:50	1
Barium	0.0131		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:50	1
Beryllium	0.0288		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:50	1
Boron	4.81	A	0.800	0.601	mg/L		07/18/23 10:25	09/21/23 20:45	10
Cadmium	0.00523		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:50	1
Calcium	578		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 20:50	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:50	1
Cobalt	0.0585		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:50	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:50	1
Lead	0.0173		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:50	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:50	1
Selenium	0.00107	J	0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:50	1
Thallium	0.00541		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:50	1
Lithium	0.245		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:50	1
Iron	1.48		0.0500	0.0277	mg/L		07/18/23 10:25	07/31/23 21:28	1
Aluminum	7.88		0.0300	0.0155	mg/L		07/18/23 10:25	07/31/23 21:28	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000635		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 10:57	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4900		40.0	40.0	mg/L			06/28/23 16:49	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.02		0.220	0.239	1.00	0.151	pCi/L	07/05/23 09:28	07/27/23 09:57	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.2		30 - 110	07/05/23 09:28	07/27/23 09:57	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.94		0.574	0.634	1.00	0.493	pCi/L	07/05/23 09:31	07/24/23 13:20	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.2		30 - 110	07/05/23 09:31	07/24/23 13:20	1
Y Carrier	87.9		30 - 110	07/05/23 09:31	07/24/23 13:20	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: SFL MW-3

Lab Sample ID: 180-158460-4

Date Collected: 06/26/23 15:45

Matrix: Water

Date Received: 06/27/23 09:49

**Method: TAL-STL 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	3.96		0.615	0.678	5.00	0.493	pCi/L		07/27/23 14:39	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: SFL MW-2

Lab Sample ID: 180-158460-5

Date Collected: 06/26/23 14:10

Matrix: Water

Date Received: 06/27/23 09:49

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3300		10.0	7.13	mg/L			07/05/23 21:09	10
Fluoride	0.250		0.100	0.0260	mg/L			07/05/23 20:54	1
Sulfate	2050		10.0	7.56	mg/L			07/05/23 21:09	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00182		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 20:54	1
Barium	0.0281		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 20:54	1
Beryllium	0.00737		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 20:54	1
Boron	0.479	A	0.400	0.301	mg/L		07/18/23 10:25	09/21/23 20:48	5
Cadmium	0.00320		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 20:54	1
Calcium	1020		1.00	0.254	mg/L		07/18/23 10:25	07/21/23 19:49	2
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 20:54	1
Cobalt	0.0186		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 20:54	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 20:54	1
Lead	0.000782	J	0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 20:54	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 20:54	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 20:54	1
Thallium	0.000881	J	0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 20:54	1
Lithium	0.445		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 20:54	1
Iron	0.159		0.100	0.0554	mg/L		07/18/23 10:25	07/31/23 21:32	2
Aluminum	0.431		0.0600	0.0310	mg/L		07/18/23 10:25	07/31/23 21:32	2

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 10:58	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7990		66.7	66.7	mg/L			06/28/23 16:49	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.58		0.336	0.365	1.00	0.244	pCi/L	07/05/23 09:28	07/27/23 09:57	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.7		30 - 110	07/05/23 09:28	07/27/23 09:57	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	6.91		0.986	1.17	1.00	0.731	pCi/L	07/05/23 09:31	07/24/23 13:20	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.7		30 - 110	07/05/23 09:31	07/24/23 13:20	1
Y Carrier	85.6		30 - 110	07/05/23 09:31	07/24/23 13:20	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Client Sample ID: SFL MW-2

Lab Sample ID: 180-158460-5

Date Collected: 06/26/23 14:10

Matrix: Water

Date Received: 06/27/23 09:49

**Method: TAL-STL 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	8.49		1.04	1.23	5.00	0.731	pCi/L		07/27/23 14:39	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

**Method: EPA 9056A - Anions, Ion Chromatography**

Lab Sample ID: MB 180-439572/22  
Matrix: Water  
Analysis Batch: 439572

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

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L			07/05/23 17:12	1
Fluoride	<0.0260		0.100	0.0260	mg/L			07/05/23 17:12	1
Sulfate	<0.756		1.00	0.756	mg/L			07/05/23 17:12	1

Lab Sample ID: LCS 180-439572/33  
Matrix: Water  
Analysis Batch: 439572

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

Analyte	Spike Added	LCS LCS Result	Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.88		mg/L		100	80 - 120
Fluoride	2.50	2.561		mg/L		102	80 - 120
Sulfate	50.0	49.58		mg/L		99	80 - 120

Lab Sample ID: 180-158703-A-1 MS  
Matrix: Water  
Analysis Batch: 439572

Client Sample ID: Matrix Spike  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS Result	Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	8.19	F1 F2	50.0	42.69	F1	mg/L		69	80 - 120
Fluoride	0.106	F1 F2	2.50	1.881	F1	mg/L		71	80 - 120
Sulfate	14.6	F1 F2	50.0	49.49	F1	mg/L		70	80 - 120

Lab Sample ID: 180-158703-A-1 MSD  
Matrix: Water  
Analysis Batch: 439572

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD Result	Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	8.19	F1 F2	50.0	57.64	F2	mg/L		99	80 - 120	30	15
Fluoride	0.106	F1 F2	2.50	2.613	F2	mg/L		100	80 - 120	33	15
Sulfate	14.6	F1 F2	50.0	64.74	F2	mg/L		100	80 - 120	27	15

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 19:45	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 19:45	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 19:45	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 19:45	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 19:45	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 19:45	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 19:45	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 19:45	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 19:45	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 19:45	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 19:45	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 19:45	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 19:45	1

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/31/23 20:23	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/31/23 20:23	1
Beryllium	<0.000274	^+	0.00100	0.000274	mg/L		07/18/23 10:25	07/31/23 20:23	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/31/23 20:23	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/31/23 20:23	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/31/23 20:23	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/31/23 20:23	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/31/23 20:23	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/31/23 20:23	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/31/23 20:23	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/31/23 20:23	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/31/23 20:23	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/31/23 20:23	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/31/23 20:23	1

Lab Sample ID: LCS 180-440656/2-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Spike Added	LCS LCS Result	Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.047		mg/L		105	80 - 120
Barium	1.00	1.047		mg/L		105	80 - 120
Beryllium	0.500	0.4986		mg/L		100	80 - 120
Cadmium	0.500	0.5210		mg/L		104	80 - 120
Calcium	25.0	27.43		mg/L		110	80 - 120
Chromium	0.500	0.5246		mg/L		105	80 - 120
Cobalt	0.500	0.5167		mg/L		103	80 - 120
Molybdenum	0.500	0.5255		mg/L		105	80 - 120
Lead	0.500	0.5342		mg/L		107	80 - 120
Antimony	0.250	0.2776		mg/L		111	80 - 120
Selenium	1.00	1.038		mg/L		104	80 - 120
Thallium	1.00	1.059		mg/L		106	80 - 120
Lithium	0.500	0.4901		mg/L		98	80 - 120

Lab Sample ID: LCS 180-440656/2-A  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Spike Added	LCS LCS Result	Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.004		mg/L		100	80 - 120
Barium	1.00	1.046		mg/L		105	80 - 120
Cadmium	0.500	0.5156		mg/L		103	80 - 120

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Client Sample ID: Lab Control Sample	
							Prep Type: Total Recoverable	
								Prep Batch: 440656
								%Rec
								Limits
Calcium	25.0	27.62		mg/L		110	80 - 120	
Chromium	0.500	0.5284		mg/L		106	80 - 120	
Molybdenum	0.500	0.5213		mg/L		104	80 - 120	
Lead	0.500	0.5284		mg/L		106	80 - 120	
Antimony	0.250	0.2731		mg/L		109	80 - 120	
Selenium	1.00	1.032		mg/L		103	80 - 120	
Thallium	1.00	1.061		mg/L		106	80 - 120	
Lithium	0.500	0.5022		mg/L		100	80 - 120	
Iron	5.00	5.266		mg/L		105	80 - 120	
Aluminum	5.00	5.043		mg/L		101	80 - 120	

Lab Sample ID: 180-158519-E-1-E MS  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: Matrix Spike		
									Prep Type: Total Recoverable		
											Prep Batch: 440656
											%Rec
											Limits
Arsenic	0.0147		1.00	1.067		mg/L		105	75 - 125		
Barium	0.0101		1.00	1.052		mg/L		104	75 - 125		
Beryllium	0.0945		0.500	0.5563		mg/L		92	75 - 125		
Cadmium	0.0115		0.500	0.5107		mg/L		100	75 - 125		
Calcium	549		25.0	554.8	4	mg/L		22	75 - 125		
Chromium	<0.00153		0.500	0.4991		mg/L		100	75 - 125		
Cobalt	0.222		0.500	0.7191		mg/L		99	75 - 125		
Molybdenum	<0.000610		0.500	0.5392		mg/L		108	75 - 125		
Lead	0.00203		0.500	0.5304		mg/L		106	75 - 125		
Antimony	<0.000967		0.250	0.2762		mg/L		110	75 - 125		
Selenium	<0.000739		1.00	0.9531		mg/L		95	75 - 125		
Thallium	0.00266		1.00	1.058		mg/L		106	75 - 125		
Lithium	0.487		0.500	0.9123		mg/L		85	75 - 125		

Lab Sample ID: 180-158519-E-1-E MS ^25  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: Matrix Spike		
									Prep Type: Total Recoverable		
											Prep Batch: 440656
											%Rec
											Limits
Arsenic	0.0135		1.00	5.047	F1	mg/L		503	75 - 125		
Barium	<0.0157	^+	1.00	5.240	F1	mg/L		524	75 - 125		
Cadmium	0.0106	^+	0.500	2.603	F1	mg/L		518	75 - 125		
Calcium	522		25.0	2874	4	mg/L		9406	75 - 125		
Chromium	<0.00765		0.500	2.589	F1	mg/L		518	75 - 125		
Molybdenum	<0.00305		0.500	2.620	F1	mg/L		524	75 - 125		
Lead	0.00208	J	0.500	2.622	F1	mg/L		524	75 - 125		
Antimony	<0.00484		0.250	1.378	F1	mg/L		551	75 - 125		
Selenium	<0.00370		1.00	5.100	F1	mg/L		510	75 - 125		
Thallium	0.00319	J	1.00	5.142	F1	mg/L		514	75 - 125		
Lithium	0.532		0.500	5.336	F1	mg/L		961	75 - 125		
Iron	3.72		5.00	45.31	F1	mg/L		832	75 - 125		
Aluminum	43.5		5.00	251.6	4	mg/L		4162	75 - 125		

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: Matrix Spike		
									Prep Type: Total Recoverable		
											Prep Batch: 440656
											%Rec
											Limits
Calcium	572		25.0	573.6	4	mg/L		6	75 - 125		

Lab Sample ID: 180-158519-E-1-F MSD  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.0101		1.00	1.050		mg/L		104	75 - 125	0	20
Beryllium	0.0945		0.500	0.5527		mg/L		92	75 - 125	1	20
Cadmium	0.0115		0.500	0.5047		mg/L		99	75 - 125	1	20
Calcium	549		25.0	564.0	4	mg/L		59	75 - 125	2	20
Chromium	<0.00153		0.500	0.4990		mg/L		100	75 - 125	0	20
Cobalt	0.222		0.500	0.7199		mg/L		99	75 - 125	0	20
Molybdenum	<0.000610		0.500	0.5450		mg/L		109	75 - 125	1	20
Lead	0.00203		0.500	0.5321		mg/L		106	75 - 125	0	20
Antimony	<0.000967		0.250	0.2790		mg/L		112	75 - 125	1	20
Selenium	<0.000739		1.00	0.9496		mg/L		95	75 - 125	0	20
Thallium	0.00266		1.00	1.058		mg/L		106	75 - 125	0	20
Lithium	0.487		0.500	0.9239		mg/L		87	75 - 125	1	20

Lab Sample ID: 180-158519-E-1-F MSD ^25  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	<0.0157	^+	1.00	5.218	F1	mg/L		522	75 - 125	0	20
Cadmium	0.0106	^+	0.500	2.561	F1	mg/L		510	75 - 125	2	20
Calcium	522		25.0	2907	4	mg/L		9539	75 - 125	1	20
Chromium	<0.00765		0.500	2.567	F1	mg/L		513	75 - 125	1	20
Molybdenum	<0.00305		0.500	2.616	F1	mg/L		523	75 - 125	0	20
Lead	0.00208	J	0.500	2.604	F1	mg/L		520	75 - 125	1	20
Antimony	<0.00484		0.250	1.372	F1	mg/L		549	75 - 125	0	20
Selenium	<0.00370		1.00	4.985	F1	mg/L		498	75 - 125	2	20
Thallium	0.00319	J	1.00	5.129	F1	mg/L		513	75 - 125	0	20
Lithium	0.532		0.500	5.313	F1	mg/L		956	75 - 125	0	20
Iron	3.72		5.00	45.40	F1	mg/L		834	75 - 125	0	20
Aluminum	43.5		5.00	254.5	4	mg/L		4221	75 - 125	1	20

Lab Sample ID: 180-158519-E-1-F MSD ^5  
Matrix: Water  
Analysis Batch: 441132

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit

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### QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

#### Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-439674/1-A  
Matrix: Water  
Analysis Batch: 439934

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		07/07/23 07:45	07/10/23 10:51	1

Lab Sample ID: LCS 180-439674/2-A  
Matrix: Water  
Analysis Batch: 439934

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.002237		mg/L		89	80 - 120

Lab Sample ID: 180-158460-2 MS  
Matrix: Water  
Analysis Batch: 439934

Client Sample ID: DUP-1  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000130		0.00100	0.0009020		mg/L		90	75 - 125

Lab Sample ID: 180-158460-2 MSD  
Matrix: Water  
Analysis Batch: 439934

Client Sample ID: DUP-1  
Prep Type: Total/NA  
Prep Batch: 439674

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	<0.000130		0.00100	0.0009240		mg/L		92	75 - 125	2	20

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

Lab Sample ID: MB 180-439174/1  
Matrix: Water  
Analysis Batch: 439174

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	<10.0		10.0	10.0	mg/L			06/28/23 16:49	1

Lab Sample ID: LCS 180-439174/2  
Matrix: Water  
Analysis Batch: 439174

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	580	564.0		mg/L		97	85 - 115

Lab Sample ID: 180-158460-3 DU  
Matrix: Water  
Analysis Batch: 439174

Client Sample ID: SFL MW-4  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	474		478.0		mg/L		0.8	10

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### QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

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

Lab Sample ID: MB 160-618894/1-A  
Matrix: Water  
Analysis Batch: 621813

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.003107	U	0.0574	0.0574	1.00	0.124	pCi/L	07/05/23 09:28	07/27/23 09:51	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		30 - 110	07/05/23 09:28	07/27/23 09:51	1

Lab Sample ID: LCS 160-618894/2-A  
Matrix: Water  
Analysis Batch: 621813

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.08		1.23	1.00	0.131	pCi/L	98	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	90.5		30 - 110

Lab Sample ID: 860-52284-A-9-B MS  
Matrix: Water  
Analysis Batch: 621814

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	0.205		12.1	10.74		1.21	1.00	0.207	pCi/L	87	60 - 140

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	93.0		30 - 110

Lab Sample ID: 860-52284-A-9-C MSD  
Matrix: Water  
Analysis Batch: 621814

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	Limit
Radium-226	0.205		11.4	10.59		1.18	1.00	0.140	pCi/L	91	60 - 140	0.06	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	91.7		30 - 110

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

Lab Sample ID: MB 160-618895/1-A  
Matrix: Water  
Analysis Batch: 621449

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618895

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.2183	U	0.250	0.250	1.00	0.532	pCi/L	07/05/23 09:31	07/24/23 13:15	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

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

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		30 - 110	07/05/23 09:31	07/24/23 13:15	1
Y Carrier	84.1		30 - 110	07/05/23 09:31	07/24/23 13:15	1

Lab Sample ID: LCS 160-618895/2-A  
Matrix: Water  
Analysis Batch: 621449

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618895

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.01	7.326		1.12	1.00	0.552	pCi/L	91	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	90.5		30 - 110
Y Carrier	83.4		30 - 110

Lab Sample ID: 860-52284-A-9-E MS  
Matrix: Water  
Analysis Batch: 621449

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 618895

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	0.690		8.56	10.36		1.41	1.00	0.519	pCi/L	113	60 - 140

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	93.0		30 - 110
Y Carrier	85.6		30 - 110

Lab Sample ID: 860-52284-A-9-F MSD  
Matrix: Water  
Analysis Batch: 621449

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 618895

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	Limit
Radium-228	0.690		8.08	9.761		1.34	1.00	0.516	pCi/L	112	60 - 140	0.22	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	91.7		30 - 110
Y Carrier	87.1		30 - 110

**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

**HPLC/IC**

**Analysis Batch: 439572**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total/NA	Water	EPA 9056A	
180-158460-2	DUP-1	Total/NA	Water	EPA 9056A	
180-158460-3	SFL MW-4	Total/NA	Water	EPA 9056A	
180-158460-3	SFL MW-4	Total/NA	Water	EPA 9056A	
180-158460-4	SFL MW-3	Total/NA	Water	EPA 9056A	
180-158460-4	SFL MW-3	Total/NA	Water	EPA 9056A	
180-158460-5	SFL MW-2	Total/NA	Water	EPA 9056A	
180-158460-5	SFL MW-2	Total/NA	Water	EPA 9056A	
MB 180-439572/22	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-439572/23	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-158703-A-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-158703-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 439674**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total/NA	Water	7470A	
180-158460-3	SFL MW-4	Total/NA	Water	7470A	
180-158460-4	SFL MW-3	Total/NA	Water	7470A	
180-158460-5	SFL MW-2	Total/NA	Water	7470A	
MB 180-439674/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-439674/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-158460-2 MS	DUP-1	Total/NA	Water	7470A	
180-158460-2 MSD	DUP-1	Total/NA	Water	7470A	

**Analysis Batch: 439934**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total/NA	Water	EPA 7470A	439674
180-158460-3	SFL MW-4	Total/NA	Water	EPA 7470A	439674
180-158460-4	SFL MW-3	Total/NA	Water	EPA 7470A	439674
180-158460-5	SFL MW-2	Total/NA	Water	EPA 7470A	439674
MB 180-439674/1-A	Method Blank	Total/NA	Water	EPA 7470A	439674
LCS 180-439674/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	439674
180-158460-2 MS	DUP-1	Total/NA	Water	EPA 7470A	439674
180-158460-2 MSD	DUP-1	Total/NA	Water	EPA 7470A	439674

**Prep Batch: 440656**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total Recoverable	Water	3005A	
180-158460-3	SFL MW-4	Total Recoverable	Water	3005A	
180-158460-4	SFL MW-3	Total Recoverable	Water	3005A	
180-158460-5	SFL MW-2	Total Recoverable	Water	3005A	
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-158519-E-1-E MS	Matrix Spike	Total Recoverable	Water	3005A	
180-158519-E-1-E MS ^25	Matrix Spike	Total Recoverable	Water	3005A	
180-158519-E-1-E MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
180-158519-E-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
180-158519-E-1-F MSD ^25	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
180-158519-E-1-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

**Metals**

**Analysis Batch: 440892**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total Recoverable	Water	EPA 6020B	440656
180-158460-3	SFL MW-4	Total Recoverable	Water	EPA 6020B	440656
180-158460-4	SFL MW-3	Total Recoverable	Water	EPA 6020B	440656
180-158460-5	SFL MW-2	Total Recoverable	Water	EPA 6020B	440656
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440656
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-E MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440656

**Analysis Batch: 441132**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total Recoverable	Water	EPA 6020B	440656
180-158460-5	SFL MW-2	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-E MS ^5	Matrix Spike	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-F MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440656

**Analysis Batch: 442055**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total Recoverable	Water	EPA 6020B	440656
180-158460-3	SFL MW-4	Total Recoverable	Water	EPA 6020B	440656
180-158460-4	SFL MW-3	Total Recoverable	Water	EPA 6020B	440656
180-158460-5	SFL MW-2	Total Recoverable	Water	EPA 6020B	440656
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440656
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-E MS ^25	Matrix Spike	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-F MSD ^25	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440656

**Analysis Batch: 447301**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total Recoverable	Water	EPA 6020B	440656
180-158460-3	SFL MW-4	Total Recoverable	Water	EPA 6020B	440656
180-158460-4	SFL MW-3	Total Recoverable	Water	EPA 6020B	440656
180-158460-5	SFL MW-2	Total Recoverable	Water	EPA 6020B	440656

**General Chemistry**

**Analysis Batch: 439174**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total/NA	Water	SM 2540C	
180-158460-3	SFL MW-4	Total/NA	Water	SM 2540C	
180-158460-4	SFL MW-3	Total/NA	Water	SM 2540C	
180-158460-5	SFL MW-2	Total/NA	Water	SM 2540C	
MB 180-439174/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-439174/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-158460-3 DU	SFL MW-4	Total/NA	Water	SM 2540C	

**Rad**

**Prep Batch: 618894**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total/NA	Water	PrecSep-21	
180-158460-3	SFL MW-4	Total/NA	Water	PrecSep-21	

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158460-1

**Rad (Continued)**

**Prep Batch: 618894 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-4	SFL MW-3	Total/NA	Water	PrecSep-21	
180-158460-5	SFL MW-2	Total/NA	Water	PrecSep-21	
MB 160-618894/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-618894/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
860-52284-A-9-B MS	Matrix Spike	Total/NA	Water	PrecSep-21	
860-52284-A-9-C MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	

**Prep Batch: 618895**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158460-2	DUP-1	Total/NA	Water	PrecSep_0	
180-158460-3	SFL MW-4	Total/NA	Water	PrecSep_0	
180-158460-4	SFL MW-3	Total/NA	Water	PrecSep_0	
180-158460-5	SFL MW-2	Total/NA	Water	PrecSep_0	
MB 160-618895/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-618895/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
860-52284-A-9-E MS	Matrix Spike	Total/NA	Water	PrecSep_0	
860-52284-A-9-F MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	

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# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
HDR Inc  
17111 Preston Road  
Suite 200  
Dallas, Texas 75248-1232  
Generated 10/16/2023 4:17:56 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-158457-1

## Eurofins Pittsburgh

### Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

### Authorization

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Authorized for release by  
Ken Hayes, Project Manager II  
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## Case Narrative



### Job ID: 180-158457-1

Laboratory: Eurofins Pittsburgh

#### Narrative

Job Narrative  
180-158457-1

#### Receipt

The samples were received on 6/27/2023 9:49 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.9°C

#### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 618894 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. SFL MW-7 (180-158457-1), MNW-1S (180-158457-2), (LCS 160-618894/2-A), (MB 160-618894/1-A), (860-52284-A-9-A), (860-52284-A-9-B MS) and (860-52284-A-9-C MSD)

Method 904.0: Radium-228 batch 618895 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. SFL MW-7 (180-158457-1), MNW-1S (180-158457-2), (LCS 160-618895/2-A), (MB 160-618895/1-A), (860-52284-A-9-D), (860-52284-A-9-E MS) and (860-52284-A-9-F MSD)

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

#### Rad

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

#### Narrative

Job Narrative  
180-158457-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 6/27/2023 9:49 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.9°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SFL MW-7 (180-158457-1) and MNW-1S (180-158457-2). 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 6020B: The continuing calibration verification (CCV) associated with batch 180-447301 recovered at 89% which was below the lower control limit of 90% for Boron. Sample has been consumed and insufficient sample available for reanalysis, therefore, the samples associated with the CCV have been reported. SFL MW-7 (180-158457-1) and MNW-1S (180-158457-2)



## Case Narrative

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

### Job ID: 180-158457-1 (Continued)

#### Laboratory: Eurofins Pittsburgh (Continued)

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

#### General Chemistry

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

## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

### 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
^	Continuing Calibration Verification (CCV) is outside acceptance limits, low biased.
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
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.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### 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.

□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-15-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	09-14-23 *
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23 *
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-23 *
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-23 *
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23 *
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23 *
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

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

Eurofins Pittsburgh

## Sample Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-158457-1	SFL MW-7	Water	06/26/23 16:20	06/27/23 09:49
180-158457-2	MNW-1S	Water	06/26/23 16:55	06/27/23 09:49



## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Client Sample ID: SFL MW-7

Lab Sample ID: 180-158457-1

Date Collected: 06/26/23 16:20

Matrix: Water

Date Received: 06/27/23 09:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	439353	06/30/23 15:13	M1D	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	439353	06/30/23 15:31	M1D	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 21:05	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			442055	07/31/23 21:38	CRL	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		5			447301	09/21/23 20:33	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:00	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:15	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	439174	06/28/23 16:49	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			959.51 mL	1.0 g	618894	07/05/23 09:28	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:55	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			959.51 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1			621404	07/24/23 13:18	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
		Instrument ID: NOEQUIP								

Client Sample ID: MNW-1S

Lab Sample ID: 180-158457-2

Date Collected: 06/26/23 16:55

Matrix: Water

Date Received: 06/27/23 09:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	439353	06/30/23 15:45	M1D	EET PIT
		Instrument ID: CHICS2100B								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	439353	06/30/23 16:03	M1D	EET PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			440892	07/19/23 21:09	RJR	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			442055	07/31/23 21:39	CRL	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	440656	07/18/23 10:25	S1Z	EET PIT
Total Recoverable	Analysis	EPA 6020B		20			447301	09/21/23 20:35	MRG	EET PIT
		Instrument ID: NEMO								

Eurofins Pittsburgh

### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Client Sample ID: MNW-1S

Lab Sample ID: 180-158457-2

Date Collected: 06/26/23 16:55

Matrix: Water

Date Received: 06/27/23 09:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			25 mL	25 mL	439366	06/30/23 12:00	MTW	EET PIT
Total/NA	Analysis	EPA 7470A		1			439508	07/03/23 10:17	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	439174	06/28/23 16:49	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1003.35 mL	1.0 g	618894	07/05/23 09:28	KAC	EET SL
Total/NA	Analysis	903.0		1			621814	07/27/23 09:55	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			1003.35 mL	1.0 g	618895	07/05/23 09:31	KAC	EET SL
Total/NA	Analysis	904.0		1			621404	07/24/23 13:18	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			621950	07/27/23 14:39	SCB	EET SL
		Instrument ID: NOEQUIP								

**Laboratory References:**

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

**Analyst References:**

Lab: EET PIT

Batch Type: Prep

MTW = Michael Wesoloski

S1Z = Sage Zviello

Batch Type: Analysis

CRL = Craig Tronzo

LWM = Leslie McIntire

M1D = Maureen Donlin

MRG = Mismel Garcia

MTW = Michael Wesoloski

RJR = Ron Rosenbaum

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

FLC = Fernando Cruz

SCB = Sarah Bernsen

Eurofins Pittsburgh

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Client Sample ID: SFL MW-7

Date Collected: 06/26/23 16:20

Date Received: 06/27/23 09:49

Lab Sample ID: 180-158457-1

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000		5.00	3.57	mg/L		06/30/23 15:31	06/30/23 15:16	5
Fluoride	0.0990	J	0.100	0.0260	mg/L		06/30/23 15:16	06/30/23 15:16	1
Sulfate	667		1.00	0.756	mg/L		06/30/23 15:16	06/30/23 15:16	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000308	J	0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 21:05	1
Barium	0.0497		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 21:05	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 21:05	1
Boron	0.759	A	0.400	0.301	mg/L		07/18/23 10:25	09/21/23 20:33	5
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 21:05	1
Calcium	431		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 21:05	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 21:05	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 21:05	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 21:05	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 21:05	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 21:05	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 21:05	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 21:05	1
Lithium	0.372		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 21:05	1
Iron	0.150		0.0500	0.0277	mg/L		07/18/23 10:25	07/31/23 21:36	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/31/23 21:36	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4440		40.0	40.0	mg/L		06/28/23 16:49	06/28/23 16:49	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.702		0.201	0.211	1.00	0.166	pCi/L	07/05/23 09:28	07/27/23 09:56	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.9		30 - 110	07/05/23 09:28	07/27/23 09:56	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.92		0.566	0.593	1.00	0.634	pCi/L	07/05/23 09:31	07/24/23 13:18	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	89.9		30 - 110	07/05/23 09:31	07/24/23 13:18	1
Y Carrier	80.7		30 - 110	07/05/23 09:31	07/24/23 13:18	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Client Sample ID: SFL MW-7

Date Collected: 06/26/23 16:20

Date Received: 06/27/23 09:49

Lab Sample ID: 180-158457-1

Matrix: Water

**Method: TAL-STL 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	2.62		0.601	0.629	5.00	0.634	pCi/L		07/27/23 14:39	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Client Sample ID: MNW-1S

Date Collected: 06/26/23 16:55

Date Received: 06/27/23 09:49

Lab Sample ID: 180-158457-2

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	633		1.00	0.713	mg/L			06/30/23 15:45	1
Fluoride	0.657		0.100	0.0260	mg/L			06/30/23 15:45	1
Sulfate	1410		5.00	3.78	mg/L			06/30/23 16:00	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00752		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 21:09	1
Barium	0.0160		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 21:09	1
Beryllium	0.0769		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 21:09	1
Boron	8.34	A	1.60	1.20	mg/L		07/18/23 10:25	09/21/23 20:36	20
Cadmium	0.0349		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 21:09	1
Calcium	310		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 21:09	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 21:09	1
Cobalt	0.340		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 21:09	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 21:09	1
Lead	0.000483	J	0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 21:09	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 21:09	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 21:09	1
Thallium	0.000884	J	0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 21:09	1
Lithium	0.0895		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 21:09	1
Iron	24.6		0.0500	0.0277	mg/L		07/18/23 10:25	07/31/23 21:39	1
Aluminum	28.1		0.0300	0.0155	mg/L		07/18/23 10:25	07/31/23 21:39	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3190		40.0	40.0	mg/L			06/28/23 16:49	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0267	U	0.0865	0.0865	1.00	0.164	pCi/L	07/05/23 09:28	07/27/23 09:56	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	93.2		30 - 110					07/05/23 09:28	07/27/23 09:56	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.381	U	0.393	0.394	1.00	0.636	pCi/L	07/05/23 09:31	07/24/23 13:18	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	93.2		30 - 110					07/05/23 09:31	07/24/23 13:18	1
Y Carrier	83.0		30 - 110					07/05/23 09:31	07/24/23 13:18	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Client Sample ID: MNW-1S

Date Collected: 06/26/23 16:55

Date Received: 06/27/23 09:49

Lab Sample ID: 180-158457-2

Matrix: Water

**Method: TAL-STL 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	0.408	U	0.402	0.403	5.00	0.636	pCi/L		07/27/23 14:39	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

**Method: EPA 9056A - Anions, Ion Chromatography**

Lab Sample ID: MB 180-439353/6  
Matrix: Water  
Analysis Batch: 439353

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L			06/30/23 11:34	1
Fluoride	<0.0260		0.100	0.0260	mg/L			06/30/23 11:34	1
Sulfate	<0.756		1.00	0.756	mg/L			06/30/23 11:34	1

Lab Sample ID: LCS 180-439353/7  
Matrix: Water  
Analysis Batch: 439353

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.24		mg/L		98	80 - 120
Fluoride	2.50	2.617		mg/L		105	80 - 120
Sulfate	50.0	48.30		mg/L		97	80 - 120

Lab Sample ID: 180-158657-C-1 MS  
Matrix: Water  
Analysis Batch: 439353

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
Chloride	1.67		50.0	50.69		mg/L		98	80 - 120
Fluoride	<0.0260		2.50	2.420		mg/L		97	80 - 120
Sulfate	0.832 J		50.0	50.24		mg/L		99	80 - 120

Lab Sample ID: 180-158657-C-1 MSD  
Matrix: Water  
Analysis Batch: 439353

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
Chloride	1.67		50.0	51.95		mg/L		101	80 - 120	2	15
Fluoride	<0.0260		2.50	2.612		mg/L		104	80 - 120	8	15
Sulfate	0.832 J		50.0	51.72		mg/L		102	80 - 120	3	15

