

2025 Annual Groundwater Monitoring Report for the Limited Purpose Landfill at the TransAlta Centralia Mine, near Centralia, Washington

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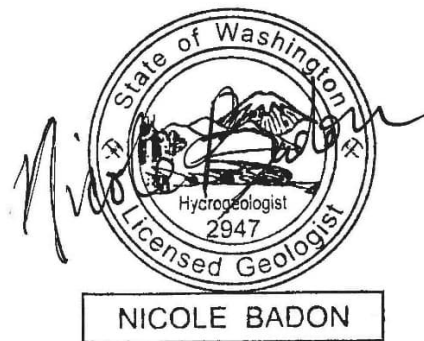
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This report has been certified by a Hydrogeologist
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Acronyms and Abbreviations

°C	degrees Celsius
CCR	coal combustion residuals
CCR SAP	<i>Groundwater Monitoring Sampling and Analysis Plan for the Limited Purpose Landfill at the TransAlta Centralia Mine</i>
CFR	Code of Federal Regulations
DQR	Double Quantification Rule
EPA	U.S. Environmental Protection Agency
HNO ₃	nitric acid
LPLF	Limited Purpose Landfill
mg/L	milligram per liter
SSI	statistically significant increase
SWFPR	sitewide false positive rate
TCM	TransAlta Centralia Mine
UPL	Upper Prediction Limit
WAC	Washington Administrative Code

Introduction

This section summarizes the 2025 annual report's purpose and objectives, the document organization, and provides the site description and the status of the monitoring program.

1.1 Purpose and Objectives

This document is the 2025 annual report for the Limited Purpose Landfill at the TransAlta Centralia Mine (TCM), as required per *CCR Groundwater Monitoring and Corrective Action* of 40 Code of Federal Regulations (CFR), 257.90(e), *Annual Groundwater Monitoring and Corrective Action Report*. Per the CCR Rule, the minimum requirements for each annual report submittal must include the following (as itemized per 40 CFR 257.90(e) [items 1 through 5]):

1. A map showing the Coal Combustion Residuals (CCR) unit (landfill) and the designated CCR groundwater monitoring network, including upgradient and downgradient wells with well identification numbers.
2. The identification of monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description, and the reasons those actions were taken.
3. A summary of the groundwater samples that were collected for analysis for each upgradient (or background) and downgradient well, the dates the samples were collected, and whether the sample was required by the detection or assessment monitoring program.
4. A narrative discussion of transition between monitoring programs (the date and circumstances of transitioning from detection phase to assessment monitoring), if applicable
5. Other information required per 40 CFR 257.90 through 257.94, interpreted to include the following:
 - A map showing groundwater elevations, inferred groundwater elevation contours, and inferred groundwater flow direction from the sampling events conducted during the year.
 - A groundwater elevation hydrograph, including data over the period of record.
 - Groundwater flow rates for the semiannual events conducted during the preceding year.
 - Results from data quality review and data validation
 - A summary of the statistical method and the respective background (compliance) limits for Detection Monitoring (Appendix III) constituents
 - A summary of any Appendix III constituents that are identified as a statistically significant increase (SSI) greater than background levels.

In addition to this technical information, the annual report must also include a narrative of the following items:

- Documentation of the status of the monitoring program (that is, detection or assessment phase)
- Key actions completed for the preceding calendar year including alternative source demonstrations
- A description of problems encountered, and actions taken to resolve the problems (if needed)
- Key activities anticipated for the upcoming year

The annual reports are due by January 31 and summarize monitoring results from the preceding year. The CCR Rule requires specific reports and notifications throughout the monitoring process, with up to three forms of submittals:

- The site's operating record (40 CFR 257.105)
- Notifications to the State Director (40 CFR 257.106)
- The publicly accessible internet site (40 CFR 257.107)

1.2 Document Organization

The document is organized into the following sections:

- Section 1. Introduction. Presents the document purpose and objectives, site description, and status of monitoring program.
- Section 2. Monitoring Program Description. Summarizes the groundwater monitoring system design (well network) and the sampling program for the Limited Purpose Landfill.
- Section 3. Groundwater Monitoring Results. Summarizes the groundwater monitoring information related to background data collection and the initial compliance event and provides a map showing groundwater elevations and inferred flow direction, estimates of groundwater seepage velocity, and a summary of groundwater quality results for the initial compliance event.
- Section 4. Statistical Evaluation. Summarizes the statistical method and the compliance limits and compares the initial compliance results to the compliance limits to determine whether there is an SSI greater than background conditions for the Appendix III constituents.
- Section 5. Alternative Source Demonstration. Summarizes statistically significant exceedances, the detection monitoring results, retesting, confirmation, and documentation of an alternative source demonstration for the confirmed values.
- Section 6. Summary. Summarizes the key points of the initial annual report per the CCR regulatory requirements.
- Section 7. References. Lists the documents referenced to develop this report.

1.3 Site Description

TCM manages the Limited Purpose Landfill, which is approximately 7 miles east of Centralia, Washington (Figure 1). The Limited Purpose Landfill is north of Pit 7 in the Centralia Mine. The site is in the southern half of Section 33, Township 15N, Range 1W; Latitude 46°44'23" North, Longitude 122°49'55". The site address is 913 Big Hanaford Road, and the Property Tax Parcel (Account) Number is 023387001000. The permitted area encompassing the Limited Purpose Landfill is 57 acres, and the actual footprint of the waste disposal area is 18 acres (Figure 2). The Limited Purpose Landfill consists of the waste disposal area, and the surface impoundments immediately south of the waste disposal area to manage leachate generated at the disposal cell.

TransAlta Centralia Generation LLC operates a coal-burning power plant that is located adjacent to TCM and generates residual ash waste; the residual ash waste is disposed of into the Limited Purpose Landfill. The construction of Stage 1 began during the summer of 2009, and the Lewis County Environmental Health Department authorized TCM to begin waste disposal operations effective October 31, 2009. On December 21, 2009, the Lewis County Environmental Health Department amended the facility permit to approve the disposal of residual ash waste in Stage 1 Area A3a, in addition to Areas A1 and A2, which had been approved for disposal in the original permit. The Stage 2 Area of the Limited Purpose Landfill

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was constructed in three phases from 2011 through 2014 and was subsequently approved for the receipt of ash waste material.

1.4 Status of the Groundwater Monitoring Program

The groundwater monitoring program is currently in the detection phase, as described under 40 CFR 257.94, *Detection Monitoring Program*.

In 2019, the background levels for the Appendix III constituents listed for detection monitoring were updated. The resultant Upper Prediction Limits (UPLs) represent a longer period of monitoring providing an additional 5 monitoring events. Due to the complex behavior of groundwater and need for sufficiently large sample sizes, the EPA Unified Guidance recommends that background levels should be evaluated and possibly updated every four to eight measurements.

Groundwater monitoring was conducted May 14, 2025 and October 13, 2025 for biannual monitoring. Resampling was conducted after the May 14, 2025 event on June 25, 2025 for an exceedance for boron in wells LPLF-2R and LPLF-8, and TDS in LPLF-2R. Resampling was conducted after the October 13, 2025 sampling event on December 2, 2025 for boron in wells LPLF-2R, LPLF 7R, and LPLF-8, and TDS in LPLF-2R. The resampling results were used in an alternative source demonstration, as documented in Section 5 of this report. Based on the demonstrations, the SSI are determined as a result of natural variation in groundwater concentrations from the resaturated spoils beneath the facility.

Monitoring Program Description

This section summarizes the CCR groundwater monitoring program for the Limited Purpose Landfill.

2.1 Monitoring Program

Groundwater is monitored in accordance with the CCR SAP (CH2M, 2016). Details regarding the site hydrogeology, the stratigraphic sequence, the uppermost aquifer, and the lower aquitard/confining unit are presented in the groundwater monitoring system design document (CH2M, 2017a) posted to the publicly available website and are not reiterated herein. Details regarding the monitoring network, sampling, and field/laboratory quality control are described in the following sections.

2.2 Monitoring Network

Effective April 17, 2015, the CCR regulations (specifically, 40 CFR 257.91, *Groundwater Monitoring Systems*) require a facility to install a detection groundwater monitoring system at appropriate locations and depths to yield groundwater samples from the uppermost aquifer and monitoring of all potential contamination pathways. At least one upgradient well must accurately represent the quality of background groundwater unaffected by potential leakage from the CCR unit. The regulations also state that at least three downgradient wells must accurately represent the quality of groundwater passing the waste boundary for the detection of potential groundwater contamination in the uppermost aquifer.

Table 1 summarizes the groundwater monitoring well network and construction details for the Limited Purpose Landfill. Figure 2 shows the designated CCR groundwater monitoring network, which consists of five wells screened in the uppermost aquifer and located around the perimeter of the ash disposal area. Monitoring wells LPLF-1 and LPLF-5 are effectively upgradient of the landfill and used to characterize background conditions unaffected by the landfill, and wells LPLF-2R, LPLF-7R, and LPLF-8 are downgradient and designated as compliance wells. As noted in Section 2.1, documentation of the CCR *Groundwater Monitoring Systems* design was submitted to the publicly available website in October 2017, as described in the *Coal Combustion Residual Groundwater Monitoring System Certification for the Limited Purpose Landfill at the Centralia Mine near Centralia, Washington* (CH2M, 2017a).

2.3 Groundwater Level Measurement

Static groundwater level measurements are collected during each monitoring event to calculate groundwater elevations, estimate groundwater flow direction, and calculate the groundwater seepage velocity. Groundwater elevations are calculated by subtracting the field measured static depth to water from the surveyed top-of-casing elevations relative to the local vertical datum (NAD 27, Washington State Plane, North 3601, Feet Intl). Field-measured groundwater levels are recorded on field forms (provided in Appendix A), and the groundwater level data are presented in Section 3.

2.4 Groundwater Sampling

Each well is equipped with dedicated tubing to facilitate low-flow sampling methods, except for LPLF-1, which is bailed to collect the sample. A peristaltic pump is used to support sampling methods required for low-flow (minimal drawdown) groundwater sampling procedures as described under *Groundwater Sampling Guidelines for Superfund and RCRA Project Managers* (EPA, 2002). In accordance with the low-flow method, purging continues until field parameters have stabilized to acceptable tolerances as outlined in the CCR SAP (CH2M, 2016b). Field parameters are measured using factory-calibrated multiparameter probe. Appendix A includes copies of field sampling forms for sampling events conducted in 2025.

Groundwater samples were collected in laboratory-provided sample containers. Below are the test methods, reporting limits, and preservatives to collect groundwater samples for the Appendix III constituents for detection monitoring.

Constituent	Analytical Test Method	Reporting Limit (mg/L)	Preservative
Boron	EPA 6010C	0.01	HNO ₃
Calcium	EPA 6010C	0.05	HNO ₃
Chloride	E300	2.5	Chill to 4°C
Fluoride	E300	0.5	Chill to 4°C
pH	SM 4500H B	0.1	Chill to 4°C
Sulfate	E300	10	Chill to 4°C
Total Dissolved Solids	A2540C	1	Chill to 4°C

°C = degrees Celsius

HNO₃ = nitric acid

mg/L = milligram per liter

Laboratory analyses were performed by an accredited and certified testing laboratory (ALS, in Kelso, Washington).

2.5 Field and Laboratory Quality Control

As described in the CCR SAP (CH2M, 2016b), field and laboratory quality control are guided by the field quality control procedures that included sample labeling, chain-of-custody documentation, and sealing of sample containers following sample collection. Field duplicate and matrix spike (with duplicates) samples are collected during each sampling event. Temperature blanks are included with each shipment.

Laboratory quality control procedures included analysis of method blanks, surrogates, duplicates, replicates, lab control samples, and matrix spike/matrix spike duplicates. Results from the laboratory quality control procedures are included in the analytical data packages and are included in Appendix B.

Groundwater Monitoring Results

This section summarizes the groundwater monitoring results related to the dates of sampling for the monitoring events, groundwater elevations, groundwater flow direction, the estimates of groundwater seepage velocity, and the groundwater quality results from the monitoring events.

3.1 Compliance Monitoring Events

The CCR Rule requires at least eight background groundwater monitoring events before the October 17, 2017, deadline to establish background conditions. Monitoring events after the eighth background event are considered initial detection-phase compliance monitoring to determine whether there is an SSI greater than background conditions. Below is a summary of the compliance and resampling events and the respective constituent suites for the sampling events. In 2025 an additional 2 monitoring events were included in the re-evaluation and determination of groundwater conditions.

Monitoring Event Type/Purpose	Date Completed	Appendix III, Detection Monitoring Constituents	Resampled Wells
Detection/Compliance	May 14, 2025	Yes	NA
Resampling/Confirmation	June 25, 2025	2 Constituents (boron, and TDS)	LPLF-2R, LPLF-8
Detection/Compliance	October 13, 2025	Yes	NA
Resampling/Confirmation	December 2, 2025	2 Constituents (boron, and TDS)	LPLF-2R, LPLF-7R, LPLF-8

3.2 Groundwater Levels and Hydrographs

Table 2 summarizes the groundwater measurements from the 2025 groundwater monitoring program. Figure 3 shows the groundwater elevation hydrograph from the CCR network wells from the initial monitoring events conducted from November 2016 through December 2025. In general, groundwater elevations are relatively similar to historical levels. Continued monitoring will be used to assess the need to evaluate seasonal patterns, characteristics, or apparent trends in the site hydrograph.

3.3 Groundwater Flow Direction

Figures 4 and 5 show the elevation contours and inferred flow direction for the groundwater conditions at the site for May and October 2025, respectively. The groundwater in the uppermost aquifer beneath the Limited Purpose Landfill generally flows to the southwest. Well, LPLF-5 was dry during the May and October 2025 sampling events (the elevation of the lowest measured groundwater level in LPLF-5 was used for contouring). A flow direction to the southwest is consistent with historical groundwater monitoring results.

3.4 Groundwater Flow Velocity Estimates

The estimated groundwater seepage velocity is 5 feet per year, which is based on the following equation and hydraulic assumptions, and groundwater elevations in the uppermost aquifer:

$$v = \frac{K_a i}{n_e} \quad \text{Equation from Fetter, 1994}$$

where:

v	=	groundwater velocity (seepage velocity)
K_a	=	average horizontal hydraulic conductivity
i	=	horizontal hydraulic gradient
n_e	=	effective porosity

- An average hydraulic conductivity estimate of 0.11 to 0.17 feet per day (equivalent to 3.88×10^{-5} to 5.82×10^{-5} centimeters per second), which is based on slug test analyses and as summarized in the *Coal Combustion Residual Groundwater Monitoring System Certification for the Limited Purpose Landfill at the Centralia Mine Site near Centralia, Washington* (CH2M, 2017a).
- Hydraulic gradient was consistently 0.02 to 0.03 feet per foot, as measured from Figures 4 and 5. This value is considered a typical but lower value based on previous monitoring performed under the pre-existing WAC program since 2007.
- Effective porosity of 0.15 (assumed value generally representative of mine spoils)

3.5 Groundwater Quality Results

Table 3 presents the groundwater quality results for the Appendix III constituents from the 2025 groundwater monitoring and resampling events. Groundwater data from the monitoring events are compared to the background conditions per the selected statistical method to determine whether the initial compliance values exceed background concentrations, as presented in Section 4. Resampling was conducted to confirm parameters that represented statistically significant exceedances for those wells and parameters identified.

3.6 Data Quality Assessment

The groundwater quality data were reviewed to assess the representativeness and usability of data before performing statistical evaluations as presented in Section 4. The method for performing the data quality review is documented in the CCR SAP (CH2M, 2016b) and follows procedures in the U.S. Environmental Protection Agency (EPA) *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA, 2016).

Table 4 is a summary of the data validation that was conducted for each sampling and analysis event. The summary includes review of laboratory analysis, receipt, qualifiers, laboratory method blanks, replicant sample results, and matrix spike recovery. Additionally, a field duplicate was collected for each detection monitoring event and relative percentage difference calculated for the duplicate sample. Laboratory and field duplicate values were within the data validation limits, except for chloride, which was slightly above the limit, in the October 2025 field duplicate for LPLF-7R.

The data quality assessment is that analysis was consistent with the CCR SAP for the site. Based on this review, the field and laboratory methods followed the procedures specified in the CCR SAP, the completeness target/goal of 100 percent was achieved, none of the data were rejected, and data were found to satisfy the data quality objectives to be included for statistical evaluation as presented in Section 4.

Statistical Evaluation

This section summarizes the CCR regulatory requirements for statistical evaluation under the detection phase, as well as the selected statistical method, and compares the 2025 monitoring data to determine if monitoring values exceed compliance limits.

4.1 Statistical Evaluation Regulatory Requirements

The CCR Rule specifically lists four methods acceptable for statistical analysis (40 CFR 257.93[f]):

1. Parametric or nonparametric analysis of variance
2. Tolerance intervals
3. Prediction intervals (limits)
4. Control charts

Another statistical test method also may be considered if it meets the performance standards listed in 40 CFR 297.93(g). Per the CCR Rule, the selected statistical method was posted to the publicly available website by the October 17, 2017, deadline.

