Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: February 23, 2024
Facility Name: NRG-Limestone Generating Station
Permit or Registration No.: CCR115

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: _____ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☐ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☒ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

February 23, 2024

Ms. Guly Aki, P.E.
Section Manager
Industrial and Hazardous Waste Permits Section – MC-130
Texas Commission on Environmental Quality
PO Box 13087
Austin, Texas 78711-3087

Subject: 2023 Annual Groundwater Monitoring and Corrective Action Report
NRG Texas Limestone Electric Generation Station,
Jewett, Texas
Solid Waste Registration No. 32490, EPA Identification No. TXD097311849
RN10088312/CN603207218, CCR RN 115

Dear Ms. Aki,

The CCR rules under 30 TAC §352.902 establishes that the Groundwater Monitoring and Corrective Action Report, which will be prepared in accordance with 30 TAC §352.901, must be submitted to the executive director for review no later than 30 days after the report was placed in the facility's operating record.

Please find enclosed is the 2023 Annual Groundwater Monitoring and Corrective Action Report for the NRG Texas Power LLC – Limestone Electric Generation Station located in Jewett, Texas. The report was placed in the facilities operating record on January 31, 2024.

Please do not hesitate to contact me via email at carl.burch@nrg.com or by phone at 713-537-2333, if you have any questions regarding the referenced report.

Sincerely,

Carl Burch
Sr. Environmental Manager
NRG Energy

Cc: Mr. Jason Scott, Environmental Specialist/RSO-Limestone
Tony Dworaczyk, TRC

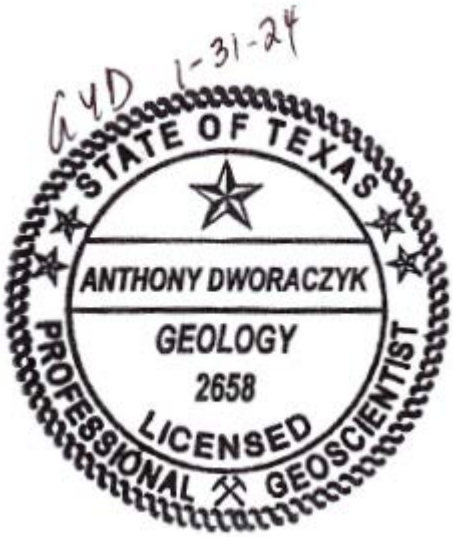
2023 Annual Groundwater Monitoring and Corrective Action Report

Limestone Electric Generating Station, Jewett, Texas

CCR RN 115
Landfill Unit (Unit 004)

January 31, 2024

Prepared For
NRG Texas Power, LLC
Jewett, Texas



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Executive Summary

Pursuant to 30 Texas Administrative Code (30 TAC) Chapter 352, Coal Combustion Residuals Waste Management and Registration Program for Coal Combustion Residuals (CCR), the owner or operator of an existing CCR unit must prepare an annual groundwater monitoring and corrective action report (Annual Report) no later than January 31, 2024, addressing the preceding calendar year. The information to be provided in the Annual Report is described in Subsection 1.2 of the Texas Commission on Environmental Quality (TCEQ) Draft Technical Guidance No. 32, Coal Combustion Residuals Groundwater Monitoring and Corrective Action. In addition, at the request of TCEQ, this Annual Report provides the field and laboratory analytical results for three years of monitoring: 2021, 2022, and 2023.

TRC Environmental Corporation (TRC) has prepared the *2023 Annual Groundwater Monitoring and Corrective Action Report* (Annual Report) for the Landfill (Unit 004) CCR unit located at the Limestone Electric Generating Station (Station) on behalf of NRG Texas Power, LLC (NRG). The Landfill (Unit 004) was the only CCR unit in operation at the Station during 2023. This Annual Report also provides the following information:

- The groundwater monitoring systems for the Landfill CCR unit operated under detection monitoring at the start and end of 2023; and
- Potential statistically significant increases (SSIs) of Appendix III CCR constituents identified above background in groundwater and provides the alternative source demonstrations (ASDs) addressing the potential SSIs that were successfully completed during 2023.

In conclusion, this Annual Report contains the information required pursuant to 30 TAC §352.901 and 30 TAC §352.902 of the TCEQ CCR Permit Program and TCEQ Draft Technical Guidance No. 32. In addition, at the request of TCEQ, this Annual Report provides the field and laboratory analytical results for three years of monitoring: 2021, 2022, and 2023. This information is provided in this Annual Report. No other information is required to be included in the Annual Report as specified in 30 TAC §352.971 and §352.981 of the TCEQ CCR Permit Program.