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/19/23 19:45	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/19/23 19:45	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		07/18/23 10:25	07/19/23 19:45	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/19/23 19:45	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/19/23 19:45	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/19/23 19:45	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		07/18/23 10:25	07/19/23 19:45	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/19/23 19:45	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/19/23 19:45	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/19/23 19:45	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/19/23 19:45	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/19/23 19:45	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/19/23 19:45	1

Lab Sample ID: MB 180-440656/1-A  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		07/18/23 10:25	07/31/23 20:23	1
Barium	<0.00314		0.0100	0.00314	mg/L		07/18/23 10:25	07/31/23 20:23	1
Beryllium	<0.000274	^+	0.00100	0.000274	mg/L		07/18/23 10:25	07/31/23 20:23	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		07/18/23 10:25	07/31/23 20:23	1
Calcium	<0.127		0.500	0.127	mg/L		07/18/23 10:25	07/31/23 20:23	1
Chromium	<0.00153		0.00200	0.00153	mg/L		07/18/23 10:25	07/31/23 20:23	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		07/18/23 10:25	07/31/23 20:23	1
Lead	<0.000376		0.00100	0.000376	mg/L		07/18/23 10:25	07/31/23 20:23	1
Antimony	<0.000967		0.00200	0.000967	mg/L		07/18/23 10:25	07/31/23 20:23	1
Selenium	<0.000739		0.00500	0.000739	mg/L		07/18/23 10:25	07/31/23 20:23	1
Thallium	<0.000472		0.00100	0.000472	mg/L		07/18/23 10:25	07/31/23 20:23	1
Lithium	<0.00129		0.00500	0.00129	mg/L		07/18/23 10:25	07/31/23 20:23	1
Iron	<0.0277		0.0500	0.0277	mg/L		07/18/23 10:25	07/31/23 20:23	1
Aluminum	<0.0155		0.0300	0.0155	mg/L		07/18/23 10:25	07/31/23 20:23	1

Lab Sample ID: LCS 180-440656/2-A  
Matrix: Water  
Analysis Batch: 440892

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.047		mg/L		105	80 - 120
Barium	1.00	1.047		mg/L		105	80 - 120
Beryllium	0.500	0.4986		mg/L		100	80 - 120
Cadmium	0.500	0.5210		mg/L		104	80 - 120
Calcium	25.0	27.43		mg/L		110	80 - 120
Chromium	0.500	0.5246		mg/L		105	80 - 120
Cobalt	0.500	0.5167		mg/L		103	80 - 120
Molybdenum	0.500	0.5255		mg/L		105	80 - 120
Lead	0.500	0.5342		mg/L		107	80 - 120
Antimony	0.250	0.2776		mg/L		111	80 - 120
Selenium	1.00	1.038		mg/L		104	80 - 120
Thallium	1.00	1.059		mg/L		106	80 - 120
Lithium	0.500	0.4901		mg/L		98	80 - 120

Lab Sample ID: LCS 180-440656/2-A  
Matrix: Water  
Analysis Batch: 442055

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 440656

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.004		mg/L		100	80 - 120
Barium	1.00	1.046		mg/L		105	80 - 120
Cadmium	0.500	0.5156		mg/L		103	80 - 120

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 440656	
							%Rec	Limits
Calcium	25.0	27.62		mg/L		110	80 - 120	
Chromium	0.500	0.5284		mg/L		106	80 - 120	
Molybdenum	0.500	0.5213		mg/L		104	80 - 120	
Lead	0.500	0.5284		mg/L		106	80 - 120	
Antimony	0.250	0.2731		mg/L		109	80 - 120	
Selenium	1.00	1.032		mg/L		103	80 - 120	
Thallium	1.00	1.061		mg/L		106	80 - 120	
Lithium	0.500	0.5022		mg/L		100	80 - 120	
Iron	5.00	5.266		mg/L		105	80 - 120	
Aluminum	5.00	5.043		mg/L		101	80 - 120	

Lab Sample ID: 180-158519-E-1-E MS  
Matrix: Water  
Analysis Batch: 440892

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 440656	
									%Rec	Limits
Arsenic	0.0147		1.00	1.067		mg/L		105	75 - 125	
Barium	0.0101		1.00	1.052		mg/L		104	75 - 125	
Beryllium	0.0945		0.500	0.5563		mg/L		92	75 - 125	
Cadmium	0.0115		0.500	0.5107		mg/L		100	75 - 125	
Calcium	549		25.0	554.8	4	mg/L		22	75 - 125	
Chromium	<0.00153		0.500	0.4991		mg/L		100	75 - 125	
Cobalt	0.222		0.500	0.7191		mg/L		99	75 - 125	
Molybdenum	<0.000610		0.500	0.5392		mg/L		108	75 - 125	
Lead	0.00203		0.500	0.5304		mg/L		106	75 - 125	
Antimony	<0.000967		0.250	0.2762		mg/L		110	75 - 125	
Selenium	<0.000739		1.00	0.9531		mg/L		95	75 - 125	
Thallium	0.00266		1.00	1.058		mg/L		106	75 - 125	
Lithium	0.487		0.500	0.9123		mg/L		85	75 - 125	

Lab Sample ID: 180-158519-E-1-E MS ^25  
Matrix: Water  
Analysis Batch: 442055

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 440656	
									%Rec	Limits
Arsenic	0.0135		1.00	5.047	F1	mg/L		503	75 - 125	
Barium	<0.0157	^+	1.00	5.240	F1	mg/L		524	75 - 125	
Cadmium	0.0106	^+	0.500	2.603	F1	mg/L		518	75 - 125	
Calcium	522		25.0	2874	4	mg/L		9406	75 - 125	
Chromium	<0.00765		0.500	2.589	F1	mg/L		518	75 - 125	
Molybdenum	<0.00305		0.500	2.620	F1	mg/L		524	75 - 125	
Lead	0.00208	J	0.500	2.622	F1	mg/L		524	75 - 125	
Antimony	<0.00484		0.250	1.378	F1	mg/L		551	75 - 125	
Selenium	<0.00370		1.00	5.100	F1	mg/L		510	75 - 125	
Thallium	0.00319	J	1.00	5.142	F1	mg/L		514	75 - 125	
Lithium	0.532		0.500	5.336	F1	mg/L		961	75 - 125	
Iron	3.72		5.00	45.31	F1	mg/L		832	75 - 125	
Aluminum	43.5		5.00	251.6	4	mg/L		4162	75 - 125	

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 440656		
									%Rec	RPD	Limit
Arsenic	0.0147		1.00	1.054		mg/L		104	75 - 125	1	20
Barium	0.0101		1.00	1.050		mg/L		104	75 - 125	0	20
Beryllium	0.0945		0.500	0.5527		mg/L		92	75 - 125	1	20
Cadmium	0.0115		0.500	0.5047		mg/L		99	75 - 125	1	20
Calcium	549		25.0	564.0	4	mg/L		59	75 - 125	2	20
Chromium	<0.00153		0.500	0.4990		mg/L		100	75 - 125	0	20
Cobalt	0.222		0.500	0.7199		mg/L		99	75 - 125	0	20
Molybdenum	<0.000610		0.500	0.5450		mg/L		109	75 - 125	1	20
Lead	0.00203		0.500	0.5321		mg/L		106	75 - 125	0	20
Antimony	<0.000967		0.250	0.2790		mg/L		112	75 - 125	1	20
Selenium	<0.000739		1.00	0.9496		mg/L		95	75 - 125	0	20
Thallium	0.00266		1.00	1.058		mg/L		106	75 - 125	0	20
Lithium	0.487		0.500	0.9239		mg/L		87	75 - 125	1	20

Lab Sample ID: 180-158519-E-1-F MSD ^25  
Matrix: Water  
Analysis Batch: 442055

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 440656		
									%Rec	RPD	Limit
Arsenic	0.0135		1.00	4.944	F1	mg/L		493	75 - 125	2	20
Barium	<0.0157	^+	1.00	5.218	F1	mg/L		522	75 - 125	0	20
Cadmium	0.0106	^+	0.500	2.561	F1	mg/L		510	75 - 125	2	20
Calcium	522		25.0	2907	4	mg/L		9539	75 - 125	1	20
Chromium	<0.00765		0.500	2.567	F1	mg/L		513	75 - 125	1	20
Molybdenum	<0.00305		0.500	2.616	F1	mg/L		523	75 - 125	0	20
Lead	0.00208	J	0.500	2.604	F1	mg/L		520	75 - 125	1	20
Antimony	<0.00484		0.250	1.372	F1	mg/L		549	75 - 125	0	20
Selenium	<0.00370		1.00	4.985	F1	mg/L		498	75 - 125	2	20
Thallium	0.00319	J	1.00	5.129	F1	mg/L		513	75 - 125	0	20
Lithium	0.532		0.500	5.313	F1	mg/L		956	75 - 125	0	20
Iron	3.72		5.00	45.40	F1	mg/L		834	75 - 125	0	20
Aluminum	43.5		5.00	254.5	4	mg/L		4221	75 - 125	1	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-439366/1-A  
Matrix: Water  
Analysis Batch: 439508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 439366	
										%Rec	Limit
Mercury	<0.000130		0.000200	0.000130	mg/L		06/30/23 12:00	07/03/23 10:09		1	

Lab Sample ID: LCS 180-439366/2-A  
Matrix: Water  
Analysis Batch: 439508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 439366	
							%Rec	Limits
Mercury	0.00250	0.002490		mg/L		100	80 - 120	

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

**Method: EPA 7470A - Mercury (CVAA) (Continued)**

Lab Sample ID: 180-158526-E-1-B MS  
Matrix: Water  
Analysis Batch: 439508  
Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 439366

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000130		0.00100	0.0008230		mg/L		82	75 - 125

Lab Sample ID: 180-158526-E-1-C MSD  
Matrix: Water  
Analysis Batch: 439508  
Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 439366

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	<0.000130		0.00100	0.0007880		mg/L		79	75 - 125	4	20

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

Lab Sample ID: MB 180-439174/1  
Matrix: Water  
Analysis Batch: 439174  
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	<10.0		10.0	10.0	mg/L			06/28/23 16:49	1

Lab Sample ID: LCS 180-439174/2  
Matrix: Water  
Analysis Batch: 439174  
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	580	564.0		mg/L		97	85 - 115

Lab Sample ID: 180-158487-B-2 DU  
Matrix: Water  
Analysis Batch: 439174  
Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	1550		1574		mg/L		2	10

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

Lab Sample ID: MB 160-618894/1-A  
Matrix: Water  
Analysis Batch: 621813  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.003107	U	0.0574	0.0574	1.00	0.124	pCi/L	07/05/23 09:28	07/27/23 09:51	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		30 - 110	07/05/23 09:28	07/27/23 09:51	1

**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

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

Lab Sample ID: LCS 160-618894/2-A  
Matrix: Water  
Analysis Batch: 621813  
Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.08		1.23	1.00	0.131	pCi/L	98	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	90.5		30 - 110

Lab Sample ID: 860-52284-A-9-B MS  
Matrix: Water  
Analysis Batch: 621814  
Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	0.205		12.1	10.74		1.21	1.00	0.207	pCi/L	87	60 - 140

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	93.0		30 - 110

Lab Sample ID: 860-52284-A-9-C MSD  
Matrix: Water  
Analysis Batch: 621814  
Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 618894

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	Limit
Radium-226	0.205		11.4	10.59		1.18	1.00	0.140	pCi/L	91	60 - 140	0.06	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	91.7		30 - 110

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

Lab Sample ID: MB 160-618895/1-A  
Matrix: Water  
Analysis Batch: 621449  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 618895

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.2183	U	0.250	0.250	1.00	0.532	pCi/L	07/05/23 09:31	07/24/23 13:15	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		30 - 110	07/05/23 09:31	07/24/23 13:15	1
Y Carrier	84.1		30 - 110	07/05/23 09:31	07/24/23 13:15	1

**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

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

Lab Sample ID: LCS 160-618895/2-A  
Matrix: Water  
Analysis Batch: 621449

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 618895

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.01	7.326		1.12	1.00	0.552	pCi/L	91	75 - 125
<b>Carrier</b>									
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>						
Ba Carrier	90.5		30 - 110						
Y Carrier	83.4		30 - 110						

Lab Sample ID: 860-52284-A-9-E MS  
Matrix: Water  
Analysis Batch: 621449

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 618895

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	0.690		8.56	10.36		1.41	1.00	0.519	pCi/L	113	60 - 140
<b>Carrier</b>											
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>								
Ba Carrier	93.0		30 - 110								
Y Carrier	85.6		30 - 110								

Lab Sample ID: 860-52284-A-9-F MSD  
Matrix: Water  
Analysis Batch: 621449

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 618895

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	0.690		8.08	9.761		1.34	1.00	0.516	pCi/L	112	60 - 140	0.22	1
<b>Carrier</b>													
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>										
Ba Carrier	91.7		30 - 110										
Y Carrier	87.1		30 - 110										

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-158457-1

**HPLC/IC**

**Analysis Batch: 439353**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158457-1	SFL MW-7	Total/NA	Water	EPA 9056A	
180-158457-1	SFL MW-7	Total/NA	Water	EPA 9056A	
180-158457-2	MNW-1S	Total/NA	Water	EPA 9056A	
180-158457-2	MNW-1S	Total/NA	Water	EPA 9056A	
MB 180-439353/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-439353/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-158657-C-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-158657-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 439366**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158457-1	SFL MW-7	Total/NA	Water	7470A	
180-158457-2	MNW-1S	Total/NA	Water	7470A	
MB 180-439366/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-439366/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-158526-E-1-B MS	Matrix Spike	Total/NA	Water	7470A	
180-158526-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 439508**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158457-1	SFL MW-7	Total/NA	Water	EPA 7470A	439366
180-158457-2	MNW-1S	Total/NA	Water	EPA 7470A	439366
MB 180-439366/1-A	Method Blank	Total/NA	Water	EPA 7470A	439366
LCS 180-439366/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	439366
180-158526-E-1-B MS	Matrix Spike	Total/NA	Water	EPA 7470A	439366
180-158526-E-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	439366

**Prep Batch: 440656**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158457-1	SFL MW-7	Total Recoverable	Water	3005A	
180-158457-2	MNW-1S	Total Recoverable	Water	3005A	
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-158519-E-1-E MS	Matrix Spike	Total Recoverable	Water	3005A	
180-158519-E-1-E MS ^25	Matrix Spike	Total Recoverable	Water	3005A	
180-158519-E-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
180-158519-E-1-F MSD ^25	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

**Analysis Batch: 440892**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-158457-1	SFL MW-7	Total Recoverable	Water	EPA 6020B	440656
180-158457-2	MNW-1S	Total Recoverable	Water	EPA 6020B	440656
MB 180-440656/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	440656
LCS 180-440656/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-E MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	440656
180-158519-E-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	440656

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### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-158457-2

Login Number: 158457

List Number: 1

Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\neq</math> 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?	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
HDR Inc  
17111 Preston Road  
Suite 200  
Dallas, Texas 75248-1232

Generated 12/28/2023 4:33:33 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-165501-1

# Eurofins Pittsburgh

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

## Authorization



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Authorized for release by  
Ken Hayes, Project Manager II  
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(615)301-5035

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Laboratory Job ID: 180-165501-1

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Job ID: 180-165501-1

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### Job Narrative 180-165501-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/16/2023 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C

#### Gas Flow Proportional Counter

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

#### Rad

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

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Job ID: 180-165501-2

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### Job Narrative 180-165501-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/16/2023 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following sample was diluted to bring the concentration of target analytes within the calibration range: SFL MW-3 (180-165501-1). Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: The following sample was diluted to bring the concentration of target analytes within the calibration range: SFL MW-4 (180-165501-2). Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: The following sample was diluted to bring the concentration of target analytes within the calibration range: SFL MW-7 (180-165501-3). Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: The following sample was diluted to bring the concentration of target analytes within the calibration range: MNW-15 (180-165501-4). 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 6020B: The post digestion spike % recovery for Lithium, Molybdenum and Antimony associated with batch 180-453090 was outside of control limits. The associated sample is: (180-165501-E-1-A PDS).

Method 6020B: The continuing calibration verification (CCV) associated with batch 180-453090 recovered above the upper control limit for Molybdenum and Antimony. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: SFL MW-3 (180-165501-1), SFL MW-4 (180-165501-2), SFL MW-7 (180-165501-3), MNW-15 (180-165501-4), (LCS 180-452613/2-A), (MB 180-452613/1-A), (180-165501-E-1-B MS), (180-165501-E-1-C MSD), (180-165501-E-1-A PDS) and (180-165501-E-1-A SD ^5).

Method 6020B: The matrix spike duplicate (MSD) recoveries for preparation batch 180-452613 and analytical batch 180-453090 were outside control limits for on Antimony See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 6020B: The serial dilution performed for the following sample associated with batch 180-453774 was outside control limits: (180-165501-E-1-A SD ^50)

Method 6020B: The post digestion spike % recovery for Barium and Beryllium associated with batch 180-453774 was outside of control limits. The associated sample is: (180-165501-E-1-A PDS ^10).

Method 6020B: The continuing calibration blank (CCB) for analytical batch 180-453774 contained Calcium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6020B: The post digestion spike % recovery for Barium and Beryllium associated with batch 180-453774 was outside of control limits. The associated sample is: (180-165501-E-1-A PDS).

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Job ID: 180-165501-2 (Continued)**

**Eurofins Pittsburgh**

Method 6020B: Linear range check standard failed high for Barium, the results of the sample were compared to the concentration of the LCS, therefore the data is reportable.

SFL MW-3 (180-165501-1), SFL MW-4 (180-165501-2), SFL MW-7 (180-165501-3), MNW-15 (180-165501-4), (LCS 180-452613/2-A), (MB 180-452613/1-A), (180-165501-E-1-B MS), (180-165501-E-1-B MS ^10), (180-165501-E-1-C MSD), (180-165501-E-1-C MSD ^10), (180-165501-E-1-A PDS), (180-165501-E-1-A PDS ^10), (180-165501-E-1-A SD ^5) and (180-165501-E-1-A SD ^50)

Method 6020B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SFL MW-3 (180-165501-1), (180-165501-E-1-B MS ^10), (180-165501-E-1-C MSD ^10), (180-165501-E-1-A PDS ^10) and (180-165501-E-1-A SD ^50). Elevated reporting limits (RLs) are provided.

Method 6020B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SFL MW-3 (180-165501-1). Elevated reporting limits (RLs) are provided.

Method 6020B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-452613 and analytical batch 180-453536 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 6020B: The post digestion spike % recovery for Boron associated with batch 180-455569 was outside of control limits. The associated sample is: (180-165402-E-1-C PDS).

Method 6020B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SFL MW-4 (180-165501-2) and SFL MW-7 (180-165501-3). 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.

### General Chemistry

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

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## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

### 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
^4+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5+	Linear Range Check (LRC) is outside acceptance limits, high biased.
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.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit.

#### 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.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

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## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-15-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	07-31-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	01-31-24

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

Eurofins Pittsburgh



## Sample Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-165501-1	SFL MW-3	Water	11/15/23 11:25	11/16/23 10:35
180-165501-2	SFL MW-4	Water	11/15/23 10:40	11/16/23 10:35
180-165501-3	SFL MW-7	Water	11/15/23 12:05	11/16/23 10:35
180-165501-4	MNW-15	Water	11/15/23 12:45	11/16/23 10:35

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Client Sample ID: SFL MW-3**

Date Collected: 11/15/23 11:25

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165501-1**

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	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 09:58	M1D	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452655	11/23/23 10:16	M1D	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454201	12/08/23 15:41	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 18:58	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453536	12/01/23 17:05	MRG	EET PIT
		Instrument ID: DORY								
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:18	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			991.65 mL	1.0 g	637925	11/22/23 09:37	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641696	12/21/23 18:34	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			991.65 mL	1.0 g	637927	11/22/23 09:45	KAC	EET SL
Total/NA	Analysis	904.0		1			641811	12/21/23 11:40	FLC	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			642146	12/27/23 12:23	EMH	EET SL
		Instrument ID: NOEQUIP								

**Client Sample ID: SFL MW-4**

Date Collected: 11/15/23 10:40

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165501-2**

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	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 10:53	M1D	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452655	11/23/23 11:11	M1D	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453774	12/05/23 17:59	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454201	12/08/23 15:55	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 19:18	MRG	EET PIT
		Instrument ID: DORY								

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**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Client Sample ID: SFL MW-4**

Date Collected: 11/15/23 10:40

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165501-2**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	455169	12/20/23 08:30	NWW	EET PIT
Total Recoverable	Analysis	EPA 6020B		4			455569	12/27/23 18:48	MRG	EET PIT
		Instrument ID: DORY								
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:19	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1001.86 mL	1.0 g	637925	11/22/23 09:37	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641696	12/21/23 18:34	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			1001.86 mL	1.0 g	637927	11/22/23 09:45	KAC	EET SL
Total/NA	Analysis	904.0		1			641811	12/21/23 11:40	FLC	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			642146	12/27/23 12:23	EMH	EET SL
		Instrument ID: NOEQUIP								

**Client Sample ID: SFL MW-7**

Date Collected: 11/15/23 12:05

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165501-3**

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	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 11:30	M1D	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452655	11/23/23 11:48	M1D	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453774	12/05/23 18:02	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454201	12/08/23 15:58	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		4			455169	12/20/23 08:30	NWW	EET PIT
		Instrument ID: DORY					455569	12/27/23 18:51	MRG	EET PIT
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:20	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
		Instrument ID: NOEQUIP								

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

#### Client Sample ID: SFL MW-7

Date Collected: 11/15/23 12:05

Date Received: 11/16/23 10:35

#### Lab Sample ID: 180-165501-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			998.19 mL	1.0 g	637925	11/22/23 09:37	KAC	EET SL
Total/NA	Analysis	903.0		1			641696	12/21/23 18:34	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			998.19 mL	1.0 g	637927	11/22/23 09:45	KAC	EET SL
Total/NA	Analysis	904.0		1			641811	12/21/23 11:40	FLC	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			642146	12/27/23 12:23	EMH	EET SL
Instrument ID: NOEQUIP										

#### Client Sample ID: MNW-15

Date Collected: 11/15/23 12:45

Date Received: 11/16/23 10:35

#### Lab Sample ID: 180-165501-4

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	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 13:02	M1D	EET PIT
Instrument ID: INTEGRION										
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452655	11/23/23 13:21	M1D	EET PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453774	12/05/23 18:05	MRG	EET PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	455169	12/20/23 08:30	NWW	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			455274	12/20/23 14:54	MRG	EET PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 19:23	MRG	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	455169	12/20/23 08:30	NWW	EET PIT
Total Recoverable	Analysis	EPA 6020B		5			455569	12/27/23 18:59	MRG	EET PIT
Instrument ID: DORY										
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:21	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1004.68 mL	1.0 g	637925	11/22/23 09:37	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641810	12/21/23 18:42	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1004.68 mL	1.0 g	637927	11/22/23 09:45	KAC	EET SL
Total/NA	Analysis	904.0		1			641811	12/21/23 11:41	FLC	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			642146	12/27/23 12:23	EMH	EET SL
Instrument ID: NOEQUIP										

#### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

#### Analyst References:

Lab: EET PIT

Batch Type: Prep

NWW = Nicholas Woten

RJR = Ron Rosenbaum

SJM = Shannon Mueller

Batch Type: Analysis

LWM = Leslie McIntire

M1D = Maureen Donlin

MRG = Mismel Garcia

MTW = Michael Wesoloski

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

EMH = Elizabeth Hoerchler

FLC = Fernando Cruz

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: SFL MW-3

Lab Sample ID: 180-165501-1

Date Collected: 11/15/23 11:25

Matrix: Water

Date Received: 11/16/23 10:35

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	747		1.00	0.713	mg/L			11/23/23 09:58	1
Fluoride	0.375		0.100	0.0260	mg/L			11/23/23 09:58	1
Sulfate	2480		5.00	3.78	mg/L			11/23/23 10:16	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00297		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:58	1
Barium	0.0239	A5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/08/23 15:41	1
Beryllium	0.0309		0.0100	0.00274	mg/L		11/22/23 07:41	12/01/23 17:05	10
Boron	4.82		0.800	0.601	mg/L		11/22/23 07:41	12/01/23 17:05	10
Cadmium	0.00507		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:58	1
Calcium	561		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 18:58	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:58	1
Cobalt	0.0518		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:58	1
Molybdenum	<0.000610	A+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:58	1
Lead	0.0131		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:58	1
Antimony	<0.000967	A+ F1	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:58	1
Selenium	0.00118	J	0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:58	1
Thallium	0.00407		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:58	1
Lithium	0.290		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:58	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000904		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:18	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4880		40.0	40.0	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.61		0.388	0.414	1.00	0.307	pCi/L	11/22/23 09:37	12/21/23 18:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110					11/22/23 09:37	12/21/23 18:34	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.13		0.478	0.517	1.00	0.439	pCi/L	11/22/23 09:45	12/21/23 11:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110					11/22/23 09:45	12/21/23 11:40	1
Y Carrier	76.3		30 - 110					11/22/23 09:45	12/21/23 11:40	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: SFL MW-3

Lab Sample ID: 180-165501-1

Date Collected: 11/15/23 11:25

Matrix: Water

Date Received: 11/16/23 10:35

**Method: TAL-STL 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	3.74		0.616	0.662	5.00	0.439	pCi/L		12/27/23 12:23	1

Eurofins Pittsburgh

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: SFL MW-4

Lab Sample ID: 180-165501-2

Date Collected: 11/15/23 10:40

Matrix: Water

Date Received: 11/16/23 10:35

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1440		5.00	3.57	mg/L			11/23/23 11:11	5
Fluoride	0.0824	J	0.100	0.0260	mg/L			11/23/23 10:53	1
Sulfate	2010		5.00	3.78	mg/L			11/23/23 11:11	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000601	J	0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 19:18	1
Barium	0.00488	J ^5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/05/23 17:59	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/22/23 07:41	12/08/23 15:55	1
Boron	0.797		0.320	0.240	mg/L		12/20/23 08:30	12/27/23 18:48	4
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 19:18	1
Calcium	160		0.500	0.127	mg/L		11/22/23 07:41	12/05/23 17:59	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 19:18	1
Cobalt	0.000370	J	0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 19:18	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 19:18	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 19:18	1
Antimony	<0.000967	^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 19:18	1
Selenium	0.00124	J	0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 19:18	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 19:18	1
Lithium	0.453		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 19:18	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	5360		40.0	40.0	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.439		0.233	0.236	1.00	0.279	pCi/L	11/22/23 09:37	12/21/23 18:34	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	95.6		30 - 110					11/22/23 09:37	12/21/23 18:34	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.00		0.501	0.533	1.00	0.490	pCi/L	11/22/23 09:45	12/21/23 11:40	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	95.6		30 - 110					11/22/23 09:45	12/21/23 11:40	1
Y Carrier	74.0		30 - 110					11/22/23 09:45	12/21/23 11:40	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: SFL MW-4

Lab Sample ID: 180-165501-2

Date Collected: 11/15/23 10:40

Matrix: Water

Date Received: 11/16/23 10:35

**Method: TAL-STL 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	2.43		0.553	0.583	5.00	0.490	pCi/L		12/27/23 12:23	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: SFL MW-7

Date Collected: 11/15/23 12:05

Date Received: 11/16/23 10:35

Lab Sample ID: 180-165501-3

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1930		5.00	3.57	mg/L			11/23/23 11:48	5
Fluoride	0.0928	J	0.100	0.0260	mg/L			11/23/23 11:30	1
Sulfate	626		1.00	0.756	mg/L			11/23/23 11:30	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 19:21	1
Barium	0.0253	A5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/05/23 18:02	1
Beryllium	<0.000274	A+	0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 19:21	1
Boron	0.812		0.320	0.240	mg/L		12/20/23 08:30	12/27/23 18:51	4
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 19:21	1
Calcium	450		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 19:21	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 19:21	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 19:21	1
Molybdenum	<0.000610	A+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 19:21	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 19:21	1
Antimony	0.00102	J	0.00200	0.000967	mg/L		11/22/23 07:41	12/08/23 15:58	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 19:21	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 19:21	1
Lithium	0.389		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 19:21	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	4220		40.0	40.0	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.426		0.218	0.222	1.00	0.245	pCi/L	11/22/23 09:37	12/21/23 18:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110					11/22/23 09:37	12/21/23 18:34	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.83		0.482	0.511	1.00	0.522	pCi/L	11/22/23 09:45	12/21/23 11:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110					11/22/23 09:45	12/21/23 11:40	1
Y Carrier	78.5		30 - 110					11/22/23 09:45	12/21/23 11:40	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: SFL MW-7

Date Collected: 11/15/23 12:05

Date Received: 11/16/23 10:35

Lab Sample ID: 180-165501-3

Matrix: Water

**Method: TAL-STL 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	2.26		0.529	0.557	5.00	0.522	pCi/L		12/27/23 12:23	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: MNW-15

Date Collected: 11/15/23 12:45

Date Received: 11/16/23 10:35

Lab Sample ID: 180-165501-4

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	609		1.00	0.713	mg/L			11/23/23 13:02	1
Fluoride	0.419		0.100	0.0260	mg/L			11/23/23 13:02	1
Sulfate	1450		5.00	3.78	mg/L			11/23/23 13:21	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00706		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 19:23	1
Barium	0.0174		0.0100	0.00314	mg/L		12/20/23 08:30	12/20/23 14:54	1
Beryllium	0.00464		0.00100	0.000274	mg/L		11/22/23 07:41	12/05/23 18:06	1
Boron	10.3		0.400	0.301	mg/L		12/20/23 08:30	12/27/23 18:59	5
Cadmium	0.0330		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 19:23	1
Calcium	311		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 19:23	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 19:23	1
Cobalt	0.322		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 19:23	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 19:23	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 19:23	1
Antimony	<0.000967	^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 19:23	1
Selenium	0.000868	J	0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 19:23	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 19:23	1
Lithium	0.104		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 19:23	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:21	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3180		40.0	40.0	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0189	U	0.170	0.170	1.00	0.335	pCi/L	11/22/23 09:37	12/21/23 18:42	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	95.4		30 - 110					11/22/23 09:37	12/21/23 18:42	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0855	U	0.310	0.310	1.00	0.561	pCi/L	11/22/23 09:45	12/21/23 11:41	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	95.4		30 - 110					11/22/23 09:45	12/21/23 11:41	1
Y Carrier	70.3		30 - 110					11/22/23 09:45	12/21/23 11:41	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Client Sample ID: MNW-15

Date Collected: 11/15/23 12:45

Date Received: 11/16/23 10:35

Lab Sample ID: 180-165501-4

Matrix: Water

**Method: TAL-STL 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	0.104	U	0.354	0.354	5.00	0.561	pCi/L		12/27/23 12:23	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Method: EPA 9056A - Anions, Ion Chromatography**

Lab Sample ID: MB 180-452655/37  
Matrix: Water  
Analysis Batch: 452655

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L			11/23/23 00:43	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/23/23 00:43	1
Sulfate	<0.756		1.00	0.756	mg/L			11/23/23 00:43	1

Lab Sample ID: LCS 180-452655/38  
Matrix: Water  
Analysis Batch: 452655

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.54		mg/L		99	80 - 120
Fluoride	2.50	2.292		mg/L		92	80 - 120
Sulfate	50.0	46.84		mg/L		94	80 - 120

Lab Sample ID: 180-165498-C-1 MS  
Matrix: Water  
Analysis Batch: 452655

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
Chloride	12.5		50.0	69.16		mg/L		113	80 - 120
Fluoride	0.173		2.50	2.802		mg/L		105	80 - 120
Sulfate	7.18		50.0	63.89		mg/L		113	80 - 120