4.2 Statistical Evaluation Methods and Compliance Limits

Based on the site-specific groundwater conditions and results from an exploratory evaluation of the background data, the selected statistical method for evaluating groundwater detection monitoring data is a prediction interval (limit) method, which is a statistical method option, per 40 CFR 257.93(f)(3). The prediction interval method will be used separately for each well-constituent pair and was selected because the Appendix III constituents exhibited significant spatial variability, making an upgradient versus downgradient, also known as interwell, comparison infeasible. The method for six of the seven Appendix III constituents (including boron, calcium, chloride, pH, sulfate, and TDS) is an intra-well Prediction Limit; the seventh constituent, fluoride, is handled separately via the Double Quantification Rule (DQR). Per EPA *Unified Guidance* (2009), the DQR is applicable to constituents that exhibit 100 percent no-detect characteristics, and fluoride is 100 percent nondetect during the background period. The DQR method, which is applicable to fluoride only, assumes that a SSI is confirmed if both the original and retest values are confirmed to be detected values. Supplemental details and rationale for method selection are presented in *Coal Combustion Residual Statistical Method for the Limited Purpose Landfill at the Centralia Mine near Centralia, Washington* (CH2M, 2017b), which has been posted to the CCR public website prior to the October 17, 2017, deadline.

EPA's *Unified Guidance* (2009) recommends that prediction limits be combined with retesting for maintaining a low sitewide false positive rate (SWFPR) while providing high statistical power. The exploratory analysis confirmed a "1-of-2" retesting strategy is acceptable and will be used to verify an apparent SSI (that is, an initial SSI for Appendix III constituents). Retesting is an integral part of the statistical methodology for controlling the SWFPR when multiple monitoring locations and parameters are being evaluated. Assuming the "1-of-2" retesting approach, an apparent SSI cannot be confirmed or denied until the results of the resampling event have been obtained.

Following the prediction interval method, the compliance limits were calculated on the CCR Appendix III constituents for the three downgradient compliance wells (LPLF-2R, LPLF-8, and LPLF-7R). The calculation of intra-well prediction limits is used for six of the seven CCR constituents, including boron, calcium, chloride, pH, sulfate, and TDS; fluoride is evaluated separately via the DQR as a result of the 100 percent nondetects during background period. Assuming that sample background data are normally

distributed, or assuming that they can be transformed to fit a normal distribution, then the parametric upper prediction limit (UPL) is based on equation (1) as follows:

$$UPL = \bar{x} + Ks \quad (1)$$

where:

\bar{x} is the sample mean,

s is the sample standard deviation, and

K is a multiplier factor that is chosen based on the evaluation schedule (nE), number of constituents (nc), number of wells (nw), number of background observations (n), overall SWFPR, and the specific retesting scheme selected.

For constituents such as pH, which require both lower and upper prediction limits, equation (2) is used:

$$LPL, UPL = \bar{x} \pm Ks \quad (2)$$

Table 5 presents the background (compliance) limits for each Appendix-III constituent derived from the equations above. For selected constituents exhibiting trends during background period, the background data were detrended before determining the background levels. As shown in Table 5, the constituents in which trends will be accounted for include boron, calcium, and TDS at well LPLF-2R; sulfate and TDS at well LPLF-7R; and calcium, sulfate, and TDS at well LPLF-8. For the cases listed as 'no' for trend removal, the UPLs and lower prediction levels are the fixed compliance values to directly compare against future detection monitoring data to determine a SSI above compliance, and will be the levels to use until background is updated in the future. However, for cases listed as 'yes' for trend removal, the UPL is a calculated value dependent on time of sampling using equation (3) as follows:

$$\text{Trend accounting UPL} = \text{Intercept} + \text{slope} * (\text{time, in days}) + \text{residual value} \quad (3)$$

Note that the trendline equations and variables for intercept, slope, time, and residual values are shown in Table 5; these UPLs are listed as 'calculated' as they are dependent upon the time when the compliance data were obtained. The time (in days) is assumed as the number of days starting from the initial background event (which was collected on November 14, 2016) to when the compliance data in question were collected (example May 14, 2025, which is 3103 days following the initial event on November 14, 2016). For TDS at well LPLF-2R, transformation was performed using the Tukey power transformation to convert it into a normal distribution before applying the simple regression to determine an appropriate relationship for trend removal.

4.3 Statistical Evaluation Results

Table 6 summarizes the monitoring results determined to be confirmed SSI after retesting and therefore identified for further evaluation. The 2025 groundwater monitoring results were less than or within the respective compliance limits, except for the following seven cases, boron in LPLF-2R (spring and fall), LPLF-7R (fall only) and LPLF-8 (spring and fall), and total dissolved solids (TDS) in LPLF-2R (spring and fall).

Resampling and confirmation testing were conducted within 90 days after validation of monitoring results and evaluated for potential detection or applicability of an alternative source demonstration. Resampling confirmed the values for boron in LPLF-2R and LPLF-8, and TDS in LPLF-2R. The resampling result for boron in LPLF-7R (0.358 mg/L) was not above the UPL of 0.421 mg/L; therefore, it is not considered an SSI, resulting in a total of six confirmed SSIs for 2025.

The remaining detections were determined that an alternative source demonstration was appropriate for the six results. Section 5 discusses the alternative source demonstration and applicability to these confirmed SSI results. It is anticipated that these results will be included in a review of site conditions and groundwater quality variability under changing groundwater elevations.

Alternative Source Demonstration

This section presents an alternative source demonstration in response to the confirmed SSIs in accordance with 40 CFR Part 257.94(e)(2).

5.1 CCR Rule Regulatory Applicability

In accordance with 40 CFR Part 257.94(e)(2), the site owner has the option to demonstrate that a source other than the regulated unit (ash waste in the LPLF) caused the SSI exceeding background levels before automatically shifting into the assessment phase requirements. The CCR regulations cite examples of alternative sources causing SSIs (for example, error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality).

The CCR regulations require alternative source demonstrations to be completed within 90 days following the determination of a valid SSI. The retesting results for the Spring and Fall events were validated for the six SSI and conditions were reviewed within the 90-day period to complete the alternative source demonstration (or the need to shift into assessment monitoring if a successful demonstration is not made). Both demonstrations are included in this section of the 2025 annual report for documentation purposes.

5.2 Alternative Source Demonstration

This section presents the technical basis and documentation to support that natural variation in groundwater quality is the reason for the SSIs observed in monitoring wells LPLF-2R and LPLF-8 as shown in Table 6 at the LPLF site. Additional evaluation was conducted looking at the time series for each of these wells and parameters, and a statistical trend evaluation to aid in the demonstration evaluation.

5.2.1 Site History

The hydrogeological setting of the LPLF is unique in that present-day subsurface conditions were constructed such that surface overburden soils (mine spoils) were excavated during active mining operations in 2006 to expose coal seams within the relatively fine-grained Skookumchuck formation. As part of reclamation efforts following coal mining activities, the mine spoils were backfilled into a pit that includes the present-day footprint of the LPLF. Recharge via precipitation created a shallow zone of saturation within the mine spoils immediately overlying the fine-grained Skookumchuck formation, which is the target groundwater monitoring zone as described in the *Coal Combustion Residual Groundwater Monitoring System Certification for the Limited Purpose Landfill at the Centralia Mine Site near Centralia, Washington* (CH2M, 2017b). The mine spoils are generally characterized as light tan to brown silty loam to silty clay with sand lenses; the underlying Skookumchuck is characterized as a sequence of siltstones, claystones, coal seams, and occasional carbonaceous shales. The stratigraphic sequence beneath the center of the LPLF consists of approximately 80 feet of mine spoils, underlain by relatively thick sequence of fine-grained Skookumchuck, estimated at over 500 feet thick in the area.

The mine spoils were generated by removal of coal seam interburdens and placed back into the mined pit. The interburden comprised silt and claystones with stringers of sub-economical coal. The backfill placement resulted in a highly heterogeneous spoil of pulverized silt and claystone with discrete and localized coal and pyritic debris mixed laterally and vertically. These gravel to cobble sized materials can be acid forming and generate localized suppressed pH in the otherwise alkaline silt and clay spoils, and secondary mobilization of calcium, sulfate and other constituents, subsequently increasing TDS in groundwater. The primary mechanisms required for suppressed pH and changes in groundwater

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chemistry are presence of acid forming material, water, and oxygen. Fluctuations in groundwater can influence these as fluctuations allow great oxygen access to moist, acid forming materials.

The presence of acid-forming materials in the spoils can result in elevated TDS and associated dissolved constituents in groundwater with localized increases closer to the material. As groundwater fluctuates, this can either submerge previously unsaturated material or expose saturated material to aerobic conditions in the unsaturated zone. The vertical heterogeneity of these materials results in groundwater conditions that can be highly variable for constituents susceptible to mobilization under suppressed pH conditions within localized areas, within a specific monitoring location.

Prior to the CCR regulations that were enacted in April 2015, TCM characterized the hydrogeological conditions for the LPLF as documented in Section 2 of TransAlta Centralia Mining LLC, Limited Purpose Landfill Solid Waste Permit Application, dated October 2008 (CH2M, 2008). To satisfy Chapter 173-350-500 (Limited Purpose Landfill) Washington Administrative Code (WAC) regulations, TCM initiated background monitoring prior to waste placement from 2007 to present, as described in the Washington State Department of Ecology (Ecology) and Lewis County Environmental Health District-approved Groundwater Monitoring Plan for TransAlta Centralia Mining LLC Limited Purpose Landfill, Amendment 1, July 2011 (CH2M, 2011a). Since 2010, TCM has prepared quarterly and annual groundwater monitoring reports and submitted these to Ecology in accordance with Chapter 173-350[5], Groundwater Monitoring – Data Analysis, Notification, and Reporting. To date, the WAC program remains under detection-phase monitoring status. The existing WAC data collected from 2007 to 2009 pre-date waste placement into the LPLF and were used to document the heterogenous nature of background conditions.

5.2.2 Background Monitoring Results

The background monitoring period may not have fully captured the actual natural variation that might be expected to occur in the spoils and under natural groundwater recharge and fluctuations, especially under conditions where groundwater elevations are lower or higher than have been previously observed. Background monitoring events conducted over several years or multiple hydrological cycles would better characterize the natural variability in groundwater and yield more data to strengthen statistical power of detection monitoring analyses. These conditions are the basis for the updated background evaluation conducted in 2019 and used in this evaluation (Jacobs, 2019).

In LPLF-2R boron has increased to a slightly lower and consistent concentration just above the UPL calculated using the initial, 8 months of background sampling. For TDS, it shows the value decreasing, but decreasing at a lower slope that was initially calculated for TDS in well LPLF-2R (both values are calculated values, using a decreasing slope for calculation of UPL values). These results support that the exceedances for boron and TDS in LPLF-2R are a result of continued change in saturated spoils geochemistry, and not associated with release from the landfill, and primarily with stabilization of the groundwater constituents while the calculated UPL uses an ongoing downward trend.

The exceedance for boron in well LPLF-8 is based on the UPL of 0.99 mg/L. LPLF-8 has always been historically much higher than the other downgradient wells, suggesting that there is an alternative source within the backfilled spoils for the boron in groundwater detected at this location. Boron concentrations have increased, and using the full set of data, shows a statistically significant trend at 95 percent confidence level.

Given that LPLF-8 has always exhibited higher concentrations of boron than other downgradient wells, while higher these concentrations are still relatively low, that the change is within about 0.2 mg/L of change, and that groundwater at this location continues to fluctuate and was at historically low levels, demonstrates that the continued change in boron is due to the nature of the saturated backfill spoils as the alternative source for these results.

As noted in the statistical method certification (CH2M, 2017a) and in accordance with Unified Guidance (EPA, 2009), it is recommended to update background conditions following four to eight sampling events because of the complex behavior of groundwater and the need for sufficiently large sample sizes. Using this principle with semiannual sampling as prescribed under the CCR program, the background values should be reviewed and updated using statistical analysis every 2 to 4 years, assuming no confirmed statistically significant increase is identified. In addition, if hydrogeologic conditions change, then background should be updated to match the latest conditions. Based on this analysis, excluding the initial 8 months of sampling should be considered in future background UPL calculations.

5.3 Alternative Source Demonstration Results

Key findings as provided in this alternative source demonstration are summarized as follows:

- 2025 Monitoring and Retesting was conducted in compliance with the CCR program and resulted in confirmed SSI values based on the current CCR program statistical method.
- These values were evaluated and qualified as unrelated to the LPLF waste materials and related to natural variation in groundwater quality within the saturated backfilled spoils.
- These findings are consistent with similar demonstration for the CCR program in previous groundwater monitoring results at the site.
- The CCR program remains under the detection-phase monitoring status per 40 CFR 257.94, *Detection Monitoring Program*.

Summary

Key findings developed and/or confirmed from the 2025 annual groundwater report are summarized as follows:

- The groundwater elevations measured during the compliance monitoring events were used to develop a site hydrograph, potentiometric surface, inferred groundwater flow direction, and calculated groundwater flow velocity for the spring and fall monitoring events in 2025.
- Groundwater flow directions, gradients, and flow velocities were consistent with historical measurements.
- Groundwater monitoring results for compliance constituents met the compliance limits except for two parameters, boron in monitoring well LPLF- 8, and boron and TDS in monitoring well LPLF-2R,
- The confirmed SSIs were evaluated and demonstrated to be a source other than the regulated unit (ash landfill) and remains in detection phase monitoring.
- Based on groundwater site conditions, the additional groundwater monitoring results will be reviewed and evaluated for the compliance limits using the selected statistical methodology.

References

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- CH2M HILL Engineers, Inc. (CH2M). 2017b. *Coal Combustion Residual Statistical Method Certification for the Limited Purpose Landfill at the Centralia Mine near Centralia, Washington*.
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- U.S. Environmental Protection Agency (EPA). 2002. *Groundwater Sampling Guidelines for Superfund and RCRA Project Managers*.
- U.S. Environmental Protection Agency (EPA). 2009. *Unified Guidance: Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*.
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Tables

Table 1. Groundwater Monitoring Well Network*2025 Annual Groundwater Monitoring Report for Limited Purpose Landfill - TransAlta Centralia Mine LLC*

Well	Installation Date	Coordinates in NAD27 ¹		Top of Casing Elevation ²	Reference Point Top of Ground Elevation ²	Well Screen Elevation ²		Sand Pack Elevation ²		Well Depth ³	Aquifer Unit	Hydraulic Designation
		Northing	Easting			Top	Bottom	Top	Bottom			
LPLF-1	October 2007	520,881.45	1,420,272.06	347.80	344.58	305.58	285.58	309.58	282.58	59	Mine Spoils	Up or Cross-Gradient
LPLF-5	August 2008	521,931.70	1,419,921.73	359.90	357.88	349.88	344.88	351.38	343.38	13	Mine Spoils	Upgradient
LPLF-8	August 2008	521,235.37	1,419,233.53	298.75	296.93	279.93	274.93	282.93	273.93	22	Mine Spoils	Downgradient
LPLF-2R	July 2016	521,561.20	1,419,130.52	296.04	293.86	10.0	263.9	275.86	262.36	31	Mine Spoils	Downgradient
LPLF-7R	July 2016	521,180.82	1,419,531.95	299.00	297.04	279.7	269.7	282.04	269.04	28	Mine Spoils	Downgradient

General Notes:

1. Well LPLF-1 is low yield and sampled via bailer.

Column Header Footnotes:

¹Washington State Plane Coordinates (NAD27).²All elevations in feet above mean sea level (NGVD29).³Well depth is feet below ground surface (rounded to nearest foot).