Based on the key activities performed during 2023, it is recommended that the Landfill (Unit 004) remain in detection monitoring subject to the following key activities and that the following project timeline be implemented during 2024:

- The *2023 Annual Report* will be prepared and placed into the Facility Operating Record (FOR) by January 31, 2024, submitted to the TCEQ within 30 days of placement in the FOR, and posted to the Station's publicly accessible CCR website by March 2, 2024;

- Both semi-annual groundwater detection monitoring events will be performed during the first and second halves of 2024 (April and October) for the Appendix III detection monitoring parameters;
- As necessary, the first and second half 2024 resampling detection monitoring events for the Landfill CCR will be performed within 30 days of the original monitoring events and samples will be reanalyzed for select Appendix III detection monitoring constituents;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2024 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined for the first and second halves of 2024 semi-annual detection monitoring events;
- Statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2024 semi-annual detection monitoring events;
- NRG will notify TCEQ, if required, if potential SSIs are identified and whether ASDs will be prepared for the first and second halves of 2024 semi-annual detection monitoring events; and
- Four new monitoring wells (MW-47, MW-48, MW-49, and MW-50) were installed in December 2023 and added to the Landfill CCR Unit monitoring well network, to provide spacing per guidance between monitoring wells along the southwestern boundary of the Landfill. These wells will be sampled quarterly during 2024 and 2025 to develop a background water quality database and the samples will be analyzed for both the Appendix III and Appendix IV CCR constituents.
- Written ASDs will be prepared and submitted to TCEQ for review and approval, if required, to evaluate potential SSIs above background for the first and second halves of 2024 semi-annual detection monitoring events for the Landfill CCR unit.

Section 1
Introduction

1.1 CCR Program Summary

On June 28, 2021, the United States Environmental Protection Agency (USEPA) published the final approval of the TCEQ partial State Coal Combustion Residuals (CCR) Permit Program, which became effective on July 28, 2021. The TCEQ adopted by reference the Federal CCR Program (40 CFR Part 257) as amended through the July 30, 2018 issue of the Federal Register (83 FR 36435), subject to the changes and additions provided in the TCEQ CCR Permit Program. As stated in USEPA's approval of the TCEQ CCR Permit Program on June 28, 2021, the TCEQ CCR Permit Program now operates in lieu of the Federal CCR program. Therefore, during 2023, the Landfill (Unit 004) CCR unit operated pursuant to the requirements of the TCEQ CCR Permit Program for the entirety of 2023.

Pursuant to the TCEQ CCR Permit Program, no later than January 31 of each calendar year, the owner or operator must prepare an annual groundwater monitoring and corrective action report (Annual Report) for the CCR unit(s) addressing the preceding calendar year. At a minimum, per TCEQ Draft Technical Guidance No. 32, the Annual Report must contain:

- A map, aerial image, or diagram showing the CCR unit(s) and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit(s);
- Narrative description of the Facility and Unit Descriptions and groundwater monitoring system, monitoring well inspection;
- Hydrogeology (groundwater flow rate and direction) with potentiometric surface map;
- Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;
- In addition to all the monitoring data, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs and laboratory reports;
- Statistical analysis and results;
- A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over

background levels); and other information required to be included in the annual report, as specified in 30 TAC §§352.971 and 352.981; and

- Summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, conclusions and recommendations, and project timelines and key activities for the upcoming year.

TRC Environmental Corporation (TRC) has prepared the *2023 Groundwater Monitoring and Corrective Action Report* for the Landfill (Unit 004) CCR unit located at the Limestone Electric Generating Station (Station) on behalf of NRG Texas Power, LLC (NRG) in accordance with 30 TAC §352.901 and 30 TAC §352.902 of the TCEQ CCR Permit Program and TCEQ Draft Technical Guidance No. 32.

Pursuant to the TCEQ CCR Permit Program, NRG will comply with the recordkeeping requirements, the notification requirements, and will post the Annual Report to NRG's publicly accessible CCR Web site. In addition, pursuant to §352.902 of the TCEQ CCR Permit Program, NRG will submit the Annual Report to the TCEQ for review no later than 30 days after the report has been placed into the Station's FOR.

1.2 Corrective Measures and Corrective Action

Finally, since the Landfill (Unit 004) is not currently subject to corrective measures or corrective action activities under the TCEQ CCR Permit Program, the provisions of 30 TAC §352.971 and §352.981 of the TCEQ CCR Permit Program do not apply. Therefore, per §352.901 of the TCEQ CCR Permit Program, no other information relative to corrective measures or corrective action must be provided in this Annual Report.

1.3 Station Overview

The Station is located northwest of Jewett, near the borders of Limestone, Freestone, and Leon Counties, Texas (see Figure 1-1). The Station is bisected by Farm-to-Market Road 39 (FM39) with the electricity generating portion of the Station located to the west of FM39 in Limestone County and a solid waste disposal area (SWDA), which includes the Landfill (Unit 004). The Station currently uses western United States coal as a fuel source to power the boilers. The spent coal fuels or CCR have been classified by the TCEQ as a Class II Nonhazardous waste and consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. During 2023, the Station had the following active CCR unit per the TCEQ CCR Permit Program:

- Landfill Unit (Unit 004).

The Landfill is located east of FM39 in the northern portion of the Station. The Landfill is located to the north of the intermittent Lynn Creek. The Landfill was constructed in 1980 and is

used for the final placement of CCR. The Landfill is divided into multiple areas for organization purposes. The western half of the landfill has reached capacity and was capped prior to the effective date of both the Federal CCR Rule on October 19, 2015, and the TCEQ CCR Permit Program. CCR is currently being placed at the southern portion of the landfill.