Lab Sample ID: 180-165498-C-1 MSD  
Matrix: Water  
Analysis Batch: 452655

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
Chloride	12.5		50.0	69.10		mg/L		113	80 - 120	0	15
Fluoride	0.173		2.50	2.820		mg/L		106	80 - 120	1	15
Sulfate	7.18		50.0	63.87		mg/L		113	80 - 120	0	15

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: MB 180-452613/1-A  
Matrix: Water  
Analysis Batch: 453090

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:30	1
Barium	<0.00314		0.0100	0.00314	mg/L		11/22/23 07:41	11/28/23 18:30	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:30	1
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 18:30	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:30	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:30	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:30	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:30	1
Antimony	<0.000967	^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:30	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:30	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:30	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:30	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: MB 180-452613/1-A  
Matrix: Water  
Analysis Batch: 453536

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/22/23 07:41	12/01/23 15:16	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/22/23 07:41	12/01/23 15:16	1

Lab Sample ID: MB 180-452613/1-A  
Matrix: Water  
Analysis Batch: 453774

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	12/05/23 16:59	1
Barium	<0.00314	^5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/05/23 16:59	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/22/23 07:41	12/05/23 16:59	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/22/23 07:41	12/05/23 16:59	1
Cadmium	<0.000217	^5+	0.00100	0.000217	mg/L		11/22/23 07:41	12/05/23 16:59	1
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	12/05/23 16:59	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	12/05/23 16:59	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	12/05/23 16:59	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/22/23 07:41	12/05/23 16:59	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	12/05/23 16:59	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	12/05/23 16:59	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	12/05/23 16:59	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	12/05/23 16:59	1

Lab Sample ID: LCS 180-452613/2-A  
Matrix: Water  
Analysis Batch: 453090

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.039		mg/L		104	80 - 120
Barium	1.00	1.069		mg/L		107	80 - 120
Cadmium	0.500	0.5380		mg/L		108	80 - 120
Calcium	25.0	27.73		mg/L		111	80 - 120
Chromium	0.500	0.5152		mg/L		103	80 - 120
Cobalt	0.500	0.5327		mg/L		107	80 - 120
Molybdenum	0.500	0.5498	^+	mg/L		110	80 - 120
Lead	0.500	0.5287		mg/L		106	80 - 120
Antimony	0.250	0.2921	^+	mg/L		117	80 - 120
Selenium	1.00	1.074		mg/L		107	80 - 120
Thallium	1.00	1.074		mg/L		107	80 - 120
Lithium	0.500	0.5335		mg/L		107	80 - 120

Lab Sample ID: LCS 180-452613/2-A  
Matrix: Water  
Analysis Batch: 453536

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	0.500	0.5403		mg/L		108	80 - 120
Boron	0.250	0.2355		mg/L		94	80 - 120

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	Client Sample ID: Lab Control Sample	
								Prep Type: Total Recoverable	Prep Batch: 452613
Arsenic	1.00	1.046		mg/L		105	80 - 120		
Barium	1.00	1.043	^5+	mg/L		104	80 - 120		
Beryllium	0.500	0.5158		mg/L		103	80 - 120		
Boron	0.250	0.2377		mg/L		95	80 - 120		
Cadmium	0.500	0.5160	^5+	mg/L		103	80 - 120		
Calcium	25.0	27.75		mg/L		111	80 - 120		
Chromium	0.500	0.5167		mg/L		103	80 - 120		
Cobalt	0.500	0.5196		mg/L		104	80 - 120		
Molybdenum	0.500	0.5302		mg/L		106	80 - 120		
Lead	0.500	0.5305		mg/L		106	80 - 120		
Antimony	0.250	0.2824		mg/L		113	80 - 120		
Selenium	1.00	1.035		mg/L		104	80 - 120		
Thallium	1.00	1.079		mg/L		108	80 - 120		
Lithium	0.500	0.5156		mg/L		103	80 - 120		

Lab Sample ID: 180-165501-1 MS  
Matrix: Water  
Analysis Batch: 453090

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.00507		0.500	0.5418		mg/L		107	75 - 125
Chromium	<0.00153		0.500	0.4477		mg/L		90	75 - 125
Cobalt	0.0518		0.500	0.5934		mg/L		108	75 - 125
Molybdenum	<0.000610	^+	0.500	0.5906	^+	mg/L		118	75 - 125
Lead	0.0131		0.500	0.4547		mg/L		88	75 - 125
Antimony	<0.000967	^+ F1	0.250	0.3091	^+	mg/L		124	75 - 125
Selenium	0.00118	J	1.00	1.017		mg/L		102	75 - 125
Thallium	0.00407		1.00	0.8949		mg/L		89	75 - 125
Lithium	0.290		0.500	0.7965		mg/L		101	75 - 125

Lab Sample ID: 180-165501-1 MS  
Matrix: Water  
Analysis Batch: 453536

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits

Lab Sample ID: 180-165501-1 MS  
Matrix: Water  
Analysis Batch: 453774

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	<0.0314	^5+	1.00	1.093	^5+	mg/L		109	75 - 125
Beryllium	0.0294		0.500	0.5677		mg/L		108	75 - 125
Cadmium	0.00530	J ^5+	0.500	0.5414	^5+	mg/L		107	75 - 125
Calcium	625		25.0	644.9	4	mg/L		78	75 - 125
Chromium	<0.0153		0.500	0.5380		mg/L		108	75 - 125

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	Client Sample ID: SFL MW-3	
										Prep Type: Total Recoverable	Prep Batch: 452613
Cobalt	0.0602		0.500	0.6020		mg/L		108	75 - 125		
Molybdenum	<0.00610		0.500	0.5575		mg/L		112	75 - 125		
Lead	0.0176		0.500	0.5643		mg/L		109	75 - 125		
Antimony	0.0217	B ^2	0.250	0.3099		mg/L		115	75 - 125		
Selenium	<0.00739		1.00	1.073		mg/L		107	75 - 125		
Thallium	0.00612	J	1.00	1.085		mg/L		108	75 - 125		

Lab Sample ID: 180-165501-1 MS  
Matrix: Water  
Analysis Batch: 453774

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.00800	J ^5+	1.00	1.065	^5+	mg/L		106	75 - 125
Cadmium	0.00334	^5+	0.500	0.5132	^5+	mg/L		102	75 - 125
Calcium	339		25.0	557.9	4	mg/L		877	75 - 125
Chromium	<0.00153		0.500	0.5006		mg/L		100	75 - 125
Cobalt	0.0350		0.500	0.5580		mg/L		105	75 - 125
Molybdenum	<0.000610		0.500	0.5400		mg/L		108	75 - 125
Lead	0.0108		0.500	0.5446		mg/L		107	75 - 125
Antimony	<0.000967		0.250	0.2812		mg/L		112	75 - 125
Selenium	0.000810	J	1.00	1.002		mg/L		100	75 - 125
Thallium	0.00334		1.00	1.096		mg/L		109	75 - 125

Lab Sample ID: 180-165501-1 MS  
Matrix: Water  
Analysis Batch: 454201

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	<0.000967		0.250	0.2717		mg/L		109	75 - 125

Lab Sample ID: 180-165501-1 MSD  
Matrix: Water  
Analysis Batch: 453090

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.00507		0.500	0.5577		mg/L		111	75 - 125	3	20
Chromium	<0.00153		0.500	0.4675		mg/L		94	75 - 125	4	20
Cobalt	0.0518		0.500	0.6124		mg/L		112	75 - 125	3	20
Molybdenum	<0.000610	^+	0.500	0.6140	^+	mg/L		123	75 - 125	4	20
Lead	0.0131		0.500	0.4680		mg/L		91	75 - 125	3	20
Antimony	<0.000967	^+ F1	0.250	0.3204	^+ F1	mg/L		128	75 - 125	4	20
Selenium	0.00118	J	1.00	0.9966		mg/L		100	75 - 125	2	20
Thallium	0.00407		1.00	0.9156		mg/L		91	75 - 125	2	20
Lithium	0.290		0.500	0.8319		mg/L		108	75 - 125	4	20

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-165501-1 MSD  
Matrix: Water  
Analysis Batch: 453536

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Boron	4.82		0.250	5.823	4	mg/L		401	75 - 125	14	20

Lab Sample ID: 180-165501-1 MSD  
Matrix: Water  
Analysis Batch: 453774

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Arsenic	<0.00282		1.00	1.092		mg/L		109	75 - 125	0	20
Barium	<0.0314	A5+	1.00	1.080	A5+	mg/L		108	75 - 125	1	20
Beryllium	0.0294		0.500	0.5601		mg/L		106	75 - 125	1	20
Cadmium	0.00530	J A5+	0.500	0.5284	A5+	mg/L		105	75 - 125	2	20
Calcium	625		25.0	638.0	4	mg/L		51	75 - 125	1	20
Chromium	<0.0153		0.500	0.5235		mg/L		105	75 - 125	3	20
Cobalt	0.0602		0.500	0.5976		mg/L		107	75 - 125	1	20
Molybdenum	<0.00610		0.500	0.5483		mg/L		110	75 - 125	2	20
Lead	0.0176		0.500	0.5590		mg/L		108	75 - 125	1	20
Antimony	0.0217	B A2	0.250	0.3013		mg/L		112	75 - 125	3	20
Selenium	<0.00739		1.00	1.034		mg/L		103	75 - 125	4	20
Thallium	0.00612	J	1.00	1.076		mg/L		107	75 - 125	1	20

Lab Sample ID: 180-165501-1 MSD  
Matrix: Water  
Analysis Batch: 453774

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Arsenic	0.00148		1.00	1.009		mg/L		101	75 - 125	0	20
Barium	0.00800	J A5+	1.00	1.069	A5+	mg/L		106	75 - 125	0	20
Cadmium	0.00334	A5+	0.500	0.5132	A5+	mg/L		102	75 - 125	0	20
Calcium	339		25.0	569.0	4	mg/L		921	75 - 125	2	20
Chromium	<0.00153		0.500	0.5013		mg/L		100	75 - 125	0	20
Cobalt	0.0350		0.500	0.5577		mg/L		105	75 - 125	0	20
Molybdenum	<0.000610		0.500	0.5397		mg/L		108	75 - 125	0	20
Lead	0.0108		0.500	0.5422		mg/L		106	75 - 125	0	20
Antimony	<0.000967		0.250	0.2803		mg/L		112	75 - 125	0	20
Selenium	0.000810	J	1.00	1.009		mg/L		101	75 - 125	1	20
Thallium	0.00334		1.00	1.074		mg/L		107	75 - 125	2	20

Lab Sample ID: 180-165501-1 MSD  
Matrix: Water  
Analysis Batch: 454201

Client Sample ID: SFL MW-3  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Beryllium	<0.000274		0.500	0.4918		mg/L		98	75 - 125	2	20
Antimony	<0.000967		0.250	0.2661		mg/L		106	75 - 125	2	20

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-455169/1-A  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00314		0.0100	0.00314	mg/L		12/20/23 08:30	12/20/23 14:20	1

Lab Sample ID: MB 180-455169/1-A  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.0601		0.0800	0.0601	mg/L		12/20/23 08:30	12/27/23 18:25	1

Lab Sample ID: LCS 180-455169/2-A  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	1.00	1.001		mg/L		100	80 - 120

Lab Sample ID: LCS 180-455169/2-A  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	0.250	0.2435		mg/L		97	80 - 120

Lab Sample ID: 180-165402-E-1-D MSD  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Barium	<0.00314		1.00	1.021		mg/L		102	75 - 125

Lab Sample ID: 180-165402-E-1-D MSD  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Boron	<0.0601		0.250	0.2604		mg/L		104	75 - 125

Lab Sample ID: 180-165402-E-1-E MSD  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Barium	<0.00314		1.00	1.000		mg/L		100	75 - 125	2	20

Lab Sample ID: 180-165402-E-1-E MSD  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Boron	<0.0601		0.250	0.2862		mg/L		114	75 - 125	9	20

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Method: EPA 7470A - Mercury (CVAA)**

Lab Sample ID: MB 180-452654/1-A  
Matrix: Water  
Analysis Batch: 452853  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:02	1

Lab Sample ID: LCS 180-452654/2-A  
Matrix: Water  
Analysis Batch: 452853  
Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.002282		mg/L		91	80 - 120

Lab Sample ID: 180-165447-E-5-C MS  
Matrix: Water  
Analysis Batch: 452853  
Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000130		0.00100	0.0008040		mg/L		80	75 - 125

Lab Sample ID: 180-165447-E-5-D MSD  
Matrix: Water  
Analysis Batch: 452853  
Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000130		0.00100	0.0008100		mg/L		81	75 - 125	1	20

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

Lab Sample ID: MB 180-452584/1  
Matrix: Water  
Analysis Batch: 452584  
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	<10.0		10.0	10.0	mg/L			11/21/23 18:31	1

Lab Sample ID: LCS 180-452584/2  
Matrix: Water  
Analysis Batch: 452584  
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	336	296.0		mg/L		88	85 - 115

Lab Sample ID: 180-165485-B-9 DU  
Matrix: Water  
Analysis Batch: 452584  
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	94.0		83.00	F3	mg/L		12	10

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

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

Lab Sample ID: MB 160-637925/1-A  
Matrix: Water  
Analysis Batch: 641696  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 637925

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0000	U	0.126	0.126	1.00	0.264	pCi/L	11/22/23 09:37	12/21/23 18:33	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110	11/22/23 09:37	12/21/23 18:33	1

Lab Sample ID: LCS 160-637925/2-A  
Matrix: Water  
Analysis Batch: 641696  
Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 637925

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.41		1.30	1.00	0.272	pCi/L	92	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		30 - 110

Lab Sample ID: 180-165500-B-1-A DU  
Matrix: Water  
Analysis Batch: 641696  
Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 637925

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.0905	U	0.06024	U	0.156	1.00	0.290	pCi/L	0.1	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	101		30 - 110

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

Lab Sample ID: MB 160-637927/1-A  
Matrix: Water  
Analysis Batch: 641811  
Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 637927

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2575	U	0.254	0.255	1.00	0.406	pCi/L	11/22/23 09:45	12/21/23 11:40	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110	11/22/23 09:45	12/21/23 11:40	1
Y Carrier	82.2		30 - 110	11/22/23 09:45	12/21/23 11:40	1

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**QC Sample Results**

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

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

Lab Sample ID: LCS 160-637927/2-A  
Matrix: Water  
Analysis Batch: 641811

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 637927

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.63	7.612		1.07	1.00	0.408	pCi/L	100	75 - 125

Carrier	%Yield	Qualifier	Limits
Ba Carrier	104		30 - 110
Y Carrier	80.4		30 - 110

Lab Sample ID: 180-165500-B-1-B DU  
Matrix: Water  
Analysis Batch: 641811

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 637927

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
Radium-228	0.254	U	0.2385	U	0.366	1.00	0.619	pCi/L	0.02	1

Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		30 - 110
Y Carrier	73.3		30 - 110

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**QC Association Summary**

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**HPLC/IC**

**Analysis Batch: 452655**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total/NA	Water	EPA 9056A	
180-165501-1	SFL MW-3	Total/NA	Water	EPA 9056A	
180-165501-2	SFL MW-4	Total/NA	Water	EPA 9056A	
180-165501-2	SFL MW-4	Total/NA	Water	EPA 9056A	
180-165501-3	SFL MW-7	Total/NA	Water	EPA 9056A	
180-165501-3	SFL MW-7	Total/NA	Water	EPA 9056A	
180-165501-4	MNW-15	Total/NA	Water	EPA 9056A	
180-165501-4	MNW-15	Total/NA	Water	EPA 9056A	
MB 180-452655/37	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452655/38	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165498-C-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-165498-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 452613**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total Recoverable	Water	3005A	
180-165501-2	SFL MW-4	Total Recoverable	Water	3005A	
180-165501-3	SFL MW-7	Total Recoverable	Water	3005A	
180-165501-4	MNW-15	Total Recoverable	Water	3005A	
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165501-1 MS	SFL MW-3	Total Recoverable	Water	3005A	
180-165501-1 MSD	SFL MW-3	Total Recoverable	Water	3005A	

**Prep Batch: 452654**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total/NA	Water	7470A	
180-165501-2	SFL MW-4	Total/NA	Water	7470A	
180-165501-3	SFL MW-7	Total/NA	Water	7470A	
180-165501-4	MNW-15	Total/NA	Water	7470A	
MB 180-452654/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-452654/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-165447-E-5-C MS	Matrix Spike	Total/NA	Water	7470A	
180-165447-E-5-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 452853**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total/NA	Water	EPA 7470A	452654
180-165501-2	SFL MW-4	Total/NA	Water	EPA 7470A	452654
180-165501-3	SFL MW-7	Total/NA	Water	EPA 7470A	452654
180-165501-4	MNW-15	Total/NA	Water	EPA 7470A	452654
MB 180-452654/1-A	Method Blank	Total/NA	Water	EPA 7470A	452654
LCS 180-452654/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	452654
180-165447-E-5-C MS	Matrix Spike	Total/NA	Water	EPA 7470A	452654
180-165447-E-5-D MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	452654

**Analysis Batch: 453090**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Metals (Continued)**

**Analysis Batch: 453090 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-2	SFL MW-4	Total Recoverable	Water	EPA 6020B	452613
180-165501-3	SFL MW-7	Total Recoverable	Water	EPA 6020B	452613
180-165501-4	MNW-15	Total Recoverable	Water	EPA 6020B	452613
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452613
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MS	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MSD	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613

**Analysis Batch: 453536**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452613
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MS	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MSD	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613

**Analysis Batch: 453774**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-2	SFL MW-4	Total Recoverable	Water	EPA 6020B	452613
180-165501-3	SFL MW-7	Total Recoverable	Water	EPA 6020B	452613
180-165501-4	MNW-15	Total Recoverable	Water	EPA 6020B	452613
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452613
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MS	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MS	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MSD	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MSD	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613

**Analysis Batch: 454201**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
180-165501-2	SFL MW-4	Total Recoverable	Water	EPA 6020B	452613
180-165501-3	SFL MW-7	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MS	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613
180-165501-1 MSD	SFL MW-3	Total Recoverable	Water	EPA 6020B	452613

**Prep Batch: 455169**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-2	SFL MW-4	Total Recoverable	Water	3005A	
180-165501-3	SFL MW-7	Total Recoverable	Water	3005A	
180-165501-4	MNW-15	Total Recoverable	Water	3005A	
MB 180-455169/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-455169/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165402-E-1-D MS	Matrix Spike	Total Recoverable	Water	3005A	
180-165402-E-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

**Analysis Batch: 455274**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-4	MNW-15	Total Recoverable	Water	EPA 6020B	455169
MB 180-455169/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	455169
LCS 180-455169/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	455169

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165501-1

**Metals (Continued)**

**Analysis Batch: 455274 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-E-1-D MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	455169
180-165402-E-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	455169

**Analysis Batch: 455569**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-2	SFL MW-4	Total Recoverable	Water	EPA 6020B	455169
180-165501-3	SFL MW-7	Total Recoverable	Water	EPA 6020B	455169
180-165501-4	MNW-15	Total Recoverable	Water	EPA 6020B	455169
MB 180-455169/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	455169
LCS 180-455169/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	455169
180-165402-E-1-D MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	455169
180-165402-E-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	455169

**General Chemistry**

**Analysis Batch: 452584**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total/NA	Water	SM 2540C	
180-165501-2	SFL MW-4	Total/NA	Water	SM 2540C	
180-165501-3	SFL MW-7	Total/NA	Water	SM 2540C	
180-165501-4	MNW-15	Total/NA	Water	SM 2540C	
MB 180-452584/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-452584/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165485-B-9 DU	Duplicate	Total/NA	Water	SM 2540C	

**Rad**

**Prep Batch: 637925**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total/NA	Water	PrecSep-21	
180-165501-2	SFL MW-4	Total/NA	Water	PrecSep-21	
180-165501-3	SFL MW-7	Total/NA	Water	PrecSep-21	
180-165501-4	MNW-15	Total/NA	Water	PrecSep-21	
MB 160-637925/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-637925/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-165500-B-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

**Prep Batch: 637927**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165501-1	SFL MW-3	Total/NA	Water	PrecSep_0	
180-165501-2	SFL MW-4	Total/NA	Water	PrecSep_0	
180-165501-3	SFL MW-7	Total/NA	Water	PrecSep_0	
180-165501-4	MNW-15	Total/NA	Water	PrecSep_0	
MB 160-637927/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-637927/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-165500-B-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

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### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165501-1

Login Number: 165501

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\neq</math> 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?	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165501-1

Login Number: 165501

List Source: Eurofins St. Louis

List Number: 2

List Creation: 11/21/23 12:37 PM

Creator: Pinette, Meadow L

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

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
HDR Inc  
17111 Preston Road  
Suite 200  
Dallas, Texas 75248-1232  
Generated 12/28/2023 4:00:09 PM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-165402-1

## Eurofins Pittsburgh

### Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

### Authorization

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Authorized for release by  
Ken Hayes, Project Manager II  
Ken.Hayes@et.eurofinsus.com  
(615)301-5035



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## Case Narrative

Job ID: 180-165402-1

Eurofins Pittsburgh

### Job Narrative 180-165402-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/15/2023 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

#### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 637741

The sample duplicate (DUP) precision for Radium-226 was outside the control limits. However the original sample and DUP activity is below the MDC / RL making the measurement of precision less critical. The lab does not believe this discrepancy to have a negative impact on the data being reported. (500-242591-N-16-A DU)

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

#### Rad

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



## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Job ID: 180-165402-2

Eurofins Pittsburgh

### Job Narrative 180-165402-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 11/15/2023 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.0°C

### HPLC/IC

Method 9056A\_ORGFM\_28D: The following sample was diluted due to the nature of the sample matrix: SSP MW-3 (180-165402-2) at 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

Method 6020B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-452611 and analytical batch 180-453090 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 6020B: The post digestion spike % recovery for Cobalt and Lead associated with batch 180-453090 was outside of control limits. The associated sample is: (180-165402-E-2-A PDS).

Method 6020B: The method blank for preparation batch 180-452611 contained Barium above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 6020B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SSP MW-3 (180-165402-2), (180-165402-E-2-B MS ^10), (180-165402-E-2-C MSD ^10), (180-165402-E-2-A PDS ^10), (180-165402-E-2-A SD ^5) and (180-165402-E-2-A SD ^50). Elevated reporting limits (RLs) are provided.

Method 6020B: The post digestion spike % recovery for Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Molybdenum, Lead, Antimony, Selenium, Thallium and Lithium associated with batch 180-454619 was outside of control limits. The associated sample is: (180-165402-E-2-A PDS ^10).

Method 6020B: The continuing calibration verification (CCV) associated with batch 180-455274 recovered above the upper control limit for Boron. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (MB 180-455169/1-A).

Method 6020B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SSP MW-3 (180-165402-2). Elevated reporting limits (RLs) are provided.

Method 6020B: The post digestion spike % recovery for several analytes associated with batch 180-455161 was outside of control limits. The associated sample is: SSP MW-3 (180-165402-2).

Method 6020B: The post digestion spike % recovery for Boron associated with batch 180-455569 was outside of control limits. The associated sample is: (180-165402-E-1-C PDS).

Method 6020B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SSP

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Job ID: 180-165402-2 (Continued)

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MW-3 (180-165402-2). 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.

### General Chemistry

Method 2540C\_Calcd: The sample did not reach a stable weight following 3 cycles of heating, cooling, and desiccation. The cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result.

SSP MW-3 (180-165402-2)

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

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## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

### Qualifiers

#### Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5+	Linear Range Check (LRC) is outside acceptance limits, high biased.
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.
F1	MS and/or MSD recovery exceeds control limits.

#### Rad

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit.
U	Result is less than the sample detection limit.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
SQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

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### Accreditation/Certification Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

#### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	01-31-24

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

### Sample Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-165402-1	FB-1	Water	11/14/23 15:05	11/15/23 09:15
180-165402-2	SSP MW-3	Water	11/14/23 16:00	11/15/23 09:15

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Client Sample ID: FB-1

Lab Sample ID: 180-165402-1

Date Collected: 11/14/23 15:05

Matrix: Water

Date Received: 11/15/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452439	11/20/23 20:04	AM	EET PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			25 mL	25 mL	455169	12/20/23 08:30	NWW	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			455274	12/20/23 14:26	MRG	EET PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	452611	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 17:51	MRG	EET PIT
Instrument ID: DORY										
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:13	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			998.61 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			998.61 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641474	12/20/23 11:31	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
Instrument ID: NOEQUIP										

Client Sample ID: SSP MW-3

Lab Sample ID: 180-165402-2

Date Collected: 11/14/23 16:00

Matrix: Water

Date Received: 11/15/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452651	11/22/23 20:49	AM	EET PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452651	11/22/23 21:03	AM	EET PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	452611	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453774	12/05/23 20:22	MRG	EET PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	455169	12/20/23 08:30	NWW	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			455274	12/20/23 14:40	MRG	EET PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			25 mL	25 mL	452611	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 17:54	MRG	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	455169	12/20/23 08:30	NWW	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			455569	12/27/23 18:45	MRG	EET PIT
Instrument ID: DORY										

**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Client Sample ID: SSP MW-3**

Date Collected: 11/14/23 16:00

Date Received: 11/15/23 09:15

**Lab Sample ID: 180-165402-2**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:19	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			740.89 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:44	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			740.89 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641474	12/20/23 11:31	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
Instrument ID: NOEQUIP										

**Laboratory References:**

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

**Analyst References:**

Lab: EET PIT

Batch Type: Prep

NWW = Nicholas Woten  
RJR = Ron Rosenbaum  
SJM = Shannon Mueller

Batch Type: Analysis

AM = Adzuiru Musule  
LWM = Leslie McIntire  
MRG = Mismel Garcia  
MTW = Michael Wesoloski

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

EMH = Elizabeth Hoerchler  
FLC = Fernando Cruz

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Client Sample ID: FB-1**

Date Collected: 11/14/23 15:05

Date Received: 11/15/23 09:15

**Lab Sample ID: 180-165402-1**

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L		11/20/23 20:04	11/20/23 20:04	1
Fluoride	<0.0260		0.100	0.0260	mg/L		11/20/23 20:04	11/20/23 20:04	1
Sulfate	<0.756		1.00	0.756	mg/L		11/20/23 20:04	11/20/23 20:04	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 17:51	1
Barium	<0.00314		0.0100	0.00314	mg/L		11/22/23 07:41	11/28/23 17:51	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 17:51	1
Boron	<0.0601	A+	0.0800	0.0601	mg/L		12/20/23 08:30	12/20/23 14:26	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 17:51	1
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 17:51	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 17:51	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 17:51	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 17:51	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 17:51	1
Antimony	<0.000967		0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 17:51	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 17:51	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 17:51	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 17:51	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:18	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	<10.0		10.0	10.0	mg/L		11/17/23 17:24	11/17/23 17:24	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00422	U	0.177	0.177	1.00	0.356	pCi/L	11/21/23 11:04	12/20/23 18:43	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.3		30 - 110					11/21/23 11:04	12/20/23 18:43	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.365	U	0.388	0.389	1.00	0.631	pCi/L	11/21/23 11:11	12/20/23 11:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.3		30 - 110					11/21/23 11:11	12/20/23 11:31	1
Y Carrier	75.5		30 - 110					11/21/23 11:11	12/20/23 11:31	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Client Sample ID: FB-1

Lab Sample ID: 180-165402-1

Date Collected: 11/14/23 15:05

Matrix: Water

Date Received: 11/15/23 09:15

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.360	U	0.426	0.427	5.00	0.631	pCi/L		12/21/23 10:29	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Client Sample ID: SSP MW-3

Lab Sample ID: 180-165402-2

Date Collected: 11/14/23 16:00

Matrix: Water

Date Received: 11/15/23 09:15

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1430		5.00	3.57	mg/L			11/22/23 21:03	5
Fluoride	0.348		0.100	0.0260	mg/L			11/22/23 20:49	1
Sulfate	2320		5.00	3.78	mg/L			11/22/23 21:03	5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00631		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 17:54	1
Barium	0.0220		0.0100	0.00314	mg/L		12/20/23 08:30	12/20/23 14:40	1
Beryllium	0.101		0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 17:54	1
Boron	3.62		0.800	0.601	mg/L		12/20/23 08:30	12/27/23 18:45	10
Cadmium	0.0477		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 17:54	1
Calcium	641		5.00	1.27	mg/L		11/22/23 07:41	12/05/23 20:22	10
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 17:54	1
Cobalt	0.445		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 17:54	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 17:54	1
Lead	0.00292	F1	0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 17:54	1
Antimony	<0.000967		0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 17:54	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 17:54	1
Thallium	0.00576	F1	0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 17:54	1
Lithium	0.533		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 17:54	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000218		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	5470		40.0	40.0	mg/L			11/17/23 17:24	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	6.00		0.905	1.05	1.00	0.580	pCi/L	11/21/23 11:04	12/20/23 18:44	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>					<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Ba Carrier</i>	94.3		30 - 110					11/21/23 11:04	12/20/23 18:44	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	25.3		1.82	2.95	1.00	0.742	pCi/L	11/21/23 11:11	12/20/23 11:31	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>					<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Ba Carrier</i>	94.3		30 - 110					11/21/23 11:11	12/20/23 11:31	1
<i>Y Carrier</i>	75.5		30 - 110					11/21/23 11:11	12/20/23 11:31	1

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### Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Client Sample ID: SSP MW-3

Lab Sample ID: 180-165402-2

Date Collected: 11/14/23 16:00

Matrix: Water

Date Received: 11/15/23 09:15

Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	31.3		2.03	3.13	5.00	0.742	pCi/L		12/21/23 10:29	1

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### QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-452439/6

Matrix: Water

Analysis Batch: 452439

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			11/20/23 18:13	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/20/23 18:13	1
Sulfate	<0.756		1.00	0.756	mg/L			11/20/23 18:13	1

Lab Sample ID: LCS 180-452439/7

Matrix: Water

Analysis Batch: 452439

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	58.90		mg/L		118	80 - 120
Fluoride	2.50	2.414		mg/L		97	80 - 120
Sulfate	50.0	47.72		mg/L		95	80 - 120

Lab Sample ID: 180-165411-C-1 MS

Matrix: Water

Analysis Batch: 452439

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Chloride	3.63		50.0	55.52		mg/L		104	80 - 120
Fluoride	0.0322	J	2.50	2.604		mg/L		103	80 - 120
Sulfate	1.03		50.0	52.74		mg/L		103	80 - 120

Lab Sample ID: 180-165411-C-1 MSD

Matrix: Water

Analysis Batch: 452439

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Chloride	3.63		50.0	55.55		mg/L		104	80 - 120	0	15
Fluoride	0.0322	J	2.50	2.602		mg/L		103	80 - 120	0	15
Sulfate	1.03		50.0	52.99		mg/L		104	80 - 120	0	15

Lab Sample ID: MB 180-452651/6

Matrix: Water

Analysis Batch: 452651

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			11/22/23 15:02	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/22/23 15:02	1
Sulfate	<0.756		1.00	0.756	mg/L			11/22/23 15:02	1

Lab Sample ID: LCS 180-452651/7

Matrix: Water

Analysis Batch: 452651

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	50.69		mg/L		101	80 - 120
Fluoride	2.50	2.625		mg/L		105	80 - 120
Sulfate	50.0	49.98		mg/L		100	80 - 120

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

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

Lab Sample ID: 180-165508-1-1 MSD Matrix: Water Analysis Batch: 452651			Client Sample ID: Matrix Spike Prep Type: Total/NA							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	%Rec
Chloride	2.93		50.0	58.44		mg/L		111	80 - 120	
Fluoride	0.124		2.50	2.493		mg/L		95	80 - 120	
Sulfate	4.45		50.0	54.17		mg/L		99	80 - 120	

Lab Sample ID: 180-165508-1-1 MSD Matrix: Water Analysis Batch: 452651			Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA								
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Chloride	2.93		50.0	51.16		mg/L		96	80 - 120	13	15
Fluoride	0.124		2.50	2.408		mg/L		91	80 - 120	3	15
Sulfate	4.45		50.0	51.94		mg/L		95	80 - 120	4	15