Table 2. Groundwater Elevations and Field Parameters

2025 Annual Groundwater Monitoring Report for Limited Purpose Landfill - TransAlta Centralia Mine LLC

Well	Date Sampled	Reference Point Elevation (ft)	Depth to Water (ft btc)	Groundwater Elevation (ft)	Temp (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Hydraulic Designation	Hydrostratigraphic Unit	Comments
LPLF-1	5/14/25	347.80	53.41	294.39	13.4	6.3	9.22	117	2,073	--	Up or Cross Gradient	Backfill/Mine Spoils	Clearish/Orange
LPLF-1	10/13/25	347.80	59.12	288.68	12.8	6.3	1.68	68.7	2,352	--	Up or Cross Gradient	Backfill/Mine Spoils	Red/Murky
LPLF-5	5/14/25	359.90	--	--	--	--	--	--	--	--	Upgradient	Backfill/Mine Spoils	Dry/no water in well. Not sampled.
LPLF-5	10/13/25	359.90	--	--	--	--	--	--	--	--	Upgradient	Backfill/Mine Spoils	Dry/no water in well. Not sampled.
LPLF-8	5/14/25	298.75	10.96	287.79	12.5	5.6	5.46	32	4,077	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-8	6/25/25	298.75	10.40	288.35	14.0	5.5	0.80	51	3,206	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-8	10/13/25	298.75	14.81	283.94	13.6	5.5	0.70	70	3,163	--	Downgradient	Backfill/Mine Spoils	Clearish
LPLF-8	12/2/25	298.75	14.33	284.42	13.0	5.8	7.68	13	3,999	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-2R	5/14/25	296.04	4.18	291.86	12.5	6.1	5.06	9	3,809	--	Downgradient	Backfill/Mine Spoils	--
LPLF-2R	6/25/25	296.04	5.30	290.74	15.1	6.0	1.29	76	3,135	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-2R	10/13/25	296.04	6.29	289.75	13.3	6.0	0.64	78	3,055	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-2R	12/2/25	296.04	5.88	290.16	12.1	6.3	7.37	-15	3,941	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-7R	5/14/25	299.00	21.40	277.60	12.3	6.1	6.75	111	3,378	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-7R	10/13/25	299.00	21.74	277.26	12.3	6.0	0.82	81	2,572	--	Downgradient	Backfill/Mine Spoils	Clear
LPLF-7R	12/2/25	299.00	21.68	277.32	11.8	6.3	8.32	124.8	3,410	--	Downgradient	Backfill/Mine Spoils	Clear
Water Levels Only													
LPLF-2	5/14/25	302.26	10.33	291.93	--	--	--	--	--	--	Cross-Gradient	Backfill/Mine Spoils	--
LPLF-2	10/13/25	302.26	13.74	288.52	--	--	--	--	--	--	Cross-Gradient	Backfill/Mine Spoils	--
LPLF-3	5/14/25	295.64	5.87	289.77	--	--	--	--	--	--	Cross-Gradient	Backfill/Mine Spoils	--
LPLF-3	10/13/25	295.64	10.56	285.08	--	--	--	--	--	--	Cross-Gradient	Backfill/Mine Spoils	--
LPLF-4	5/14/25	303.12	3.56	299.56	--	--	--	--	--	--	Cross-Gradient	Backfill/Mine Spoils	--
LPLF-4	10/13/25	303.12	9.89	293.23	--	--	--	--	--	--	Cross-Gradient	Backfill/Mine Spoils	--

Notes:

" -- " = Not applicable, not available, and/or not measured.

Reference point elevation is top of PVC casing; all elevations are in feet above mean sea level (NAVD88).

Field parameter readings represent final stabilized readings obtained during low-flow purge immediately prior to collection of water-quality sample.

ft = feet

ft btc = feet below top of casing

C = degrees celcius

mg/L = milligrams per liter

mV = millivolts

uS/cm = microsiemens per centimeter

NTU = Nephelometric Turbidity Units

Table 3. Groundwater Analytical Summary

2025 Annual Groundwater Monitoring Report for the Limited Purpose Landfill - TransAlta Centralia Mine LLC

Spring Sampling Event

Well	LPLF-1		LPLF-2R		LPLF-5		LPLF-7R		LPLF-8		LPLF-7R (FD)		LPLF-2R		LPLF-8	
Sample ID	051425-CCR-LPLF1		051425-CCR-LPLF2R		051425-CCR-LPLF5		051425-CCR-LPLF7R		051425-CCR-LPLF8		051425-CCR-LPLF7R FD		0627525-CCR-LPLF2R		062525-CCR-LPLF8	
Sample Date	5/14/2025		5/14/2025		5/14/2025		5/14/2025		5/14/2025		5/14/2025		6/25/2025		6/25/2025	
Hydraulic Designation	Up or Cross Gradient		Downgradient		Up Gradient		Downgradient		Downgradient		Downgradient		Downgradient		Downgradient	
Analyte	Method	Units														
Boron	SW6010C	mg/L	0.544	0.354	Dry		0.336	1.1	0.335		0.355		1.16			
Calcium	SW6010C	mg/L	138	390	Dry		221	379	219		403		384			
Chloride	E300	mg/L	1.3 J	9.1	Dry		9.1	6.9	9.2		7.1		6.8			
Fluoride	E300	mg/L	2	2 U	Dry		2 U	2 U	2 U		-		-			
Sulfate	E300	mg/L	0.864	1,480	Dry		1,350	2,290	1,360		1700		2210			
Total Dissolved Solids	A2540C	mg/L	1,580	3,260	Dry		2,650	3,860	2,640		3,180		3730			

Fall Sampling Event

Well	LPLF-1		LPLF-2R		LPLF-7R		LPLF-8		LPLF-7R (FD)		LPLF 2R		LPLF 8		LPLF-7R	
Sample ID	101325-CCR-LPLF1		101325-CCR-LPLF2R		101325-CCR-LPLF7R		101325-CCR-LPLF8		101325-CCR-LPLF8 FD		110225-CCR-LPLF2R		110225-CCR-LPLF8		110225-CCR-LPLF7R	
Sample Date	10/13/2025		10/13/2025		10/13/2025		10/13/2025		10/13/2025		12/2/2025		12/2/2025		12/2/2025	
Hydraulic Designation	Up or Cross Gradient		Downgradient		Downgradient		Downgradient		Downgradient		Downgradient		Downgradient		Downgradient	
Analyte	Method	Units														
Boron	SW6010C	mg/L	0.623	0.386	0.48		1.19	0.489	0.391		1.16		0.358			
Calcium	SW6010C	mg/L	145	444	246		402	254	-		-		-			
Chloride	E300	mg/L	2.6	8.7	7.6		7.1	9.5	-		-		-			
Fluoride	E300	mg/L	2 U	2 U	2 U		2 U	2 U	-		-		-			
Sulfate	E300	mg/L	1,040	1,530	1,560		2,270	1,350	-		-		-			
Total Dissolved Solids	A2540C	mg/L	2,180	3,300	2,680		3,720	2,680	3,360		-		-			

Notes:

Field parameters represent final stabilized readings obtained during sampling immediately prior to sample collection.

Non-detect values reported as "U" with the laboratory method detection limit; "J" is estimated value as determined from data validation.

(FD) Field Duplicate

Acronyms:

Data qualifiers: U = non-detect value, J = estimated value.

C = degrees celcius

mg/L = milligrams per liter

mV = millivolts

uS/cm = microsiemens per centimeter

NTU = Nephelometric Turbidity Units

Table 4 Data Validation Summary

2025 Annual Groundwater Monitoring Report for the Limited Purpose Landfill - TransAlta Centralia Mine LLC

Validation Summary 5/14/2025

No discrepancies noted in sample receipt or analysis

The detection limit for Fluoride was raised and samples were diluted prior to analysis due to relatively high levels of non-target background components.

J qualifier noted in the analysis result for chloride at LPLF-1

Method blank was non-detect

Replicate samples within RPD limits

Matrix Spike recovery values were within recovery limits, except calcium in matrix spike for LPLF-8

Lab control sample recovery values were within recovery limits

Field Duplicate for LPLF-7R, field duplicate RPD within limits

Parameter	FD RPD Limit	5/14/2025		FD RPD
		LPLF-7R	LPLF-7R FD	
TDS	20	2650	2640	-0.4%
Chloride	20	9.1	9.2	1.1%
Sulfate	20	1350	1360	0.7%
Boron	20	0.336	0.335	-0.3%
Calcium	20	221	219	-0.9%

Validation Summary 6/25/2025

Sample receipt noted that pH-preserved bottles received for CCR-LPLF-2RFD were not received at the appropriate pH, additional preservative added at lab

No data qualifiers noted in the analysis results

Method blanks were non-detect

Replicate samples within RPD limits

Matrix Spike recovery within the % recovery limits, except calcium in LPLF-8 MS

Laboratory replicate sample within RPD

Validation Summary 10/13/2025

No discrepancies noted in sample receipt or analysis

No qualifiers noted in the analysis results

Method blanks were non-detect for most analytes except method blank KQ2518498-01 with boron detection of 0.004 J mg/L, method blanks K2510238-MB2 and K2510238-MB3 each with sulfate detection of 0.03 J mg/L, method blank K2510238-MB4 with sulfate detection of 0.12 mg/L, method blank K2510238-MB5 with sulfate detection of 0.13 mg/L, method blank K2510238-MB6 with fluoride detection of 0.77 mg/L and sulfate detection of 0.12 mg/L, method blank K2510238-MB7 with sulfate detection of 0.11 mg/L, and method blank K2510238-MB8 with sulfate detection of 0.10 J mg/L.

Replicate samples within RPD limits

Lab control sample recovery values were within recovery limits

Matrix Spike recovery values were within recovery limits, except Boron and Calcium in LPLF-2R MS

Field Duplicate for LPLF-7R, field duplicate RPD exceeds limit for chloride

Parameter	FD RPD Limit	10/13/2025		FD RPD
		LPLF-7R	FD	
TDS	20	2680	2680	0.0%
Chloride	20	7.6	9.5	22.2%
Sulfate	20	1560	1350	-14.4%
Boron	20	0.48	0.489	1.9%
Calcium	20	246	254	3.2%

Validation Summary 12/2/2025

Sample receipt noted that bottles received for CCR-LPLF8 and CCR-LPLF7R were received unpreserved; however, no test was indicated for it.

No discrepancies noted in sample analysis

No qualifiers noted in the analysis results

Method blanks were non-detect except method blank KQ2521563-01 with boron detection of 0.0004 J mg/L

Lab control sample recovery values were within recovery limits

Table 5 Statistical Method for TransAlta Limited Purpose Landfill
2025 Annual Report for the Limited Purpose Landfill at the TransAlta Centralia Mine LLC

				Updated 2019						
Well	Constituent	Units	Method	Trending Calculated UPL (if needed) = (Intercept + [Slope* Time(days)] + Residual)				K-Value	Lower Prediction Levels	Upper Prediction Levels
				Trend Removal	Intercept	Slope	Residual		(LPL)	(UPL)
LPLF-2R	Boron	mg/L	Parametric UPL	Yes	0.35	-2.21E-05	0.0297	2.4	--	Calculated
LPLF-2R	Calcium	mg/L	Parametric UPL	Yes	--	--	--	2.4	--	545
LPLF-2R	Chloride	mg/L	Parametric UPL	No	--	--	--	2.4	--	9.59
LPLF-2R	Fluoride	mg/L	DQR	No	--	--	--	--	--	DQR
LPLF-2R	pH	pH units	Parametric UPL	No	--	--	--	2.79	5.98	7.07
LPLF-2R	Sulfate	mg/L	Parametric UPL	No	--	--	--	2.4	--	2163
LPLF-2R	TDS	mg/L	Non-Parametric UPL	Yes	3631	-0.359	201	2.4	--	Calculated
LPLF-7R	Boron	mg/L	Parametric UPL	No	--	--	--	2.4	--	0.421
LPLF-7R	Calcium	mg/L	Parametric UPL	No	--	--	--	2.4	--	263
LPLF-7R	Chloride	mg/L	Parametric UPL	No	--	--	--	2.4	--	9.99
LPLF-7R	Fluoride	mg/L	DQR	No	--	--	--	--	--	DQR
LPLF-7R	pH	pH units	Parametric UPL	No	--	--	--	2.79	6.09	6.99
LPLF-7R	Sulfate	mg/L	Parametric UPL	Yes	944	0.758	509	2.4	--	Calculated
LPLF-7R	TDS	mg/L	Parametric UPL	Yes	1890	0.892	607	2.4	--	Calculated
LPLF-8	Boron	mg/L	Parametric UPL	No	--	--	--	2.4	--	0.99
LPLF-8	Calcium	mg/L	Parametric UPL	Yes	--	--	--	2.4	--	441
LPLF-8	Chloride	mg/L	Parametric UPL	No	--	--	--	2.4	--	7.84
LPLF-8	Fluoride	mg/L	DQR	No	--	--	--	--	--	DQR
LPLF-8	pH	pH units	Parametric UPL	No	--	--	--	2.79	5.66	6.36
LPLF-8	Sulfate	mg/L	Parametric UPL	Yes	2124	1.14	357	2.4	--	Calculated
LPLF-8	TDS	mg/L	Parametric UPL	Yes	3429	0.49	445	2.4	--	Calculated

TIME (days) is the period from Nov. 14, 2016 to time of compliance event.

Calculated Upper Prediction Limits (compliance values)				
5/14/2025	6/25/2025	10/13/2025	12/2/2025	
0.311	0.310	0.308	0.307	
--	--	--	--	
--	--	--	--	
--	--	--	--	
--	--	--	--	
2719	2704	2664	2646	
--	--	--	--	
--	--	--	--	
--	--	--	--	
--	--	--	--	
3804	3835	3919	3957	
5264	5301	5399	5444	
--	--	--	--	
--	--	--	--	
--	--	--	--	
--	--	--	--	
6019	6067	6193	6250	
5396	5417	5471	5496	
start date	days since start			
11/14/2016	3103	3145	3255	3305

Table 6 Summary of Compliance Value Exceedance
2025 Annual Groundwater Monitoring Report for the Limited Purpose Landfill - TransAlta Centralia Mine LLC

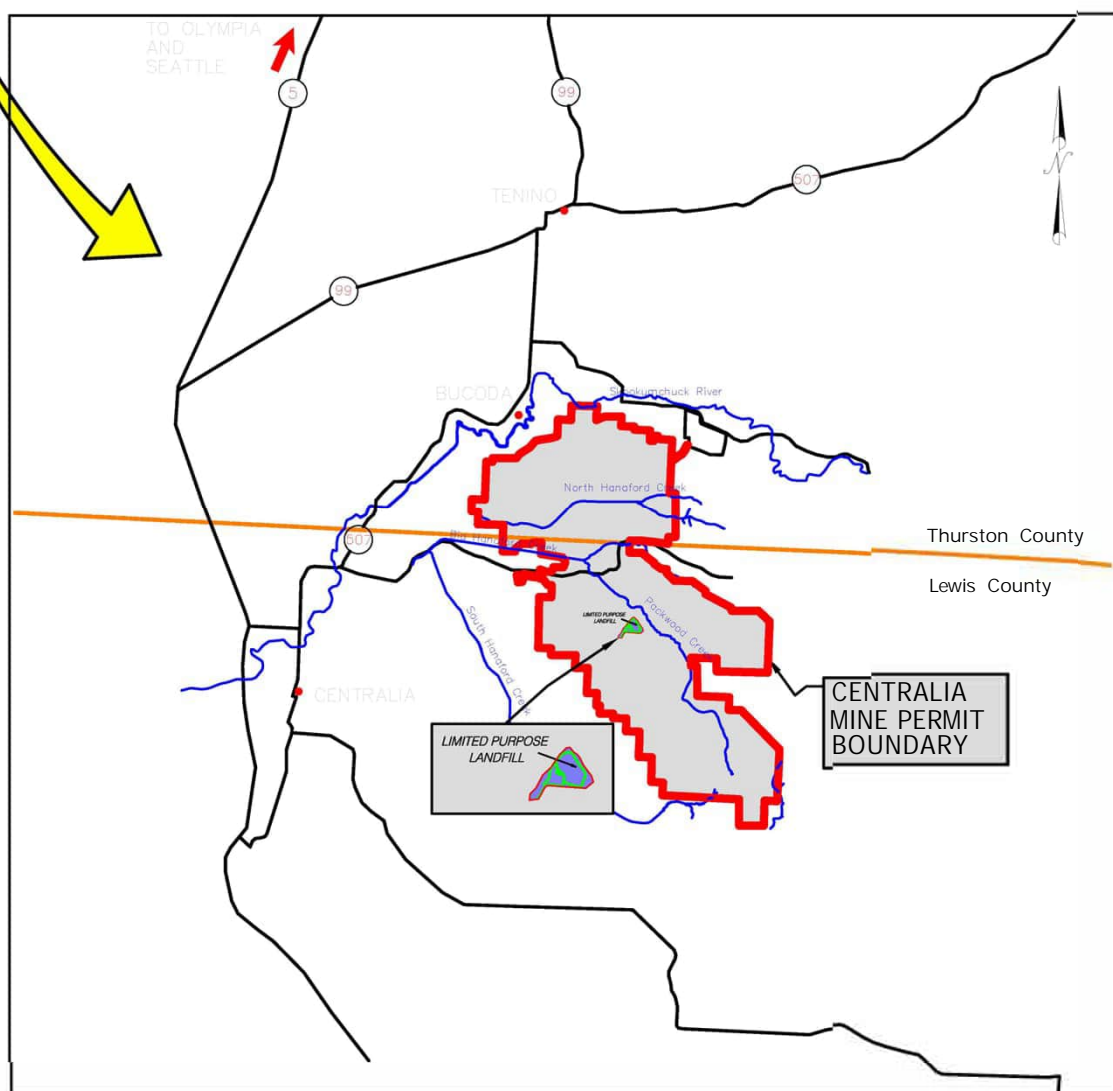
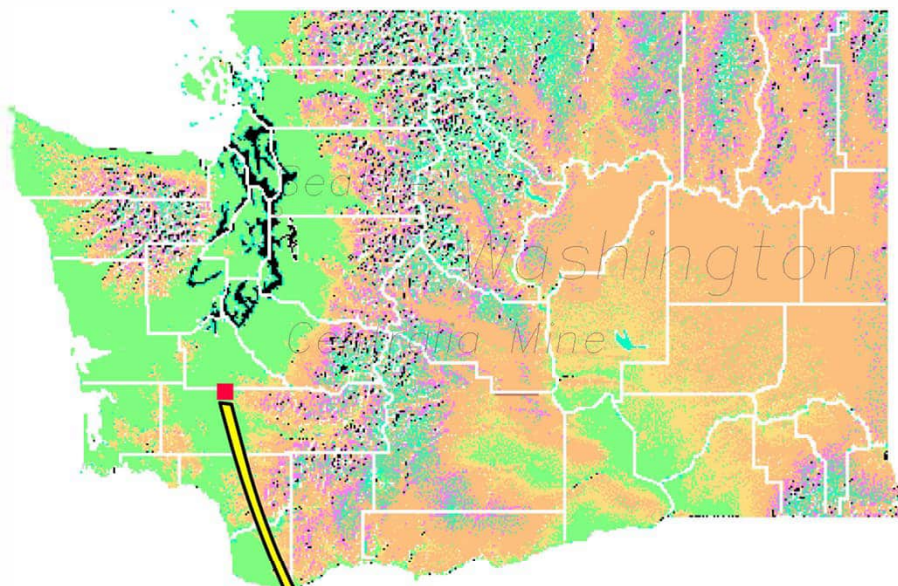
Well	Sample Date	Parameter	Upper Limit (mg/L)	Sample Result (mg/L)	Resample Date	Upper Limit (mg/L)	ReTest Result (mg/L)	Percent Over UL for Compliance Event	Percent Over UL for the Retesting Event	Percent Change between Compliance and Retesting Event
LPLF-2R	5/14/2025	Boron	0.311	0.354	6/25/2025	0.310	0.355	14%	14.5%	0.3%
LPLF-2R	5/14/2025	TDS	2,719	3,260	6/25/2025	2,704	3,180	20%	17.6%	-2.5%
LPLF-8	5/14/2025	Boron	0.99	1.10	6/25/2025	0.99	1.16	11%	17.2%	5.5%
LPLF-2R	10/13/2025	Boron	0.308	0.386	12/2/2025	0.307	0.391	25%	27.4%	1.3%
LPLF-2R	10/13/2025	TDS	2664	3,300	12/2/2025	2,646	3,360	24%	27.0%	1.8%
LPLF-7R	10/13/2025	Boron	0.421	0.480	12/2/2025	0.421	0.358	14%	-14.9%	-25.4%
LPLF-8	10/13/2025	Boron	0.99	1.19	12/2/2025	0.99	1.16	20%	17.2%	-2.5%

Notes:

Bold parameters indicate calculated limits

Six results (highlighted yellow) were confirmed as statistically-significant exceedances for evaluation.