The location of the Landfill is shown on Figure 1-2.

Section 2
Groundwater Monitoring System and Hydrogeology

2.1 Groundwater Monitoring Systems

The groundwater monitoring system for the Landfill CCR unit at the Station consists of a total of 14 monitoring wells installed into the uppermost aquifer, which are described in the subsections below. Four additional wells: MW-47, MW-48, MW-49, and MW-50; were installed during December 2023. The locations and identification numbers for the background (or upgradient) and downgradient groundwater monitoring wells that are part of the groundwater monitoring program are shown on Figure 2-1.

2.1.1 Landfill (Unit 004)

The groundwater monitoring system for the Landfill consists of 14 monitoring wells (MW-1, MW-2, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-27R, MW-28R, MW-47, MW-18, MW-49, and MW-50) screened into the uppermost aquifer (see Figure 2-1). Monitoring wells MW-27R and MW-28R are located hydraulically upgradient of the Landfill and monitor background quality in the uppermost aquifer. The remaining eight wells (MW-1, MW-2, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-47, MW-48, MW-49, and MW-50) are located downgradient of the Landfill and monitor the quality of groundwater in the uppermost aquifer passing beneath the waste boundary of the Landfill.

Four new monitoring wells (MW-47, MW-48, MW-49, and MW-50) were installed in December 2023 and added to the Landfill CCR Unit monitoring well network, to provide spacing per guidance between monitoring wells along the southwestern boundary of the Landfill. These wells will be sampled quarterly during 2024 and 2025 to develop a background water quality data base and the samples will be analyzed for both the Appendix III and Appendix IV CCR constituents.

2.2 Semi-annual Detection Monitoring Sampling

Hydrologic Monitoring Inc. (HMI) performed the semi-annual detection monitoring events during the first and second half of 2023 per §352.941 of the TCEQ CCR Permit Program. HMI performed the monitoring activities under contract to TRC.

The first half 2023 semi-annual detection monitoring event was conducted in April 2023, with the second half 2023 semi-annual detection monitoring event being performed in October 2023.

2.2.1 Monitoring Well Inspection

Prior to sample collection, each well was visually inspected for conditions that could potentially affect the validity of the analytical results. The results of the inspection were documented on a Water Sample Log. No deficiencies were noted in the monitoring wells during the 2023 semi-annual detection monitoring events.

2.2.2 Quarterly Background Detection Monitoring

A total of eight quarterly background monitoring events were performed beginning in the third quarter of 2019 through the second quarter of 2021 for the 10 monitoring wells installed during that time period. The quarterly background samples were analyzed for both the Appendix III and Appendix IV Federal CCR Rule parameters. This background data set was used for comparison to 2023 semi-annual sampling events.

2.2.3 Semi-annual Detection Monitoring

The Appendix III field and laboratory analytical data collected during the April 2023 and October 2023 semi-annual detection monitoring events were the fourth and fifth semi-annual detection monitoring events that used the new background water quality data set to identify potential SSIs for the Appendix III data.

2.2.4 Analytical Laboratory

During 2023, the semi-annual detection monitoring groundwater samples were analyzed by ALS Environmental (ALS) located in Houston, Texas, which is a TCEQ certified laboratory (TCEQ ID T104704231-22-29).

2.2.5 Laboratory and Field Analyses

The semi-annual groundwater detection monitoring samples were analyzed for the Appendix III CCR constituents pursuant to 30 TAC Chapter 352. Additionally, field parameters (pH, temperature, specific conductivity, and turbidity) were obtained for all monitoring wells during both semi-annual groundwater monitoring events performed during 2023.

Laboratory and field analytical data are provided in Appendices A and B. Semi-annual detection monitoring analytical data for 2021 through 2023 are summarized in Table 2-2.

2.3 Laboratory Data Quality Review

Upon receipt of the April and October 2023 groundwater monitoring analytical data from the analytical laboratory, the data were evaluated for completeness, overall quality and usability, method-specified sample holding times, precision and accuracy, and potential sample contamination.

TRC concluded that the April and October laboratory analytical data, analyzed by ALS, were complete and usable for the purposes of the CCR semi-annual detection monitoring program. Laboratory data quality review information is provided in Appendix C.

2.4 Groundwater Flow Direction, Gradient, and Rate

Static groundwater elevations were measured for each monitoring well at the Landfill CCR unit during each of the 2023 semi-annual detection monitoring sampling events prior to sample collection. These measurements are provided in Table 2-1. Groundwater potentiometric surface maps were developed for the April and October detection monitoring events to evaluate groundwater flow directions. The potentiometric surface maps are provided as Figures 2-2, and 2-3.

Groundwater is typically encountered at depths ranging from 2.19 (MW-01) to 30.44 (MW-28R) feet below top of casing (btoc) for the Landfill groundwater monitoring system, with the overall direction of groundwater flow beneath and in the vicinity of the Landfill to the south-southeast.

Based on the 2023 detection monitoring groundwater elevation data, there does not appear to be significant seasonal changes in groundwater flow direction at the Landfill CCR unit. The calculated groundwater gradients were variable depending on lithology and ranged from 0.0043 to 0.0127 feet/feet at the Landfill. The average groundwater flow velocity beneath the Landfill was 11 feet/year.