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: MB 180-451832/1-A Matrix: Water Analysis Batch: 454002			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 451832						
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/14/23 09:48	12/07/23 16:44	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/14/23 09:48	12/07/23 16:44	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/14/23 09:48	12/07/23 16:44	1
Calcium	<0.127		0.500	0.127	mg/L		11/14/23 09:48	12/07/23 16:44	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/14/23 09:48	12/07/23 16:44	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/14/23 09:48	12/07/23 16:44	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/14/23 09:48	12/07/23 16:44	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/14/23 09:48	12/07/23 16:44	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/14/23 09:48	12/07/23 16:44	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/14/23 09:48	12/07/23 16:44	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/14/23 09:48	12/07/23 16:44	1

Lab Sample ID: LCS 180-451832/2-A Matrix: Water Analysis Batch: 454002			Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 451832					
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	%Rec
Arsenic	1.00	1.052		mg/L		105	80 - 120	
Beryllium	0.500	0.5567		mg/L		111	80 - 120	
Calcium	25.0	28.05		mg/L		112	80 - 120	
Chromium	0.500	0.4934		mg/L		99	80 - 120	
Cobalt	0.500	0.4746		mg/L		95	80 - 120	
Molybdenum	0.500	0.5513		mg/L		110	80 - 120	
Lead	0.500	0.5246		mg/L		105	80 - 120	
Selenium	1.00	1.042		mg/L		104	80 - 120	
Thallium	1.00	1.035		mg/L		104	80 - 120	
Lithium	0.500	0.4987		mg/L		100	80 - 120	

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-452611/1-A Matrix: Water Analysis Batch: 453090			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 452611						
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 17:34	1
Barium	0.07830		0.0100	0.00314	mg/L		11/22/23 07:41	11/28/23 17:34	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 17:34	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 17:34	1
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 17:34	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 17:34	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 17:34	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 17:34	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 17:34	1
Antimony	<0.000967		0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 17:34	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 17:34	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 17:34	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 17:34	1

Lab Sample ID: MB 180-452611/1-A Matrix: Water Analysis Batch: 453774			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 452611						
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	12/05/23 19:40	1

Lab Sample ID: MB 180-452611/1-A Matrix: Water Analysis Batch: 454002			Client Sample ID: Method Blank Prep Type: Total Recoverable Prep Batch: 452611						
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	12/07/23 11:57	1
Barium	<0.00314	*5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/07/23 11:57	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/22/23 07:41	12/07/23 11:57	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/22/23 07:41	12/07/23 11:57	1
Cadmium	<0.000217	*5+	0.00100	0.000217	mg/L		11/22/23 07:41	12/07/23 11:57	1
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	12/07/23 11:57	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	12/07/23 11:57	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	12/07/23 11:57	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/22/23 07:41	12/07/23 11:57	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	12/07/23 11:57	1
Antimony	<0.000967	*5+	0.00200	0.000967	mg/L		11/22/23 07:41	12/07/23 11:57	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	12/07/23 11:57	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	12/07/23 11:57	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	12/07/23 11:57	1

Lab Sample ID: LCS 180-452611/2-A Matrix: Water Analysis Batch: 453090			Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 452611					
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits	%Rec
Arsenic	1.00	1.037		mg/L		104	80 - 120	
Barium	1.00	1.034		mg/L		103	80 - 120	
Beryllium	0.500	0.5235		mg/L		105	80 - 120	

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Client Sample ID: Lab Control Sample	
							Prep Type: Total Recoverable	Prep Batch: 452611
							%Rec	Limits
Cadmium	0.500	0.5128		mg/L		103	80 - 120	
Calcium	25.0	27.35		mg/L		109	80 - 120	
Chromium	0.500	0.5128		mg/L		103	80 - 120	
Cobalt	0.500	0.5096		mg/L		102	80 - 120	
Molybdenum	0.500	0.5268		mg/L		105	80 - 120	
Lead	0.500	0.5098		mg/L		102	80 - 120	
Antimony	0.250	0.2788		mg/L		112	80 - 120	
Selenium	1.00	1.029		mg/L		103	80 - 120	
Thallium	1.00	1.016		mg/L		102	80 - 120	
Lithium	0.500	0.5130		mg/L		103	80 - 120	

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Client Sample ID: Lab Control Sample	
							Prep Type: Total Recoverable	Prep Batch: 452611
							%Rec	Limits
Calcium	25.0	25.92		mg/L		104	80 - 120	

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: SSP MW-3	
									Prep Type: Total Recoverable	Prep Batch: 452611
									%Rec	Limits
Arsenic	0.00631		1.00	0.8686		mg/L		86	75 - 125	
Barium	0.0183	B	1.00	0.8847		mg/L		87	75 - 125	
Cadmium	0.0477		0.500	0.5590		mg/L		102	75 - 125	
Chromium	<0.00153		0.500	0.3776		mg/L		76	75 - 125	
Cobalt	0.445		0.500	0.9970		mg/L		110	75 - 125	
Lead	0.00292	F1	0.500	0.3586	F1	mg/L		71	75 - 125	
Selenium	<0.000739		1.00	0.9284		mg/L		93	75 - 125	
Thallium	0.00576	F1	1.00	0.7223	F1	mg/L		72	75 - 125	

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: SSP MW-3	
									Prep Type: Total Recoverable	Prep Batch: 452611
									%Rec	Limits
Calcium	641		25.0	687.3	4	mg/L		185	75 - 125	

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: SSP MW-3	
									Prep Type: Total Recoverable	Prep Batch: 452611
									%Rec	Limits
Arsenic	0.0135		1.00	1.244		mg/L		123	75 - 125	
Boron	4.13	*+	0.250	4.383	4	mg/L		101	75 - 125	
Cadmium	0.0642		0.500	0.6502		mg/L		117	75 - 125	
Calcium	797		25.0	793.7	4	mg/L		-11	75 - 125	
Cobalt	0.608		0.500	1.155		mg/L		109	75 - 125	
Molybdenum	<0.00610		0.500	0.6141		mg/L		123	75 - 125	

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Client Sample ID: SSP MW-3	
									Prep Type: Total Recoverable	Prep Batch: 452611
									%Rec	Limits
Lead	0.00637	J	0.500	0.6060		mg/L		120	75 - 125	
Selenium	0.0226	J	1.00	1.135		mg/L		111	75 - 125	
Thallium	0.0132		1.00	1.213		mg/L		120	75 - 125	

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	Client Sample ID: SSP MW-3	
												Prep Type: Total Recoverable	Prep Batch: 452611
												%Rec	RPD
Arsenic	0.00631		1.00	0.8442		mg/L		84	75 - 125	3	20		
Barium	0.0183	B	1.00	0.8687		mg/L		85	75 - 125	2	20		
Cadmium	0.0477		0.500	0.5335		mg/L		97	75 - 125	5	20		
Chromium	<0.00153		0.500	0.3732		mg/L		75	75 - 125	1	20		
Cobalt	0.445		0.500	0.9511		mg/L		101	75 - 125	5	20		
Lead	0.00292	F1	0.500	0.3568	F1	mg/L		71	75 - 125	1	20		
Selenium	<0.000739		1.00	0.9152		mg/L		92	75 - 125	1	20		
Thallium	0.00576	F1	1.00	0.7125	F1	mg/L		71	75 - 125	1	20		

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	Client Sample ID: SSP MW-3	
												Prep Type: Total Recoverable	Prep Batch: 452611
												%Rec	RPD
Calcium	641		25.0	677.7	4	mg/L		147	75 - 125	1	20		

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit	Client Sample ID: SSP MW-3	
												Prep Type: Total Recoverable	Prep Batch: 452611
												%Rec	RPD
Arsenic	0.0135		1.00	1.202		mg/L		119	75 - 125	3	20		
Boron	4.13	*+	0.250	4.110	4	mg/L		-8	75 - 125	6	20		
Cadmium	0.0642		0.500	0.6237		mg/L		112	75 - 125	4	20		
Calcium	797		25.0	754.1	4	mg/L		-170	75 - 125	5	20		
Cobalt	0.608		0.500	1.122		mg/L		103	75 - 125	3	20		
Molybdenum	<0.00610		0.500	0.5970		mg/L		119	75 - 125	3	20		
Lead	0.00637	J	0.500	0.5896		mg/L		117	75 - 125	3	20		
Selenium	0.0226	J	1.00	1.114		mg/L		109	75 - 125	2	20		
Thallium	0.0132		1.00	1.174		mg/L		116	75 - 125	3	20		

Analyte	Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac	Client Sample ID: Method Blank	
											Prep Type: Total Recoverable	Prep Batch: 452727
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/25/23 10:44	12/07/23 11:54			1	
Barium	<0.00314	*5+	0.0100	0.00314	mg/L		11/25/23 10:44	12/07/23 11:54			1	
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/25/23 10:44	12/07/23 11:54			1	
Boron	<0.0601		0.0800	0.0601	mg/L		11/25/23 10:44	12/07/23 11:54			1	
Cadmium	<0.000217	*5+	0.00100	0.000217	mg/L		11/25/23 10:44	12/07/23 11:54			1	

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-452727/1-A  
Matrix: Water  
Analysis Batch: 454002

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452727

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.127		0.500	0.127	mg/L		11/25/23 10:44	12/07/23 11:54	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/25/23 10:44	12/07/23 11:54	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/25/23 10:44	12/07/23 11:54	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/25/23 10:44	12/07/23 11:54	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/25/23 10:44	12/07/23 11:54	1
Antimony	<0.000967	^5+	0.00200	0.000967	mg/L		11/25/23 10:44	12/07/23 11:54	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/25/23 10:44	12/07/23 11:54	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/25/23 10:44	12/07/23 11:54	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/25/23 10:44	12/07/23 11:54	1

Lab Sample ID: MB 180-453093/1-A  
Matrix: Water  
Analysis Batch: 454002

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 453093

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/29/23 09:56	12/07/23 14:30	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/29/23 09:56	12/07/23 14:30	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/29/23 09:56	12/07/23 14:30	1
Calcium	<0.127		0.500	0.127	mg/L		11/29/23 09:56	12/07/23 14:30	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/29/23 09:56	12/07/23 14:30	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/29/23 09:56	12/07/23 14:30	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/29/23 09:56	12/07/23 14:30	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/29/23 09:56	12/07/23 14:30	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/29/23 09:56	12/07/23 14:30	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/29/23 09:56	12/07/23 14:30	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/29/23 09:56	12/07/23 14:30	1

Lab Sample ID: LCS 180-453093/2-A  
Matrix: Water  
Analysis Batch: 454002

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 453093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.001		mg/L		100	80 - 120
Beryllium	0.500	0.5183		mg/L		104	80 - 120
Boron	0.250	0.2470		mg/L		99	80 - 120
Calcium	25.0	27.80		mg/L		111	80 - 120
Chromium	0.500	0.4848		mg/L		97	80 - 120
Cobalt	0.500	0.4869		mg/L		97	80 - 120
Molybdenum	0.500	0.5150		mg/L		103	80 - 120
Lead	0.500	0.5038		mg/L		101	80 - 120
Selenium	1.00	1.014		mg/L		101	80 - 120
Thallium	1.00	0.9780		mg/L		98	80 - 120
Lithium	0.500	0.4961		mg/L		99	80 - 120

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-453208/1-A  
Matrix: Water  
Analysis Batch: 454002

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 453208

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/30/23 12:00	12/07/23 13:17	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/30/23 12:00	12/07/23 13:17	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/30/23 12:00	12/07/23 13:17	1
Calcium	<0.127		0.500	0.127	mg/L		11/30/23 12:00	12/07/23 13:17	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/30/23 12:00	12/07/23 13:17	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/30/23 12:00	12/07/23 13:17	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/30/23 12:00	12/07/23 13:17	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/30/23 12:00	12/07/23 13:17	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/30/23 12:00	12/07/23 13:17	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/30/23 12:00	12/07/23 13:17	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/30/23 12:00	12/07/23 13:17	1

Lab Sample ID: LCS 180-453208/2-A  
Matrix: Water  
Analysis Batch: 454002

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 453208

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.022		mg/L		102	80 - 120
Beryllium	0.500	0.5180		mg/L		104	80 - 120
Boron	0.250	0.2489		mg/L		100	80 - 120
Calcium	25.0	28.50		mg/L		114	80 - 120
Chromium	0.500	0.4942		mg/L		99	80 - 120
Cobalt	0.500	0.4932		mg/L		99	80 - 120
Molybdenum	0.500	0.5243		mg/L		105	80 - 120
Lead	0.500	0.5091		mg/L		102	80 - 120
Selenium	1.00	1.028		mg/L		103	80 - 120
Thallium	1.00	0.9738		mg/L		97	80 - 120
Lithium	0.500	0.4858		mg/L		97	80 - 120

Lab Sample ID: MB 180-455169/1-A  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		12/20/23 08:30	12/20/23 14:20	1
Barium	<0.00314		0.0100	0.00314	mg/L		12/20/23 08:30	12/20/23 14:20	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		12/20/23 08:30	12/20/23 14:20	1
Boron	<0.0601	^+	0.0800	0.0601	mg/L		12/20/23 08:30	12/20/23 14:20	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		12/20/23 08:30	12/20/23 14:20	1
Calcium	<0.127		0.500	0.127	mg/L		12/20/23 08:30	12/20/23 14:20	1
Chromium	<0.00153		0.00200	0.00153	mg/L		12/20/23 08:30	12/20/23 14:20	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		12/20/23 08:30	12/20/23 14:20	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		12/20/23 08:30	12/20/23 14:20	1
Lead	<0.000376		0.00100	0.000376	mg/L		12/20/23 08:30	12/20/23 14:20	1
Antimony	<0.000967		0.00200	0.000967	mg/L		12/20/23 08:30	12/20/23 14:20	1
Selenium	<0.000739		0.00500	0.000739	mg/L		12/20/23 08:30	12/20/23 14:20	1
Thallium	<0.000472		0.00100	0.000472	mg/L		12/20/23 08:30	12/20/23 14:20	1
Lithium	<0.00129		0.00500	0.00129	mg/L		12/20/23 08:30	12/20/23 14:20	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-455169/1-A  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.0601		0.0800	0.0601	mg/L		12/20/23 08:30	12/27/23 18:25	1

Lab Sample ID: LCS 180-455169/2-A  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.9996		mg/L		100	80 - 120
Barium	1.00	0.4976		mg/L		100	80 - 120
Beryllium	0.500	0.5109		mg/L		102	80 - 120
Boron	0.250	0.2352	^+	mg/L		94	80 - 120
Cadmium	0.500	0.4976		mg/L		100	80 - 120
Chromium	0.500	0.4877		mg/L		98	80 - 120
Cobalt	0.500	0.4889		mg/L		98	80 - 120
Molybdenum	0.500	0.5082		mg/L		102	80 - 120
Lead	0.500	0.5045		mg/L		101	80 - 120
Antimony	0.250	0.2699		mg/L		108	80 - 120
Selenium	1.00	0.9987		mg/L		100	80 - 120
Thallium	1.00	0.9820		mg/L		98	80 - 120
Lithium	0.500	0.5103		mg/L		102	80 - 120

Lab Sample ID: LCS 180-455169/2-A  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.250	0.2435		mg/L		97	80 - 120

Lab Sample ID: 180-165402-1 MS  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: FB-1  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	<0.00314		1.00	1.021		mg/L		102	75 - 125

Lab Sample ID: 180-165402-1 MS  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: FB-1  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	<0.0601		0.250	0.2604		mg/L		104	75 - 125

Lab Sample ID: 180-165402-1 MSD  
Matrix: Water  
Analysis Batch: 455274

Client Sample ID: FB-1  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Barium	<0.00314		1.00	1.000		mg/L		100	75 - 125	2	20

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: 180-165402-1 MSD  
Matrix: Water  
Analysis Batch: 455569

Client Sample ID: FB-1  
Prep Type: Total Recoverable  
Prep Batch: 455169

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Boron	<0.0601		0.250	0.2862		mg/L		114	75 - 125	9	20

**Method: EPA 7470A - Mercury (CVAA)**

Lab Sample ID: MB 180-452642/1-A  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 452642

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 13:52	1

Lab Sample ID: LCS 180-452642/2-A  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 452642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.002373		mg/L		95	80 - 120

Lab Sample ID: 180-165410-K-1-C MS  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 452642

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.000133	J	0.00100	0.001028		mg/L		90	75 - 125

Lab Sample ID: 180-165410-K-1-D MSD  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 452642

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	0.000133	J	0.00100	0.0009770		mg/L		84	75 - 125	5	20

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

Lab Sample ID: MB 180-452325/1  
Matrix: Water  
Analysis Batch: 452325

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			11/17/23 17:24	1

Lab Sample ID: LCS 180-452325/2  
Matrix: Water  
Analysis Batch: 452325

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	336	316.0		mg/L		94	85 - 115

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

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

Lab Sample ID: 180-165401-C-3 DU			Client Sample ID: Duplicate					
Matrix: Water			Prep Type: Total/NA					
Analysis Batch: 452325								
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2910		2832		mg/L		NC	10

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

Lab Sample ID: MB 160-637741/1-A			Client Sample ID: Method Blank							
Matrix: Water			Prep Type: Total/NA							
Analysis Batch: 641474			Prep Batch: 637741							
Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06042	U	0.132	0.132	1.00	0.244	pCi/L	11/21/23 11:04	12/20/23 18:28	1
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac				
Ba Carrier	98.5		30 - 110	11/21/23 11:04	12/20/23 18:28	1				

Lab Sample ID: LCS 160-637741/2-A			Client Sample ID: Lab Control Sample						
Matrix: Water			Prep Type: Total/NA						
Analysis Batch: 641474			Prep Batch: 637741						
Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.379		1.23	1.00	0.319	pCi/L	83	75 - 125
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	97.9		30 - 110						

Lab Sample ID: 500-242591-N-16-A DU			Client Sample ID: Duplicate							
Matrix: Water			Prep Type: Total/NA							
Analysis Batch: 641668			Prep Batch: 637741							
Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.561		0.05877	U F	0.174	1.00	0.323	pCi/L	1.13	1
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	101		30 - 110							

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

Lab Sample ID: MB 160-637742/1-A			Client Sample ID: Method Blank							
Matrix: Water			Prep Type: Total/NA							
Analysis Batch: 641669			Prep Batch: 637742							
Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.04353	U	0.204	0.204	1.00	0.409	pCi/L	11/21/23 11:11	12/20/23 11:35	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

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

Lab Sample ID: MB 160-637742/1-A			Client Sample ID: Method Blank			
Matrix: Water			Prep Type: Total/NA			
Analysis Batch: 641669			Prep Batch: 637742			
Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	11/21/23 11:11	12/20/23 11:35	1
Y Carrier	84.1		30 - 110	11/21/23 11:11	12/20/23 11:35	1

Lab Sample ID: LCS 160-637742/2-A			Client Sample ID: Lab Control Sample						
Matrix: Water			Prep Type: Total/NA						
Analysis Batch: 641669			Prep Batch: 637742						
Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.63	7.098		1.03	1.00	0.467	pCi/L	93	75 - 125
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	97.9		30 - 110						
Y Carrier	81.1		30 - 110						

Lab Sample ID: 500-242591-N-16-B DU			Client Sample ID: Duplicate							
Matrix: Water			Prep Type: Total/NA							
Analysis Batch: 641669			Prep Batch: 637742							
Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.221	U	0.4420	U	0.307	1.00	0.449	pCi/L	0.33	1
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	101		30 - 110							
Y Carrier	77.0		30 - 110							

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**HPLC/IC**

**Analysis Batch: 452439**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total/NA	Water	EPA 9056A	
MB 180-452439/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452439/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165411-C-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-165411-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Analysis Batch: 452651**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-2	SSP MW-3	Total/NA	Water	EPA 9056A	
180-165402-2	SSP MW-3	Total/NA	Water	EPA 9056A	
MB 180-452651/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452651/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165508-1-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-165508-1-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 451832**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-451832/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-451832/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

**Prep Batch: 452611**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total Recoverable	Water	3005A	
180-165402-2	SSP MW-3	Total Recoverable	Water	3005A	
MB 180-452611/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-452611/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165402-2 MS	SSP MW-3	Total Recoverable	Water	3005A	
180-165402-2 MSD	SSP MW-3	Total Recoverable	Water	3005A	

**Prep Batch: 452642**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total/NA	Water	7470A	
180-165402-2	SSP MW-3	Total/NA	Water	7470A	
MB 180-452642/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-452642/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-165410-K-1-C MS	Matrix Spike	Total/NA	Water	7470A	
180-165410-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Prep Batch: 452727**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-452727/1-A	Method Blank	Total Recoverable	Water	200.8 Rev 5.4	

**Analysis Batch: 452853**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total/NA	Water	EPA 7470A	452642
180-165402-2	SSP MW-3	Total/NA	Water	EPA 7470A	452642
MB 180-452642/1-A	Method Blank	Total/NA	Water	EPA 7470A	452642
LCS 180-452642/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	452642
180-165410-K-1-C MS	Matrix Spike	Total/NA	Water	EPA 7470A	452642

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Metals (Continued)**

**Analysis Batch: 452853 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165410-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	452642

**Analysis Batch: 453090**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total Recoverable	Water	EPA 6020B	452611
180-165402-2	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611
MB 180-452611/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452611
LCS 180-452611/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452611
180-165402-2 MS	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611
180-165402-2 MSD	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611

**Prep Batch: 453093**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-453093/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-453093/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

**Prep Batch: 453208**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-453208/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-453208/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

**Analysis Batch: 453774**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-2	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611
MB 180-452611/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452611
LCS 180-452611/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452611
180-165402-2 MS	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611
180-165402-2 MSD	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611

**Analysis Batch: 454002**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-451832/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	451832
MB 180-452611/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452611
MB 180-452727/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452727
MB 180-453093/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	453093
MB 180-453208/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	453208
LCS 180-451832/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	451832
LCS 180-453093/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	453093
LCS 180-453208/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	453208

**Analysis Batch: 454619**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-2 MS	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611
180-165402-2 MSD	SSP MW-3	Total Recoverable	Water	EPA 6020B	452611

**Prep Batch: 455169**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total Recoverable	Water	3005A	
180-165402-2	SSP MW-3	Total Recoverable	Water	3005A	
MB 180-455169/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-455169/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165402-1

**Metals (Continued)**

**Prep Batch: 455169 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1 MS	FB-1	Total Recoverable	Water	3005A	
180-165402-1 MSD	FB-1	Total Recoverable	Water	3005A	

**Analysis Batch: 455274**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total Recoverable	Water	EPA 6020B	455169
180-165402-2	SSP MW-3	Total Recoverable	Water	EPA 6020B	455169
MB 180-455169/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	455169
LCS 180-455169/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	455169
180-165402-1 MS	FB-1	Total Recoverable	Water	EPA 6020B	455169
180-165402-1 MSD	FB-1	Total Recoverable	Water	EPA 6020B	455169

**Analysis Batch: 455569**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-2	SSP MW-3	Total Recoverable	Water	EPA 6020B	455169
MB 180-455169/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	455169
LCS 180-455169/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	455169
180-165402-1 MS	FB-1	Total Recoverable	Water	EPA 6020B	455169
180-165402-1 MSD	FB-1	Total Recoverable	Water	EPA 6020B	455169

**General Chemistry**

**Analysis Batch: 452325**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total/NA	Water	SM 2540C	
180-165402-2	SSP MW-3	Total/NA	Water	SM 2540C	
MB 180-452325/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-452325/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165401-C-3 DU	Duplicate	Total/NA	Water	SM 2540C	

**Rad**

**Prep Batch: 637741**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total/NA	Water	PrecSep-21	
180-165402-2	SSP MW-3	Total/NA	Water	PrecSep-21	
MB 160-637741/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-637741/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
500-242591-N-16-A DU	Duplicate	Total/NA	Water	PrecSep-21	

**Prep Batch: 637742**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165402-1	FB-1	Total/NA	Water	PrecSep_0	
180-165402-2	SSP MW-3	Total/NA	Water	PrecSep_0	
MB 160-637742/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-637742/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
500-242591-N-16-B DU	Duplicate	Total/NA	Water	PrecSep_0	

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**Eurofins TestAmerica, Pittsburgh**

301 Alpha Drive RUDC Park  
Pittsburgh, PA 15289  
Phone (412) 963-7659 Fax (412) 963-2468

**Chain of Custody Record**

Eurofins TestAmerica  
Environment Testing

<b>Client Information</b> Client Contact: David Vogt (Will Nicholson) Company: HDR Inc Address: 17111 Preston Road Suite 200 City: Dallas State: TX, Zip: 75245-1232 Phone: 972-960-4461 (Tel) Email: david.vogt@hdrinc.com (william.nicholson@hdrinc.com) Project Name: Gibbons Creek Steam Electric Station Site:		<b>Sample Information</b> Sample: Will Nicholson Phone: 706-252-1418 E-Mail: Ken.Haynes@Eurofins.com PWSID:		Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: NO#: Project #: 18023511 SSOW#:		Center Tracking Info: State of Origin: TX Page of 200 #		Preservation Codes: A-HCL B-NiCl C-Zn Acetate D-NiSO4 E-NiSO4 F-NiSO4 G-NiSO4 H-Arsenic Acid I-Typ Dodecylsulfate J-D Water K-EDTA L-EDA Z-Other (specify)	
<b>Analysis Requested</b> 90.0 - Standard Target List 909A - OROFM 200 - (MOD) Local Method 6020B - 7476A 2540C - Cold - Local Method		Field Filled Sample (Yes or No) Perform MS/MSD (Yes or No) 90.0 - Standard Target List 909A - OROFM 200 - (MOD) Local Method 6020B - 7476A 2540C - Cold - Local Method		Total Number of Containers Special Instructions/Note: 180-165402 Chain of Custody		Method of Disposal: <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal By Lab Special Instructions/OC Requirements: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Method of Shipment: Received by: [Signature] Date/Time: 11/15/23 0915 Company: Eurofins	
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant Deliverable Requested: I, II, III, IV, Other (specify)		Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: NO#: Project #: 18023511 SSOW#:		Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: NO#: Project #: 18023511 SSOW#:		Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: NO#: Project #: 18023511 SSOW#:		Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: NO#: Project #: 18023511 SSOW#:	
Empty Kit Requisitioned by: [Signature] Requisitioned by: [Signature] Requisitioned by:		Date/Time: 11/14/23 1730 Date/Time: Date/Time:		Date/Time: 11/15/23 0915 Date/Time: Date/Time:		Date/Time: 11/15/23 0915 Date/Time: Date/Time:		Date/Time: 11/15/23 0915 Date/Time: Date/Time:	
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: S.M.W. 000018		Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: S.M.W. 000018		Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	

**Chain of Custody Record**

<b>Client Information - (Sub Contract Lab)</b> Shipping/Receiving TestAmerica Laboratories, Inc. 13715 Rider Trail North, Earth City, MO, 63045 Phone: 314-298-8568 (Tel) 314-298-8757 (Fax) Email: Project Name: Carbons Creek Steam Electric Station Site: S505W		Sample: Name: Ken Fayers E-Mail: Ken.Fayers@eurofins.com Phone: Accreditations Required (See Note) NELAP - Toxics		Clearing/Testing Note: Site ID Origin Test: Job #: 180-165402-1			
Date Requested: 12/19/2023 (AT Requested Date) PO #: NO #: Project #: 18023511 Site: S505W		Analysis Requested 903 Greener, 2) Standard Target List 904 Greener, 3) Standard Target List 905 Greener, 4) Standard Target List 906 Greener, 5) Standard Target List 907 Greener, 6) Standard Target List 908 Greener, 7) Standard Target List 909 Greener, 8) Standard Target List 910 Greener, 9) Standard Target List 911 Greener, 10) Standard Target List 912 Greener, 11) Standard Target List 913 Greener, 12) Standard Target List 914 Greener, 13) Standard Target List 915 Greener, 14) Standard Target List 916 Greener, 15) Standard Target List 917 Greener, 16) Standard Target List 918 Greener, 17) Standard Target List 919 Greener, 18) Standard Target List 920 Greener, 19) Standard Target List 921 Greener, 20) Standard Target List 922 Greener, 21) Standard Target List 923 Greener, 22) Standard Target List 924 Greener, 23) Standard Target List 925 Greener, 24) Standard Target List 926 Greener, 25) Standard Target List 927 Greener, 26) Standard Target List 928 Greener, 27) Standard Target List 929 Greener, 28) Standard Target List 930 Greener, 29) Standard Target List 931 Greener, 30) Standard Target List 932 Greener, 31) Standard Target List 933 Greener, 32) Standard Target List 934 Greener, 33) Standard Target List 935 Greener, 34) Standard Target List 936 Greener, 35) Standard Target List 937 Greener, 36) Standard Target List 938 Greener, 37) Standard Target List 939 Greener, 38) Standard Target List 940 Greener, 39) Standard Target List 941 Greener, 40) Standard Target List 942 Greener, 41) Standard Target List 943 Greener, 42) Standard Target List 944 Greener, 43) Standard Target List 945 Greener, 44) Standard Target List 946 Greener, 45) Standard Target List 947 Greener, 46) Standard Target List 948 Greener, 47) Standard Target List 949 Greener, 48) Standard Target List 950 Greener, 49) Standard Target List 951 Greener, 50) Standard Target List 952 Greener, 51) Standard Target List 953 Greener, 52) Standard Target List 954 Greener, 53) Standard Target List 955 Greener, 54) Standard Target List 956 Greener, 55) Standard Target List 957 Greener, 56) Standard Target List 958 Greener, 57) Standard Target List 959 Greener, 58) Standard Target List 960 Greener, 59) Standard Target List 961 Greener, 60) Standard Target List 962 Greener, 61) Standard Target List 963 Greener, 62) Standard Target List 964 Greener, 63) Standard Target List 965 Greener, 64) Standard Target List 966 Greener, 65) Standard Target List 967 Greener, 66) Standard Target List 968 Greener, 67) Standard Target List 969 Greener, 68) Standard Target List 970 Greener, 69) Standard Target List 971 Greener, 70) Standard Target List 972 Greener, 71) Standard Target List 973 Greener, 72) Standard Target List 974 Greener, 73) Standard Target List 975 Greener, 74) Standard Target List 976 Greener, 75) Standard Target List 977 Greener, 76) Standard Target List 978 Greener, 77) Standard Target List 979 Greener, 78) Standard Target List 980 Greener, 79) Standard Target List 981 Greener, 80) Standard Target List 982 Greener, 81) Standard Target List 983 Greener, 82) Standard Target List 984 Greener, 83) Standard Target List 985 Greener, 84) Standard Target List 986 Greener, 85) Standard Target List 987 Greener, 86) Standard Target List 988 Greener, 87) Standard Target List 989 Greener, 88) Standard Target List 990 Greener, 89) Standard Target List 991 Greener, 90) Standard Target List 992 Greener, 91) Standard Target List 993 Greener, 92) Standard Target List 994 Greener, 93) Standard Target List 995 Greener, 94) Standard Target List 996 Greener, 95) Standard Target List 997 Greener, 96) Standard Target List 998 Greener, 97) Standard Target List 999 Greener, 98) Standard Target List 1000 Greener, 99) Standard Target List 1001 Greener, 100) Standard Target List		Preservation Codes: M - Issue B - Batch O - ANSO2 P - NaOH D - Nitric Acid E - NaOH G - Acetone H - Acetic Acid I - for J - for K - EDTA L - EDTA V - MCA W - pH 4.5 Z - other (specify) Other:		Special Instructions/Note: Test Number of containers: 2	
Sample Identification - Client ID (Lab ID) FB-1 (180-165402-1) SSP MW-3 (180-165402-2)							
Sample Date: 11/14/23 Sample Time: 15:05 Sample Type (C=Cont, G=Grab): Central Matrix (W=Water, O=Other): Water Preservation Code:							
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Empty Air Pallet/qualified by: Date: 11-17-23 17:03 Signature: [Signature] Requalified by: Date/Time: Requalified by: Date/Time: Custody Seal No. A, Yes, B, No							
Primary Deliverable Rank: 2 Special Instructions/QC Requirements Return To Client: <input type="checkbox"/> <input checked="" type="checkbox"/> Return To Lab Disposal By Lab: <input type="checkbox"/> <input checked="" type="checkbox"/> Disposal By Client Months: Method of Storage: Date/Time: Company: Date/Time: Company: Date/Time: Company: Cooler Temperature, °C and Other Remarks:							

Note: Since laboratory accreditation is subject to change, Eurofins Pittsburgh reserves the right to change the laboratory accreditation. This sample is intended for use as a check of quality. If the laboratory does not currently maintain accreditation in the State of origin listed above for analytes/elements being analyzed, the samples must be shipped back to the Surface Pittsburgh Laboratory of Eurofins Pittsburgh. Any changes to accreditation status should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody, attesting to said compliance to Eurofins Pittsburgh.