Figures

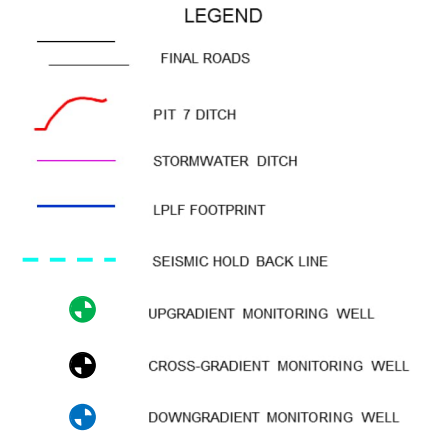
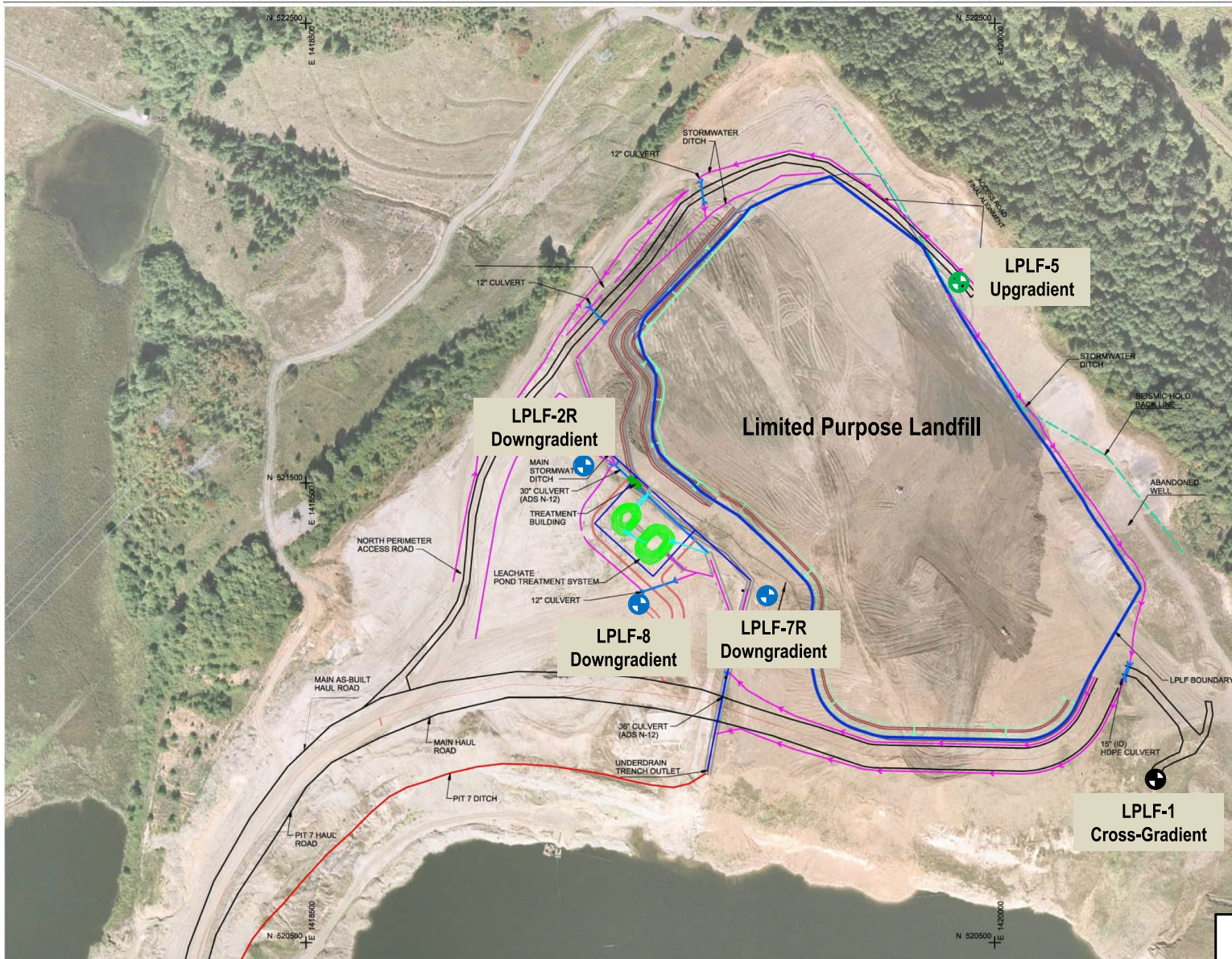


Source: TransAlta Centralia Mining LLC

Figure 1

Vicinity Map

2025 Annual Groundwater Monitoring
Report for the Limited Purpose Landfill -
TransAlta Centralia Mine LLC



Source: TransAlta Centralia Mining LLC

Jacobs

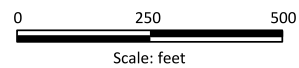
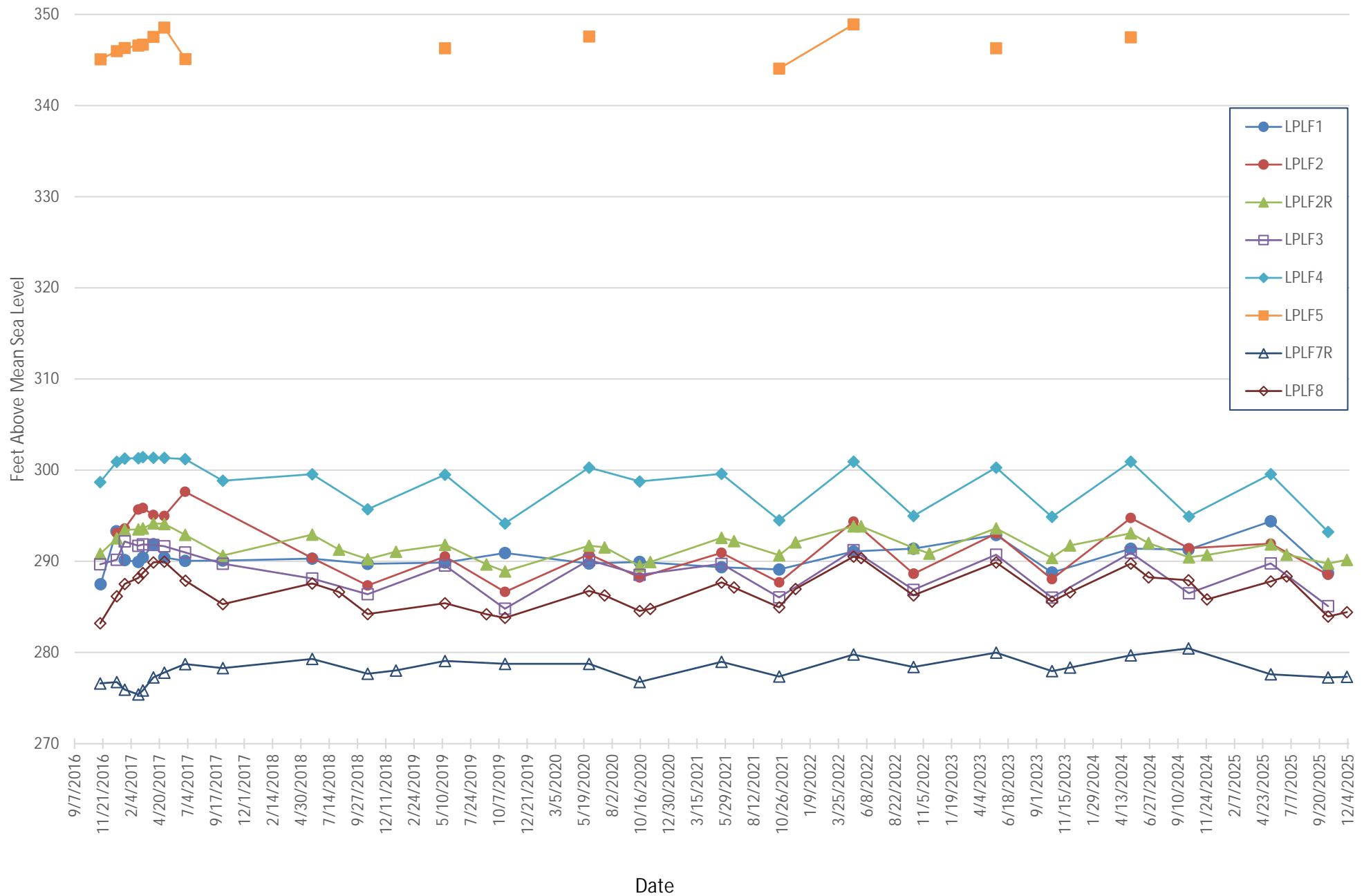
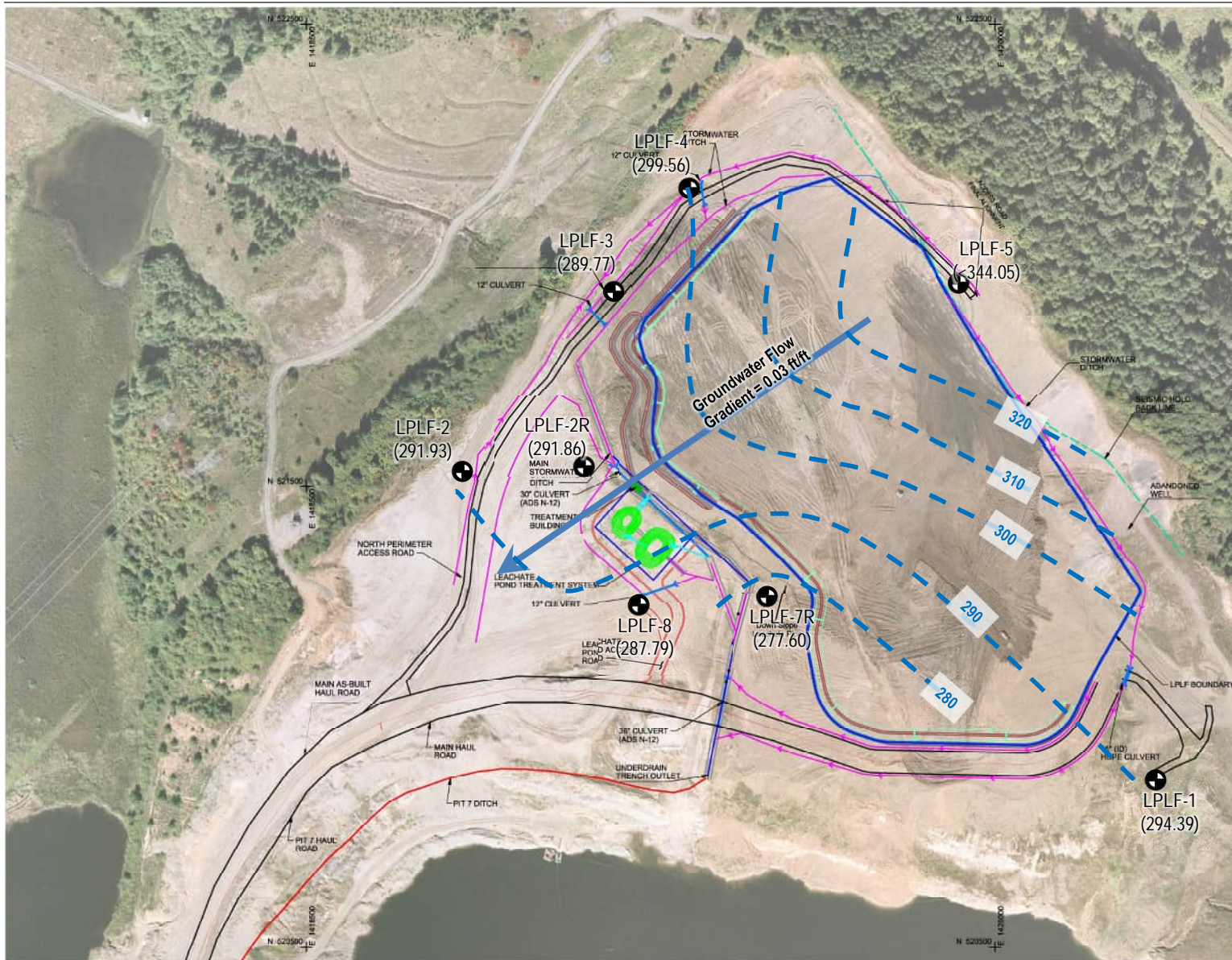


Figure 2
Site Map and Groundwater Monitoring Network
 2025 Annual Groundwater Monitoring Report for
 the Limited Purpose Landfill - TransAlta Centralia
 Mine LLC





- FINAL ROADS
- PIT 7 DITCH
- STORMWATER DITCH
- LPLF FOOTPRINT
- SEISMIC HOLDBACK LINE
- LPLF-1 (291.38) GROUNDWATER WELLS AND ELEVATIONS (ft msl)
- 340 GROUNDWATER ELEVATION CONTOURS (ft msl)
- INFERRED GROUNDWATER FLOW DIRECTION

NOTE:
1. Groundwater levels measured May 14, 2025.