2.5 Monitoring Wells Installed or Decommissioned

Four new monitoring wells (MW-47, MW-48, MW-49, and MW-50) were installed in December 2023 and added to the Landfill CCR Unit monitoring well network, to provide spacing per guidance between monitoring wells along the southwestern boundary of the Landfill. These wells will be sampled quarterly during 2024 and 2025 to develop a background water quality database and the samples will be analyzed for both the Appendix III and Appendix IV CCR constituents.

Section 3
Status of Groundwater Monitoring and Corrective Action Program

3.1 Semi-annual Detection Monitoring Summary

This Annual Report provides the monitoring data for the semi-annual detection monitoring performed during April and October 2023 for the Landfill. In addition, this Annual Report provides the previous monitoring data from 2021 and 2022. Previous monitoring data were provided in the 2017, 2018, 2019, 2020, 2021, and 2022 Annual Reports. Based on the data and results of the monitoring activities during 2023, the status of the groundwater monitoring and corrective action program at the Station including key actions completed, problems encountered, and actions to resolve the problems are summarized in the following subsections.

3.2 Key Actions Completed

The following key actions were completed during 2023:

- The *2022 Annual Groundwater Monitoring and Corrective Action Report* was prepared per §257.90(e) and (f) of the Federal CCR Rule and 30 TAC Chapter 352 of the TCEQ CCR Permit Program, placed into the FOR by January 31, 2023, and posted to NRG's publicly accessible CCR website by March 2, 2023;
- The first and second half 2023 semi-annual detection monitoring events for the Landfill CCR unit were performed during April 2023 and October 2023 and the samples were analyzed for the Appendix III detection monitoring constituents;
- The first and second half 2023 resampling detection monitoring events for the Landfill CCR unit were performed during May 2023 and the samples were reanalyzed for select Appendix III detection monitoring constituents;
- To perform the statistical analysis for the first half 2023 (April) and second half 2023 (October) semi-annual detection monitoring events, the Appendix III analytical results were compared to the new background water quality data set developed using the eight quarterly detection monitoring events performed beginning in the third quarter of 2019 through the second quarter of 2021;
- Groundwater potentiometric surface maps were prepared for the Landfill CCR unit for the April and October 2023 semi-annual detection monitoring events;
- The directions and apparent flow rate of groundwater were determined;

- Potential SSIs above background were identified for the Landfill CCR unit for the first and second half 2023 semi-annual detection monitoring events;
- NRG notified TCEQ in December 2022 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2022 (October) semi-annual detection monitoring event. An ASD was submitted to TCEQ during the first quarter 2023 and is appended to this Annual Report;
- Four new monitoring wells (MW-47, MW-48, MW-49, and MW-50) were installed in December 2023 and added to the Landfill CCR Unit monitoring well network, along the southwestern boundary of the Landfill. These wells will be sampled quarterly during 2024 and 2025 to develop a background water quality data base and the samples will be analyzed for both the Appendix III and Appendix IV CCR constituents.
- NRG notified TCEQ in May 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the first half 2023 (April) semi-annual detection monitoring event and that an ASD will be prepared, which was submitted to TCEQ during the third quarter; and
- NRG notified TCEQ in December 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2023 (October) semi-annual detection monitoring event and that the ASDs are included with this report.
- NRG intends to prepare and submit an ASD to TCEQ with this Annual Report during the first quarter of 2024.

The Landfill CCR unit remained in detection monitoring during 2023 based on the successful completion/submittal of written ASDs. No corrective action activities were performed for the Landfill CCR unit pursuant to the TCEQ Permit Program during 2023.

3.3 Problems Encountered and Resolution

During 2023, no problems were encountered in the CCR groundwater monitoring program for the Station and no actions were taken to resolve problems.

Section 4
Statistical Analysis and Results

This Annual Report identifies potential SSIs above background that were determined for groundwater samples collected during the April 2023 and October 2023 semi-annual detection monitoring events.

4.1 April 2023 Semi-annual Detection Monitoring Event

Statistical analysis and identification of potential SSIs for the first half (April 2023) semi-annual detection monitoring event were completed in May 2023. Select analytes were resampled in May 2023 following receipt of the April 2023 sampling data. The statistical analysis was conducted in accordance with the revised Statistical Methods Certification (August 2018) using (Lower Tolerance Limits) LTLs where applicable, and Upper Tolerance Limits (UTLs) per §257.93(f)(3) of the Federal CCR Rule and the TCEQ CCR Permit Program.

The eighth and final quarterly background detection monitoring event was performed during April 2021 as part of the development of a new background groundwater quality data set for the groundwater monitoring program. Statistical analysis and identification of potential SSIs for the April 2023 semi-annual detection monitoring event was performed using the new background water quality data set. Per the TCEQ CCR Permit Program, potential SSIs were identified in May 2023 for the April 2023 semi-annual detection monitoring event.