**Login Sample Receipt Checklist**

Client: HDR Inc

Job Number: 180-165402-1

**Login Number: 165402**  
**List Number: 1**  
**Creator: Abernathy, Eric L**

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is <= 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?	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



**Login Sample Receipt Checklist**

Client: HDR Inc

Job Number: 180-165402-1

**Login Number: 165402**

**List Number: 2**

**Creator: Pinette, Meadow L**

**List Source: Eurofins St. Louis**

**List Creation: 11/20/23 02:18 PM**

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



Environment Testing

**ANALYTICAL REPORT**

**PREPARED FOR**

Attn: David Vogt  
 HDR Inc  
 17111 Preston Road  
 Suite 200  
 Dallas, Texas 75248-1232

Generated 12/22/2023 4:17:56 PM

**JOB DESCRIPTION**

Gibbons Creek Steam Electric Station

**JOB NUMBER**

180-165499-1





**Job Notes**

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

**Authorization**

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Authorized for release by  
Ken Hayes, Project Manager II  
Ken.Hayes@et.eurofinsus.com  
(615)301-5035



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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Job ID: 180-165499-1

Eurofins Pittsburgh

### Job Narrative 180-165499-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/16/2023 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C

#### Gas Flow Proportional Counter

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

#### Rad

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

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Job ID: 180-165499-2

Eurofins Pittsburgh

### Job Narrative 180-165499-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/16/2023 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following samples were diluted to bring the concentration of target analytes within the calibration range: SSP MW-2 (180-165499-1) and SFL MW-6 (180-165499-2). Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: The following sample was diluted due to the nature of the sample matrix: SFL MW-6 (180-165499-2), SFL MW-5 (180-165499-3) and SFL MW-2 (180-165499-4). 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 6020B: The post digestion spike % recovery for Lithium associated with batch 180-453090 was outside of control limits. The associated sample is: (180-165501-E-1-A PDS).

Method 6020B: The continuing calibration verification (CCV) associated with batch 180-453090 recovered above the upper control limit for Barium, Molybdenum and Antimony. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: SSP MW-2 (180-165499-1), SFL MW-6 (180-165499-2), SFL MW-5 (180-165499-3), SFL MW-2 (180-165499-4), (180-165501-E-1-A), (180-165501-E-1-B MS), (180-165501-E-1-C MSD) and (180-165501-E-1-A SD ^5).

Method 6020B: The continuing calibration verification (CCV) associated with batch 180-453090 recovered above the upper control limit for Beryllium, Molybdenum and Antimony. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (MB 180-452613/1-A).

Method 6020B: The serial dilution performed for the following samples associated with batch 180-453774 was outside control limits: SSP MW-2 (180-165499-1), SFL MW-6 (180-165499-2), SFL MW-5 (180-165499-3), SFL MW-2 (180-165499-4), (LCS 180-452613/2-A) and (180-165501-E-1-A SD ^50)

Method 6020B: The post digestion spike % recovery for Calcium associated with batch 180-453774 was outside of control limits. The associated sample is: (180-165501-E-1-A SD ^5).

Method 6020B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SSP MW-2 (180-165499-1), SFL MW-6 (180-165499-2), SFL MW-5 (180-165499-3), SFL MW-2 (180-165499-4), (180-165501-E-1-A ^10), (180-165501-E-1-B MS ^10), (180-165501-E-1-C MSD ^10), (180-165501-E-1-A PDS ^10) and (180-165501-E-1-A SD ^50). Elevated reporting limits (RLs) are provided.

Method 6020B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SSP MW-2 (180-165499-1), SFL MW-6 (180-165499-2), SFL MW-5 (180-165499-3) and SFL MW-2 (180-165499-4). Elevated reporting limits (RLs) are provided.

Method 6020B: The linear range check (LRC) failed for boron for samples (LCS 180-452613/2-A) and (MB 180-452613/1-A) and results were substantiated by a secondary verification; the Calibration Standard, the CCV. Results are reported, as is, with this

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

### Job ID: 180-165499-2 (Continued)

### Eurofins Pittsburgh

narrative.

Method 6020B: The linear range check (LRC) failed for barium for samples SSP MW-2 (180-165499-1), SFL MW-5 (180-165499-3) and SFL MW-2 (180-165499-4) and results were substantiated by a secondary verification; the Calibration Standard, the LCS, or CCV. Results are reported, as is, with this narrative.

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

#### General Chemistry

Method 2540C\_Calcd: The sample did not reach a stable weight following 3 cycles of heating, cooling, and desiccation. The cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result. SSP MW-2 (180-165499-1)

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

## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

### 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
^4+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
^5+	Linear Range Check (LRC) is outside acceptance limits, high biased.
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.

#### General Chemistry

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit.

#### 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.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

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## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-15-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	07-30-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	01-31-24

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

Eurofins Pittsburgh

## Sample Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-165499-1	SSP MW-2	Water	11/15/23 07:15	11/16/23 10:35
180-165499-2	SFL MW-6	Water	11/15/23 08:00	11/16/23 10:35
180-165499-3	SFL MW-5	Water	11/15/23 08:45	11/16/23 10:35
180-165499-4	SFL MW-2	Water	11/15/23 09:25	11/16/23 10:35



## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**Client Sample ID: SSP MW-2**

Date Collected: 11/15/23 07:15

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165499-1**

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	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 02:53	M1D	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	452655	11/23/23 03:11	M1D	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453774	12/05/23 17:03	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 18:41	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453536	12/01/23 16:43	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454159	12/08/23 20:33	S1Z	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:08	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	15 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			749.76 mL	1.0 g	637928	11/22/23 09:46	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641696	12/21/23 20:53	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			749.76 mL	1.0 g	637931	11/22/23 09:53	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	641696	12/21/23 11:59	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
		Instrument ID: NOEQUIP								

**Client Sample ID: SFL MW-6**

Date Collected: 11/15/23 08:00

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165499-2**

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	EPA 9056A		2.5	1 mL	1 mL	452655	11/23/23 03:29	M1D	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		25	1 mL	1 mL	452655	11/23/23 03:48	M1D	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453774	12/05/23 17:09	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453536	12/01/23 16:54	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454159	12/08/23 20:44	S1Z	EET PIT
		Instrument ID: DORY								

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**Client Sample ID: SFL MW-6**

Date Collected: 11/15/23 08:00

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165499-2**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453536	12/01/23 16:51	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453536	12/01/23 17:44	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454159	12/08/23 20:41	S1Z	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:09	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			749.01 mL	1.0 g	637928	11/22/23 09:46	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641696	12/21/23 20:53	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			749.01 mL	1.0 g	637931	11/22/23 09:53	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	641696	12/21/23 12:00	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
		Instrument ID: NOEQUIP								

**Client Sample ID: SFL MW-5**

Date Collected: 11/15/23 08:45

Date Received: 11/16/23 10:35

**Lab Sample ID: 180-165499-3**

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	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 04:06	M1D	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	452655	11/23/23 04:25	M1D	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453774	12/05/23 17:13	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 18:47	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453536	12/01/23 16:54	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454159	12/08/23 20:44	S1Z	EET PIT
		Instrument ID: NEMO								

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Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-5

Lab Sample ID: 180-165499-3

Date Collected: 11/15/23 08:45

Matrix: Water

Date Received: 11/16/23 10:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:10	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			999.21 mL	1.0 g	637928	11/22/23 09:46	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641696	12/21/23 20:53	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Prep	PrecSep_0			999.21 mL	1.0 g	637931	11/22/23 09:53	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	641696	12/21/23 12:00	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
		Instrument ID: NOEQUIP								

Client Sample ID: SFL MW-2

Lab Sample ID: 180-165499-4

Date Collected: 11/15/23 09:25

Matrix: Water

Date Received: 11/16/23 10:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 05:39	M1D	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	452655	11/23/23 05:57	M1D	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453774	12/05/23 17:15	MRG	EET PIT
		Instrument ID: A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 18:50	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			453536	12/01/23 16:57	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453536	12/01/23 17:53	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454159	12/08/23 20:47	S1Z	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:11	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	15 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
		Instrument ID: NOEQUIP								

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Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-2

Lab Sample ID: 180-165499-4

Date Collected: 11/15/23 09:25

Matrix: Water

Date Received: 11/16/23 10:35

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			994.67 mL	1.0 g	637928	11/22/23 09:46	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641810	12/21/23 21:01	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			994.67 mL	1.0 g	637931	11/22/23 09:53	KAC	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	641810	12/21/23 12:00	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
		Instrument ID: NOEQUIP								

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET PIT

Batch Type: Prep

RJR = Ron Rosenbaum

SJM = Shannon Mueller

Batch Type: Analysis

LWM = Leslie McIntire

M1D = Maureen Donlin

MRG = Mismel Garcia

MTW = Michael Wesoloski

S1Z = Sage Ziviello

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

EMH = Elizabeth Hoerchler

FLC = Fernando Cruz

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SSP MW-2

Lab Sample ID: 180-165499-1

Date Collected: 11/15/23 07:15

Matrix: Water

Date Received: 11/16/23 10:35

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2280		10.0	7.13	mg/L			11/23/23 03:11	10
Fluoride	0.191		0.100	0.0260	mg/L			11/23/23 02:53	1
Sulfate	2210		10.0	7.56	mg/L			11/23/23 03:11	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00541		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:41	1
Barium	0.0216	A5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/08/23 20:38	1
Beryllium	0.0568		0.0100	0.00274	mg/L		11/22/23 07:41	12/01/23 16:48	10
Boron	0.559		0.0800	0.0601	mg/L		11/22/23 07:41	12/08/23 20:38	1
Cadmium	0.00192		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:41	1
Calcium	718		5.00	1.27	mg/L		11/22/23 07:41	12/05/23 17:06	10
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:41	1
Cobalt	0.0643		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:41	1
Molybdenum	<0.000610	A+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:41	1
Lead	0.000451	J	0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:41	1
Antimony	<0.000967	A+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:41	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:41	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:41	1
Lithium	0.809		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:41	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:08	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	6400		66.7	66.7	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.893		0.372	0.381	1.00	0.418	pCi/L	11/22/23 09:46	12/21/23 20:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.4		30 - 110					11/22/23 09:46	12/21/23 20:53	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.63		0.668	0.710	1.00	0.696	pCi/L	11/22/23 09:53	12/21/23 11:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.4		30 - 110					11/22/23 09:53	12/21/23 11:59	1
Y Carrier	82.6		30 - 110					11/22/23 09:53	12/21/23 11:59	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SSP MW-2

Lab Sample ID: 180-165499-1

Date Collected: 11/15/23 07:15

Matrix: Water

Date Received: 11/16/23 10:35

**Method: TAL-STL 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	3.52		0.765	0.806	5.00	0.696	pCi/L		12/21/23 10:29	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-6

Lab Sample ID: 180-165499-2

Date Collected: 11/15/23 08:00

Matrix: Water

Date Received: 11/16/23 10:35

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7020		25.0	17.8	mg/L			11/23/23 03:48	25
Fluoride	1.40		0.250	0.0650	mg/L			11/23/23 03:29	2.5
Sulfate	2260		2.50	1.89	mg/L			11/23/23 03:29	2.5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0433		0.0100	0.00282	mg/L		11/22/23 07:41	12/01/23 16:51	10
Barium	0.0510	J	0.100	0.0314	mg/L		11/22/23 07:41	12/01/23 16:51	10
Beryllium	0.0964		0.0100	0.00274	mg/L		11/22/23 07:41	12/01/23 16:51	10
Boron	0.428		0.0800	0.0601	mg/L		11/22/23 07:41	12/08/23 20:41	1
Cadmium	0.00213		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:44	1
Calcium	1470		5.00	1.27	mg/L		11/22/23 07:41	12/05/23 17:09	10
Chromium	0.0154	J	0.0200	0.0153	mg/L		11/22/23 07:41	12/01/23 16:51	10
Cobalt	0.234		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:44	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:44	1
Lead	0.00264		0.00100	0.000376	mg/L		11/22/23 07:41	12/01/23 17:44	1
Antimony	<0.000967	^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:44	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:44	1
Thallium	0.00437		0.00100	0.000472	mg/L		11/22/23 07:41	12/01/23 17:44	1
Lithium	1.43		0.0500	0.0129	mg/L		11/22/23 07:41	12/01/23 16:51	10

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:09	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	11200		200	200	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	5.31		0.770	0.906	1.00	0.355	pCi/L	11/22/23 09:46	12/21/23 20:53	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	96.9		30 - 110					11/22/23 09:46	12/21/23 20:53	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	17.7		1.46	2.19	1.00	0.599	pCi/L	11/22/23 09:53	12/21/23 12:00	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	96.9		30 - 110					11/22/23 09:53	12/21/23 12:00	1
Y Carrier	83.0		30 - 110					11/22/23 09:53	12/21/23 12:00	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-6

Lab Sample ID: 180-165499-2

Date Collected: 11/15/23 08:00

Matrix: Water

Date Received: 11/16/23 10:35

**Method: TAL-STL 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	23.1		1.65	2.37	5.00	0.599	pCi/L		12/21/23 10:29	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-5

Date Collected: 11/15/23 08:45

Date Received: 11/16/23 10:35

Lab Sample ID: 180-165499-3

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2650		10.0	7.13	mg/L			11/23/23 04:25	10
Fluoride	0.0841	J	0.100	0.0260	mg/L			11/23/23 04:06	1
Sulfate	2180		10.0	7.56	mg/L			11/23/23 04:25	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00231		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:47	1
Barium	0.0172	A5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/08/23 20:44	1
Beryllium	0.00893	J	0.0100	0.00274	mg/L		11/22/23 07:41	12/01/23 16:54	10
Boron	4.53		0.800	0.601	mg/L		11/22/23 07:41	12/01/23 16:54	10
Cadmium	0.00420		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:47	1
Calcium	931		5.00	1.27	mg/L		11/22/23 07:41	12/05/23 17:13	10
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:47	1
Cobalt	0.0455		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:47	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:47	1
Lead	0.000434	J	0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:47	1
Antimony	<0.000967	^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:47	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:47	1
Thallium	0.000992	J	0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:47	1
Lithium	0.751		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:47	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:10	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7540		100	100	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	3.09		0.508	0.579	1.00	0.236	pCi/L	11/22/23 09:46	12/21/23 20:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		30 - 110					11/22/23 09:46	12/21/23 20:53	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	10.9		0.972	1.40	1.00	0.431	pCi/L	11/22/23 09:53	12/21/23 12:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		30 - 110					11/22/23 09:53	12/21/23 12:00	1
Y Carrier	85.6		30 - 110					11/22/23 09:53	12/21/23 12:00	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-5

Date Collected: 11/15/23 08:45

Date Received: 11/16/23 10:35

Lab Sample ID: 180-165499-3

Matrix: Water

**Method: TAL-STL 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	14.0		1.10	1.52	5.00	0.431	pCi/L		12/21/23 10:29	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-2

Lab Sample ID: 180-165499-4

Date Collected: 11/15/23 09:25

Matrix: Water

Date Received: 11/16/23 10:35

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2420		10.0	7.13	mg/L			11/23/23 05:57	10
Fluoride	0.196		0.100	0.0260	mg/L			11/23/23 05:39	1
Sulfate	1570		10.0	7.56	mg/L			11/23/23 05:57	10

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00213		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:50	1
Barium	0.0211	A5+	0.0100	0.00314	mg/L		11/22/23 07:41	12/08/23 20:47	1
Beryllium	0.00179		0.00100	0.000274	mg/L		11/22/23 07:41	12/08/23 20:47	1
Boron	0.965		0.800	0.601	mg/L		11/22/23 07:41	12/01/23 16:57	10
Cadmium	0.00122		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:50	1
Calcium	892		5.00	1.27	mg/L		11/22/23 07:41	12/05/23 17:16	10
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:50	1
Cobalt	0.0219		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:50	1
Molybdenum	0.000760	J	0.00500	0.000610	mg/L		11/22/23 07:41	12/01/23 17:50	1
Lead	0.00118		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:50	1
Antimony	<0.000967	A+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:50	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:50	1
Thallium	0.000658	J	0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:50	1
Lithium	0.492		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:50	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	6290		66.7	66.7	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.60		0.397	0.422	1.00	0.328	pCi/L	11/22/23 09:46	12/21/23 21:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		30 - 110					11/22/23 09:46	12/21/23 21:01	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	6.32		0.787	0.979	1.00	0.469	pCi/L	11/22/23 09:53	12/21/23 12:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.3		30 - 110					11/22/23 09:53	12/21/23 12:00	1
Y Carrier	81.5		30 - 110					11/22/23 09:53	12/21/23 12:00	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Client Sample ID: SFL MW-2

Lab Sample ID: 180-165499-4

Date Collected: 11/15/23 09:25

Matrix: Water

Date Received: 11/16/23 10:35

**Method: TAL-STL 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	7.92		0.881	1.07	5.00	0.469	pCi/L		12/21/23 10:29	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**Method: EPA 9056A - Anions, Ion Chromatography**

Lab Sample ID: MB 180-452655/37  
Matrix: Water  
Analysis Batch: 452655

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			11/23/23 00:43	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/23/23 00:43	1
Sulfate	<0.756		1.00	0.756	mg/L			11/23/23 00:43	1

Lab Sample ID: LCS 180-452655/38  
Matrix: Water  
Analysis Batch: 452655

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	49.54		mg/L		99	80 - 120
Fluoride	2.50	2.292		mg/L		92	80 - 120
Sulfate	50.0	46.84		mg/L		94	80 - 120

Lab Sample ID: 180-165449-D-1 MS  
Matrix: Water  
Analysis Batch: 452655

Client Sample ID: Matrix Spike  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Chloride	53.3		50.0	107.8		mg/L		109	80 - 120
Fluoride	0.0476	J	2.50	2.757		mg/L		108	80 - 120
Sulfate	17.3		50.0	71.69		mg/L		109	80 - 120

Lab Sample ID: 180-165449-D-1 MSD  
Matrix: Water  
Analysis Batch: 452655

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Chloride	53.3		50.0	108.1		mg/L		110	80 - 120	0	15
Fluoride	0.0476	J	2.50	2.782		mg/L		109	80 - 120	1	15
Sulfate	17.3		50.0	72.05		mg/L		109	80 - 120	0	15

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: MB 180-452613/1-A  
Matrix: Water  
Analysis Batch: 453090

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:30	1
Barium	<0.00314		0.0100	0.00314	mg/L		11/22/23 07:41	11/28/23 18:30	1
Beryllium	<0.000274	^+	0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 18:30	1
Boron	<0.0601	^5- ^+	0.0800	0.0601	mg/L		11/22/23 07:41	11/28/23 18:30	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:30	1
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 18:30	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:30	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:30	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:30	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:30	1
Antimony	<0.000967	^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:30	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:30	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-452613/1-A  
Matrix: Water  
Analysis Batch: 453090

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:30	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:30	1

Lab Sample ID: MB 180-452613/1-A  
Matrix: Water  
Analysis Batch: 453536

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	12/01/23 15:16	1
Barium	<0.00314		0.0100	0.00314	mg/L		11/22/23 07:41	12/01/23 15:16	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/22/23 07:41	12/01/23 15:16	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/22/23 07:41	12/01/23 15:16	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	12/01/23 15:16	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	12/01/23 15:16	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	12/01/23 15:16	1

Lab Sample ID: MB 180-452613/1-A  
Matrix: Water  
Analysis Batch: 453774

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	12/05/23 16:59	1

Lab Sample ID: LCS 180-452613/2-A  
Matrix: Water  
Analysis Batch: 453090

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Arsenic	1.00	1.039		mg/L		104	80 - 120
Barium	1.00	1.069		mg/L		107	80 - 120
Beryllium	0.500	0.5475	^+	mg/L		109	80 - 120
Boron	0.250	0.2769	^5- ^+	mg/L		111	80 - 120
Cadmium	0.500	0.5380		mg/L		108	80 - 120
Calcium	25.0	27.73		mg/L		111	80 - 120
Chromium	0.500	0.5152		mg/L		103	80 - 120
Cobalt	0.500	0.5327		mg/L		107	80 - 120
Molybdenum	0.500	0.5498	^+	mg/L		110	80 - 120
Lead	0.500	0.5287		mg/L		106	80 - 120
Antimony	0.250	0.2921	^+	mg/L		117	80 - 120
Selenium	1.00	1.074		mg/L		107	80 - 120
Thallium	1.00	1.074		mg/L		107	80 - 120
Lithium	0.500	0.5335		mg/L		107	80 - 120

Lab Sample ID: LCS 180-452613/2-A  
Matrix: Water  
Analysis Batch: 453536

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452613

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Arsenic	1.00	1.129		mg/L		113	80 - 120
Barium	1.00	1.112		mg/L		111	80 - 120

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-452613/2-A Matrix: Water Analysis Batch: 453536		Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 452613							
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Beryllium	0.500	0.5403		mg/L		108	80 - 120		
Boron	0.250	0.2355		mg/L		94	80 - 120		
Lead	0.500	0.5619		mg/L		112	80 - 120		
Thallium	1.00	1.128		mg/L		113	80 - 120		
Lithium	0.500	0.5284		mg/L		106	80 - 120		

Lab Sample ID: LCS 180-452613/2-A Matrix: Water Analysis Batch: 453774		Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 452613							
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Calcium	25.0	27.75		mg/L		111	80 - 120		

Lab Sample ID: 180-165501-E-1-B MS Matrix: Water Analysis Batch: 453090		Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 452613							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00297		1.00	0.9458		mg/L		94	75 - 125
Cadmium	0.00507		0.500	0.5418		mg/L		107	75 - 125
Chromium	<0.00153		0.500	0.4477		mg/L		90	75 - 125
Cobalt	0.0518		0.500	0.5934		mg/L		108	75 - 125
Lead	0.0131		0.500	0.4547		mg/L		88	75 - 125
Selenium	0.00118 J		1.00	1.017		mg/L		102	75 - 125
Thallium	0.00407		1.00	0.8949		mg/L		89	75 - 125
Lithium	0.290		0.500	0.7965		mg/L		101	75 - 125

Lab Sample ID: 180-165501-E-1-B MS Matrix: Water Analysis Batch: 453774		Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 452613							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	339		25.0	557.9	4	mg/L		877	75 - 125

Lab Sample ID: 180-165501-E-1-B MS ^10 Matrix: Water Analysis Batch: 453536		Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 452613							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.00700 J		1.00	1.111		mg/L		110	75 - 125
Boron	4.82		0.250	5.081	4	mg/L		104	75 - 125
Cadmium	0.00494 J		0.500	0.4917		mg/L		97	75 - 125
Chromium	<0.0153		0.500	0.5233		mg/L		105	75 - 125
Cobalt	0.0507		0.500	0.5383		mg/L		98	75 - 125
Molybdenum	<0.00610		0.500	0.4743		mg/L		95	75 - 125
Lead	0.0171		0.500	0.5567		mg/L		108	75 - 125
Antimony	<0.00967		0.250	0.2876		mg/L		115	75 - 125
Thallium	0.00553 J		1.00	1.079		mg/L		107	75 - 125

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-165501-E-1-B MS ^10 Matrix: Water Analysis Batch: 453774		Client Sample ID: Matrix Spike Prep Type: Total Recoverable Prep Batch: 452613							
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	625		25.0	644.9	4	mg/L		78	75 - 125

Lab Sample ID: 180-165501-E-1-C MSD Matrix: Water Analysis Batch: 453090		Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 452613									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	0.00297		1.00	0.9790		mg/L		98	75 - 125	3	20
Cadmium	0.00507		0.500	0.5577		mg/L		111	75 - 125	3	20
Chromium	<0.00153		0.500	0.4675		mg/L		94	75 - 125	4	20
Cobalt	0.0518		0.500	0.6124		mg/L		112	75 - 125	3	20
Lead	0.0131		0.500	0.4680		mg/L		91	75 - 125	3	20
Selenium	0.00118 J		1.00	0.9966		mg/L		100	75 - 125	2	20
Thallium	0.00407		1.00	0.9156		mg/L		91	75 - 125	2	20
Lithium	0.290		0.500	0.8319		mg/L		108	75 - 125	4	20

Lab Sample ID: 180-165501-E-1-C MSD Matrix: Water Analysis Batch: 453774		Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 452613									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Calcium	339		25.0	569.0	4	mg/L		921	75 - 125	2	20

Lab Sample ID: 180-165501-E-1-C MSD ^10 Matrix: Water Analysis Batch: 453536		Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 452613									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	0.00700 J		1.00	1.125		mg/L		112	75 - 125	1	20
Boron	4.82		0.250	5.823	4	mg/L		401	75 - 125	14	20
Cadmium	0.00494 J		0.500	0.4953		mg/L		98	75 - 125	1	20
Chromium	<0.0153		0.500	0.5322		mg/L		106	75 - 125	2	20
Cobalt	0.0507		0.500	0.5469		mg/L		99	75 - 125	2	20
Molybdenum	<0.00610		0.500	0.4831		mg/L		97	75 - 125	2	20
Lead	0.0171		0.500	0.5666		mg/L		110	75 - 125	2	20
Antimony	<0.00967		0.250	0.2921		mg/L		117	75 - 125	2	20
Thallium	0.00553 J		1.00	1.098		mg/L		109	75 - 125	2	20

Lab Sample ID: 180-165501-E-1-C MSD ^10 Matrix: Water Analysis Batch: 453774		Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable Prep Batch: 452613									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Calcium	625		25.0	638.0	4	mg/L		51	75 - 125	1	20

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**Method: EPA 7470A - Mercury (CVAA)**

Lab Sample ID: MB 180-452654/1-A  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:02	1

Lab Sample ID: LCS 180-452654/2-A  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00250	0.002282		mg/L		91	80 - 120

Lab Sample ID: 180-165447-E-5-C MS  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	<0.000130		0.00100	0.0008040		mg/L		80	75 - 125

Lab Sample ID: 180-165447-E-5-D MSD  
Matrix: Water  
Analysis Batch: 452853

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 452654

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	<0.000130		0.00100	0.0008100		mg/L		81	75 - 125	1	20

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

Lab Sample ID: MB 180-452584/1  
Matrix: Water  
Analysis Batch: 452584

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	<10.0		10.0	10.0	mg/L			11/21/23 18:31	1

Lab Sample ID: LCS 180-452584/2  
Matrix: Water  
Analysis Batch: 452584

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	336	296.0		mg/L		88	85 - 115

Lab Sample ID: 180-165485-B-3 DU  
Matrix: Water  
Analysis Batch: 452584

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	108		101.0		mg/L		NC	10

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

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

Lab Sample ID: 180-165485-B-9 DU  
Matrix: Water  
Analysis Batch: 452584

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	94.0		83.00	F3	mg/L		12	10

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

Lab Sample ID: MB 160-637928/1-A  
Matrix: Water  
Analysis Batch: 641696

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 637928

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03703	U	0.146	0.146	1.00	0.283	pCi/L	11/22/23 09:46	12/21/23 19:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		30 - 110					11/22/23 09:46	12/21/23 19:21	1

Lab Sample ID: LCS 160-637928/2-A  
Matrix: Water  
Analysis Batch: 641696

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 637928

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.928		1.26	1.00	0.249	pCi/L	88	75 - 125
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	98.2		30 - 110						

Lab Sample ID: 752-13863-V-1-A DU  
Matrix: Water  
Analysis Batch: 641810

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 637928

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.913		0.7045		0.313	1.00	0.388	pCi/L	0.32	1
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	94.1		30 - 110							

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

Lab Sample ID: MB 160-637931/1-A  
Matrix: Water  
Analysis Batch: 641696

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 637931

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5670		0.346	0.350	1.00	0.505	pCi/L	11/22/23 09:53	12/21/23 11:55	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

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

Lab Sample ID: MB 160-637931/1-A  
Matrix: Water  
Analysis Batch: 641696

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 637931

Carrier	MB MB		Limits
	%Yield	Qualifier	
Ba Carrier	101		30 - 110
Y Carrier	80.7		30 - 110

Prepared	Analyzed	Dil Fac
11/22/23 09:53	12/21/23 11:55	1
11/22/23 09:53	12/21/23 11:55	1

Lab Sample ID: LCS 160-637931/2-A  
Matrix: Water  
Analysis Batch: 641812

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 637931

Analyte	Spike Added	LCS LCS		Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
		Result	Qual						
Radium-228	7.63	7.158		1.28	1.00	0.906	pCi/L	94	75 - 125

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Ba Carrier	98.2		30 - 110
Y Carrier	80.0		30 - 110

Lab Sample ID: 752-13863-V-1-B DU  
Matrix: Water  
Analysis Batch: 641696

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 637931

Analyte	Sample Sample		DU DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
	Result	Qual	Result	Qual						
Radium-228	1.79		2.203		0.581	1.00	0.562	pCi/L	0.35	1

Carrier	DU DU		Limits
	%Yield	Qualifier	
Ba Carrier	94.1		30 - 110
Y Carrier	77.8		30 - 110

**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**HPLC/IC**

**Analysis Batch: 452655**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total/NA	Water	EPA 9056A	
180-165499-1	SSP MW-2	Total/NA	Water	EPA 9056A	
180-165499-2	SFL MW-6	Total/NA	Water	EPA 9056A	
180-165499-2	SFL MW-6	Total/NA	Water	EPA 9056A	
180-165499-3	SFL MW-5	Total/NA	Water	EPA 9056A	
180-165499-3	SFL MW-5	Total/NA	Water	EPA 9056A	
180-165499-4	SFL MW-2	Total/NA	Water	EPA 9056A	
180-165499-4	SFL MW-2	Total/NA	Water	EPA 9056A	
MB 180-452655/37	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452655/38	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165449-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-165449-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 452613**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total Recoverable	Water	3005A	
180-165499-2	SFL MW-6	Total Recoverable	Water	3005A	
180-165499-3	SFL MW-5	Total Recoverable	Water	3005A	
180-165499-4	SFL MW-2	Total Recoverable	Water	3005A	
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-165501-E-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-165501-E-1-B MS *10	Matrix Spike	Total Recoverable	Water	3005A	
180-165501-E-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
180-165501-E-1-C MSD *10	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

**Prep Batch: 452654**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total/NA	Water	7470A	
180-165499-2	SFL MW-6	Total/NA	Water	7470A	
180-165499-3	SFL MW-5	Total/NA	Water	7470A	
180-165499-4	SFL MW-2	Total/NA	Water	7470A	
MB 180-452654/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-452654/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-165447-E-5-C MS	Matrix Spike	Total/NA	Water	7470A	
180-165447-E-5-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 452853**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total/NA	Water	EPA 7470A	452654
180-165499-2	SFL MW-6	Total/NA	Water	EPA 7470A	452654
180-165499-3	SFL MW-5	Total/NA	Water	EPA 7470A	452654
180-165499-4	SFL MW-2	Total/NA	Water	EPA 7470A	452654
MB 180-452654/1-A	Method Blank	Total/NA	Water	EPA 7470A	452654
LCS 180-452654/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	452654
180-165447-E-5-C MS	Matrix Spike	Total/NA	Water	EPA 7470A	452654
180-165447-E-5-D MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	452654