Jacobs



Figure 4
Groundwater Elevations and Flow Map
May 14, 2025
2025 Annual Groundwater Monitoring Report
for the Limited Purpose Landfill - TransAlta
Centralia Mine LLC

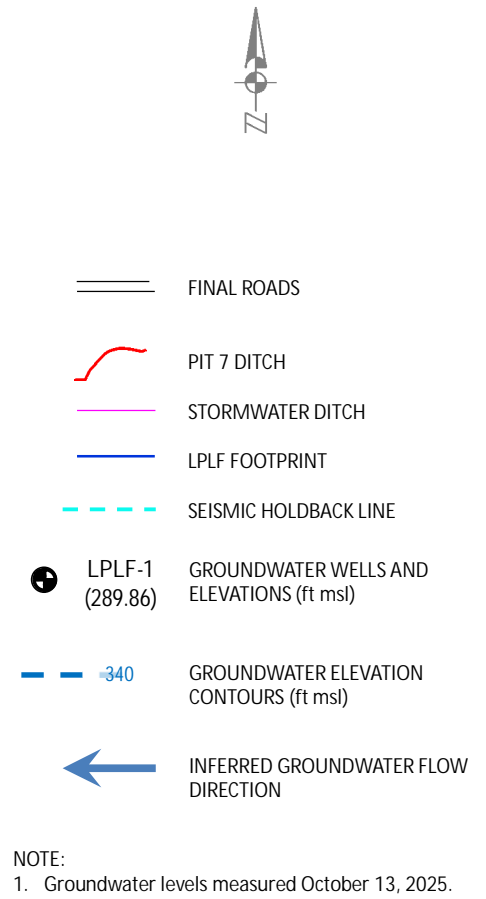
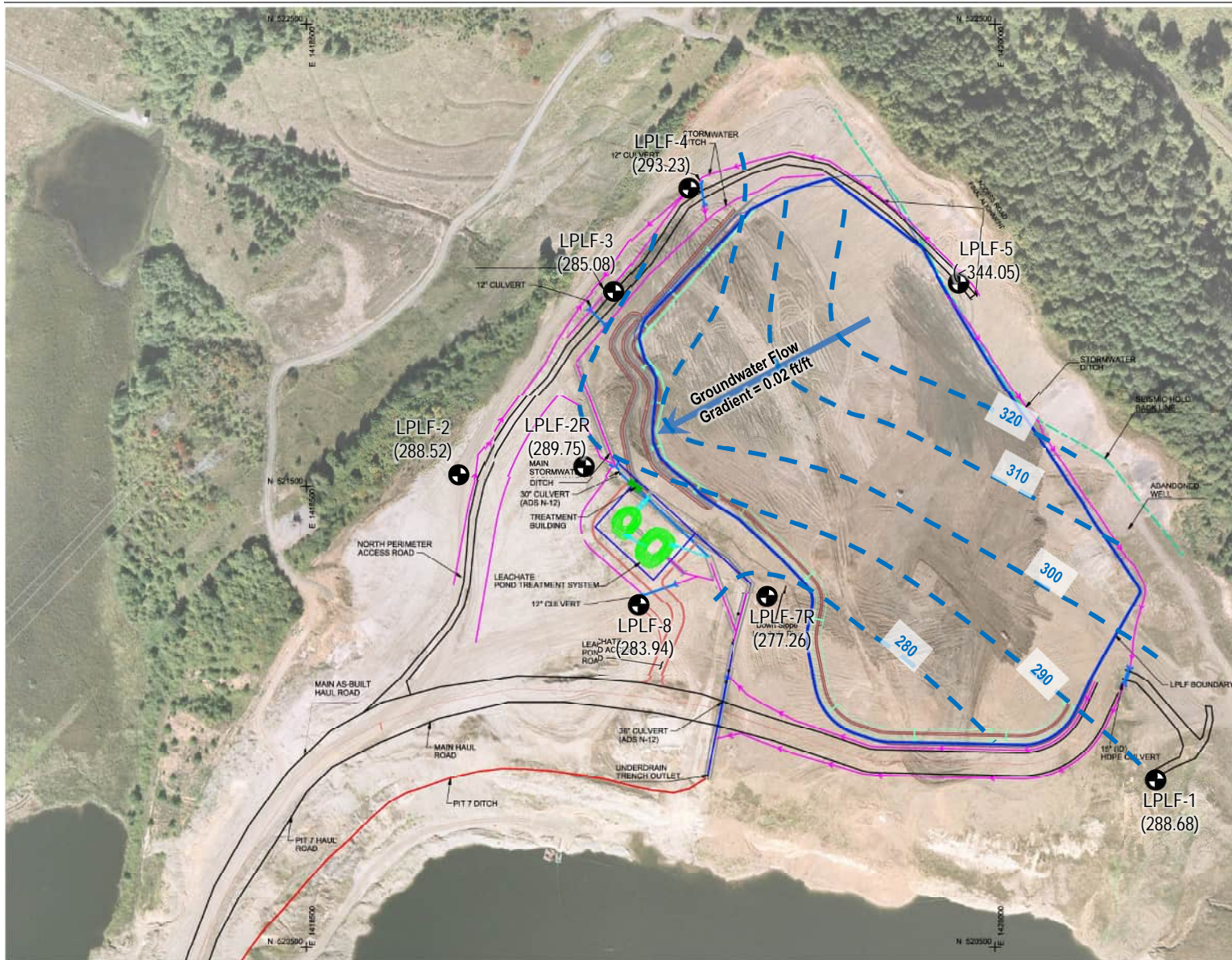


Figure 5
Groundwater Elevations and Flow Map
October 13, 2025
2025 Annual Groundwater Monitoring Report
for the Limited Purpose Landfill - TransAlta
Centralia Mine LLC

Appendix A

Field Forms

Note: NO FILTER

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 2

Field Team: BM

Date: 5-14-25

Weather/Temp: cloudy / cool

Arrival Time to Well: 9:30

Purge Method: ☐ Peristaltic ☐ Grab ☐ Bail

Initial DTW (ft btc): 10.33

Pump Setting ⁵: _____

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
	Begin Pumping								
Water Level Only									
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: _____

Sample Time: _____

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 2R

Field Team: BR

Date: 5-14-25

Weather/Temp: cloudy / cool

Arrival Time to Well: 9:01

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (ft btc): 3.6

Pump Setting ⁵: 100 mls/min Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
9:03	Begin Pumping								
9:08	4.06	600	6.19	3838	6.75	12.6	6.5		clear
9:13	4.09	1100	6.13	3819	5.78	12.5	5.4		↑
9:18	4.18	1600	6.12	3809	5.06	12.5	8.5		
	4.24								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 051425-CCR-LPLF 2R

Sample Time: 9:18

QC SAMPLE : ☐ Field Duplicate ☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 3

Field Team: Ben

Date: 5-14-25

Weather/Temp: cloudy / cool

Arrival Time to Well: 9:25

Purge Method: ☐ Peristaltic ☐ Grab ☐ Bail

Initial DTW (ft btc): 5.87

Pump Setting ⁵: _____ Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
	Begin Pumping								
<i>Water Level Only</i>									
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: _____

Sample Time: _____

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

Note: NO FILTER

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 5

Field Team: BM

Date: 5-14-25

Weather/Temp: cloudy/cool

Arrival Time to Well: 9:20

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (ft btc): Dry

Pump Setting ⁵: _____ Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
Begin Pumping									
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs

⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: _____

Sample Time: _____

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 7R

Field Team: BM

Date: 5-14-25

Weather/Temp: cloudy / cool

Arrival Time to Well: 8:15

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (ft btc): 20.1

Pump Setting ⁵: 100 mls/min Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
8:17	Begin Pumping								
8:22	20.53	560	6.18	3350	9.50	12.4	139.4		clear
8:27	21.6	1000	6.10	3379	7.67	12.3	128.3		L
8:32	21.4	1500	6.10	3378	6.75	12.3	111.3		
	21.48								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 051425-CCR-LPLF7R Sample Time: 8:32

QC SAMPLE: ☒ Field Duplicate ☐ MS/MSD
QC Sample ID: 051425-CCR-LPLF7R FD QC Sample Time: 8:36

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 8

Field Team: Tom

Date: 5-14-25

Weather/Temp: cloudy / cool

Arrival Time to Well: 8:39

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (ft btc): 9.18

Pump Setting ⁵: 100 mL/min Notes: _____

Field Parameters

Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
8:41	Begin Pumping								
8:46	10.34	600	5.67	4075	7.33	12.9	48.1		clear
8:51	10.62	1000	5.61	4086	6.24	12.8	36.8		1
8:56	10.96	1340	5.61	4077	5.46	12.5	32.2		
	11.24								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 051425-CCR-LPLF 8

Sample Time: 8:56

QC SAMPLE: ☐ Field Duplicate

☒ MS/MSD

QC Sample ID: 051425-CCR-LPLF 8 MS
051425-CCR-LPLF 8 MSD

QC Sample Time: 8:58
8:59

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF8

Field Team: ML

Date: 6-25-25

Weather/Temp: Cloudy / mild

Arrival Time to Well: 8:55

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (ft btc): 9.29

Pump Setting ⁵: 100 mL/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
9:00	Begin Pumping								
9:05	9.89	600	5.54	3254	1.48	14.6	52.5		Clear
9:10	10.18	1020	5.53	3220	1.05	14.1	51.3		
9:15	10.4	1490	5.52	3206	0.80	14.0	50.7		
	10.48								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs

⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 062525-CCR-LPLF8

Sample Time: 9:15

QC SAMPLE: ☐ Field Duplicate

☒ MS/MSD

QC Sample ID: 062525-CCR-LPLF-8 MS

QC Sample Time: 9:17

062525-CCR-LPLF-8 MSD

9:18

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TCM LPLF

Project Number: CCR GW

Well ID: LPLF 2R

Field Team: ML

Date: 6-25-25

Weather/Temp: Cloudy / mild

Arrival Time to Well: 10:42

Purge Method: ☐ Bladder ☒ Peristaltic ☐ Grab ☐ Other: _____

Initial DTW (ft btc): 469

Pump Setting⁵: 100 mL/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
<u>10:44</u>	Begin Pumping								
<u>10:49</u>	<u>4.92</u>	<u>600</u>	<u>6.05</u>	<u>2782</u>	<u>1.33</u>	<u>13.9</u>	<u>81.2</u>		
<u>10:54</u>	<u>4.95</u>	<u>1100</u>	<u>6.09</u>	<u>3144</u>	<u>1.72</u>	<u>15.7</u>	<u>77.9</u>		
<u>10:59</u>	<u>5.3</u>	<u>1600</u>	<u>6.03</u>	<u>3135</u>	<u>1.29</u>	<u>15.1</u>	<u>75.7</u>		
	<u>4.94</u>								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method

² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 062525-CCR-LPLF 2R

Sample Time: 10:59

Analysis: ☐ Appendix III (boron, calcium, chloride, fluoride, pH, sulfate, and TDS)

☐ Appendix IV (total metals, Radium 226, and Radium 228)

☐ Other, specify _____

QC SAMPLE: ☐ Field Duplicate ☐ MS/MSD ☐ EQ Rinsate Blank

TOTAL PURGED (ml): _____

QC Sample ID: 062525-CCR-LPLF 2R

QC Sample Time: _____

Comments: _____

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 1

Field Team: BM

Date: 10-13-25

Weather/Temp: Sunny / cool

Arrival Time to Well: 8:15

Purge Method: ☐ Peristaltic ☐ Grab ☒ Bail

Initial DTW (top of well head): 58.80

Pump Setting ⁵: _____

Notes: Water is very low in well
2 bails were only half full

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
	Begin Pumping								
8:22	59.12	1080	6.31	2352	1.68	12.8	68.7		red/murky
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 101325-CCR-LPLF 1

Sample Time: 8:22

QC SAMPLE: ☐ Field Duplicate

☐ MS/MSD

QC Sample ID: _____

QC Sample Time: _____

Comments: bottom is 61.2

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 2R

Field Team: BM

Date: 10-13-25

Weather/Temp: sunny / cool

Arrival Time to Well: 9:37

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): 5.88

Pump Setting ⁵: 100 mls/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
9:42	Begin Pumping								
9:47	6.02	520	6.04	3050	1.02	13.6	78.3		clear
9:52	6.1	1000	6.03	3079	0.85	13.7	78.3		±
9:57	6.29	1500	6.03	3055	0.64	13.3	78.1		±
	6.3								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 101325-CCR-LPLF2R

Sample Time: 9:57

QC SAMPLE :

☐ Field Duplicate

☒ MS/MSD

QC Sample ID :

101325-CCR-LPLF2RMS
101325-CCR-LPLF2RMSD

QC Sample Time: 9:58
9:59

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 2

Field Team: BM

Date: 10-13-25

Weather/Temp: sunny/cool

Arrival Time to Well: 10:31

Purge Method: ☐ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): 13.74

Pump Setting ⁵: _____

Notes: Water Level

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
Begin Pumping									
<div>Water Level</div> <div>Only</div>									
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs

⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: _____

Sample Time: _____

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 4

Field Team: BM

Date: 10-13-25

Weather/Temp: Sunny / cool

Arrival Time to Well: 10:20

Purge Method: ☐ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): 9.89

Pump Setting ⁵: _____

Notes: Water Level Only

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
Begin Pumping									
<u>Water Level Only</u>									
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: _____

Sample Time: _____

QC SAMPLE : ☐ Field Duplicate ☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 5

Field Team: Bm

Date: 10-13-25

Weather/Temp: Sunny / cool

Arrival Time to Well: 10:14

Purge Method: ☐ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): Dry

Pump Setting ⁵: _____

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
Begin Pumping									
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs

⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: _____

Sample Time: _____

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 7R

Field Team: BM

Date: 10-13-25

Weather/Temp: sunny / cool

Arrival Time to Well: 8:50

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): 21.21

Pump Setting ⁵: 100 mls/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
8:56	Begin Pumping								
9:01	21.37	480	6.03	2583	1.79	12.3	80.9		clear
9:06	21.51	1000	5.99	2570	1.11	12.2	80.0		I
9:11	21.74	940	5.99	2572	0.82	12.3	81.0		I
	21.88								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 101325-CCR-LPLF 7R

Sample Time: 9:11

QC SAMPLE:

☒ Field Duplicate

☐ MS/MSD

QC Sample ID:

1013-CCR-LPLF 7R FD

QC Sample Time: 9:13

Comments:

Sample: LPLF 1, 2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 8

Field Team: BM

Date: 10-13-25

Weather/Temp: sunny / cool

Arrival Time to Well: 9:16

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): 13.8

Pump Setting ⁵: 100 mL/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
9:20	Begin Pumping								
9:25	14.1	520	5.53	3177	1.33	13.5	66.9		clear
9:30	14.54	1000	5.51	3165	0.94	13.5	67.8		I
9:35	14.81	1400	5.51	3163	0.70	13.6	69.7		I
	14.97								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 101325-CCR-LPLF 8

Sample Time: 9:35

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 2R

Field Team: Bri

Date: 12-2-25

Weather/Temp: cloudy/cold

Arrival Time to Well: 11:12

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): (5.43)

Pump Setting ⁵: 100 mls/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
11:14	Begin Pumping								
11:19	(5.71)	600	6.33	3948	7.87	12.0	-6.0		clear
11:24	(5.94)	1020	6.31	3960	7.63	11.9	-13.2		
11:29	(5.88)	1500	6.31	3941	7.37	12.1	-14.8		
	(5.9)								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 120225-CCR-LPLF 2R

Sample Time: 11:29

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 8

Field Team: Bri

Date: 12-2-25

Weather/Temp: cloudy / cold

Arrival Time to Well: 10:50~~3~~

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): (13.14)

Pump Setting ⁵: 100 ml/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
10:55	Begin Pumping								
11:00	(13.68)	600	5.95	3995	8.54	13.0	99.5		clear
11:05	(14.10)	1040	5.84	4002	7.95	12.9	22.0		±
11:10	(14.33)	1480	5.83	3999	7.68	13.0	12.7		±
	(14.43)								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 120225-CCR-LPLF 8

Sample Time: 11:10

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Groundwater Purging and Sampling Form

SITE: TransAlta Centralia Mine

CCR GW

Well ID: LPLF 7R

Field Team: Bri

Date: 12-2-25

Weather/Temp: cloudy / cold

Arrival Time to Well: 10:28

Purge Method: ☒ Peristaltic ☐ Grab ☐ Bail

Initial DTW (top of well head): (21.34)
(21.07)

Pump Setting⁵: 100 mls/min

Notes: _____

Field Parameters									
Time ¹	DTW ²	Purge Vol. (ml)	pH	Sp. Cond. (uS/cm)	DO (mg/L)	Temp (°C)	ORP (mV)	Turbidity (NTU)	Note color, odor, etc.
10:31	Begin Pumping								
10:36	(21.39)	600	6.64	3455	9.52	12.9	108.1		clear
10:41	(21.42)	1060	6.31	3407	8.99	12.0	123.7		+
10:46	(21.56)	1420	6.28	3416	8.61	11.8	125.9		+
10:51	(21.68)	1940	6.25	3410	8.32	11.8	124.8		+
	(21.94)								
Stabilization Criteria ³	-	-	± 0.1 units	± 3%	± 0.3 mg/L	-	± 10 mV	± 10% ⁴	-

¹ Collect field parameters in consistent 3-5 minute intervals for Low-Flow method ² DTW: Total drawdown should not exceed 0.33 ft for Low-Flow method

³ Stabilization achieved after 3 successive readings for Low-Flow method; minimum parameter subset: pH, sp. cond., and turbidity or DO

⁴ For turbidity readings > 10 NTUs ⁵ Low-flow target purge rate is 0.1 - 0.5 L/min (0.03 - 0.13 gal/min)

Sample ID: 120225-CCR-LPLF 7R

Sample Time: 10:51

QC SAMPLE : ☐ Field Duplicate

☐ MS/MSD

QC Sample ID : _____

QC Sample Time: _____

Comments: _____

Sample: LPLF 1,2R, 5, 7R, 8, FD, MS, MSD

Water Level: LPLF 2, 3, 4

Bottles 125 ml preserved (pink)

250 ml

Note: NO FILTER

INTERNAL

Appendix B

Laboratory Reports



May 29, 2025

Service Request No:K2505006

Marc Read
Transalta Centralia Mining, LLC
913 Big Hanaford Rd
Centralia, WA 98531

Laboratory Results for: LPLF CCR

Dear Marc,

Enclosed are the results of the sample(s) submitted to our laboratory May 15, 2025
For your reference, these analyses have been assigned our service request number **K2505006**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3261. You may also contact me via email at Nick.Foth@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Nick Foth
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Received: 05/15/2025

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Five ground water samples were received for analysis at ALS Environmental on 05/15/2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method 300.0, 05/21/2025: The detection limit was elevated for Fluoride for the samples in this delivery group. The samples were diluted prior to instrumental analysis due to relatively high levels of non-target background components. No further corrective action was needed.