The results of the statistical analysis for the April 2023 semi-annual detection monitoring event for the Landfill are summarized in the following table. One potential SSI was identified for downgradient monitoring wells MW-21 and MW-01, and one potential SSI was identified for upgradient monitoring well MW-28R. An ASD was performed during 2023 to evaluate the potential SSIs as discussed in Section 5.0, which is provided with the 2023 Annual Report. The ASD was also submitted to TCEQ during 2023.

Table 4-1
Potential SSI – April 2023, Detection Monitoring, Landfill

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-21	N/A	0.44	5/1/2023	0.734	mg/L
Sulfate	MW-28R	N/A	890	5/1/2023	959	mg/L
pH	MW-01	4.1	7.6	5/1/2023	3.75	SU

mg/L= milligrams per liter
N/A = Not Applicable
LTL – Lower Tolerance Limit
UTL – Upper Tolerance Limit

4.2 October 2023 Semi-annual Detection Monitoring Event

Statistical analysis and identification of potential SSIs for the second half (October 2023) semi-annual detection monitoring event was completed in October 2023. The statistical analysis was conducted in accordance with the revised Statistical Methods Certification (August 2018) using LTLs where applicable, and UTLs per §257.93(f)(3) of the Federal CCR Rule and the TCEQ CCR Permit Program.

The results of the statistical analysis for the October 2023 semi-annual detection monitoring event for the Landfill are summarized in the following table. One potential SSI was identified for downgradient monitoring wells MW-21 and MW-01, and one potential SSI was identified for upgradient monitoring well MW-28R. An ASD was performed to evaluate the potential SSIs as discussed in Section 5.0, which is provided with this Annual Report.

Table 4-2
Potential SSI – October 2023, Detection Monitoring, Landfill

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-21	N/A	0.44	10/10/2023	0.652	mg/L
pH	MW-01	4.1	7.6	10/10/2023	3.9	SU

mg/L= milligrams per liter SU = Standard Units N/A = Not Applicable
LTL – Lower Tolerance Limit UTL – Upper Tolerance Limit

Section 5
Alternative Source Demonstrations

As described in Section 4.0, potential SSIs above background levels were identified for the Landfill for the second half (October) 2022, the first half (April) 2023, and the second half (October) 2023 semi-annual detection monitoring events. ASDs were prepared for all three semi-annual detection monitoring events that successfully documented that alternative sources or historical errors in statistical analysis were responsible for the potential SSIs observed. The second half (October) 2023 ASD and the first half (April) 2023 ASD were submitted to TCEQ during 2023. The second half (October) 2023 ASD will be submitted to TCEQ with this Annual Report. All three ASDs are appended to this Annual Report.

Pursuant to §257.94(e)(2) of the Federal CCR Rule and the TCEQ CCR Permit Program, the owner or operator may demonstrate that a source other than the CCR unit caused the SSI(s) over background levels for a constituent or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. To evaluate the potential SSIs and to determine whether an ASD could be successfully demonstrated, ASDs were completed and certified by a qualified Texas P.E. during 202 and 2024 per the Federal CCR Rule as follows:

- In February 2023, an ASD was certified for one potential SSI identified for the Landfill CCR unit for the second half (October 2022) semi-annual detection monitoring and sampling event;
- In August 2023, an ASD was certified for three potential SSIs identified for the Landfill CCR unit for the first half (April 2023) semi-annual detection monitoring sampling event; and
- In January 2024, an ASD was certified for two potential SSIs identified for the Landfill CCR unit for the second half (October) 2023) semi-annual detection monitoring sampling event.

Pursuant to the TCEQ CCR Permit Program, ASDs successfully demonstrated alternative sources or issues with laboratory data analytical quality for the Landfill CCR unit. Therefore, the Landfill remained in detection monitoring during 2023. The ASDs for three semi-annual detection monitoring events are discussed in the subsections below. The completed ASDs are provided in Appendix D.

5.1 Summary of ASDs

5.1.1 Second Half (October) 2022

The second half (October) 2022 ASD was successfully completed for the Landfill during the first quarter of 2023. The results for the ASD for the second half (October) 2022 semi-annual detection monitoring sampling event are summarized below:

- October 2022. One potential SSI was identified. Boron was identified for downgradient monitoring well MW-21. Three alternative sources were identified for the potential SSI:
  1) Presence of numerous non-CCR sources in the vicinity of the Landfill, including historical and current natural gas wells and their associated well pads and surface pits that are located immediately surrounding the Landfill;
  2) Monitor wells were completed into and screened across both lignite and shale seams that are a source of trace elements such as boron; and
  3) A lignite mine is located immediately south of the Landfill and mining operations can impact the groundwater quality (boron concentration) and pH of groundwater over a long period of time.

The ASD was submitted to TCEQ during the first quarter 2023 for review and approval by TCEQ.

5.1.2 First Half (April) 2023

The first half (April) 2023 ASD was successfully completed for the Landfill during the third quarter 2023. The results for the ASDs for the first half (April) 2023 semi-annual detection monitoring sampling event is summarized below:

- April 2023. Three potential SSIs were identified. Boron was identified for downgradient monitoring well MW-21; pH was identified for downgradient monitoring well MW-01; and sulfate was identified for upgradient monitoring well MW-28R. Three alternative sources were identified for the potential SSIs:
  1) Presence of numerous non-CCR sources in the vicinity of the Landfill, including historical and current natural gas wells and their associated well pads and surface pits that are located immediately surrounding the Landfill;
  2) Monitor wells were completed into and screened across both lignite and shale seams that are a source of trace elements such as boron; and
  3) A lignite mine is located immediately south of the Landfill and mining operations can impact the groundwater quality (boron concentration) and pH of groundwater over a long period of time.