**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**Metals**

**Analysis Batch: 453090**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total Recoverable	Water	EPA 6020B	452613
180-165499-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	452613
180-165499-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	452613
180-165499-4	SFL MW-2	Total Recoverable	Water	EPA 6020B	452613
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452613
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-B MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	452613

**Analysis Batch: 453536**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total Recoverable	Water	EPA 6020B	452613
180-165499-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	452613
180-165499-3	SFL MW-6	Total Recoverable	Water	EPA 6020B	452613
180-165499-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	452613
180-165499-4	SFL MW-2	Total Recoverable	Water	EPA 6020B	452613
180-165499-4	SFL MW-2	Total Recoverable	Water	EPA 6020B	452613
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452613
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-B MS ^10	Matrix Spike	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-C MSD ^10	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	452613

**Analysis Batch: 453774**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total Recoverable	Water	EPA 6020B	452613
180-165499-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	452613
180-165499-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	452613
180-165499-4	SFL MW-2	Total Recoverable	Water	EPA 6020B	452613
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452613
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-B MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-B MS ^10	Matrix Spike	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	452613
180-165501-E-1-C MSD ^10	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	452613

**Analysis Batch: 454159**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total Recoverable	Water	EPA 6020B	452613
180-165499-2	SFL MW-6	Total Recoverable	Water	EPA 6020B	452613
180-165499-3	SFL MW-5	Total Recoverable	Water	EPA 6020B	452613
180-165499-4	SFL MW-2	Total Recoverable	Water	EPA 6020B	452613

**General Chemistry**

**Analysis Batch: 452584**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total/NA	Water	SM 2540C	
180-165499-2	SFL MW-6	Total/NA	Water	SM 2540C	
180-165499-3	SFL MW-5	Total/NA	Water	SM 2540C	
180-165499-4	SFL MW-2	Total/NA	Water	SM 2540C	
MB 180-452584/1	Method Blank	Total/NA	Water	SM 2540C	

**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165499-1

**General Chemistry (Continued)**

**Analysis Batch: 452584 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-452584/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165485-B-3 DU	Duplicate	Total/NA	Water	SM 2540C	
180-165485-B-9 DU	Duplicate	Total/NA	Water	SM 2540C	

**Rad**

**Prep Batch: 637928**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total/NA	Water	PrecSep-21	
180-165499-2	SFL MW-6	Total/NA	Water	PrecSep-21	
180-165499-3	SFL MW-5	Total/NA	Water	PrecSep-21	
180-165499-4	SFL MW-2	Total/NA	Water	PrecSep-21	
MB 180-637928/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 180-637928/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
752-13863-V-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

**Prep Batch: 637931**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165499-1	SSP MW-2	Total/NA	Water	PrecSep_0	
180-165499-2	SFL MW-6	Total/NA	Water	PrecSep_0	
180-165499-3	SFL MW-5	Total/NA	Water	PrecSep_0	
180-165499-4	SFL MW-2	Total/NA	Water	PrecSep_0	
MB 180-637931/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 180-637931/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
752-13863-V-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

<b>Client Information</b>		Sampler: Will Nicholson Phone: 706-252-1418		Lab P/N: Hayes, Ken E-Mail: Ken.Hayes@Eurofinsat.com		COC No: 180-67956-13428.2 Page: _____ of _____ Job #:	
Client Contact: David Vogt (Will Nicholson) Company: HDR Inc		Due Date Requested: TAT Requested (days): Compliance Project: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> PO #: WO #: Project Name: Gibbons Creek Steam Electric Station Site:		State of Origin: TX E-MAIL: Ken.Hayes@Eurofinsat.com		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - NaOH E - NH4SCN F - NaOH G - Ammonio Acid H - Nitro Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - NaOH P - NaOH Q - NaOH R - Na2SO3 S - H2SO4 T - Ammonio Acid U - Acetone V - MCAA W - pH 4.5 X - other (specify) Z - other (specify) Other:	
Address: 17171 Preston Road, Suite 200 City: Dallas State: TX Zip: 75248-1232 Phone: 972-960-4461 (Tel) Email: david.vogt@hdmco.com (william.nicholson@hdrinc.com) Project Name: Gibbons Creek Steam Electric Station Site:		Analysis Requested: 904 - Standard Target List 905A - Standard Target List 906A - ORFPA 200 - (MOD) Local Method 6020B, 7470A 2540C - Cold - Local Method		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 903 - Standard Target List 904 - Standard Target List 905A - ORFPA 200 - (MOD) Local Method 6020B, 7470A 2540C - Cold - Local Method		Special Instructions Note: Total Number of containers: 5 Special Instructions Note:	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Identification SSP MW-2 SFL MW-6 SFL MW-5 SFL MW-2		Sample Type (C-comp, G-grab, I-incident, A-ambient) Sample Time Sample Date Matrix (None, Blank, Overst, Incident, Amb)		Special Instructions/OC Requirements: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/OC Requirements:	
Empty Kit Requisitioned by: Requisitioned by: [Signature] Requisitioned by: [Signature] Requisitioned by: [Signature]		Date/Time Date/Time Date/Time		Date/Time Date/Time Date/Time		Method of Disposal: Date/Time Date/Time Date/Time	
Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Custody Seal No.:		Custody Seal No.:		Ver: 01/16/2019	

**Login Sample Receipt Checklist**

Client: HDR Inc

Job Number: 180-165499-1

**Login Number: 165499**  
**List Number: 1**  
**Creator: Abernathy, Eric L**

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is <= 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?	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**Login Sample Receipt Checklist**

Client: HDR Inc

Job Number: 180-165499-1

**Login Number: 165499**

**List Number: 2**

**Creator: Pinette, Meadow L**

**List Source: Eurofins St. Louis**

**List Creation: 11/21/23 04:30 PM**

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



Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
 HDR Inc  
 17111 Preston Road  
 Suite 200  
 Dallas, Texas 75248-1232

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## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-165500-1





**Job Notes**

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PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

**Authorization**

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Authorized for release by  
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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

Job ID: 180-165500-1

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### Job Narrative 180-165500-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/16/2023 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C

#### Gas Flow Proportional Counter

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

#### Rad

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

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

Job ID: 180-165500-2

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### Job Narrative 180-165500-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/16/2023 10:35 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following sample was diluted due to the nature of the sample matrix: MNW-18 (180-165500-2). 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 6020B: The continuing calibration verification (CCV) associated with batch 180-453090 recovered above the upper control limit for Barium, Beryllium, Molybdenum and Antimony. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: FB-2 (180-165500-1), MNW-18 (180-165500-2), (LCS 180-452613/2-A), (MB 180-452613/1-A), (180-165501-E-1-A), (180-165501-E-1-B MS), (180-165501-E-1-C MSD), (180-165501-E-1-A PDS) and (180-165501-E-1-A SD ^5).

Method 6020B: The post digestion spike % recovery for Beryllium, Molybdenum and Antimony associated with batch 180-453090 was outside of control limits. The associated sample is: (180-165501-E-1-A PDS).

Method 6020B: The linear range check (LRC) failed for boron for samples (LCS 180-452613/2-A) and (MB 180-452613/1-A) and results were substantiated by a secondary verification; the Calibration Standard, the CCV. Results are reported, as is, with this narrative.

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

#### General Chemistry

Method 2540C\_Calcd: The sample did not reach a stable weight following 3 cycles of heating, cooling, and desiccation. The cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result.

MNW-18 (180-165500-2)

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

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## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

### 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
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
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.
π	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

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## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

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## Accreditation/Certification Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	01-31-24

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

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## Sample Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-165500-1	FB-2	Water	11/15/23 12:45	11/16/23 10:35
180-165500-2	MNW-18	Water	11/15/23 13:55	11/16/23 10:35

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12/27/2023

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

## Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

Client Sample ID: FB-2

Lab Sample ID: 180-165500-1

Date Collected: 11/15/23 12:45

Matrix: Water

Date Received: 11/16/23 10:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452655	11/23/23 06:34	M1D	EET PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 18:52	MRG	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454159	12/08/23 20:51	S1Z	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:16	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			991.65 mL	1.0 g	637925	11/22/23 09:37	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641696	12/21/23 18:33	FLC	EET SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			991.65 mL	1.0 g	637927	11/22/23 09:45	KAC	EET SL
Total/NA	Analysis	904.0		1			641811	12/21/23 11:40	FLC	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			642146	12/27/23 12:23	EMH	EET SL
Instrument ID: NOEQUIP										

Client Sample ID: MNW-18

Lab Sample ID: 180-165500-2

Date Collected: 11/15/23 13:55

Matrix: Water

Date Received: 11/16/23 10:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5	1 mL	1 mL	452655	11/23/23 06:16	M1D	EET PIT
Instrument ID: INTEGRION										
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			453090	11/28/23 18:55	MRG	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	452613	11/22/23 07:41	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			454159	12/08/23 20:54	S1Z	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	452654	11/22/23 09:58	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 15:17	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	452584	11/21/23 18:31	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			999.02 mL	1.0 g	637925	11/22/23 09:37	KAC	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	641696	12/21/23 18:34	FLC	EET SL
Instrument ID: GFPCRED										



**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

**Client Sample ID: MNW-18**

**Lab Sample ID: 180-165500-2**

Date Collected: 11/15/23 13:55

Matrix: Water

Date Received: 11/16/23 10:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			999.02 mL	1.0 g	637927	11/22/23 09:45	KAC	EET SL
Total/NA	Analysis	904.0		1			641811	12/21/23 11:40	FLC	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			642146	12/27/23 12:23	EMH	EET SL
		Instrument ID: NOEQUIP								

**Laboratory References:**

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

**Analyst References:**

Lab: EET PIT

Batch Type: Prep

RJR = Ron Rosenbaum

SJM = Shannon Mueller

Batch Type: Analysis

LWM = Leslie McIntire

M1D = Maureen Donlin

MRG = Mismel Garcia

MTW = Michael Wesoloski

S1Z = Sage Ziviello

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

EMH = Elizabeth Hoerchler

FLC = Fernando Cruz

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

**Client Sample ID: FB-2**

**Lab Sample ID: 180-165500-1**

Date Collected: 11/15/23 12:45

Matrix: Water

Date Received: 11/16/23 10:35

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L		11/23/23 06:34	11/23/23 06:34	1
Fluoride	0.0298	J	0.100	0.0260	mg/L		11/23/23 06:34	11/23/23 06:34	1
Sulfate	<0.756		1.00	0.756	mg/L		11/23/23 06:34	11/23/23 06:34	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:52	1
Barium	<0.00314	^+	0.0100	0.00314	mg/L		11/22/23 07:41	11/28/23 18:52	1
Beryllium	<0.000274	^+	0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 18:52	1
Boron	<0.0601		0.0800	0.0601	mg/L		11/22/23 07:41	12/08/23 20:51	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:52	1
Calcium	0.213	J	0.500	0.127	mg/L		11/22/23 07:41	11/28/23 18:52	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:52	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:52	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:52	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:52	1
Antimony	<0.000967	^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:52	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:52	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:52	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:52	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	<10.0		10.0	10.0	mg/L		11/21/23 18:31	11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0905	U	0.159	0.159	1.00	0.282	pCi/L	11/22/23 09:37	12/21/23 18:33	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.4		30 - 110					11/22/23 09:37	12/21/23 18:33	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.254	U	0.352	0.352	1.00	0.590	pCi/L	11/22/23 09:45	12/21/23 11:40	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	97.4		30 - 110					11/22/23 09:45	12/21/23 11:40	1
Y Carrier	69.5		30 - 110					11/22/23 09:45	12/21/23 11:40	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

**Client Sample ID: FB-2**

**Lab Sample ID: 180-165500-1**

Date Collected: 11/15/23 12:45

Matrix: Water

Date Received: 11/16/23 10:35

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.344	U	0.386	0.386	5.00	0.590	pCi/L		12/27/23 12:23	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

**Client Sample ID: MNW-18**

**Lab Sample ID: 180-165500-2**

Date Collected: 11/15/23 13:55

Matrix: Water

Date Received: 11/16/23 10:35

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	216		2.50	1.78	mg/L			11/23/23 06:16	2.5
Fluoride	0.185	J	0.250	0.0650	mg/L			11/23/23 06:16	2.5
Sulfate	748		2.50	1.89	mg/L			11/23/23 06:16	2.5

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00114		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:55	1
Barium	0.00541	J ^+	0.0100	0.00314	mg/L		11/22/23 07:41	11/28/23 18:55	1
Beryllium	<0.000274	^+	0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 18:55	1
Boron	0.321		0.0800	0.0601	mg/L		11/22/23 07:41	12/08/23 20:54	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:55	1
Calcium	159		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 18:55	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:55	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:55	1
Molybdenum	<0.000610	^+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:55	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:55	1
Antimony	0.00158	J ^+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:55	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:55	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:55	1
Lithium	0.252		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:55	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1710		20.0	20.0	mg/L			11/21/23 18:31	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0726	U	0.156	0.157	1.00	0.285	pCi/L	11/22/23 09:37	12/21/23 18:34	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	102		30 - 110					11/22/23 09:37	12/21/23 18:34	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.686		0.373	0.378	1.00	0.522	pCi/L	11/22/23 09:45	12/21/23 11:40	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	102		30 - 110					11/22/23 09:45	12/21/23 11:40	1
Y Carrier	69.2		30 - 110					11/22/23 09:45	12/21/23 11:40	1

### Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

Client Sample ID: MNW-18

Lab Sample ID: 180-165500-2

Date Collected: 11/15/23 13:55

Matrix: Water

Date Received: 11/16/23 10:35

Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.759		0.404	0.409	5.00	0.522	pCi/L		12/27/23 12:23	1

### QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-452655/37

Matrix: Water

Analysis Batch: 452655

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			11/23/23 00:43	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/23/23 00:43	1
Sulfate	<0.756		1.00	0.756	mg/L			11/23/23 00:43	1

Lab Sample ID: LCS 180-452655/38

Matrix: Water

Analysis Batch: 452655

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	49.54		mg/L		99	80 - 120
Fluoride	2.50	2.292		mg/L		92	80 - 120
Sulfate	50.0	46.84		mg/L		94	80 - 120

Method: EPA 6020B - Metals (ICP/MS)

Lab Sample ID: MB 180-452613/1-A

Matrix: Water

Analysis Batch: 453090

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 452613

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/22/23 07:41	11/28/23 18:30	1
Barium	<0.00314		0.0100	0.00314	mg/L		11/22/23 07:41	11/28/23 18:30	1
Beryllium	<0.000274	A+	0.00100	0.000274	mg/L		11/22/23 07:41	11/28/23 18:30	1
Boron	<0.0601	A5- A+	0.0800	0.0601	mg/L		11/22/23 07:41	11/28/23 18:30	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/22/23 07:41	11/28/23 18:30	1
Calcium	<0.127		0.500	0.127	mg/L		11/22/23 07:41	11/28/23 18:30	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/22/23 07:41	11/28/23 18:30	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/22/23 07:41	11/28/23 18:30	1
Molybdenum	<0.000610	A+	0.00500	0.000610	mg/L		11/22/23 07:41	11/28/23 18:30	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/22/23 07:41	11/28/23 18:30	1
Antimony	<0.000967	A+	0.00200	0.000967	mg/L		11/22/23 07:41	11/28/23 18:30	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/22/23 07:41	11/28/23 18:30	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/22/23 07:41	11/28/23 18:30	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/22/23 07:41	11/28/23 18:30	1

Lab Sample ID: LCS 180-452613/2-A

Matrix: Water

Analysis Batch: 453090

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 452613

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Arsenic	1.00	1.039		mg/L		104	80 - 120
Barium	1.00	1.069		mg/L		107	80 - 120
Beryllium	0.500	0.5475	A+	mg/L		109	80 - 120
Boron	0.250	0.2769	A5- A+	mg/L		111	80 - 120
Cadmium	0.500	0.5380		mg/L		108	80 - 120
Calcium	25.0	27.73		mg/L		111	80 - 120
Chromium	0.500	0.5152		mg/L		103	80 - 120
Cobalt	0.500	0.5327		mg/L		107	80 - 120
Molybdenum	0.500	0.5498	A+	mg/L		110	80 - 120

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	Client Sample ID: Lab Control Sample	
								Prep Type: Total Recoverable	Prep Batch: 452613
Lead	0.500	0.5287		mg/L		106	80 - 120		
Antimony	0.250	0.2921	^+	mg/L		117	80 - 120		
Selenium	1.00	1.074		mg/L		107	80 - 120		
Thallium	1.00	1.074		mg/L		107	80 - 120		
Lithium	0.500	0.5335		mg/L		107	80 - 120		

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	Client Sample ID: Method Blank	
										Prep Type: Total/NA	Prep Batch: 452654
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:58	11/27/23 15:02	1		

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	Client Sample ID: Lab Control Sample	
								Prep Type: Total/NA	Prep Batch: 452654
Mercury	0.00250	0.002282		mg/L		91	80 - 120		

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	Client Sample ID: Method Blank	
										Prep Type: Total/NA	Prep Batch: 452584
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			11/21/23 18:31	1		

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	Client Sample ID: Lab Control Sample	
								Prep Type: Total/NA	Prep Batch: 452584
Total Dissolved Solids	336	296.0		mg/L		88	85 - 115		

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

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	Client Sample ID: Method Blank	
											Prep Type: Total/NA	Prep Batch: 637925
Radium-226	0.0000	U	0.126	0.126	1.00	0.264	pCi/L	11/22/23 09:37	12/21/23 18:33	1		

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110	11/22/23 09:37	12/21/23 18:33	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

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

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	Client Sample ID: Lab Control Sample	
										Prep Type: Total/NA	Prep Batch: 637925
Radium-226	11.3	10.41		1.30	1.00	0.272	pCi/L	92	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		30 - 110

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit	Client Sample ID: FB-2	
											Prep Type: Total/NA	Prep Batch: 637925
Radium-226	0.0905	U	0.06024	U	0.156	1.00	0.290	pCi/L	0.1	1		

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	101		30 - 110

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

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	Client Sample ID: Method Blank	
											Prep Type: Total/NA	Prep Batch: 637927
Radium-228	0.2575	U	0.254	0.255	1.00	0.406	pCi/L	11/22/23 09:45	12/21/23 11:40	1		

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110	11/22/23 09:45	12/21/23 11:40	1
Y Carrier	82.2		30 - 110	11/22/23 09:45	12/21/23 11:40	1

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	Client Sample ID: Lab Control Sample	
										Prep Type: Total/NA	Prep Batch: 637927
Radium-228	7.63	7.612		1.07	1.00	0.408	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		30 - 110
Y Carrier	80.4		30 - 110

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### QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

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

Lab Sample ID: 180-165500-1 DU  
Matrix: Water  
Analysis Batch: 641811

Client Sample ID: FB-2  
Prep Type: Total/NA  
Prep Batch: 637927

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.254	U	0.2385	U	0.366	1.00	0.619	pCi/L	0.02	1

Carrier	%Yield	DU Qualifier	DU Limits
Ba Carrier	101		30 - 110
Y Carrier	73.3		30 - 110

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### QC Association Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165500-1

#### HPLC/IC

##### Analysis Batch: 452655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165500-1	FB-2	Total/NA	Water	EPA 9056A	
180-165500-2	MNW-18	Total/NA	Water	EPA 9056A	
MB 180-452655/37	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452655/38	Lab Control Sample	Total/NA	Water	EPA 9056A	

#### Metals

##### Prep Batch: 452613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165500-1	FB-2	Total Recoverable	Water	3005A	
180-165500-2	MNW-18	Total Recoverable	Water	3005A	
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

##### Prep Batch: 452654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165500-1	FB-2	Total/NA	Water	7470A	
180-165500-2	MNW-18	Total/NA	Water	7470A	
MB 180-452654/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-452654/2-A	Lab Control Sample	Total/NA	Water	7470A	

##### Analysis Batch: 452853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165500-1	FB-2	Total/NA	Water	EPA 7470A	452654
180-165500-2	MNW-18	Total/NA	Water	EPA 7470A	452654
MB 180-452654/1-A	Method Blank	Total/NA	Water	EPA 7470A	452654
LCS 180-452654/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	452654

##### Analysis Batch: 453090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165500-1	FB-2	Total Recoverable	Water	EPA 6020B	452613
180-165500-2	MNW-18	Total Recoverable	Water	EPA 6020B	452613
MB 180-452613/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452613
LCS 180-452613/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452613

##### Analysis Batch: 454159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165500-1	FB-2	Total Recoverable	Water	EPA 6020B	452613
180-165500-2	MNW-18	Total Recoverable	Water	EPA 6020B	452613

#### General Chemistry

##### Analysis Batch: 452584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165500-1	FB-2	Total/NA	Water	SM 2540C	
180-165500-2	MNW-18	Total/NA	Water	SM 2540C	
MB 180-452584/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-452584/2	Lab Control Sample	Total/NA	Water	SM 2540C	

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### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165500-1

Login Number: 165500

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\neq</math> 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?	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165500-1

Login Number: 165500

List Source: Eurofins St. Louis

List Number: 2

List Creation: 11/21/23 04:27 PM

Creator: Pinette, Meadow L

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

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
HDR Inc  
17111 Preston Road  
Suite 200  
Dallas, Texas 75248-1232

Generated 12/21/2023 11:11:59 AM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-165398-1

## Eurofins Pittsburgh

### Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

### Authorization

Generated  
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Authorized for release by  
Ken Hayes, Project Manager II  
Ken.Hayes@et.eurofinsus.com  
(615)301-5035



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## Case Narrative

Job ID: 180-165398-1

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Job Narrative  
180-165398-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 11/15/2023 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 637741

The sample duplicate (DUP) precision for Radium-226 was outside the control limits. However the original sample and DUP activity is below the MDC / RL making the measurement of precision less critical. The lab does not believe this discrepancy to have a negative impact on the data being reported. (500-242591-N-16-A DU)

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

### Rad

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



## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Job ID: 180-165398-2

Eurofins Pittsburgh

Job Narrative  
180-165398-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
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The samples were received on 11/15/2023 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

### HPLC/IC

Method 9056A\_ORGFM\_28D: The following samples were diluted due to the nature of the sample matrix: SSP/AP MW-1 (180-165398-1) and AP MW-5 (180-165398-4) at 10.0 and 5.0. 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 6020B: The method blank for preparation batch 180-452231 and analytical batch 180-452697 contained Antimony above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 6020B: Linear range check standard failed low for boron, the results of the sample were compared to the concentration of the LCS, therefore the data is reportable.  
SSP/AP MW-1 (180-165398-1), AP MW-3 (180-165398-2), AP MW-1D (180-165398-3), AP MW-5 (180-165398-4), (LCS 180-452231/2-A ^3), (MB 180-452231/1-A), (180-165398-E-3-C MSD), (180-165398-E-3-A PDS) and (180-165398-E-3-A SD ^100)

Method 6020B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-452231 and analytical batch 180-452876 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 6020B: The post digestion spike % recovery for Boron, Calcium and Lithium associated with batch 180-452876 was outside of control limits. The associated sample is: (180-165398-E-3-A PDS).

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

### General Chemistry

Method 2540C\_Calcd: The sample did not reach a stable weight following 3 cycles of heating, cooling, and desiccation. The cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result.  
AP MW-5 (180-165398-4)

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

Eurofins Pittsburgh

## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

### 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
^4-	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Rad

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit
U	Result is less than the sample detection limit.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
DI 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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-15-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	12-31-23

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

Eurofins Pittsburgh

## Sample Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-165398-1	SSP/AP MW-1	Water	11/14/23 11:15	11/15/23 09:15
180-165398-2	AP MW-3	Water	11/14/23 12:00	11/15/23 09:15
180-165398-3	AP MW-1D	Water	11/14/23 12:40	11/15/23 09:15
180-165398-4	AP MW-5	Water	11/14/23 13:15	11/15/23 09:15

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Client Sample ID: SSP/AP MW-1**

Date Collected: 11/14/23 11:15

Date Received: 11/15/23 09:15

**Lab Sample ID: 180-165398-1**

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	EPA 9056A		1	1 mL	1 mL	452138	11/16/23 21:25	AM	EET PIT
		Instrument ID: CHIC2100A								
Total/NA	Analysis	EPA 9056A		10	1 mL	1 mL	452138	11/16/23 21:53	AM	EET PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 20:23	S1Z	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:19	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		2			452876	11/27/23 14:16	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:10	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	15 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			992.32 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			992.32 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641669	12/20/23 11:34	FLC	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/20/23 10:40	EMH	EET SL
		Instrument ID: NOEQUIP								

**Client Sample ID: AP MW-3**

Date Collected: 11/14/23 12:00

Date Received: 11/15/23 09:15

**Lab Sample ID: 180-165398-2**

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	EPA 9056A		1	1 mL	1 mL	452138	11/16/23 22:21	AM	EET PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 20:26	S1Z	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:22	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			452876	11/27/23 14:22	MRG	EET PIT
		Instrument ID: NEMO								

Eurofins Pittsburgh

**Lab Chronicle**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Client Sample ID: AP MW-3**

Date Collected: 11/14/23 12:00

Date Received: 11/15/23 09:15

**Lab Sample ID: 180-165398-2**

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:11	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			993.03 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			993.03 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641669	12/20/23 11:34	FLC	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/20/23 10:40	EMH	EET SL
		Instrument ID: NOEQUIP								

**Client Sample ID: AP MW-1D**

Date Collected: 11/14/23 12:40

Date Received: 11/15/23 09:15

**Lab Sample ID: 180-165398-3**

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	EPA 9056A		1	1 mL	1 mL	452138	11/16/23 22:34	AM	EET PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 20:29	S1Z	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:25	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		20			452876	11/27/23 14:25	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:12	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			975.55 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			975.55 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641669	12/20/23 11:34	FLC	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/20/23 10:40	EMH	EET SL
		Instrument ID: NOEQUIP								

Eurofins Pittsburgh

Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: AP MW-5

Date Collected: 11/14/23 13:15

Date Received: 11/15/23 09:15

Lab Sample ID: 180-165398-4

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	EPA 9056A		1	1 mL	1 mL	452138	11/16/23 21:39	AM	EET PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452138	11/16/23 22:07	AM	EET PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 20:49	S1Z	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:45	MRG	EET PIT
Instrument ID: DORY										
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			452876	11/27/23 14:50	MRG	EET PIT
Instrument ID: NEMO										
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:13	MTW	EET PIT
Instrument ID: HGZ										
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1002.02 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1002.02 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641669	12/20/23 11:35	FLC	EET SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			641297	12/20/23 10:40	EMH	EET SL
Instrument ID: NOEQUIP										

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: EET PIT

Batch Type: Prep

RJR = Ron Rosenbaum  
SJM = Shannon Mueller

Batch Type: Analysis

AM = Adzaira Musule  
LWM = Leslie McIntire  
MRG = Mismel Garcia  
MTW = Michael Wesoloski  
S1Z = Sage Ziviello

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

EMH = Elizabeth Hoerchler  
FLC = Fernando Cruz

Eurofins Pittsburgh

Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: SSP/AP MW-1

Date Collected: 11/14/23 11:15

Date Received: 11/15/23 09:15

Lab Sample ID: 180-165398-1

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1610		10.0	7.13	mg/L		11/16/23 21:53	11/16/23 21:53	10
Fluoride	0.0325	J	0.100	0.0260	mg/L		11/16/23 21:25	11/16/23 21:25	1
Sulfate	3050		10.0	7.56	mg/L		11/16/23 21:53	11/16/23 21:53	10

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00150		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:23	1
Barium	0.0249		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:19	1
Beryllium	0.000779	J	0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:19	1
Boron	0.735	A5-	0.160	0.120	mg/L		11/17/23 08:13	11/27/23 14:16	2
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:23	1
Calcium	623		1.00	0.254	mg/L		11/17/23 08:13	11/27/23 14:16	2
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:23	1
Cobalt	0.000479	J	0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:23	1
Molybdenum	0.000644	J	0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:19	1
Lead	0.000404	J	0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:19	1
Antimony	0.00161	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:19	1
Selenium	<0.000739	A+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 20:23	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:19	1
Lithium	1.33		0.0100	0.00258	mg/L		11/17/23 08:13	11/27/23 14:16	2

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	7170		66.7	66.7	mg/L		11/17/23 17:24	11/17/23 17:24	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.174	U	0.211	0.212	1.00	0.348	pCi/L	11/21/23 11:04	12/20/23 18:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		30 - 110					11/21/23 11:04	12/20/23 18:43	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.753		0.345	0.352	1.00	0.450	pCi/L	11/21/23 11:11	12/20/23 11:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		30 - 110					11/21/23 11:11	12/20/23 11:34	1
Y Carrier	75.9		30 - 110					11/21/23 11:11	12/20/23 11:34	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: SSP/AP MW-1

Lab Sample ID: 180-165398-1

Date Collected: 11/14/23 11:15

Matrix: Water

Date Received: 11/15/23 09:15

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.927		0.404	0.411	5.00	0.450	pCi/L		12/20/23 10:40	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: AP MW-3

Lab Sample ID: 180-165398-2

Date Collected: 11/14/23 12:00

Matrix: Water

Date Received: 11/15/23 09:15

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	156		1.00	0.713	mg/L		11/16/23 22:21	11/16/23 22:21	1
Fluoride	0.0566	J	0.100	0.0260	mg/L		11/16/23 22:21	11/16/23 22:21	1
Sulfate	574		1.00	0.756	mg/L		11/16/23 22:21	11/16/23 22:21	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00109		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:26	1
Barium	0.0229		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:22	1
Beryllium	0.00312		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:22	1
Boron	5.38	A5-	0.800	0.601	mg/L		11/17/23 08:13	11/27/23 14:22	10
Cadmium	0.00487		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:26	1
Calcium	152		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:22	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:26	1
Cobalt	0.0387		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:26	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:22	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:22	1
Antimony	0.00153	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:22	1
Selenium	<0.000739	A+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 20:26	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:22	1
Lithium	0.0480		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:22	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00385		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	1320		10.0	10.0	mg/L			11/17/23 17:24	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.387		0.237	0.240	1.00	0.315	pCi/L	11/21/23 11:04	12/20/23 18:43	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.9		30 - 110					11/21/23 11:04	12/20/23 18:43	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.53		0.468	0.489	1.00	0.529	pCi/L	11/21/23 11:11	12/20/23 11:34	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.9		30 - 110					11/21/23 11:11	12/20/23 11:34	1
Y Carrier	75.5		30 - 110					11/21/23 11:11	12/20/23 11:34	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: AP MW-3

Lab Sample ID: 180-165398-2

Date Collected: 11/14/23 12:00

Matrix: Water

Date Received: 11/15/23 09:15

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	1.92		0.525	0.545	5.00	0.529	pCi/L		12/20/23 10:40	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: AP MW-1D

Lab Sample ID: 180-165398-3

Date Collected: 11/14/23 12:40

Matrix: Water

Date Received: 11/15/23 09:15

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	113		1.00	0.713	mg/L		11/16/23 22:34	11/16/23 22:34	1
Fluoride	0.868		0.100	0.0260	mg/L		11/16/23 22:34	11/16/23 22:34	1
Sulfate	362		1.00	0.756	mg/L		11/16/23 22:34	11/16/23 22:34	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0121		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:29	1
Barium	0.0131		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:25	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:25	1
Boron	4.83	A5- F2 F1	1.60	1.20	mg/L		11/17/23 08:13	11/27/23 14:25	20
Cadmium	0.000224	J	0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:29	1
Calcium	73.3	F1	0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:25	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:29	1
Cobalt	0.00998		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:29	1
Molybdenum	0.0337		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:25	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:25	1
Antimony	0.00168	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:25	1
Selenium	0.00167	J	0.00500	0.000739	mg/L		11/17/23 08:13	11/22/23 13:25	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:25	1
Lithium	0.0218		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:25	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:12	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	998		10.0	10.0	mg/L			11/17/23 17:24	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.243	U	0.213	0.214	1.00	0.322	pCi/L	11/21/23 11:04	12/20/23 18:43	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	99.0		30 - 110					11/21/23 11:04	12/20/23 18:43	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.463	U	0.347	0.350	1.00	0.529	pCi/L	11/21/23 11:11	12/20/23 11:34	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	99.0		30 - 110					11/21/23 11:11	12/20/23 11:34	1
Y Carrier	73.6		30 - 110					11/21/23 11:11	12/20/23 11:34	1



Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: AP MW-1D

Lab Sample ID: 180-165398-3

Date Collected: 11/14/23 12:40

Matrix: Water

Date Received: 11/15/23 09:15

Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Total Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.706		0.407	0.410	5.00	0.529	pCi/L		12/20/23 10:40	1

Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

Client Sample ID: AP MW-5

Lab Sample ID: 180-165398-4

Date Collected: 11/14/23 13:15

Matrix: Water

Date Received: 11/15/23 09:15

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	670		1.00	0.713	mg/L		11/16/23 21:39	11/16/23 21:39	1
Fluoride	3.09		0.100	0.0260	mg/L		11/16/23 21:39	11/16/23 21:39	1
Sulfate	1370		5.00	3.78	mg/L		11/16/23 22:07	11/16/23 22:07	5

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0234		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:49	1
Barium	0.0109		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:45	1
Beryllium	0.110		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:45	1
Boron	3.53	A5-	0.800	0.601	mg/L		11/17/23 08:13	11/27/23 14:50	10
Cadmium	0.0128		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:49	1
Calcium	600		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:45	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:49	1
Cobalt	0.236		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:49	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:45	1
Lead	0.00190		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:45	1
Antimony	0.00118	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:45	1
Selenium	<0.000739	A+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 20:49	1
Thallium	0.00293		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:45	1
Lithium	0.592		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:45	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000954		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	5080		40.0	40.0	mg/L			11/17/23 17:24	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Total Uncert. (2σ+/-)						
Radium-226	0.552		0.249	0.254	1.00	0.285	pCi/L	11/21/23 11:04	12/20/23 18:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110					11/21/23 11:04	12/20/23 18:43	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count		RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Total Uncert. (2σ+/-)						
Radium-228	1.02		0.385	0.396	1.00	0.488	pCi/L	11/21/23 11:11	12/20/23 11:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		30 - 110					11/21/23 11:11	12/20/23 11:35	1
Y Carrier	78.9		30 - 110					11/21/23 11:11	12/20/23 11:35	1

**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Client Sample ID: AP MW-5**

**Lab Sample ID: 180-165398-4**

Date Collected: 11/14/23 13:15

Matrix: Water

Date Received: 11/15/23 09:15

**Method: TAL-STL Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	1.57		0.459	0.470	5.00	0.488	pCi/L		12/20/23 10:40	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Method: EPA 9056A - Anions, Ion Chromatography**

**Lab Sample ID: MB 180-452138/6**  
Matrix: Water  
Analysis Batch: 452138

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.713		1.00	0.713	mg/L			11/16/23 18:38	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/16/23 18:38	1
Sulfate	<0.756		1.00	0.756	mg/L			11/16/23 18:38	1

**Lab Sample ID: LCS 180-452138/7**  
Matrix: Water  
Analysis Batch: 452138

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Chloride	50.0	55.23		mg/L		110	80 - 120
Fluoride	2.50	2.660		mg/L		106	80 - 120
Sulfate	50.0	51.05		mg/L		102	80 - 120

**Lab Sample ID: 180-162330-D-2 MS**  
Matrix: Water  
Analysis Batch: 452138

**Client Sample ID: Matrix Spike**  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Chloride	<0.713		50.0	52.35		mg/L		105	80 - 120
Fluoride	<0.0260		2.50	2.492		mg/L		100	80 - 120
Sulfate	<0.756		50.0	48.92		mg/L		98	80 - 120

**Lab Sample ID: 180-162330-D-2 MSD**  
Matrix: Water  
Analysis Batch: 452138

**Client Sample ID: Matrix Spike Duplicate**  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
Chloride	<0.713		50.0	52.53		mg/L		105	80 - 120	0	15
Fluoride	<0.0260		2.50	2.509		mg/L		100	80 - 120	1	15
Sulfate	<0.756		50.0	48.98		mg/L		98	80 - 120	0	15

**Method: EPA 6020B - Metals (ICP/MS)**

**Lab Sample ID: MB 180-452231/1-A**  
Matrix: Water  
Analysis Batch: 452600

**Client Sample ID: Method Blank**  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:18	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:18	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:18	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:18	1
Selenium	<0.000739	A+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 20:18	1

**Lab Sample ID: MB 180-452231/1-A**  
Matrix: Water  
Analysis Batch: 452697

**Client Sample ID: Method Blank**  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/22/23 13:14	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: MB 180-452231/1-A  
Matrix: Water  
Analysis Batch: 452697

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00314		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:14	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:14	1
Boron	<0.0601	^+	0.0800	0.0601	mg/L		11/17/23 08:13	11/22/23 13:14	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/22/23 13:14	1
Calcium	<0.127		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:14	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/22/23 13:14	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/22/23 13:14	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:14	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:14	1
Antimony	0.001396	J	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:14	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/17/23 08:13	11/22/23 13:14	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:14	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:14	1

Lab Sample ID: MB 180-452231/1-A  
Matrix: Water  
Analysis Batch: 452876

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.0601	^5-	0.0800	0.0601	mg/L		11/17/23 08:13	11/27/23 14:10	1
Calcium	<0.127		0.500	0.127	mg/L		11/17/23 08:13	11/27/23 14:10	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/17/23 08:13	11/27/23 14:10	1

Lab Sample ID: LCS 180-452231/2-A  
Matrix: Water  
Analysis Batch: 452600

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.173		mg/L		117	80 - 120
Cadmium	0.500	0.5944		mg/L		119	80 - 120
Chromium	0.500	0.5900		mg/L		118	80 - 120
Cobalt	0.500	0.5918		mg/L		118	80 - 120
Selenium	1.00	1.192	^+	mg/L		119	80 - 120

Lab Sample ID: LCS 180-452231/2-A  
Matrix: Water  
Analysis Batch: 452697

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	1.077		mg/L		108	80 - 120
Barium	1.00	0.9086		mg/L		91	80 - 120
Beryllium	0.500	0.5434		mg/L		109	80 - 120
Cadmium	0.500	0.5251		mg/L		105	80 - 120
Calcium	25.0	29.08		mg/L		116	80 - 120
Chromium	0.500	0.5255		mg/L		105	80 - 120
Cobalt	0.500	0.5357		mg/L		107	80 - 120
Molybdenum	0.500	0.5350		mg/L		107	80 - 120
Lead	0.500	0.5347		mg/L		107	80 - 120
Antimony	0.250	0.2708		mg/L		108	80 - 120

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: LCS 180-452231/2-A  
Matrix: Water  
Analysis Batch: 452697

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Selenium	1.00	1.047		mg/L		105	80 - 120
Thallium	1.00	1.062		mg/L		106	80 - 120
Lithium	0.500	0.5226		mg/L		105	80 - 120

Lab Sample ID: LCS 180-452231/2-A ^3  
Matrix: Water  
Analysis Batch: 452876

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	1.25	1.113	^5-	mg/L		89	80 - 120
Calcium	25.0	28.44		mg/L		114	80 - 120
Lithium	0.500	0.4707		mg/L		94	80 - 120

Lab Sample ID: 180-165398-3 MS  
Matrix: Water  
Analysis Batch: 452600

Client Sample ID: AP MW-1D  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0121		1.00	1.182		mg/L		117	75 - 125
Cadmium	0.000224	J	0.500	0.5872		mg/L		117	75 - 125
Chromium	<0.00153		0.500	0.5872		mg/L		117	75 - 125
Cobalt	0.000998		0.500	0.5976		mg/L		118	75 - 125

Lab Sample ID: 180-165398-3 MS  
Matrix: Water  
Analysis Batch: 452697

Client Sample ID: AP MW-1D  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0126		1.00	1.170		mg/L		116	75 - 125
Barium	0.0131		1.00	1.006		mg/L		99	75 - 125
Beryllium	<0.000274		0.500	0.5711		mg/L		114	75 - 125
Cadmium	0.000367	J	0.500	0.5643		mg/L		113	75 - 125
Calcium	73.3	F1	25.0	107.3	F1	mg/L		138	75 - 125
Chromium	<0.00153		0.500	0.5615		mg/L		112	75 - 125
Cobalt	0.00923		0.500	0.5890		mg/L		116	75 - 125
Molybdenum	0.0337		0.500	0.6156		mg/L		116	75 - 125
Lead	<0.000376		0.500	0.5776		mg/L		116	75 - 125
Antimony	0.00168	J B	0.250	0.2884		mg/L		115	75 - 125
Selenium	0.00167	J	1.00	1.096		mg/L		109	75 - 125
Thallium	<0.000472		1.00	1.153		mg/L		115	75 - 125
Lithium	0.0218		0.500	0.5718		mg/L		110	75 - 125

Lab Sample ID: 180-165398-3 MS  
Matrix: Water  
Analysis Batch: 452876

Client Sample ID: AP MW-1D  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	4.83	^5- F2 F1	1.25	6.253	^5-	mg/L		114	75 - 125
Calcium	72.0	F2 F1	25.0	105.2	F1	mg/L		133	75 - 125
Lithium	<0.0258	F2 F1	0.500	0.5366		mg/L		107	75 - 125

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: 180-165398-3 MSD Matrix: Water Analysis Batch: 452600		Client Sample ID: AP MW-1D Prep Type: Total Recoverable Prep Batch: 452231									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0121		1.00	1.181		mg/L		117	75 - 125	0	20
Cadmium	0.000224	J	0.500	0.5870		mg/L		117	75 - 125	0	20
Chromium	<0.00153		0.500	0.5876		mg/L		118	75 - 125	0	20
Cobalt	0.00998		0.500	0.5994		mg/L		118	75 - 125	0	20

Lab Sample ID: 180-165398-3 MSD Matrix: Water Analysis Batch: 452697		Client Sample ID: AP MW-1D Prep Type: Total Recoverable Prep Batch: 452231									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.0126		1.00	1.131		mg/L		112	75 - 125	3	20
Barium	0.0131		1.00	0.9876		mg/L		97	75 - 125	2	20
Beryllium	<0.000274		0.500	0.5593		mg/L		112	75 - 125	2	20
Cadmium	0.000367	J	0.500	0.5468		mg/L		109	75 - 125	3	20
Calcium	73.3	F1	25.0	106.1	F1	mg/L		131	75 - 125	1	20
Chromium	<0.00153		0.500	0.5418		mg/L		108	75 - 125	4	20
Cobalt	0.00923		0.500	0.5696		mg/L		112	75 - 125	3	20
Molybdenum	0.0337		0.500	0.5998		mg/L		113	75 - 125	3	20
Lead	<0.000376		0.500	0.5604		mg/L		112	75 - 125	3	20
Antimony	0.00168	J B	0.250	0.2802		mg/L		111	75 - 125	3	20
Selenium	0.00167	J	1.00	1.053		mg/L		105	75 - 125	4	20
Thallium	<0.000472		1.00	1.106		mg/L		111	75 - 125	4	20
Lithium	0.0218		0.500	0.5595		mg/L		108	75 - 125	2	20

Lab Sample ID: 180-165398-3 MSD Matrix: Water Analysis Batch: 452876		Client Sample ID: AP MW-1D Prep Type: Total Recoverable Prep Batch: 452231									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	4.83	A5- F2 F1	1.25	6.493	A5- F1	mg/L		133	75 - 125	4	20
Calcium	72.0	F2 F1	25.0	111.5	F1	mg/L		158	75 - 125	6	20
Lithium	<0.0258	F2 F1	0.500	0.5412		mg/L		108	75 - 125	1	20

**Method: EPA 7470A - Mercury (CVAA)**

Lab Sample ID: MB 180-452642/1-A Matrix: Water Analysis Batch: 452853		Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 452642									
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 13:52	1		

Lab Sample ID: LCS 180-452642/2-A Matrix: Water Analysis Batch: 452853		Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 452642									
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Mercury	0.00250	0.002373		mg/L		95	80 - 120				

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Method: EPA 7470A - Mercury (CVAA) (Continued)**

Lab Sample ID: 180-165410-K-1-C MS Matrix: Water Analysis Batch: 452853		Client Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 452642									
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.000133	J	0.00100	0.001028		mg/L		90	75 - 125		

Lab Sample ID: 180-165410-K-1-D MSD Matrix: Water Analysis Batch: 452853		Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA Prep Batch: 452642									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.000133	J	0.00100	0.0009770		mg/L		84	75 - 125	5	20

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

Lab Sample ID: MB 180-452325/1 Matrix: Water Analysis Batch: 452325		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	<10.0		10.0	10.0	mg/L			11/17/23 17:24	1		

Lab Sample ID: LCS 180-452325/2 Matrix: Water Analysis Batch: 452325		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	336	316.0		mg/L		94	85 - 115				

Lab Sample ID: 180-165389-A-3 DU Matrix: Water Analysis Batch: 452325		Client Sample ID: Duplicate Prep Type: Total/NA									
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	Analyzed	Dil Fac		
Total Dissolved Solids	1440		1405		mg/L				2 10		

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

Lab Sample ID: MB 160-637741/1-A Matrix: Water Analysis Batch: 641474		Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 637741									
Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-226	0.06042	U	0.132	0.132	1.00	0.244	pCi/L	11/21/23 11:04	12/20/23 18:28	1	

Carrier	%Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	11/21/23 11:04	12/20/23 18:28	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

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

Lab Sample ID: LCS 160-637741/2-A  
Matrix: Water  
Analysis Batch: 641474

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 637741

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.379		1.23	1.00	0.319	pCi/L	83	75 - 125
<b>Carrier</b>									
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>						
Ba Carrier	97.9		30 - 110						

Lab Sample ID: 500-242591-N-16-A DU  
Matrix: Water  
Analysis Batch: 641668

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 637741

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.561		0.05877	U F	0.174	1.00	0.323	pCi/L	1.13	1
<b>Carrier</b>										
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>							
Ba Carrier	101		30 - 110							

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

Lab Sample ID: MB 160-637742/1-A  
Matrix: Water  
Analysis Batch: 641669

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 637742

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.04353	U	0.204	0.204	1.00	0.409	pCi/L	11/21/23 11:11	12/20/23 11:35	1
<b>Carrier</b>										
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>							
Ba Carrier	98.5		30 - 110							
Y Carrier	84.1		30 - 110							

Lab Sample ID: LCS 160-637742/2-A  
Matrix: Water  
Analysis Batch: 641669

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 637742

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	7.63	7.098		1.03	1.00	0.467	pCi/L	93	75 - 125
<b>Carrier</b>									
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>						
Ba Carrier	97.9		30 - 110						
Y Carrier	81.1		30 - 110						

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

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

Lab Sample ID: 500-242591-N-16-B DU  
Matrix: Water  
Analysis Batch: 641669

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 637742

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.221	U	0.4420	U	0.307	1.00	0.449	pCi/L	0.33	1
<b>Carrier</b>										
	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>							
Ba Carrier	101		30 - 110							
Y Carrier	77.0		30 - 110							

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**HPLC/IC**

**Analysis Batch: 452138**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total/NA	Water	EPA 9056A	
180-165398-1	SSP/AP MW-1	Total/NA	Water	EPA 9056A	
180-165398-2	AP MW-3	Total/NA	Water	EPA 9056A	
180-165398-3	AP MW-1D	Total/NA	Water	EPA 9056A	
180-165398-4	AP MW-5	Total/NA	Water	EPA 9056A	
180-165398-4	AP MW-5	Total/NA	Water	EPA 9056A	
MB 180-452138/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452138/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-162330-D-2 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-162330-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 452231**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total Recoverable	Water	3005A	
180-165398-2	AP MW-3	Total Recoverable	Water	3005A	
180-165398-3	AP MW-1D	Total Recoverable	Water	3005A	
180-165398-4	AP MW-5	Total Recoverable	Water	3005A	
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-452231/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 180-452231/2-A *3	Lab Control Sample	Total Recoverable	Water	3005A	
180-165398-3 MS	AP MW-1D	Total Recoverable	Water	3005A	
180-165398-3 MSD	AP MW-1D	Total Recoverable	Water	3005A	

**Analysis Batch: 452600**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	452231
180-165398-2	AP MW-3	Total Recoverable	Water	EPA 6020B	452231
180-165398-3	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231
180-165398-4	AP MW-5	Total Recoverable	Water	EPA 6020B	452231
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452231
LCS 180-452231/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452231
180-165398-3 MS	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231
180-165398-3 MSD	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231

**Prep Batch: 452642**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total/NA	Water	7470A	
180-165398-2	AP MW-3	Total/NA	Water	7470A	
180-165398-3	AP MW-1D	Total/NA	Water	7470A	
180-165398-4	AP MW-5	Total/NA	Water	7470A	
MB 180-452642/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-452642/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-165410-K-1-C MS	Matrix Spike	Total/NA	Water	7470A	
180-165410-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 452697**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	452231
180-165398-2	AP MW-3	Total Recoverable	Water	EPA 6020B	452231

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165398-1

**Metals (Continued)**

**Analysis Batch: 452697 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-3	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231
180-165398-4	AP MW-5	Total Recoverable	Water	EPA 6020B	452231
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452231
LCS 180-452231/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452231
180-165398-3 MS	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231
180-165398-3 MSD	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231

**Analysis Batch: 452853**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total/NA	Water	EPA 7470A	452642
180-165398-2	AP MW-3	Total/NA	Water	EPA 7470A	452642
180-165398-3	AP MW-1D	Total/NA	Water	EPA 7470A	452642
180-165398-4	AP MW-5	Total/NA	Water	EPA 7470A	452642
MB 180-452642/1-A	Method Blank	Total/NA	Water	EPA 7470A	452642
LCS 180-452642/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	452642
180-165410-K-1-C MS	Matrix Spike	Total/NA	Water	EPA 7470A	452642
180-165410-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	452642

**Analysis Batch: 452876**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total Recoverable	Water	EPA 6020B	452231
180-165398-2	AP MW-3	Total Recoverable	Water	EPA 6020B	452231
180-165398-3	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231
180-165398-4	AP MW-5	Total Recoverable	Water	EPA 6020B	452231
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452231
LCS 180-452231/2-A *3	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452231
180-165398-3 MS	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231
180-165398-3 MSD	AP MW-1D	Total Recoverable	Water	EPA 6020B	452231

**General Chemistry**

**Analysis Batch: 452325**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total/NA	Water	SM 2540C	
180-165398-2	AP MW-3	Total/NA	Water	SM 2540C	
180-165398-3	AP MW-1D	Total/NA	Water	SM 2540C	
180-165398-4	AP MW-5	Total/NA	Water	SM 2540C	
MB 180-452325/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-452325/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165389-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	

**Rad**

**Prep Batch: 637741**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165398-1	SSP/AP MW-1	Total/NA	Water	PrecSep-21	
180-165398-2	AP MW-3	Total/NA	Water	PrecSep-21	
180-165398-3	AP MW-1D	Total/NA	Water	PrecSep-21	
180-165398-4	AP MW-5	Total/NA	Water	PrecSep-21	
MB 160-637741/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-637741/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
500-242591-N-16-A DU	Duplicate	Total/NA	Water	PrecSep-21	

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Chain of Custody Record

Client Information (Sub Contract Lab)		Sample	Lab/In	Form/Testing (N/A)	RFQ No.
Shipping/Receiving		Phone	Hayes, Ken	State of Origin	180-165398-1
Company		City	Ken Hayes@eurofins.com	Page 1 of 1	Job #
13715 Rider Trail North,		State Data Requested:	NE-LAP - Texas	Page 1 of 1	180-165398-1
Earth City		YAT Requested (days)			
MO: 63045					
314-398-6566(Tel) 314-298-8757(Fax)		PO #			
Email		PO #			
Project Name		Project #			
Gibbons Creek Steam Electric Station		SSO/MW			
Site					

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Specimen, Element)	Preservation Code (Increase as needed)	Field Filtered Sample (Yes or No)	Field Preserved Sample (Yes or No)	903 Orpheeep, 21 Standard Target List	906 Orpheeep, 3 Standard Target List	R4228#228, OFTC	Total Number of Containers	Special Instructions/Note:
SSPAP MW-1 (180-165398-1)	11/14/23	11:15 Central	Water	Water		X	X	X	X	X	2	
AP MW-3 (180-165398-2)	11/14/23	12:40 Central	Water	Water		X	X	X	X	X	2	
AP MW-10 (180-165398-3)	11/14/23	13:15 Central	Water	Water		X	X	X	X	X	2	
AP MW-5 (180-165398-4)	11/14/23	13:15 Central	Water	Water		X	X	X	X	X	2	

Note: Some laboratory accreditation are subject to change. Eurofins Pittsburgh adheres to the procedures of method, analysis & accreditation compliance with the indicated specifications. This sample shipment is to be held under chain of custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/chemicals being analyzed, the samples must be shipped back to the Eurofins Pittsburgh laboratory or other jurisdiction that should be brought to Eurofins Pittsburgh attention immediately. If all requested accreditations are correct to date, return the signed Chain of Custody attesting to said compliance to Eurofins Pittsburgh.

Possible Hazard Identification  
Unclassified

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
Special Instructions/OC Requirements

Empty Kit Reinquished by: Date: 11-17-23 17:00  
Reinquished by: Date/Time: Company: APMS  
Reinquished by: Date/Time: Company: AM Pinette  
Reinquished by: Date/Time: Company: AM Pinette

Custody Seal No: 3, 4, 5, 6, No

Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165398-1

Login Number: 165398  
List Number: 1  
Creator: Abernathy, Eric L

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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?	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165398-1

Login Number: 165398

List Number: 2

Creator: Pinette, Meadow L

List Source: Eurofins St. Louis

List Creation: 11/20/23 02:18 PM

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



Environment Testing

# ANALYTICAL REPORT

## PREPARED FOR

Attn: David Vogt  
HDR Inc  
17111 Preston Road  
Suite 200  
Dallas, Texas 75248-1232

Generated 12/21/2023 11:40:11 AM

## JOB DESCRIPTION

Gibbons Creek Steam Electric Station

## JOB NUMBER

180-165401-1

# Eurofins Pittsburgh

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

## Authorization



Generated  
12/21/2023 11:40:11 AM

Authorized for release by  
Ken Hayes, Project Manager II  
Ken.Hayes@et.eurofinsus.com  
(615)301-5035

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Laboratory Job ID: 180-165401-1

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Job ID: 180-165401-1

Eurofins Pittsburgh

### Job Narrative 180-165401-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/15/2023 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C

#### Gas Flow Proportional Counter

Method 903.0: Radium-226 batch 637741

The sample duplicate (DUP) precision for Radium-226 was outside the control limits. However the original sample and DUP activity is below the MDC / RL making the measurement of precision less critical. The lab does not believe this discrepancy to have a negative impact on the data being reported. (500-242591-N-16-A DU)

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

#### Rad

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

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## Case Narrative

Client: HDR Inc  
Project: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Job ID: 180-165401-2

Eurofins Pittsburgh

### Job Narrative 180-165401-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Receipt

The samples were received on 11/15/2023 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.4°C

#### HPLC/IC

Method 9056A\_ORGFM\_28D: The following samples were diluted due to the nature of the sample matrix: AP MW-4 (180-165401-1) and DUP-1 (180-165401-2) at 5.0 and 5.0. Elevated reporting limits (RLs) are provided.

Method 9056A\_ORGFM\_28D: The continuing calibration verification (CCV) associated with batch 180-452346 recovered outside acceptance criteria, low biased, for fluoride. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect (or below the reporting limit) for the analyte(s), the data are reported.

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

#### Metals

Method 6020B: The method blank for preparation batch 180-452231 and analytical batch 180-452697 contained Antimony above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 6020B: Linear range check standard failed low for boron, the results of the sample were compared to the concentration of the LCS, therefore the data is reportable.  
AP MW-4 (180-165401-1), DUP-1 (180-165401-2), SSP MW-4 (180-165401-3), EQ-1 (180-165401-4), (LCS 180-452231/2-A ^3), (MB 180-452231/1-A), (180-165398-E-3-A ^20), (180-165398-E-3-B MS ^20), (180-165398-E-3-C MSD), (180-165398-E-3-A PDS) and (180-165398-E-3-A SD ^100)

Method 6020B: The post digestion spike % recovery for Boron associated with batch 180-452876 was outside of control limits. The associated sample is: (180-165398-E-3-A PDS).

Method 6020B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-452231 and analytical batch 180-452876 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

#### General Chemistry

Method 2540C\_Calcd: The sample did not reach a stable weight following 3 cycles of heating, cooling, and desiccation. The cycle 3 weight was used to calculate the Total Dissolved Solids (TDS) for the sample result.  
SSP MW-4 (180-165401-3)

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

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## Definitions/Glossary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

### 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
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### Rad

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit
U	Result is less than the sample detection limit.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
SQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

### Laboratory: Eurofins Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-24
California	State	2891	04-30-24
Connecticut	State	PH-0688	09-30-24
Florida	NELAP	E871008	06-30-24
Georgia	State	PA 02-00416	04-30-24
Illinois	NELAP	004375	06-30-24
Kansas	NELAP	E-10350	01-31-24
Kentucky (UST)	State	162013	04-30-23 *
Kentucky (WW)	State	KY98043	12-31-23
Louisiana	NELAP	04041	06-30-22 *
Louisiana (All)	NELAP	04041	06-30-24
Maine	State	PA00164	03-06-24
Minnesota	NELAP	042-999-482	12-31-23
New Hampshire	NELAP	2030	04-04-24
New Jersey	NELAP	PA005	06-30-24
New York	NELAP	11182	04-01-24
North Carolina (WW/SW)	State	434	12-31-23
North Dakota	State	R-227	04-30-24
Oregon	NELAP	PA-2151	02-06-24
Pennsylvania	NELAP	02-00416	04-30-24
Rhode Island	State	LAO00362	12-31-22 *
South Carolina	State	89014	04-30-23 *
Texas	NELAP	T104704528	03-31-24
US Fish & Wildlife	US Federal Programs	058448	03-31-24
USDA	US Federal Programs	P330-16-00211	04-11-26
Utah	NELAP	PA001462019-8	05-31-24
Virginia	NELAP	10043	07-14-24
West Virginia DEP	State	142	01-31-24
Wisconsin	State	998027800	08-31-24

### Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23

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

Eurofins Pittsburgh

## Accreditation/Certification Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

### Laboratory: Eurofins St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO00542020-1	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO000542021-14	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	01-31-24

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

Eurofins Pittsburgh

## Sample Summary

Client: HDR Inc.  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-165401-1	AP MW-4	Water	11/14/23 13:50	11/15/23 09:15
180-165401-2	DUP-1	Water	11/14/23 16:00	11/15/23 09:15
180-165401-3	SSP MW-4	Water	11/14/23 15:05	11/15/23 09:15
180-165401-4	EQ-1	Water	11/14/23 15:15	11/15/23 09:15

Eurofins Pittsburgh  
12/21/2023

## Method Summary

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

### Protocol References:

EPA = US Environmental Protection Agency  
None = None  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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## Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: AP MW-4

Lab Sample ID: 180-165401-1

Date Collected: 11/14/23 13:50

Matrix: Water

Date Received: 11/15/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452346	11/19/23 00:14	AM	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452346	11/19/23 00:32	AM	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 20:51	S1Z	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:47	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			452876	11/27/23 14:53	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:14	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			995.97 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			995.97 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641669	12/20/23 11:34	FLC	EET SL
		Instrument ID: GFPCORANGE								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/20/23 10:40	EMH	EET SL
		Instrument ID: NOEQUIP								

Client Sample ID: DUP-1

Lab Sample ID: 180-165401-2

Date Collected: 11/14/23 16:00

Matrix: Water

Date Received: 11/15/23 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1	1 mL	1 mL	452346	11/19/23 00:50	AM	EET PIT
		Instrument ID: INTEGRION								
Total/NA	Analysis	EPA 9056A		5	1 mL	1 mL	452346	11/19/23 01:09	AM	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 20:54	S1Z	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:50	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		10			452876	11/27/23 14:56	MRG	EET PIT
		Instrument ID: NEMO								

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

#### Client Sample ID: DUP-1

Date Collected: 11/14/23 16:00

Date Received: 11/15/23 09:15

#### Lab Sample ID: 180-165401-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:15	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			992.49 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			992.49 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641474	12/20/23 11:31	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
		Instrument ID: NOEQUIP								

#### Client Sample ID: SSP MW-4

Date Collected: 11/14/23 15:05

Date Received: 11/15/23 09:15

#### Lab Sample ID: 180-165401-3

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	EPA 9056A		1	1 mL	1 mL	452138	11/17/23 00:39	AM	EET PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 20:57	S1Z	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:53	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		3			452876	11/27/23 14:59	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:16	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			999.09 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			999.09 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641474	12/20/23 11:31	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
		Instrument ID: NOEQUIP								

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### Lab Chronicle

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

#### Client Sample ID: EQ-1

Date Collected: 11/14/23 15:15

Date Received: 11/15/23 09:15

#### Lab Sample ID: 180-165401-4

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	EPA 9056A		1	1 mL	1 mL	452346	11/19/23 02:23	AM	EET PIT
		Instrument ID: INTEGRION								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452600	11/21/23 21:00	S1Z	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452697	11/22/23 13:56	MRG	EET PIT
		Instrument ID: DORY								
Total Recoverable	Prep	3005A			25 mL	25 mL	452231	11/17/23 08:13	SJM	EET PIT
Total Recoverable	Analysis	EPA 6020B		1			452876	11/27/23 15:02	MRG	EET PIT
		Instrument ID: NEMO								
Total/NA	Prep	7470A			25 mL	25 mL	452642	11/22/23 09:11	RJR	EET PIT
Total/NA	Analysis	EPA 7470A		1			452853	11/27/23 14:17	MTW	EET PIT
		Instrument ID: HGZ								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	452325	11/17/23 17:24	LWM	EET PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			981.06 mL	1.0 g	637741	11/21/23 11:04	KAC	EET SL
Total/NA	Analysis	903.0		1			641668	12/20/23 18:43	FLC	EET SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			981.06 mL	1.0 g	637742	11/21/23 11:11	KAC	EET SL
Total/NA	Analysis	904.0		1			641474	12/20/23 11:31	FLC	EET SL
		Instrument ID: GFPCRED								
Total/NA	Analysis	Ra226_Ra228		1			641297	12/21/23 10:29	EMH	EET SL
		Instrument ID: NOEQUIP								

#### Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

#### Analyst References:

Lab: EET PIT

Batch Type: Prep

RJR = Ron Rosenbaum  
SJM = Shannon Mueller

Batch Type: Analysis

AM = Adzuira Musule  
LWM = Leslie McIntire  
MRG = Mismel Garcia  
MTW = Michael Wesoloski  
S1Z = Sage Zviello

Lab: EET SL

Batch Type: Prep

KAC = Kevin Cox

Batch Type: Analysis

EMH = Elizabeth Hoerchler  
FLC = Fernando Cruz

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Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: AP MW-4

Lab Sample ID: 180-165401-1

Date Collected: 11/14/23 13:50

Matrix: Water

Date Received: 11/15/23 09:15

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	435		1.00	0.713	mg/L			11/19/23 00:14	1
Fluoride	0.0603	J	0.100	0.0260	mg/L			11/19/23 00:14	1
Sulfate	2160		5.00	3.78	mg/L			11/19/23 00:32	5