Approved by Karen Melorine

Date 05/29/2025



SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: 051425-CCR-LPLF1	Lab ID: K2505006-001
------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.544		0.003	0.021	mg/L	6010D
Calcium	138		0.003	0.021	mg/L	6010D
Chloride	1.3	J	0.10	2.0	mg/L	300.0
Solids, Total Dissolved	1580			20	mg/L	SM 2540 C
Sulfate	864		5	50	mg/L	300.0

CLIENT ID: 051425-CCR-LPLF2R	Lab ID: K2505006-002
-------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.354		0.003	0.021	mg/L	6010D
Calcium	390		0.003	0.021	mg/L	6010D
Chloride	9.1		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	3260			40	mg/L	SM 2540 C
Sulfate	1480		5	50	mg/L	300.0

CLIENT ID: 050525-CCR-LPLF7R	Lab ID: K2505006-003
-------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.336		0.003	0.021	mg/L	6010D
Calcium	221		0.003	0.021	mg/L	6010D
Chloride	9.1		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	2650			40	mg/L	SM 2540 C
Sulfate	1350		5	50	mg/L	300.0

CLIENT ID: 050525-CCR-LPLF7R FD	Lab ID: K2505006-004
--	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.335		0.003	0.021	mg/L	6010D
Calcium	219		0.003	0.021	mg/L	6010D
Chloride	9.2		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	2640			40	mg/L	SM 2540 C
Sulfate	1360		5	50	mg/L	300.0

CLIENT ID: 050525-CCR-LPLF8	Lab ID: K2505006-005
------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	1.10		0.03	0.21	mg/L	6010D
Calcium	379		0.03	0.21	mg/L	6010D
Chloride	6.9		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	3860			40	mg/L	SM 2540 C
Sulfate	2290		5	50	mg/L	300.0



Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR

Service Request:K2505006

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2505006-001	051425-CCR-LPLF1	5/14/2025	0803
K2505006-002	051425-CCR-LPLF2R	5/14/2025	0918
K2505006-003	050525-CCR-LPLF7R	5/14/2025	0832
K2505006-004	050525-CCR-LPLF7R FD	5/14/2025	0836
K2505006-005	050525-CCR-LPLF8	5/14/2025	0859

Cooler Receipt and Preservation Form

PM NF

Client TransAlta Service Request K25 05006
 Received: 5/15/25 Opened: 5/15/25 By: pdp Unloaded: 5/15/25 By: pdp

1. Samples were received via? USPS ~~Fed Ex~~ UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filled
<u>1.4</u>	<u>2.5</u>	<u>11R00</u>					
<u>4.7</u>							

4. Was a Temperature Blank present in cooler? NA Y N If yes, note the temperature in the appropriate column below:

If no, take the temperature of a representative sample bottle contained within the cooler; note in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges?

If no, were they received on ice and same day as collected? If not, note the cooler # below and notify the PM.

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

7. Were custody papers properly-filled out (ink, signed, etc.)? NA Y N
 8. Were samples received in good condition (unbroken) NA Y N
 9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
 10. Did all sample labels and tags agree with custody papers? NA Y N
 11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 13. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 14. Was C12/Res negative? NA Y N
 15. Were samples received within method specified time limit? If not, note the error below and notify the PM. NA Y N
 16. Were 100mL sterile microbiology bottles filled exactly to the 100mL mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____



Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value over the calibration range.
- J The result is an estimated value between the MDL and the MRL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR/

Service Request: K2505006

Sample Name: 051425-CCR-LPLF1
Lab Code: K2505006-001
Sample Matrix: Ground Water

Date Collected: 05/14/25
Date Received: 05/15/25

Analysis Method
300.0
6010D
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
AMCKORNEY
AWILSON

Sample Name: 051425-CCR-LPLF2R
Lab Code: K2505006-002
Sample Matrix: Ground Water

Date Collected: 05/14/25
Date Received: 05/15/25

Analysis Method
300.0
6010D
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
AMCKORNEY
AWILSON

Sample Name: 050525-CCR-LPLF7R
Lab Code: K2505006-003
Sample Matrix: Ground Water

Date Collected: 05/14/25
Date Received: 05/15/25

Analysis Method
300.0
6010D
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
AMCKORNEY
AWILSON

Sample Name: 050525-CCR-LPLF7R FD
Lab Code: K2505006-004
Sample Matrix: Ground Water

Date Collected: 05/14/25
Date Received: 05/15/25

Analysis Method
300.0
6010D
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
AMCKORNEY
AWILSON

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR/

Service Request: K2505006

Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005
Sample Matrix: Ground Water

Date Collected: 05/14/25
Date Received: 05/15/25

Analysis Method

300.0
6010D
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By

ZHAMPTON
AMCKORNEY
AWILSON



Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 051425-CCR-LPLF1
Lab Code: K2505006-001

Service Request: K2505006
Date Collected: 05/14/25 08:03
Date Received: 05/15/25 15:13

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	0.544	mg/L	0.021	0.003	1	05/28/25 12:11	05/21/25	
Calcium	6010D	138	mg/L	0.021	0.003	1	05/28/25 12:11	05/21/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 051425-CCR-LPLF2R
Lab Code: K2505006-002

Service Request: K2505006
Date Collected: 05/14/25 09:18
Date Received: 05/15/25 15:13

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	0.354	mg/L	0.021	0.003	1	05/28/25 12:14	05/21/25	
Calcium	6010D	390	mg/L	0.021	0.003	1	05/28/25 12:14	05/21/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF7R
Lab Code: K2505006-003

Service Request: K2505006
Date Collected: 05/14/25 08:32
Date Received: 05/15/25 15:13
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	0.336	mg/L	0.021	0.003	1	05/28/25 12:17	05/21/25	
Calcium	6010D	221	mg/L	0.021	0.003	1	05/28/25 12:17	05/21/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 050525-CCR-LPLF7R FD
Lab Code: K2505006-004

Service Request: K2505006
Date Collected: 05/14/25 08:36
Date Received: 05/15/25 15:13

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	0.335	mg/L	0.021	0.003	1	05/28/25 12:20	05/21/25	
Calcium	6010D	219	mg/L	0.021	0.003	1	05/28/25 12:20	05/21/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005

Service Request: K2505006
Date Collected: 05/14/25 08:59
Date Received: 05/15/25 15:13
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	1.10	mg/L	0.21	0.03	10	05/28/25 11:57	05/21/25	
Calcium	6010D	379	mg/L	0.21	0.03	10	05/28/25 11:57	05/21/25	



General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 051425-CCR-LPLF1
Lab Code: K2505006-001

Service Request: K2505006
Date Collected: 05/14/25 08:03
Date Received: 05/15/25 15:13

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	1.3 J	mg/L	2.0	0.10	20	05/21/25 00:06	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	05/21/25 00:06	
Sulfate	300.0	864	mg/L	50	5	500	05/20/25 22:04	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 051425-CCR-LPLF1
Lab Code: K2505006-001

Service Request: K2505006
Date Collected: 05/14/25 08:03
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	1580	mg/L	20	-	1	05/21/25 14:42	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 051425-CCR-LPLF2R
Lab Code: K2505006-002

Service Request: K2505006
Date Collected: 05/14/25 09:18
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	9.1	mg/L	2.0	0.10	20	05/21/25 00:24	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	05/21/25 00:24	
Sulfate	300.0	1480	mg/L	50	5	500	05/20/25 22:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 051425-CCR-LPLF2R
Lab Code: K2505006-002

Service Request: K2505006
Date Collected: 05/14/25 09:18
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3260	mg/L	40	-	1	05/20/25 18:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF7R
Lab Code: K2505006-003

Service Request: K2505006
Date Collected: 05/14/25 08:32
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	9.1	mg/L	2.0	0.10	20	05/21/25 00:41	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	05/21/25 00:41	
Sulfate	300.0	1350	mg/L	50	5	500	05/20/25 22:22	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF7R
Lab Code: K2505006-003

Service Request: K2505006
Date Collected: 05/14/25 08:32
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	2650	mg/L	40	-	1	05/20/25 18:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 050525-CCR-LPLF7R FD
Lab Code: K2505006-004

Service Request: K2505006
Date Collected: 05/14/25 08:36
Date Received: 05/15/25 15:13

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	9.2	mg/L	2.0	0.10	20	05/21/25 00:58	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	05/21/25 00:58	
Sulfate	300.0	1360	mg/L	50	5	500	05/20/25 22:31	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF7R FD
Lab Code: K2505006-004

Service Request: K2505006
Date Collected: 05/14/25 08:36
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	2640	mg/L	40	-	1	05/20/25 18:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005

Service Request: K2505006
Date Collected: 05/14/25 08:59
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	6.9	mg/L	2.0	0.10	20	05/21/25 01:33	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	05/21/25 01:33	
Sulfate	300.0	2290	mg/L	50	5	500	05/20/25 22:39	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005

Service Request: K2505006
Date Collected: 05/14/25 08:59
Date Received: 05/15/25 15:13
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3860	mg/L	40	-	1	05/20/25 18:35	



QC Summary Forms

ALS Environmental—Kelso Laboratory
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Metals

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: Method Blank
Lab Code: KQ2508570-01

Service Request: K2505006
Date Collected: NA
Date Received: NA

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	ND U	mg/L	0.021	0.003	1	05/28/25 11:51	05/21/25	
Calcium	6010D	ND U	mg/L	0.021	0.003	1	05/28/25 11:51	05/21/25	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Collected: 05/14/25
Date Received: 05/15/25
Date Analyzed: 05/28/25
Date Extracted: 05/21/25

Matrix Spike Summary
Total Metals

Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005
Analysis Method: 6010D
Prep Method: EPA CLP ILM04.0

Units: mg/L
Basis: NA

Matrix Spike
KQ2508570-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Boron	1.10	1.55	0.50	92	75-125
Calcium	379	392	10.0	126 #	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Collected: 05/14/25
Date Received: 05/15/25
Date Analyzed: 05/28/25

Replicate Sample Summary**Total Metals**

Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2508570-03	Average	RPD	RPD Limit
					Result			
Boron	6010D	0.21	0.03	1.10	1.07	1.09	3	20
Calcium	6010D	0.21	0.03	379	377	378	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Analyzed: 05/28/25

Lab Control Sample Summary
Total Metals

Units:mg/L
Basis:NA

Lab Control Sample
KQ2508570-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Boron	6010D	0.481	0.500	96	80-120
Calcium	6010D	11.6	12.5	93	80-120



General Chemistry

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dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2505006-MB1

Service Request: K2505006
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	05/20/25 17:35	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	05/20/25 17:35	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	05/20/25 17:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2505006-MB1

Service Request: K2505006
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	05/20/25 18:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2505006-MB2

Service Request: K2505006
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	05/20/25 21:21	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	05/20/25 21:21	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	05/20/25 21:21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2505006-MB2

Service Request: K2505006
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	05/20/25 18:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2505006-MB3

Service Request: K2505006
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	05/20/25 23:49	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	05/20/25 23:49	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	05/20/25 23:49	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: Method Blank
Lab Code: K2505006-MB3

Service Request: K2505006
Date Collected: NA
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	05/21/25 14:42	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2505006-MB4

Service Request: K2505006
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	05/21/25 14:42	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request:K2505006
Date Collected:05/14/25
Date Received:05/15/25
Date Analyzed:05/20/25 - 05/21/25

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005

Units:mg/L
Basis:NA

Matrix Spike K2505006-005MS						Duplicate Matrix Spike K2505006-005DMS					
Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Chloride	300.0	6.9	159	160	95	159	160	95	90-110	<1	20
Fluoride	300.0	ND U	151	160	95	152	160	95	90-110	<1	20
Sulfate	300.0	2290	6290	4000	100	6320	4000	101	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Collected: 05/14/25
Date Received: 05/15/25
Date Analyzed: 05/20/25 - 05/21/25

Replicate Sample Summary
General Chemistry Parameters

Sample Name: 050525-CCR-LPLF8
Lab Code: K2505006-005

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2505006-005DUP	Average	RPD	RPD Limit
					Result			
Chloride	300.0	2.0	0.10	6.9	7.0	6.97	<1	20
Fluoride	300.0	2.0	0.2	ND U	ND U	NC	NC	20
Solids, Total Dissolved	SM 2540 C	40	-	3860	3830	3850	<1	5
Sulfate	300.0	50	5	2290	2310	2300	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Analyzed: 05/20/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2505006-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.80	5.00	96	90-110
Fluoride	300.0	4.85	5.00	97	90-110
Solids, Total Dissolved	SM 2540 C	786	789	100	85-115
Sulfate	300.0	4.96	5.00	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Analyzed: 05/20/25 - 05/21/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2505006-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.83	5.00	97	90-110
Fluoride	300.0	4.86	5.00	97	90-110
Solids, Total Dissolved	SM 2540 C	790	789	100	85-115
Sulfate	300.0	4.98	5.00	100	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2505006
Date Analyzed: 05/20/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2505006-LCS3

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.81	5.00	96	90-110
Fluoride	300.0	4.85	5.00	97	90-110
Sulfate	300.0	4.96	5.00	99	90-110



July 07, 2025

Service Request No:K2506413

Marc Read
Transalta Centralia Mining, LLC
913 Big Hanaford Rd
Centralia, WA 98531

Laboratory Results for: LPLF CCR

Dear Marc,

Enclosed are the results of the sample(s) submitted to our laboratory June 25, 2025
For your reference, these analyses have been assigned our service request number **K2506413**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Naomi Pedersen
Project Manager

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PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413
Date Received: 06/25/2025

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Two ground water samples were received for analysis at ALS Environmental on 06/25/2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by



Date

07/07/2025



SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: 051425-CCR-LPLF2R			Lab ID: K2506413-001			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	355		3	21	ug/L	6010D
Calcium	403000		3	42	ug/L	6010D
Chloride	7.1		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	3180			40	mg/L	SM 2540 C
Sulfate	1700		5	50	mg/L	300.0

CLIENT ID: 050525-CCR-LPLF8			Lab ID: K2506413-002			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	1160		30	210	ug/L	6010D
Calcium	384000		30	420	ug/L	6010D
Chloride	6.8		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	3730			40	mg/L	SM 2540 C
Sulfate	2210		5	50	mg/L	300.0



Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR

Service Request:K2506413

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2506413-001	051425-CCR-LPLF2R	6/25/2025	1059
K2506413-002	050525-CCR-LPLF8	6/25/2025	0915

Cooler Receipt and Preservation Form

PM NP

Client Trans Alta Mining Service Request K25 00413
 Received: 6/25/25 Opened: 6/25/25 By: pdp Unloaded: 6/25/25 By: pdp

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
<u>3.9</u>	<u>6.6</u>	<u>1802</u>					
	<u>2.9</u>	<u>11</u>					

4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:

If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges?

If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM.