The ASD was submitted to TCEQ during the third quarter 2023 for review and approval by TCEQ.

5.1.3 Second Half (October) 2023

The second half (October) 2023 ASD was successfully completed for the Landfill during the first quarter 2024. The results for the ASD for the second half (October) 2023 semi-annual detection monitoring sampling event is summarized below:

- October 2023. Two potential SSIs were identified. Boron was identified at downgradient monitoring well MW-21; and pH was identified for downgradient monitoring well MW-01. Three alternative sources were identified for the potential SSIs:
  1) Presence of numerous non-CCR sources in the vicinity of the Landfill, including historical and current natural gas wells and their associated well pads and surface pits that are located immediately surrounding the Landfill;
  2) Monitor wells were completed into and screened across both lignite and shale seams that are a source of trace elements such as boron; and
  3) A lignite mine is located immediately south of the Landfill and mining operations can impact the groundwater quality (boron concentrations) and pH of groundwater over a long period of time.

The ASD is submitted to TCEQ as part of this Annual Report.

5.2 Detection Monitoring During 2023

As discussed previously, written ASDs were completed and certified by a qualified Texas P.E. during 2023 and 2024 for the Landfill CCR unit. The ASDs successfully demonstrated that alternative sources were responsible for the potential SSIs identified in groundwater for the first half (April 2023) and second half (October 2023) semi-annual detection monitoring events. Therefore, the Landfill CCR unit remained in the detection monitoring program at the start and end of 2023.

5.3 Transition Between Monitoring Programs

During 2023, the groundwater monitoring system for the Landfill CCR unit remained in detection monitoring. Therefore, there was no transition between detection and assessment monitoring programs for the Landfill CCR unit during 2023.

Section 6
Projected Key Activities and Timelines for 2024

Key activities and project timelines for 2024 will be performed pursuant to TCEQ's CCR Permit Program and are as follows:

- The *2023 Annual Report* will be prepared and placed into the FOR by January 31, 2024, submitted to the TCEQ within 30 days of placement in the FOR, and posted to the Station's publicly accessible CCR website by March 2, 2024;
- An ASD for the second half 2023 (October) semi-annual detection monitoring event will be prepared and submitted to the TCEQ with this Annual Report;
- Both semi-annual groundwater detection monitoring events will be performed during the first and second halves of 2024 (April and October) for the Appendix III detection monitoring parameters;
- As necessary, the first and second half 2024 resampling detection monitoring events for the Landfill CCR will be performed within 30 days of the original monitoring events and samples will be reanalyzed for select Appendix III detection monitoring constituents;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2024 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined for the first and second halves of 2024 semi-annual detection monitoring events;
- Statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2024 semi-annual detection monitoring events;
- NRG will notify TCEQ, if required, if potential SSIs are identified and whether ASDs will be prepared for the first and second halves of 2024 semi-annual detection monitoring events; and
- Four new monitoring wells (MW-47, MW-48, MW-49, and MW-50) were installed in December 2023 and added to the Landfill CCR Unit monitoring well network, to provide a minimum of a 600-foot spacing between monitoring wells along the southwestern boundary of the Landfill. These wells will be sampled quarterly during 2024 to develop a background water quality data base and the samples will be analyzed for both the Appendix III and Appendix IV CCR constituents.
- An ASD for the second half 2023 (October) semi-annual detection monitoring event will be prepared and submitted to the TCEQ as part of this Annual Report;

- Written ASDs will be prepared and submitted to TCEQ for review and approval, if required, to evaluate potential SSIs above background for the first and second halves of 2024 semi-annual detection monitoring events for the Landfill CCR unit.

Section 7
Conclusions and Recommendations

In conclusion, this Annual Report contains the information required pursuant to 30 TAC §352.901 and 30 TAC §352.902 of the TCEQ CCR Permit Program and TCEQ Draft Technical Guidance No. 32 of the TCEQ CCR Permit Program. In addition, at the request of TCEQ, this Annual Report provides the field and laboratory analytical results for three years of monitoring: 2021, 2022, and 2023. This information is provided in this Annual Report. No other information is required to be included in the Annual Report as specified in 30 TAC §352.971 and §352.981 of the TCEQ CCR Permit Program. The following key actions were completed during 2023:

- The *2022 Annual Groundwater Monitoring and Corrective Action Report* was prepared per §257.90(e) and (f) of the Federal CCR Rule and 30 TAC Chapter 352 of the TCEQ CCR Permit Program, placed into the FOR by January 31, 2023, and posted to NRG's publicly accessible CCR website by March 2, 2023;
- The first and second half 2023 semi-annual detection monitoring events for the Landfill CCR unit were performed during April 2023 and October 2023 and the samples were analyzed for the Appendix III detection monitoring constituents;
- The first and second half 2023 resampling detection monitoring events for the Landfill CCR unit were performed during May and November 2023 and the samples were reanalyzed for select Appendix III detection monitoring constituents;
- To perform the statistical analysis for the first half 2023 (April) and second half 2023 (October) semi-annual detection monitoring events, the Appendix III analytical results were compared to the new background water quality data set developed using the eight quarterly detection monitoring events performed beginning in the third quarter of 2019 through the second quarter of 2021;
- Groundwater potentiometric surface maps were prepared for the Landfill CCR unit for the April and October 2023 semi-annual detection monitoring events;
- The directions and apparent flow rate of groundwater were determined;
- Potential SSIs above background were identified for the Landfill CCR unit for the first and second half 2023 semi-annual detection monitoring events;
- NRG notified TCEQ in December 2022 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2022 (October) semi-annual detection monitoring event. An ASD was submitted to TCEQ during the first quarter 2023 and is appended to this Annual Report;

- Four new monitoring wells (MW-47, MW-48, MW-49, and MW-50) were installed in December 2023 and added to the Landfill CCR Unit monitoring well network spacing along the southwestern boundary of the Landfill per spacing guidance. These wells will be sampled quarterly during 2024 and 2025 to develop a background water quality data base and the samples will be analyzed for both the Appendix III and Appendix IV CCR constituents.
- NRG notified TCEQ in May 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the first half 2023 (April) semi-annual detection monitoring event and that an ASD will be prepared, which was submitted to TCEQ during the third quarter; and
- NRG notified TCEQ in November 2023 pursuant to the TCEQ CCR Permit Program that potential SSIs had been identified for the second half 2023 (October) semi-annual detection monitoring event and that NRG intends to prepare and submit an ASD to TCEQ with this Annual Report during the first quarter of 2024.

Based on the key activities performed during 2023, it is recommended that the Landfill (Unit 004) remain in semi-annual detection monitoring subject to the following key activities and that the following project timeline be implemented during 2024:

- The *2023 Annual Report* will be prepared and placed into the FOR by January 31, 2024, submitted to the TCEQ within 30 days of placement in the FOR, and posted to the Station's publicly accessible CCR website by March 2, 2024;
- An ASD for the second half 2023 (October) semi-annual detection monitoring event will be prepared and submitted to the TCEQ with this Annual Report;
- Both semi-annual groundwater detection monitoring events will be performed during the first and second halves of 2024 (April and October) for the Appendix III detection monitoring parameters;
- As necessary, the first and second half 2024 resampling detection monitoring events for the Landfill CCR will be performed within 30 days of the original monitoring events and samples will be reanalyzed for select Appendix III detection monitoring constituents;
- Groundwater potentiometric surface maps will be prepared for the first and second halves of 2024 semi-annual detection monitoring events;
- The flow rates and directions of groundwater flow will be determined for the first and second halves of 2024 semi-annual detection monitoring events;
- Statistical analysis and identification of potential SSIs will be performed for the first and second halves of 2024 semi-annual detection monitoring events;

- NRG will notify TCEQ, if required, if potential SSIs are identified and whether ASDs will be prepared for the first and second halves of 2024 semi-annual detection monitoring events; and
- Four new monitoring wells (MW-47, MW-48, MW-49, and MW-50) were installed in December 2023 and added to the Landfill CCR Unit monitoring well network along the southwestern boundary of the Landfill. These wells will be sampled quarterly during 2024 to develop a background water quality data base and the samples will be analyzed for both the Appendix III and Appendix IV CCR constituents.
- An ASD for the second half 2023 (October) semi-annual detection monitoring event will be prepared and submitted to the TCEQ as part of this Annual Report; and
- Written ASDs will be prepared and submitted to TCEQ for review and approval, if required, to evaluate potential SSIs above background for the first and second halves of 2024 semi-annual detection monitoring events for the Landfill CCR unit.

Section 8
References

Federal Register, Vol. 80 No. 74, April 17, 2015, 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule.

Federal Register, Vol. 85, No. 168, August 28, 2020, 40 CFR Part 257, Hazardous and Solid Waste Management System; Disposal of CCR from Electric Utilities; A Holistic Approach to Closure Part A: Deadline to Initiate Closure.

ERM, Sampling and Analysis Plan, October 2017, Limestone Electric Generating Station, Jewett, Texas.

ERM, CCR Statistical Analysis Plan, October 2017, Limestone Electric Generating Station, Jewett, Texas.

ERM, Annual Groundwater Monitoring and Corrective Action Report, January 31, 2018, Limestone Electric Generating Station, Secondary E Pond Unit (Unit 003), Jewett, Texas.

TCEQ, Draft Technical Guidance No. 32, Coal Combustion Residuals Groundwater Monitoring and Corrective Action.

TCEQ, 30 TAC Chapter 352, Coal Combustion Residuals Waste Management and Registration Program for Coal Combustion Residuals (CCR) Implementation.

TRC, 2018 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2019, Limestone Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Jewett, Texas.

TRC, 2019 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2020, Limestone Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Jewett, Texas.