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:51	1
Barium	0.0230		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:47	1
Beryllium	0.000307	J	0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:47	1
Boron	2.46	A5-	0.800	0.601	mg/L		11/17/23 08:13	11/27/23 14:53	10
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:51	1
Calcium	502		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:47	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:51	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:51	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:47	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:47	1
Antimony	0.00130	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:47	1
Selenium	<0.000739	A+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 20:51	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:47	1
Lithium	0.827		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:47	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3970		40.0	40.0	mg/L			11/17/23 17:24	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.444		0.243	0.246	1.00	0.302	pCi/L	11/21/23 11:04	12/20/23 18:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		30 - 110					11/21/23 11:04	12/20/23 18:43	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.512	U	0.346	0.350	1.00	0.516	pCi/L	11/21/23 11:11	12/20/23 11:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		30 - 110					11/21/23 11:11	12/20/23 11:34	1
Y Carrier	79.3		30 - 110					11/21/23 11:11	12/20/23 11:34	1

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Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: AP MW-4

Lab Sample ID: 180-165401-1

Date Collected: 11/14/23 13:50

Matrix: Water

Date Received: 11/15/23 09:15

Method: TAL-STL 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	0.956		0.423	0.428	5.00	0.516	pCi/L		12/20/23 10:40	1

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Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: DUP-1

Date Collected: 11/14/23 16:00

Date Received: 11/15/23 09:15

Lab Sample ID: 180-165401-2

Matrix: Water

Method: SW846 EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	434		1.00	0.713	mg/L			11/19/23 00:50	1
Fluoride	0.0568	J	0.100	0.0260	mg/L			11/19/23 00:50	1
Sulfate	2170		5.00	3.78	mg/L			11/19/23 01:09	5

Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:54	1
Barium	0.0194		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:50	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:50	1
Boron	2.39	A5-	0.800	0.601	mg/L		11/17/23 08:13	11/27/23 14:56	10
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:54	1
Calcium	438		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:50	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:54	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:54	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:50	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:50	1
Antimony	0.00125	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:50	1
Selenium	<0.000739	^+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 20:54	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:50	1
Lithium	0.728		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:50	1

Method: SW846 EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	3960		40.0	40.0	mg/L			11/17/23 17:24	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.423		0.226	0.229	1.00	0.280	pCi/L	11/21/23 11:04	12/20/23 18:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		30 - 110					11/21/23 11:04	12/20/23 18:43	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.787		0.361	0.368	1.00	0.486	pCi/L	11/21/23 11:11	12/20/23 11:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		30 - 110					11/21/23 11:11	12/20/23 11:31	1
Y Carrier	80.4		30 - 110					11/21/23 11:11	12/20/23 11:31	1

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Client Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: DUP-1

Date Collected: 11/14/23 16:00

Date Received: 11/15/23 09:15

Lab Sample ID: 180-165401-2

Matrix: Water

Method: TAL-STL 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		0.426	0.433	5.00	0.486	pCi/L		12/21/23 10:29	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: SSP MW-4

Lab Sample ID: 180-165401-3

Date Collected: 11/14/23 15:05

Matrix: Water

Date Received: 11/15/23 09:15

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	843		1.00	0.713	mg/L			11/17/23 00:39	1
Fluoride	0.0444	J	0.100	0.0260	mg/L			11/17/23 00:39	1
Sulfate	700		1.00	0.756	mg/L			11/17/23 00:39	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:57	1
Barium	0.0184		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:53	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:53	1
Boron	0.903	A5-	0.240	0.180	mg/L		11/17/23 08:13	11/27/23 14:59	3
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:57	1
Calcium	276		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:53	1
Chromium	0.233		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:57	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:57	1
Molybdenum	0.108		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:53	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:53	1
Antimony	0.00136	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:53	1
Selenium	0.00456	J	0.00500	0.000739	mg/L		11/17/23 08:13	11/22/23 13:53	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:53	1
Lithium	0.542		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:53	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	2910		40.0	40.0	mg/L			11/17/23 17:24	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.486		0.289	0.292	1.00	0.390	pCi/L	11/21/23 11:04	12/20/23 18:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.7		30 - 110					11/21/23 11:04	12/20/23 18:43	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.07		0.544	0.576	1.00	0.561	pCi/L	11/21/23 11:11	12/20/23 11:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.7		30 - 110					11/21/23 11:11	12/20/23 11:31	1
Y Carrier	71.8		30 - 110					11/21/23 11:11	12/20/23 11:31	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: SSP MW-4

Lab Sample ID: 180-165401-3

Date Collected: 11/14/23 15:05

Matrix: Water

Date Received: 11/15/23 09:15

**Method: TAL-STL 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	2.56		0.616	0.646	5.00	0.561	pCi/L		12/21/23 10:29	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: EQ-1

Date Collected: 11/14/23 15:15

Date Received: 11/15/23 09:15

Lab Sample ID: 180-165401-4

Matrix: Water

**Method: SW846 EPA 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L			11/19/23 02:23	1
Fluoride	0.0270	J	0.100	0.0260	mg/L			11/19/23 02:23	1
Sulfate	<0.756		1.00	0.756	mg/L			11/19/23 02:23	1

**Method: SW846 EPA 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 21:00	1
Barium	<0.00314	^+	0.0100	0.00314	mg/L		11/17/23 08:13	11/21/23 21:00	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:56	1
Boron	<0.0601	^5-	0.0800	0.0601	mg/L		11/17/23 08:13	11/27/23 15:02	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 21:00	1
Calcium	<0.127		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:56	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 21:00	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 21:00	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:56	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:56	1
Antimony	0.00139	J B	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:56	1
Selenium	<0.000739	^+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 21:00	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:56	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:56	1

**Method: SW846 EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 14:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	<10.0		10.0	10.0	mg/L			11/17/23 17:24	1

**Method: EPA 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0661	U	0.154	0.155	1.00	0.285	pCi/L	11/21/23 11:04	12/20/23 18:43	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	99.0		30 - 110					11/21/23 11:04	12/20/23 18:43	1

**Method: EPA 904.0 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0954	U	0.307	0.307	1.00	0.547	pCi/L	11/21/23 11:11	12/20/23 11:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	99.0		30 - 110					11/21/23 11:11	12/20/23 11:31	1
Y Carrier	78.1		30 - 110					11/21/23 11:11	12/20/23 11:31	1

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**Client Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Client Sample ID: EQ-1

Date Collected: 11/14/23 15:15

Date Received: 11/15/23 09:15

Lab Sample ID: 180-165401-4

Matrix: Water

**Method: TAL-STL 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	0.161	U	0.343	0.344	5.00	0.547	pCi/L		12/21/23 10:29	1

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

**Method: EPA 9056A - Anions, Ion Chromatography**

Lab Sample ID: MB 180-452138/6  
Matrix: Water  
Analysis Batch: 452138

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

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L			11/16/23 18:38	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/16/23 18:38	1
Sulfate	<0.756		1.00	0.756	mg/L			11/16/23 18:38	1

Lab Sample ID: LCS 180-452138/7  
Matrix: Water  
Analysis Batch: 452138

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

Analyte	Result	Spike Added	LCS LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride		50.0	55.23	mg/L		110	80 - 120
Fluoride		2.50	2.660	mg/L		106	80 - 120
Sulfate		50.0	51.05	mg/L		102	80 - 120

Lab Sample ID: 180-165359-D-1 MS  
Matrix: Water  
Analysis Batch: 452138

Client Sample ID: Matrix Spike  
Prep Type: Total/NA

Analyte	Result	Sample Sample Qualifier	Spike Added	MS MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	8.05		50.0	62.58	mg/L		109	80 - 120
Fluoride	0.0426	J	2.50	2.624	mg/L		103	80 - 120
Sulfate	10.9		50.0	61.24	mg/L		101	80 - 120

Lab Sample ID: 180-165359-D-1 MSD  
Matrix: Water  
Analysis Batch: 452138

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Analyte	Result	Sample Sample Qualifier	Spike Added	MSD MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	8.05		50.0	59.21	mg/L		102	80 - 120	6	15
Fluoride	0.0426	J	2.50	2.496	mg/L		98	80 - 120	5	15
Sulfate	10.9		50.0	57.61	mg/L		93	80 - 120	6	15

Lab Sample ID: MB 180-452346/41  
Matrix: Water  
Analysis Batch: 452346

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

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.713		1.00	0.713	mg/L			11/18/23 22:23	1
Fluoride	<0.0260		0.100	0.0260	mg/L			11/18/23 22:23	1
Sulfate	<0.756		1.00	0.756	mg/L			11/18/23 22:23	1

Lab Sample ID: LCS 180-452346/42  
Matrix: Water  
Analysis Batch: 452346

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

Analyte	Result	Spike Added	LCS LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride		50.0	49.80	mg/L		100	80 - 120
Fluoride		2.50	2.529	mg/L		101	80 - 120
Sulfate		50.0	49.57	mg/L		99	80 - 120

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

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

Lab Sample ID: 180-165373-D-1 MS  
Matrix: Water  
Analysis Batch: 452346

Client Sample ID: Matrix Spike  
Prep Type: Total/NA

Analyte	Result	Sample Sample Qualifier	Spike Added	MS MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1.50		50.0	53.14	mg/L		103	80 - 120
Fluoride	0.163		2.50	2.699	mg/L		101	80 - 120
Sulfate	50.6		50.0	99.72	mg/L		98	80 - 120

Lab Sample ID: 180-165373-D-1 MSD  
Matrix: Water  
Analysis Batch: 452346

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Analyte	Result	Sample Sample Qualifier	Spike Added	MSD MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1.50		50.0	53.18	mg/L		103	80 - 120	0	15
Fluoride	0.163		2.50	2.697	mg/L		101	80 - 120	0	15
Sulfate	50.6		50.0	99.59	mg/L		98	80 - 120	0	15

**Method: EPA 6020B - Metals (ICP/MS)**

Lab Sample ID: MB 180-452231/1-A  
Matrix: Water  
Analysis Batch: 452600

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/21/23 20:18	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/21/23 20:18	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/21/23 20:18	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/21/23 20:18	1
Selenium	<0.000739	+	0.00500	0.000739	mg/L		11/17/23 08:13	11/21/23 20:18	1

Lab Sample ID: MB 180-452231/1-A  
Matrix: Water  
Analysis Batch: 452697

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.000282		0.00100	0.000282	mg/L		11/17/23 08:13	11/22/23 13:14	1
Barium	<0.00314		0.0100	0.00314	mg/L		11/17/23 08:13	11/22/23 13:14	1
Beryllium	<0.000274		0.00100	0.000274	mg/L		11/17/23 08:13	11/22/23 13:14	1
Cadmium	<0.000217		0.00100	0.000217	mg/L		11/17/23 08:13	11/22/23 13:14	1
Calcium	<0.127		0.500	0.127	mg/L		11/17/23 08:13	11/22/23 13:14	1
Chromium	<0.00153		0.00200	0.00153	mg/L		11/17/23 08:13	11/22/23 13:14	1
Cobalt	<0.000261		0.000500	0.000261	mg/L		11/17/23 08:13	11/22/23 13:14	1
Molybdenum	<0.000610		0.00500	0.000610	mg/L		11/17/23 08:13	11/22/23 13:14	1
Lead	<0.000376		0.00100	0.000376	mg/L		11/17/23 08:13	11/22/23 13:14	1
Antimony	0.001396	J	0.00200	0.000967	mg/L		11/17/23 08:13	11/22/23 13:14	1
Selenium	<0.000739		0.00500	0.000739	mg/L		11/17/23 08:13	11/22/23 13:14	1
Thallium	<0.000472		0.00100	0.000472	mg/L		11/17/23 08:13	11/22/23 13:14	1
Lithium	<0.00129		0.00500	0.00129	mg/L		11/17/23 08:13	11/22/23 13:14	1

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-452231/1-A  
Matrix: Water  
Analysis Batch: 452876

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Boron	<0.0601	*5-	0.0800	0.0601	mg/L		11/17/23 08:13	11/27/23 14:10	1

Lab Sample ID: LCS 180-452231/2-A  
Matrix: Water  
Analysis Batch: 452600

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Arsenic	1.00	1.173		mg/L		117	80 - 120	
Cadmium	0.500	0.5944		mg/L		119	80 - 120	
Chromium	0.500	0.5900		mg/L		118	80 - 120	
Cobalt	0.500	0.5918		mg/L		118	80 - 120	

Lab Sample ID: LCS 180-452231/2-A  
Matrix: Water  
Analysis Batch: 452607

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Arsenic	1.00	1.077		mg/L		108	80 - 120	
Barium	1.00	0.9086		mg/L		91	80 - 120	
Beryllium	0.500	0.5434		mg/L		109	80 - 120	
Cadmium	0.500	0.5251		mg/L		105	80 - 120	
Calcium	25.0	29.08		mg/L		116	80 - 120	
Chromium	0.500	0.5255		mg/L		105	80 - 120	
Cobalt	0.500	0.5357		mg/L		107	80 - 120	
Molybdenum	0.500	0.5350		mg/L		107	80 - 120	
Lead	0.500	0.5347		mg/L		107	80 - 120	
Antimony	0.250	0.2708		mg/L		108	80 - 120	
Selenium	1.00	1.047		mg/L		105	80 - 120	
Thallium	1.00	1.062		mg/L		106	80 - 120	
Lithium	0.500	0.5226		mg/L		105	80 - 120	

Lab Sample ID: LCS 180-452231/2-A ^3  
Matrix: Water  
Analysis Batch: 452876

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Boron	1.25	1.113	*5-	mg/L		89	80 - 120	

Lab Sample ID: 180-165398-E-3-B MS  
Matrix: Water  
Analysis Batch: 452600

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Arsenic	0.0121		1.00	1.182		mg/L		117	75 - 125	
Cadmium	0.000224	J	0.500	0.5872		mg/L		117	75 - 125	
Chromium	<0.00153		0.500	0.5872		mg/L		117	75 - 125	
Cobalt	0.00998		0.500	0.5976		mg/L		118	75 - 125	

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QC Sample Results

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

Method: EPA 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-165398-E-3-B MS  
Matrix: Water  
Analysis Batch: 452697

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	
Arsenic	0.0126		1.00	1.170		mg/L		116	75 - 125	
Barium	0.0131		1.00	1.006		mg/L		99	75 - 125	
Beryllium	<0.000274		0.500	0.5711		mg/L		114	75 - 125	
Cadmium	0.000367	J	0.500	0.5643		mg/L		113	75 - 125	
Calcium	73.3	F1	25.0	107.3	F1	mg/L		136	75 - 125	
Chromium	<0.00153		0.500	0.5615		mg/L		112	75 - 125	
Cobalt	0.00923		0.500	0.5890		mg/L		116	75 - 125	
Molybdenum	0.0337		0.500	0.6156		mg/L		116	75 - 125	
Lead	<0.000376		0.500	0.5776		mg/L		116	75 - 125	
Antimony	0.00168	J B	0.250	0.2884		mg/L		115	75 - 125	
Selenium	0.00167	J	1.00	1.096		mg/L		109	75 - 125	
Thallium	<0.000472		1.00	1.153		mg/L		115	75 - 125	
Lithium	0.0218		0.500	0.5718		mg/L		110	75 - 125	

Lab Sample ID: 180-165398-E-3-B MS ^20  
Matrix: Water  
Analysis Batch: 452876

Client Sample ID: Matrix Spike  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec	
				Result	Qualifier				Limits	
Boron	4.83	*5- F2 F1	1.25	6.253	*5-	mg/L		114	75 - 125	

Lab Sample ID: 180-165398-E-3-C MSD  
Matrix: Water  
Analysis Batch: 452600

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits			
Arsenic	0.0121		1.00	1.181		mg/L		117	75 - 125	0	20	
Cadmium	0.000224	J	0.500	0.5870		mg/L		117	75 - 125	0	20	
Chromium	<0.00153		0.500	0.5876		mg/L		118	75 - 125	0	20	
Cobalt	0.00998		0.500	0.5994		mg/L		118	75 - 125	0	20	

Lab Sample ID: 180-165398-E-3-C MSD  
Matrix: Water  
Analysis Batch: 452697

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 452231

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec		RPD	Limit
				Result	Qualifier				Limits			
Arsenic	0.0126		1.00	1.131		mg/L		112	75 - 125	3	20	
Barium	0.0131		1.00	0.9876		mg/L		97	75 - 125	2	20	
Beryllium	<0.000274		0.500	0.5593		mg/L		112	75 - 125	2	20	
Cadmium	0.000367	J	0.500	0.5468		mg/L		109	75 - 125	3	20	
Calcium	73.3	F1	25.0	106.1	F1	mg/L		131	75 - 125	1	20	
Chromium	<0.00153		0.500	0.5418		mg/L		108	75 - 125	4	20	
Cobalt	0.00923		0.500	0.5696		mg/L		112	75 - 125	3	20	
Molybdenum	0.0337		0.500	0.5998		mg/L		113	75 - 125	3	20	
Lead	<0.000376		0.500	0.5604		mg/L		112	75 - 125	3	20	
Antimony	0.00168	J B	0.250	0.2802		mg/L		111	75 - 125	3	20	
Selenium	0.00167	J	1.00	1.053		mg/L		105	75 - 125	4	20	
Thallium	<0.000472		1.00	1.106		mg/L		111	75 - 125	4	20	
Lithium	0.0218		0.500	0.5595		mg/L		108	75 - 125	2	20	

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

**Method: EPA 6020B - Metals (ICP/MS) (Continued)**

Lab Sample ID: 180-165398-E-3-C MSD		Client Sample ID: Matrix Spike Duplicate									
Matrix: Water		Prep Type: Total Recoverable									
Analysis Batch: 452876		Prep Batch: 452231									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Boron	4.83	A5- F2 F1	1.25	6.493	A5- F1	mg/L		133	75 - 125	4	20

**Method: EPA 7470A - Mercury (CVAA)**

Lab Sample ID: MB 180-452642/1-A		Client Sample ID: Method Blank									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 452853		Prep Batch: 452642									
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Mercury	<0.000130		0.000200	0.000130	mg/L		11/22/23 09:11	11/27/23 13:52			1

Lab Sample ID: LCS 180-452642/2-A		Client Sample ID: Lab Control Sample									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 452853		Prep Batch: 452642									
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Mercury	0.00250	0.002373		mg/L		95	80 - 120				

Lab Sample ID: 180-165410-K-1-C MS		Client Sample ID: Matrix Spike									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 452853		Prep Batch: 452642									
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits		
Mercury	0.000133	J	0.00100	0.001028		mg/L		90	75 - 125		

Lab Sample ID: 180-165410-K-1-D MSD		Client Sample ID: Matrix Spike Duplicate									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 452853		Prep Batch: 452642									
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	0.000133	J	0.00100	0.0009770		mg/L		84	75 - 125	5	20

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

Lab Sample ID: MB 180-452325/1		Client Sample ID: Method Blank									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 452325											
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Total Dissolved Solids	<10.0		10.0	10.0	mg/L			11/17/23 17:24			1

Lab Sample ID: LCS 180-452325/2		Client Sample ID: Lab Control Sample									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 452325											
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Total Dissolved Solids	336	316.0		mg/L		94	85 - 115				

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

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

Lab Sample ID: 180-165389-A-3 DU		Client Sample ID: Duplicate										
Matrix: Water		Prep Type: Total/NA										
Analysis Batch: 452325												
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit				
Total Dissolved Solids	1440		1405		mg/L			2	10			

Lab Sample ID: 180-165401-3 DU		Client Sample ID: SSP MW-4									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 452325											
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit			
Total Dissolved Solids	2910		2832		mg/L		NC	10			

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

Lab Sample ID: MB 160-637741/1-A		Client Sample ID: Method Blank									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 641474		Prep Batch: 637741									
Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
Radium-226	0.06042	U	0.132	0.132	1.00	0.244	pCi/L	11/21/23 11:04	12/20/23 18:28	1	

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		30 - 110	11/21/23 11:04	12/20/23 18:28	1

Lab Sample ID: LCS 160-637741/2-A		Client Sample ID: Lab Control Sample									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 641474		Prep Batch: 637741									
Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226	11.3	9.379		1.23	1.00	0.319	pCi/L	83	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.9		30 - 110

Lab Sample ID: 500-242591-N-16-A DU		Client Sample ID: Duplicate									
Matrix: Water		Prep Type: Total/NA									
Analysis Batch: 641668		Prep Batch: 637741									
Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit	
Radium-226	0.561		0.05877	U F	0.174	1.00	0.323	pCi/L	1.13	1	

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	101		30 - 110

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**QC Sample Results**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

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

Lab Sample ID: MB 160-637742/1-A  
Matrix: Water  
Analysis Batch: 641669

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 637742

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac	
	Result	Qualifier									
Radium-228	-0.04353	U	0.204	0.204	1.00	0.409	pCi/L	11/21/23 11:11	12/20/23 11:35	1	
<b>Carrier</b>	<b>MB MB</b>		<b>Limits</b>				<b>Prepared</b>		<b>Analyzed</b>		<b>Dil Fac</b>
Ba Carrier	98.5		30 - 110				11/21/23 11:11		12/20/23 11:35		1
Y Carrier	84.1		30 - 110				11/21/23 11:11		12/20/23 11:35		1

Lab Sample ID: LCS 160-637742/2-A  
Matrix: Water  
Analysis Batch: 641669

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 637742

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	
										Radium-228
<b>Carrier</b>	<b>LCS LCS</b>		<b>Limits</b>				<b>%Yield</b>		<b>Qualifier</b>	<b>Limits</b>
Ba Carrier	97.9		30 - 110				81.1			30 - 110
Y Carrier	81.1		30 - 110							

Lab Sample ID: 500-242591-N-16-B DU  
Matrix: Water  
Analysis Batch: 641669

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 637742

Analyte	Sample Sample		DU DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual						
Radium-228	0.221	U	0.4420	U	0.307	1.00	0.449	pCi/L	0.33	1
<b>Carrier</b>	<b>DU DU</b>		<b>Limits</b>				<b>%Yield</b>		<b>Qualifier</b>	<b>Limits</b>
Ba Carrier	101		30 - 110				77.0			30 - 110
Y Carrier	77.0		30 - 110							

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

**HPLC/IC**

**Analysis Batch: 452138**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-3	SSP MW-4	Total/NA	Water	EPA 9056A	
MB 180-452138/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452138/7	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165359-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-165359-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Analysis Batch: 452346**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total/NA	Water	EPA 9056A	
180-165401-1	AP MW-4	Total/NA	Water	EPA 9056A	
180-165401-2	DUP-1	Total/NA	Water	EPA 9056A	
180-165401-2	DUP-1	Total/NA	Water	EPA 9056A	
180-165401-4	EQ-1	Total/NA	Water	EPA 9056A	
MB 180-452346/41	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-452346/42	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-165373-D-1 MS	Matrix Spike	Total/NA	Water	EPA 9056A	
180-165373-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 9056A	

**Metals**

**Prep Batch: 452231**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total Recoverable	Water	3005A	
180-165401-2	DUP-1	Total Recoverable	Water	3005A	
180-165401-3	SSP MW-4	Total Recoverable	Water	3005A	
180-165401-4	EQ-1	Total Recoverable	Water	3005A	
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-452231/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCS 180-452231/2-A ^3	Lab Control Sample	Total Recoverable	Water	3005A	
180-165398-E-3-B MS	Matrix Spike	Total Recoverable	Water	3005A	
180-165398-E-3-B MS ^20	Matrix Spike	Total Recoverable	Water	3005A	
180-165398-E-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	

**Analysis Batch: 452600**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total Recoverable	Water	EPA 6020B	452231
180-165401-2	DUP-1	Total Recoverable	Water	EPA 6020B	452231
180-165401-3	SSP MW-4	Total Recoverable	Water	EPA 6020B	452231
180-165401-4	EQ-1	Total Recoverable	Water	EPA 6020B	452231
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452231
LCS 180-452231/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452231
180-165398-E-3-B MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	452231
180-165398-E-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	452231

**Prep Batch: 452642**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total/NA	Water	7470A	
180-165401-2	DUP-1	Total/NA	Water	7470A	
180-165401-3	SSP MW-4	Total/NA	Water	7470A	
180-165401-4	EQ-1	Total/NA	Water	7470A	
MB 180-452642/1-A	Method Blank	Total/NA	Water	7470A	

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

**Metals (Continued)**

**Prep Batch: 452642 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-452642/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-165410-K-1-C MS	Matrix Spike	Total/NA	Water	7470A	
180-165410-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

**Analysis Batch: 452697**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total Recoverable	Water	EPA 6020B	452231
180-165401-2	DUP-1	Total Recoverable	Water	EPA 6020B	452231
180-165401-3	SSP MW-4	Total Recoverable	Water	EPA 6020B	452231
180-165401-4	EQ-1	Total Recoverable	Water	EPA 6020B	452231
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452231
LCS 180-452231/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452231
180-165398-E-3-B MS	Matrix Spike	Total Recoverable	Water	EPA 6020B	452231
180-165398-E-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	452231

**Analysis Batch: 452853**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total/NA	Water	EPA 7470A	452642
180-165401-2	DUP-1	Total/NA	Water	EPA 7470A	452642
180-165401-3	SSP MW-4	Total/NA	Water	EPA 7470A	452642
180-165401-4	EQ-1	Total/NA	Water	EPA 7470A	452642
MB 180-452642/1-A	Method Blank	Total/NA	Water	EPA 7470A	452642
LCS 180-452642/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	452642
180-165410-K-1-C MS	Matrix Spike	Total/NA	Water	EPA 7470A	452642
180-165410-K-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	EPA 7470A	452642

**Analysis Batch: 452876**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total Recoverable	Water	EPA 6020B	452231
180-165401-2	DUP-1	Total Recoverable	Water	EPA 6020B	452231
180-165401-3	SSP MW-4	Total Recoverable	Water	EPA 6020B	452231
180-165401-4	EQ-1	Total Recoverable	Water	EPA 6020B	452231
MB 180-452231/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	452231
LCS 180-452231/2-A *3	Lab Control Sample	Total Recoverable	Water	EPA 6020B	452231
180-165398-E-3-B MS *20	Matrix Spike	Total Recoverable	Water	EPA 6020B	452231
180-165398-E-3-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	EPA 6020B	452231

**General Chemistry**

**Analysis Batch: 452325**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total/NA	Water	SM 2540C	
180-165401-2	DUP-1	Total/NA	Water	SM 2540C	
180-165401-3	SSP MW-4	Total/NA	Water	SM 2540C	
180-165401-4	EQ-1	Total/NA	Water	SM 2540C	
MB 180-452325/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-452325/2	Lab Control Sample	Total/NA	Water	SM 2540C	
180-165389-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	
180-165401-3 DU	SSP MW-4	Total/NA	Water	SM 2540C	

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**QC Association Summary**

Client: HDR Inc  
Project/Site: Gibbons Creek Steam Electric Station

Job ID: 180-165401-1

**Rad**

**Prep Batch: 637741**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total/NA	Water	PrecSep-21	
180-165401-2	DUP-1	Total/NA	Water	PrecSep-21	
180-165401-3	SSP MW-4	Total/NA	Water	PrecSep-21	
180-165401-4	EQ-1	Total/NA	Water	PrecSep-21	
MB 160-637741/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-637741/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
500-242591-N-16-A DU	Duplicate	Total/NA	Water	PrecSep-21	

**Prep Batch: 637742**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-165401-1	AP MW-4	Total/NA	Water	PrecSep_0	
180-165401-2	DUP-1	Total/NA	Water	PrecSep_0	
180-165401-3	SSP MW-4	Total/NA	Water	PrecSep_0	
180-165401-4	EQ-1	Total/NA	Water	PrecSep_0	
MB 160-637742/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-637742/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
500-242591-N-16-B DU	Duplicate	Total/NA	Water	PrecSep_0	

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**Chain of Custody Record**

<b>Client Information</b>		Lab #/M Hayes, Ken		COC No. 180-67955-19428.2		
David Vogt (Will Nicholson)		E-Mail Ken.Hayes@Eurolfins.com		Page 1 of 1		
HDR Inc		PWSID		Job #		
Address 17111 Preston Road, Suite 200		City Dallas		State of Origin TX		
Phone 714-759-6122		TAT Requested (days):		Preservation Codes:		
Fax 972-960-4461 (Tel)		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaOH F - NaOH G - Acetic Acid H - Acetic Acid I - DI Water J - EDTA K - EDTA L - EDA M - Hexane N - None O - AANAOZ P - NaOH Q - NaOH R - NaOH S - H2SO4 T - Acetic Acid U - Acetic Acid V - MCAA W - pH 4.5 X - other (specify)		
Project Name Gibbons Creek Steam Electric Station		Project # 18023511		Other:		
Site SS0W#		SS0W#		Special Instructions/Notes:		
<b>Sample Identification</b>		<b>Analysis Requested</b>		Total Number of Containers		
Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Preservation Code	D	I	N
11/14/23	1350	G	Water	X	X	X
11/14/23	1600	G	Water	X	X	X
11/14/23	1505	G	Water	X	X	X
11/14/23	1515	G	Water	X	X	X
			Water			
			Water			
			Water			
			Water			
			Water			
			Water			
			Water			
			Water			
<b>Possible Hazard Identification</b>		<b>Method of Shipment</b>		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Dispose By Lab <input type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify)		Date: 11/14/23 1730		Special Instructions/OC Requirements:		
Empty Kit Requisitioned by: <i>Will Nicholson</i>		Date/Time: 11/14/23 1730		Date/Time: 11/15/23 0915		
Retransmitted by:		Company: HDR		Company: EPA/AME		
Retransmitted by:		Company:		Company:		
Retransmitted by:		Company:		Company:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature (°C) and Other Remarks:		



**Chain of Custody Record**

<b>Client Information (Sub Contract Lab)</b>		Lab #/M Hayes, Ken		COC No. 180-469717.1		
Shoring/Receiving		E-Mail Ken.Hayes@eurolfins.com		Page 1 of 1		
Company TestAmerica Laboratories, Inc		PWSID		Job #		
Address 13715 Riser Trail North		City Dallas		State of Origin TX		
Phone 314-298-5565 (Tel) 314-298-9757 (Fax)		TAT Requested (days):		Preservation Codes:		
Site SS0W#		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaOH F - NaOH G - Acetic Acid H - Acetic Acid I - DI Water J - EDTA K - EDTA L - EDA M - Hexane N - None O - AANAOZ P - NaOH Q - NaOH R - NaOH S - H2SO4 T - Acetic Acid U - Acetic Acid V - MCAA W - pH 4.5 X - other (specify)		
Project Name Gibbons Creek Steam Electric Station		Project # 18023511		Other:		
Site SS0W#		SS0W#		Special Instructions/Notes:		
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Analysis Requested</b>		Total Number of Containers		
Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Preservation Code	D	I	N
11/14/23	13:50	Central	Water	X	X	X
11/14/23	15:05	Central	Water	X	X	X
11/14/23	15:05	Central	Water	X	X	X
11/14/23	15:15	Central	Water	X	X	X
			Water			
			Water			
			Water			
			Water			
			Water			
			Water			
			Water			
			Water			
<b>Possible Hazard Identification</b>		<b>Method of Shipment</b>		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Dispose By Lab <input type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify)		Date: 11-17-23 1700		Special Instructions/OC Requirements:		
Empty Kit Requisitioned by: <i>Will Nicholson</i>		Date/Time: 11-17-23 1700		Date/Time: NOV 21 2023 0900		
Retransmitted by:		Company: EPA/AME		Company: EPA/AME		
Retransmitted by:		Company:		Company:		
Retransmitted by:		Company:		Company:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature (°C) and Other Remarks:		



### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165401-1

Login Number: 165401

List Source: Eurofins Pittsburgh

List Number: 1

Creator: Abernathy, Eric L

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\neq</math> 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?	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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

### Login Sample Receipt Checklist

Client: HDR Inc

Job Number: 180-165401-1

Login Number: 165401

List Source: Eurofins St. Louis

List Number: 2

List Creation: 11/20/23 02:18 PM

Creator: Pinette, Meadow L

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