NA Y N
NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

7. Were custody papers properly filled out (ink, signed, etc.)?

NA Y N

8. Were samples received in good condition (unbroken)

NA Y N

9. Were all sample labels complete (ie, analysis, preservation, etc.)?

NA Y N

10. Did all sample labels and tags agree with custody papers?

NA Y N

11. Were appropriate bottles/containers and volumes received for the tests indicated?

NA Y N

12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below

NA Y N

13. Were VOA vials received without headspace? Indicate in the table below.

NA Y N

14. Was C12/Res negative?

NA Y N

15. Were samples received within method specified time limit? If not, notate the error below and notify the PM.

NA Y N

16. Were 100mL sterile microbiology bottles filled exactly to the 100mL mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
<u>051425-CR-LR-FR</u>	<u>125ml</u>			<u>Y</u>	<u>H2O3</u>	<u>ML</u>	<u>REL-10-P</u>	<u>pdp</u>	<u>15:55</u>

SHORT HOLD

Notes, Discrepancies, Resolutions:



Miscellaneous Forms

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Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value over the calibration range.
- J The result is an estimated value between the MDL and the MRL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

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Analyst Summary report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR/

Service Request: K2506413

Sample Name: 051425-CCR-LPLF2R
Lab Code: K2506413-001
Sample Matrix: Ground Water

Date Collected: 06/25/25
Date Received: 06/25/25

Analysis Method
300.0
6010D
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
AMCKORNEY
AWILSON

Sample Name: 050525-CCR-LPLF8
Lab Code: K2506413-002
Sample Matrix: Ground Water

Date Collected: 06/25/25
Date Received: 06/25/25

Analysis Method
300.0
6010D
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
AMCKORNEY
AWILSON



Sample Results

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Metals

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 051425-CCR-LPLF2R
Lab Code: K2506413-001

Service Request: K2506413
Date Collected: 06/25/25 10:59
Date Received: 06/25/25 15:40
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	355	ug/L	21	3	1	07/02/25 13:34	06/30/25	
Calcium	6010D	403000	ug/L	42	3	1	07/02/25 13:34	06/30/25	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 050525-CCR-LPLF8
Lab Code: K2506413-002

Service Request: K2506413
Date Collected: 06/25/25 09:15
Date Received: 06/25/25 15:40

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	1160	ug/L	210	30	10	07/02/25 13:37	06/30/25	
Calcium	6010D	384000	ug/L	420	30	10	07/02/25 13:37	06/30/25	



General Chemistry

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 051425-CCR-LPLF2R
Lab Code: K2506413-001

Service Request: K2506413
Date Collected: 06/25/25 10:59
Date Received: 06/25/25 15:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	7.1	mg/L	2.0	0.10	20	06/28/25 04:29	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	06/28/25 04:29	
Sulfate	300.0	1700	mg/L	50	5	500	06/28/25 04:29	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 051425-CCR-LPLF2R
Lab Code: K2506413-001

Service Request: K2506413
Date Collected: 06/25/25 10:59
Date Received: 06/25/25 15:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3180	mg/L	40	-	1	06/28/25 17:59	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 050525-CCR-LPLF8
Lab Code: K2506413-002

Service Request: K2506413
Date Collected: 06/25/25 09:15
Date Received: 06/25/25 15:40

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	6.8	mg/L	2.0	0.10	20	06/28/25 05:12	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	06/28/25 05:12	
Sulfate	300.0	2210	mg/L	50	5	500	06/28/25 03:37	

ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 050525-CCR-LPLF8
Lab Code: K2506413-002

Service Request: K2506413
Date Collected: 06/25/25 09:15
Date Received: 06/25/25 15:40
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3730	mg/L	40	-	1	06/28/25 17:59	



QC Summary Forms

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: Method Blank
Lab Code: KQ2511156-01

Service Request: K2506413
Date Collected: NA
Date Received: NA

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6010D	ND U	ug/L	21	3	1	07/02/25 13:28	06/30/25	
Calcium	6010D	ND U	ug/L	42	3	1	07/02/25 13:28	06/30/25	

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413
Date Collected: 06/25/25
Date Received: 06/25/25
Date Analyzed: 07/2/25
Date Extracted: 06/30/25

Matrix Spike Summary
Total Metals

Sample Name: 050525-CCR-LPLF8
Lab Code: K2506413-002
Analysis Method: 6010D
Prep Method: EPA CLP ILM04.0

Units: ug/L
Basis: NA

Matrix Spike
KQ2511156-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Boron	1160	1670	500	103	75-125
Calcium	384000	391000	10000	67 #	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413**Date Collected:** 06/25/25**Date Received:** 06/25/25**Date Analyzed:** 07/02/25**Replicate Sample Summary****Total Metals****Sample Name:** 050525-CCR-LPLF8**Units:** ug/L**Lab Code:** K2506413-002**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
					KQ2511156-03 Result			
Boron	6010D	210	30	1160	1150	1160	<1	20
Calcium	6010D	420	30	384000	378000	381000	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:
Project:
Sample Matrix:

Transalta Centralia Mining, LLC
LPLF CCR
Ground Water

Service Request: K2506413
Date Analyzed: 07/02/25

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2511156-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Boron	6010D	477	500	95	80-120
Calcium	6010D	12100	12500	97	80-120



General Chemistry

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2506413-MB1

Service Request: K2506413
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	06/27/25 18:37	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	06/27/25 18:37	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	06/27/25 18:37	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2506413-MB1

Service Request: K2506413
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	06/28/25 17:59	

ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2506413-MB2

Service Request: K2506413
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	06/27/25 22:23	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	06/27/25 22:23	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	06/27/25 22:23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2506413-MB2

Service Request: K2506413
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	06/28/25 17:59	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2506413-MB3

Service Request: K2506413
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	06/28/25 02:10	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	06/28/25 02:10	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	06/28/25 02:10	

ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2506413-MB4

Service Request: K2506413
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	06/28/25 04:55	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	06/28/25 04:55	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	06/28/25 04:55	

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request:K2506413
Date Collected:06/25/25
Date Received:06/25/25
Date Analyzed:6/28/25

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: 050525-CCR-LPLF8
Lab Code: K2506413-002

Units:mg/L
Basis:NA

Matrix Spike K2506413-002MS						Duplicate Matrix Spike K2506413-002DMS					
Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Chloride	300.0	6.8	160	160	96	160	160	96	90-110	<1	20
Fluoride	300.0	ND U	152	160	95	151	160	95	90-110	<1	20
Sulfate	300.0	2210	6170	4000	99	6170	4000	99	90-110	<1	20

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413**Date Collected:** 06/25/25**Date Received:** 06/25/25**Date Analyzed:** 06/28/25

Replicate Sample Summary
General Chemistry Parameters

Sample Name: 050525-CCR-LPLF8**Units:** mg/L**Lab Code:** K2506413-002**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2506413-002DUP	Average	RPD	RPD Limit
					Result			
Chloride	300.0	2.0	0.10	6.8	6.8	6.83	<1	20
Fluoride	300.0	2.0	0.2	ND U	ND U	NC	NC	20
Solids, Total Dissolved	SM 2540 C	40	-	3730	3760	3740	<1	5
Sulfate	300.0	50	5	2210	2210	2210	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413
Date Analyzed: 06/27/25 - 06/28/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2506413-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.78	5.00	96	90-110
Fluoride	300.0	4.85	5.00	97	90-110
Solids, Total Dissolved	SM 2540 C	762	789	97	85-115
Sulfate	300.0	4.85	5.00	97	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413
Date Analyzed: 06/27/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2506413-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.82	5.00	96	90-110
Fluoride	300.0	4.88	5.00	98	90-110
Sulfate	300.0	4.93	5.00	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413
Date Analyzed: 06/28/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2506413-LCS3

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.78	5.00	96	90-110
Fluoride	300.0	4.83	5.00	97	90-110
Sulfate	300.0	4.90	5.00	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2506413
Date Analyzed: 06/28/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2506413-LCS4

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.79	5.00	96	90-110
Fluoride	300.0	4.85	5.00	97	90-110
Sulfate	300.0	4.92	5.00	98	90-110



November 05, 2025

Service Request No:K2510238

Marc Read
Transalta Centralia Mining, LLC
913 Big Hanaford Rd
Centralia, WA 98531

Laboratory Results for: LPLF CCR

Dear Marc,

Enclosed are the results of the sample(s) submitted to our laboratory October 15, 2025
For your reference, these analyses have been assigned our service request number **K2510238**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3301. You may also contact me via email at Naomi.Pedersen@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Naomi Pedersen
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Received: 10/15/2025

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Five ground water samples were received for analysis at ALS Environmental on 10/15/2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method 300.0, 11/04/2025: Method Blank K2510238-MB6 contained low levels of Fluoride above the Method Reporting Limit (MRL). In accordance with ALS QA/QC policy, all sample results less than twenty times the level found in the Method Blank were flagged as estimated. For the samples in this delivery group, Fluoride was non-detect and therefore data quality was not affected. No further corrective action was necessary.

Method 300.0, 11/03-04/2025: The detection limit was elevated for Fluoride for the samples in this delivery group. The samples were diluted prior to instrumental analysis due to relatively high levels of non-target background components. No further corrective action was needed.

Approved by



Date

11/05/2025



SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: 101325-CCR-LPLF1	Lab ID: K2510238-001
------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.623		0.004	0.020	mg/L	6020B
Calcium	145		0.06	0.20	mg/L	6020B
Chloride	2.6		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	2180			40	mg/L	SM 2540 C
Sulfate	1040		5	50	mg/L	300.0

CLIENT ID: 101325-CCR-LPLF2R	Lab ID: K2510238-002
-------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.386		0.0004	0.0020	mg/L	6020B
Calcium	444		0.3	1.0	mg/L	6020B
Chloride	8.7		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	3300			40	mg/L	SM 2540 C
Sulfate	1530		5	50	mg/L	300.0

CLIENT ID: 101325-CCR-LPLF7R	Lab ID: K2510238-003
-------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.480		0.004	0.020	mg/L	6020B
Calcium	246		0.06	0.20	mg/L	6020B
Chloride	7.6		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	2680			40	mg/L	SM 2540 C
Sulfate	1560		5	50	mg/L	300.0

CLIENT ID: 101325-CCR-LPLF7R FD	Lab ID: K2510238-004
--	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.489		0.004	0.020	mg/L	6020B
Calcium	254		0.06	0.20	mg/L	6020B
Chloride	9.5		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	2680			40	mg/L	SM 2540 C
Sulfate	1350		5	50	mg/L	300.0

CLIENT ID: 101325-CCR-LPLF8	Lab ID: K2510238-005
------------------------------------	-----------------------------

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	1.19		0.004	0.020	mg/L	6020B
Calcium	402		0.06	0.20	mg/L	6020B
Chloride	7.1		0.10	2.0	mg/L	300.0
Solids, Total Dissolved	3720			40	mg/L	SM 2540 C
Sulfate	2270		5	50	mg/L	300.0



Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR

Service Request:K2510238

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2510238-001	101325-CCR-LPLF1	10/13/2025	0822
K2510238-002	101325-CCR-LPLF2R	10/13/2025	0957
K2510238-003	101325-CCR-LPLF7R	10/13/2025	0911
K2510238-004	101325-CCR-LPLF7R FD	10/13/2025	0913
K2510238-005	101325-CCR-LPLF8	10/13/2025	0935



ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Work Order No.:

Chain of Custody

Part of the ALS Group A Campbell Brothers Limited Company

102510238

Project Manager: Brianna McCloskey		Bill to: Brianna McCloskey																										
Client Name: TransAlta Centralia Mining Company		Company: TransAlta Centralia Mining																										
Address: 913 Big Hanaford Road		Address: 913 Big Hanaford Road																										
City, State ZIP: Centralia, WA 98531		City, State ZIP: Centralia, WA 98531																										
Email: brianna_mccloskey@transalta.com		Email: brianna_mccloskey@transalta.com																										
Phone: 360-623-4982		po#																										
Project Name: LPLF CCR		REQUESTED ANALYSIS										TAT																
Project Number:												<input checked="" type="checkbox"/> Routine 21day																
P.O. Number: 4700108993 Line 30												<input type="checkbox"/> Same Day 100%																
Sampler's Name: Brianna McCloskey												<input type="checkbox"/> Next Day ***																
SAMPLE RECEIPT												<input type="checkbox"/> 3 Day																
Temperature (°C):		Temp Blank Present												<input type="checkbox"/> 5 Day 50%														
Received Intact:		Yes No N/A		Wet Ice / Blue Ice												Surcharges.												
Cooler Custody Seals:		Yes No N/A		Total Containers:												Please call for availability												
Sample Custody Seals:		Yes No N/A														Due Date:												
Sample Identification		Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	SM 2540 C / TDS	9056A / Chloride	9056A / F	9056A / SO4	6010D / Metals T											Comments						
101325-CCR-LPLF1		GW	10/13/2025	8:22		2	X	X	X	X	X																	
101325-CCR-LPLF2R		GW	10/13/2025	9:57		2	X	X	X	X	X																	
101325-CCR-LPLF7R		GW	10/13/2025	9:11		2	X	X	X	X	X																	
101325-CCR-LPLF7R FD		GW	10/13/2025	9:13		2	X	X	X	X	X																	
101325-CCR-LPLF8		GW	10/13/2025	9:35		2	X	X	X	X	X																	
101325-CCR-LPLF2R MSD		GW	10/13/2025	9:59		2	X	X	X	X	X																	
101325-CCR-LPLF2R MS		GW	10/13/2025	9:58		2	X	X	X	X	X																	
Dissolved		Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr																										
Total		Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr																										
RELINQUISHED BY												RECEIVED BY																
Print Name		Signature		Date/Time		Print Name		Signature		Date/Time																		
Brianna McCloskey				10/15/25 14:10		Naomi Pedersen				10/15/25 1410																		

Cooler Receipt and Preservation Form

Client TransAlta Service Request K25 10238 PM NP
 Received: 10115125 Opened: 10115125 By: NP Unloaded: 10115125 By: NP

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID/NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number	NA	Filed
<u>1.5</u>	<u>2.4</u>	<u>1806</u>						

4. Was a Temperature Blank present in cooler? NA Y N If yes, note the temperature in the appropriate column below:

If no, take the temperature of a representative sample bottle contained within the cooler; note in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges?

NA Y N
NA Y N

If no, were they received on ice and same day as collected? If not, note the cooler # below and notify the PM.

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 8. Were samples received in good condition (unbroken)? NA Y N
 9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
 10. Did all sample labels and tags agree with custody papers? NA Y N
 11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 13. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 14. Was C12/Res negative? NA Y N
 15. Were samples received within method specified time limit? If not, note the error below and notify the PM. NA Y N
 16. Were 100mL sterile microbiology bottles filled exactly to the 100mL mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____



Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value over the calibration range.
- J The result is an estimated value between the MDL and the MRL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR/

Service Request: K2510238

Sample Name: 101325-CCR-LPLF1
Lab Code: K2510238-001
Sample Matrix: Ground Water

Date Collected: 10/13/25
Date Received: 10/15/25

Analysis Method
300.0
6020B
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
ABOYER
MSPECHT

Sample Name: 101325-CCR-LPLF1
Lab Code: K2510238-001.R01
Sample Matrix: Ground Water

Date Collected: 10/13/25
Date Received: 10/15/25

Analysis Method
300.0

Extracted/Digested By

Analyzed By
ZHAMPTON

Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002
Sample Matrix: Ground Water

Date Collected: 10/13/25
Date Received: 10/15/25

Analysis Method
300.0
6020B
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
ABOYER
MSPECHT

Sample Name: 101325-CCR-LPLF7R
Lab Code: K2510238-003
Sample Matrix: Ground Water

Date Collected: 10/13/25
Date Received: 10/15/25

Analysis Method
300.0
6020B
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
ABOYER
MSPECHT

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR/

Service Request: K2510238

Sample Name: 101325-CCR-LPLF7R FD
Lab Code: K2510238-004
Sample Matrix: Ground Water

Date Collected: 10/13/25
Date Received: 10/15/25

Analysis Method
300.0
6020B
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
ABOYER
MSPECHT

Sample Name: 101325-CCR-LPLF8
Lab Code: K2510238-005
Sample Matrix: Ground Water

Date Collected: 10/13/25
Date Received: 10/15/25

Analysis Method
300.0
6020B
SM 2540 C

Extracted/Digested By

MCHATTICK

Analyzed By
ZHAMPTON
ABOYER
MSPECHT



Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF1
Lab Code: K2510238-001

Service Request: K2510238
Date Collected: 10/13/25 08:22
Date Received: 10/15/25 14:10
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.623	mg/L	0.020	0.004	10	10/24/25 16:18	10/22/25	
Calcium	6020B	145	mg/L	0.20	0.06	10	10/24/25 16:18	10/22/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002

Service Request: K2510238
Date Collected: 10/13/25 09:57
Date Received: 10/15/25 14:10
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.386	mg/L	0.0020	0.0004	1	10/24/25 14:53	10/22/25	
Calcium	6020B	444	mg/L	1.0	0.3	50	10/24/25 15:57	10/22/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 101325-CCR-LPLF7R
Lab Code: K2510238-003

Service Request: K2510238
Date Collected: 10/13/25 09:11
Date Received: 10/15/25 14:10

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.480	mg/L	0.020	0.004	10	10/24/25 16:21	10/22/25	
Calcium	6020B	246	mg/L	0.20	0.06	10	10/24/25 16:21	10/22/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 101325-CCR-LPLF7R FD
Lab Code: K2510238-004

Service Request: K2510238
Date Collected: 10/13/25 09:13
Date Received: 10/15/25 14:10

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.489	mg/L	0.020	0.004	10	10/24/25 16:24	10/22/25	
Calcium	6020B	254	mg/L	0.20	0.06	10	10/24/25 16:24	10/22/25	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 101325-CCR-LPLF8
Lab Code: K2510238-005

Service Request: K2510238
Date Collected: 10/13/25 09:35
Date Received: 10/15/25 14:10

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	1.19	mg/L	0.020	0.004	10	10/24/25 16:27	10/22/25	
Calcium	6020B	402	mg/L	0.20	0.06	10	10/24/25 16:27	10/22/25	



General Chemistry

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 101325-CCR-LPLF1
Lab Code: K2510238-001

Service Request: K2510238
Date Collected: 10/13/25 08:22
Date Received: 10/15/25 14:10

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	2.6	mg/L	2.0	0.10	20	11/04/25 16:21	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	11/04/25 16:21	
Sulfate	300.0	1040	mg/L	50	5	500	11/04/25 16:12	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 101325-CCR-LPLF1
Lab Code: K2510238-001

Service Request: K2510238
Date Collected: 10/13/25 08:22
Date Received: 10/15/25 14:10

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	2180	mg/L	40	-	1	10/20/25 18:42	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002

Service Request: K2510238
Date Collected: 10/13/25 09:57
Date Received: 10/15/25 14:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	8.7	mg/L	2.0	0.10	20	11/03/25 22:47	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	11/03/25 22:47	
Sulfate	300.0	1530	mg/L	50	5	500	11/03/25 21:20	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002

Service Request: K2510238
Date Collected: 10/13/25 09:57
Date Received: 10/15/25 14:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3300	mg/L	40	-	1	10/20/25 18:42	

ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF7R
Lab Code: K2510238-003

Service Request: K2510238
Date Collected: 10/13/25 09:11
Date Received: 10/15/25 14:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	7.6	mg/L	2.0	0.10	20	11/03/25 23:21	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	11/03/25 23:21	
Sulfate	300.0	1560	mg/L	50	5	500	11/03/25 21:55	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF7R
Lab Code: K2510238-003

Service Request: K2510238
Date Collected: 10/13/25 09:11
Date Received: 10/15/25 14:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	2680	mg/L	40	-	1	10/20/25 18:42	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF7R FD
Lab Code: K2510238-004

Service Request: K2510238
Date Collected: 10/13/25 09:13
Date Received: 10/15/25 14:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	9.5	mg/L	2.0	0.10	20	11/03/25 23:30	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	11/03/25 23:30	
Sulfate	300.0	1350	mg/L	50	5	500	11/03/25 22:03	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: 101325-CCR-LPLF7R FD
Lab Code: K2510238-004

Service Request: K2510238
Date Collected: 10/13/25 09:13
Date Received: 10/15/25 14:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	2680	mg/L	40	-	1	10/20/25 18:42	

ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 101325-CCR-LPLF8
Lab Code: K2510238-005

Service Request: K2510238
Date Collected: 10/13/25 09:35
Date Received: 10/15/25 14:10

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	7.1	mg/L	2.0	0.10	20	11/03/25 23:39	
Fluoride	300.0	ND U	mg/L	2.0	0.2	20	11/03/25 23:39	
Sulfate	300.0	2270	mg/L	50	5	500	11/03/25 22:12	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: 101325-CCR-LPLF8
Lab Code: K2510238-005

Service Request: K2510238
Date Collected: 10/13/25 09:35
Date Received: 10/15/25 14:10

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3720	mg/L	40	-	1	10/20/25 18:42	



QC Summary Forms

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Metals

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ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: Method Blank
Lab Code: KQ2518498-01

Service Request: K2510238
Date Collected: NA
Date Received: NA

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.0004 J	mg/L	0.0020	0.0004	1	10/24/25 14:47	10/22/25	
Calcium	6020B	ND U	mg/L	0.020	0.006	1	10/24/25 14:47	10/22/25	

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Collected: 10/13/25
Date Received: 10/15/25
Date Analyzed: 10/24/25
Date Extracted: 10/22/25

Matrix Spike Summary
Total Metals

Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002
Analysis Method: 6020B
Prep Method: EPA CLP ILM04.0

Units: mg/L
Basis: NA

Matrix Spike
KQ2518498-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Boron	0.386	0.421	0.0250	140 #	75-125
Calcium	444	479	10.3	345 #	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Collected: 10/13/25
Date Received: 10/15/25
Date Analyzed: 10/24/25

Replicate Sample Summary**Total Metals**

Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2518498-03	Average	RPD	RPD Limit
					Result			
Boron	6020B	0.0020	0.0004	0.386	0.386	0.386	<1	20
Calcium	6020B	1.0	0.3	444	458	451	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 10/24/25

Lab Control Sample Summary
Total Metals

Units:mg/L
Basis:NA

Lab Control Sample
KQ2518498-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Boron	6020B	0.0250	0.0250	100	80-120
Calcium	6020B	10.1	10.3	99	80-120



General Chemistry

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB1

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/03/25 12:41	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	11/03/25 12:41	
Sulfate	300.0	ND U	mg/L	0.10	0.010	1	11/03/25 12:41	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB1

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	10/20/25 18:42	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB2

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/03/25 16:52	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	11/03/25 16:52	
Sulfate	300.0	0.03 J	mg/L	0.10	0.010	1	11/03/25 16:52	

ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB2

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	10/20/25 18:42	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: Method Blank
Lab Code: K2510238-MB3

Service Request: K2510238
Date Collected: NA
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/03/25 20:45	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	11/03/25 20:45	
Sulfate	300.0	0.03 J	mg/L	0.10	0.010	1	11/03/25 20:45	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB4

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/04/25 00:31	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	11/04/25 00:31	
Sulfate	300.0	0.12	mg/L	0.10	0.010	1	11/04/25 00:31	

ALS Group USA, Corp.
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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB5

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/04/25 15:11	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	11/04/25 15:11	
Sulfate	300.0	0.13	mg/L	0.10	0.010	1	11/04/25 15:11	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB6

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/04/25 19:04	
Fluoride	300.0	0.77	mg/L	0.10	0.006	1	11/04/25 19:04	
Sulfate	300.0	0.12	mg/L	0.10	0.010	1	11/04/25 19:04	

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Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Sample Name: Method Blank
Lab Code: K2510238-MB7

Service Request: K2510238
Date Collected: NA
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/04/25 22:49	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	11/04/25 22:49	
Sulfate	300.0	0.11	mg/L	0.10	0.010	1	11/04/25 22:49	

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dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water
Sample Name: Method Blank
Lab Code: K2510238-MB8

Service Request: K2510238
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Chloride	300.0	ND U	mg/L	0.10	0.005	1	11/05/25 02:35	
Fluoride	300.0	ND U	mg/L	0.10	0.006	1	11/05/25 02:35	
Sulfate	300.0	0.10 J	mg/L	0.10	0.010	1	11/05/25 02:35	

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Collected: 10/13/25
Date Received: 10/15/25
Date Analyzed: 11/3/25

Duplicate Matrix Spike Summary
General Chemistry Parameters

Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002

Units: mg/L
Basis: NA

Matrix Spike K2510238-002MS						Duplicate Matrix Spike K2510238-002DMS					
Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Chloride	300.0	8.7	161	160	96	163	160	96	90-110	<1	20
Fluoride	300.0	ND U	156	160	98	158	160	98	90-110	<1	20
Sulfate	300.0	1530	5470	4000	99	5480	4000	99	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Collected: 10/13/25
Date Received: 10/15/25
Date Analyzed: 10/20/25 - 11/03/25

Replicate Sample Summary
General Chemistry Parameters

Sample Name: 101325-CCR-LPLF2R
Lab Code: K2510238-002

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2510238- 002DUP	Average	RPD	RPD Limit
					Result			
Chloride	300.0	2.0	0.10	8.7	8.3	8.45	5	20
Fluoride	300.0	2.0	0.2	ND U	ND U	NC	NC	20
Solids, Total Dissolved	SM 2540 C	40	-	3300	3310	3300	<1	5
Sulfate	300.0	50	5	1530	1530	1530	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 10/20/25 - 11/03/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.92	5.00	98	90-110
Fluoride	300.0	4.98	5.00	100	90-110
Solids, Total Dissolved	SM 2540 C	766	789	97	85-115
Sulfate	300.0	4.96	5.00	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 11/03/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.92	5.00	98	90-110
Fluoride	300.0	5.00	5.00	100	90-110
Sulfate	300.0	5.02	5.00	100	90-110

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 11/03/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS3

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.91	5.00	98	90-110
Fluoride	300.0	4.98	5.00	100	90-110
Sulfate	300.0	5.00	5.00	100	90-110

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 11/04/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS4

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.93	5.00	99	90-110
Fluoride	300.0	4.73	5.00	95	90-110
Sulfate	300.0	5.09	5.00	102	90-110

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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 11/04/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS5

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.93	5.00	99	90-110
Fluoride	300.0	5.01	5.00	100	90-110
Sulfate	300.0	5.03	5.00	101	90-110

ALS Group USA, Corp.
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QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 11/04/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS6

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.91	5.00	98	90-110
Fluoride	300.0	4.99	5.00	100	90-110
Sulfate	300.0	4.99	5.00	100	90-110

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dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 11/04/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS7

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.91	5.00	98	90-110
Fluoride	300.0	4.98	5.00	100	90-110
Sulfate	300.0	4.96	5.00	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Ground Water

Service Request: K2510238
Date Analyzed: 11/05/25

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
K2510238-LCS8

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	300.0	4.92	5.00	98	90-110
Fluoride	300.0	5.01	5.00	100	90-110
Sulfate	300.0	4.98	5.00	100	90-110



December 16, 2025

Service Request No:K2512097

Marc Read
Transalta Centralia Mining, LLC
913 Big Hanaford Rd
Centralia, WA 98531

Laboratory Results for: LPLF CCR

Dear Marc,

Enclosed are the results of the sample(s) submitted to our laboratory December 04, 2025
For your reference, these analyses have been assigned our service request number **K2512097**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3301. You may also contact me via email at Naomi.Pedersen@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Naomi Pedersen
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Service Request: K2512097
Date Received: 12/04/2025

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:


Three water samples were received for analysis at ALS Environmental on 12/04/2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by 

Date 12/16/2025



SAMPLE DETECTION SUMMARY

This form includes only detections above the reporting levels. For a full listing of sample results, continue to the Sample Results section of this Report.

CLIENT ID: 1200225-CCR-LPLF2R			Lab ID: K2512097-001			
-------------------------------	--	--	----------------------	--	--	--

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.391		0.0004	0.0020	mg/L	6020B
Solids, Total Dissolved	3360			40	mg/L	SM 2540 C

CLIENT ID: 120225-CCR-LPLF8			Lab ID: K2512097-002			
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Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	1.16		0.004	0.020	mg/L	6020B

CLIENT ID: 1200225-CCR-LPLF7R			Lab ID: K2512097-003			
-------------------------------	--	--	----------------------	--	--	--

Analyte	Results	Flag	MDL	MRL	Units	Method
Boron	0.358		0.0004	0.0020	mg/L	6020B



Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR

Service Request:K2512097

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2512097-001	1200225-CCR-LPLF2R	12/2/2025	1129
K2512097-002	120225-CCR-LPLF8	12/2/2025	1110
K2512097-003	1200225-CCR-LPLF7R	12/2/2025	1051



ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068

Work Order No.:

42512097
Chain of Custody

Part of the ALS Group A Campbell Brothers Limited Company

Project Manager: Brianna McCloskey		Bill to: Brianna McCloskey																					
Client Name: TransAlta Centralia Mining Company		Company: TransAlta Centralia Mining																					
Address: 913 Big Hanaford Road		Address: 913 Big Hanaford Road																					
City, State ZIP: Centralia, WA 98531		City, State ZIP: Centralia, WA 98531																					
Email: brianna_mccloskey@transalta.com		Email: brianna_mccloskey@transalta.com																					
Phone: 360-623-4982																							
Project Name: LPLF CCR		REQUESTED ANALYSIS																TAT					
Project Number:																		<input checked="" type="checkbox"/> Routine 21 day					
P.O. Number: 4700108993 Line 30																		<input type="checkbox"/> Same Day 100%					
Sampler's Name: Brianna McCloskey																		<input type="checkbox"/> Next Day ***					
																		<input type="checkbox"/> 3 Day					
SAMPLE RECEIPT																		<input type="checkbox"/> 5 Day 50%					
Temperature (°C):		Temp Blank Present																		Surcharges. Please call for availability			
Received Intact:		Wet Ice / Blue Ice																					
Cooler Custody Seals:		Total Containers:																					
Sample Custody Seals:																							
Sample Identification		Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	SM 2540 C / TDS	9056A / Chloride	9056A / F	9056A / SO4	6010D / Metals T											Due Date:	
																						Comments	
1200225-CCR-LPLF2R		GW	12/02/2025	11:29		2	X				X											TDS & Boron only	
120225-CCR-LPLF8		GW	12/02/2025	11:10		2					X											Boron only	
1200225-CCR-LPLF7R		GW	12/02/2025	10:51		2					X											Boron only	
Dissolved		Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Ti, V, Zn, Zr																Additional Methods Available Upon Request					
Total		Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Ti, V, Zn, Zr																					
RELINQUISHED BY												RECEIVED BY											
Print Name		Signature		Date/Time		Print Name		Signature		Date/Time													
Brianna McCloskey				12/4/25 15:16		CODY GRAVES				12/4/25 15:16													

Cooler Receipt and Preservation Form

PM NP

Client TransAlta Service Request K25 12097
 Received: 12/4/25 Opened: 12/4/25 By: HM Unloaded: 12/4/25 By: HM

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filled
<u>0.1</u>		<u>11402</u>					

4. Was a Temperature Blank present in cooler? NA Y N If yes, note the temperature in the appropriate column below:

If no, take the temperature of a representative sample bottle contained within the cooler; note in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges?

If no, were they received on ice and same day as collected? If not, note the cooler # below and notify the PM.

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 8. Were samples received in good condition (unbroken) NA Y N
 9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
 10. Did all sample labels and tags agree with custody papers? NA Y N
 11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 13. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 14. Was C12/Rcs negative? NA Y N
 15. Were samples received within method specified time limit? If not, note the error below and notify the PM. NA Y N
 16. Were 100mL sterile microbiology bottles filled exactly to the 100mL mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broko	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: received 250mL unpreserved for CCB-LPLF8 and CCB-LPLF7B, no test indicated for it.



Miscellaneous Forms

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Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value over the calibration range.
- J The result is an estimated value between the MDL and the MRL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR/

Service Request: K2512097

Sample Name: 1200225-CCR-LPLF2R
Lab Code: K2512097-001
Sample Matrix: Water

Date Collected: 12/2/25
Date Received: 12/4/25

Analysis Method
6020B
SM 2540 C

Extracted/Digested By
MCHATTICK

Analyzed By
ABOYER
MSPECHT

Sample Name: 1200225-CCR-LPLF2R
Lab Code: K2512097-001.R01
Sample Matrix: Water

Date Collected: 12/2/25
Date Received: 12/4/25

Analysis Method
6020B

Extracted/Digested By
MCHATTICK

Analyzed By
ABOYER

Sample Name: 120225-CCR-LPLF8
Lab Code: K2512097-002
Sample Matrix: Water

Date Collected: 12/2/25
Date Received: 12/4/25

Analysis Method
6020B

Extracted/Digested By
MCHATTICK

Analyzed By
ABOYER

Sample Name: 120225-CCR-LPLF8
Lab Code: K2512097-002.R01
Sample Matrix: Water

Date Collected: 12/2/25
Date Received: 12/4/25

Analysis Method
6020B

Extracted/Digested By
MCHATTICK

Analyzed By
ABOYER

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR/

Service Request: K2512097

Sample Name: 1200225-CCR-LPLF7R
Lab Code: K2512097-003
Sample Matrix: Water

Date Collected: 12/2/25
Date Received: 12/4/25

Analysis Method
6020B

Extracted/Digested By
MCHATTICK

Analyzed By
ABOYER

Sample Name: 1200225-CCR-LPLF7R
Lab Code: K2512097-003.R01
Sample Matrix: Water

Date Collected: 12/2/25
Date Received: 12/4/25

Analysis Method
6020B

Extracted/Digested By
MCHATTICK

Analyzed By
ABOYER



Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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Metals

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1317 South 13th Avenue, Kelso, WA 98626
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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Sample Name: 1200225-CCR-LPLF2R
Lab Code: K2512097-001

Service Request: K2512097
Date Collected: 12/02/25 11:29
Date Received: 12/04/25 15:16

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.391	mg/L	0.0020	0.0004	1	12/11/25 13:28	12/10/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Sample Name: 120225-CCR-LPLF8
Lab Code: K2512097-002

Service Request: K2512097
Date Collected: 12/02/25 11:10
Date Received: 12/04/25 15:16

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	1.16	mg/L	0.020	0.004	10	12/11/25 13:31	12/10/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Sample Name: 1200225-CCR-LPLF7R
Lab Code: K2512097-003

Service Request: K2512097
Date Collected: 12/02/25 10:51
Date Received: 12/04/25 15:16

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.358	mg/L	0.0020	0.0004	1	12/11/25 13:34	12/10/25	



General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Sample Name: 1200225-CCR-LPLF2R
Lab Code: K2512097-001

Service Request: K2512097
Date Collected: 12/02/25 11:29
Date Received: 12/04/25 15:16

Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	3360	mg/L	40	-	1	12/09/25 22:00	



QC Summary Forms

ALS Environmental—Kelso Laboratory
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Metals

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Sample Name: Method Blank
Lab Code: KQ2521563-01

Service Request: K2512097
Date Collected: NA
Date Received: NA

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Boron	6020B	0.0004 J	mg/L	0.0020	0.0004	1	12/11/25 12:21	12/10/25	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Service Request: K2512097
Date Analyzed: 12/11/25

Lab Control Sample Summary
Total Metals

Units:mg/L
Basis:NA

Lab Control Sample
KQ2521563-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Boron	6020B	0.0245	0.0250	98	80-120



General Chemistry

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1317 South 13th Avenue, Kelso, WA 98626
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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2512097-MB1

Service Request: K2512097
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	12/09/25 22:00	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2512097-MB2

Service Request: K2512097
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Dissolved	SM 2540 C	ND U	mg/L	10	-	1	12/09/25 22:00	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Transalta Centralia Mining, LLC
Project: LPLF CCR
Sample Matrix: Water

Service Request: K2512097
Date Analyzed: 12/09/25
Date Extracted: NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method: SM 2540 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 903666

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2512097-LCS	800	789	101	85-115