TRC, 2020 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2021, Limestone Electric Generating Station, Secondary E Pond (Unit 003) and Landfill (Unit 004), Jewett, Texas.

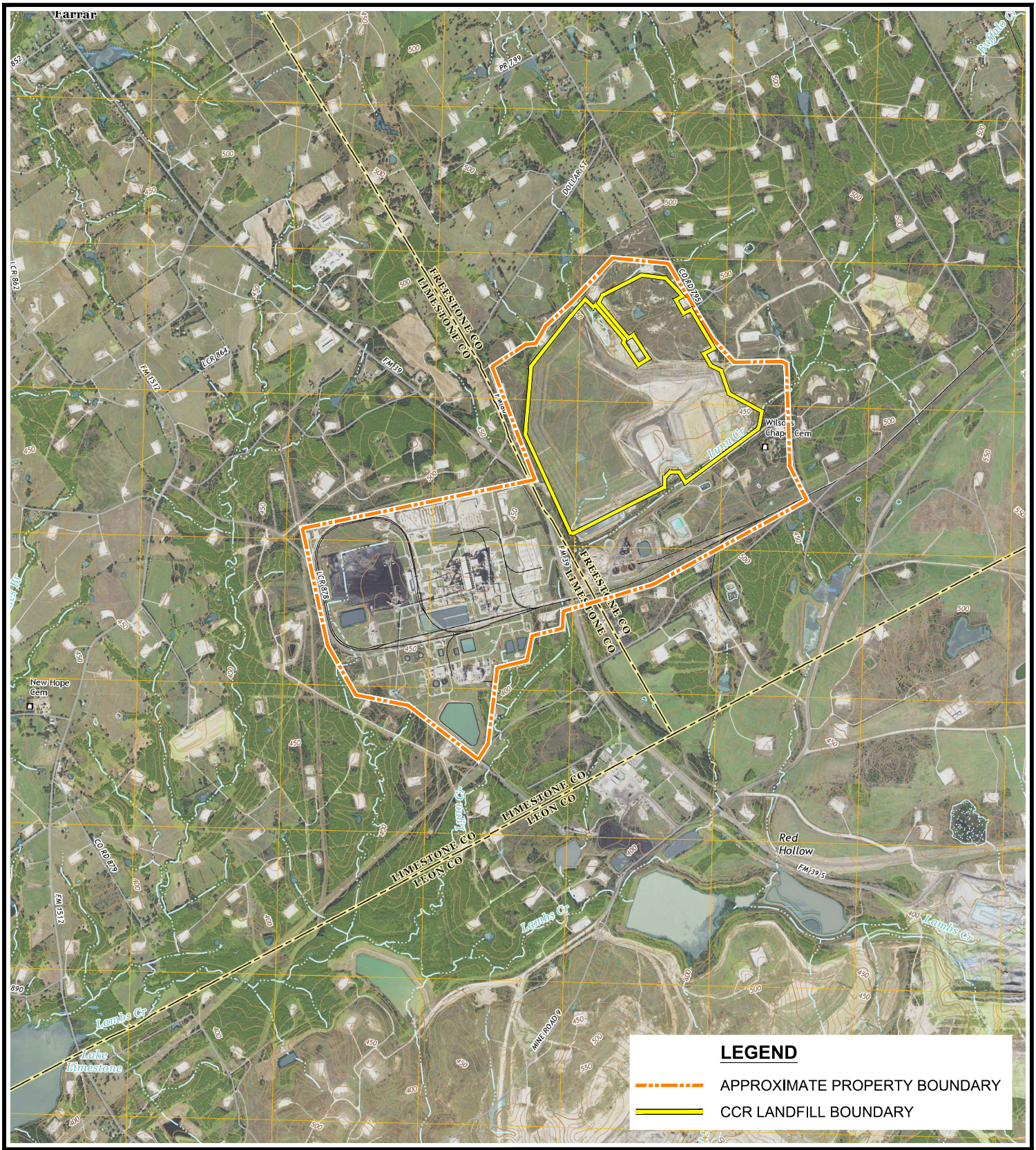
TRC, 2021 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2022, Limestone Electric Generating Station, Landfill (Unit 004), Jewett, Texas.

TRC, 2022 Annual Groundwater Monitoring and Corrective Action Report, January 31, 2023, Limestone Electric Generating Station, Landfill (Unit 004), Jewett, Texas.

TRC, Alternative Source Demonstration, August 2023, Limestone Electric Generating Station, Landfill (Unit 004), Jewett, Texas.

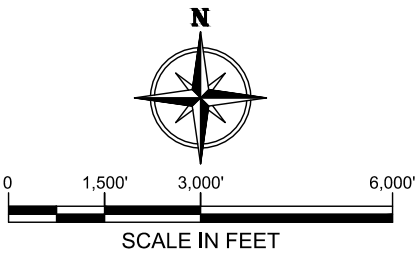
TRC, Statistical Methods Certification, August 2018, Limestone Electric Generating Station, Jewett, Texas.

Figures



REFERENCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLES
DONIE, TEXAS (2016) & FARRAR, TEXAS (2016)

TEXAS
QUADRANGLE LOCATION



SCALE IN FEET
1" = 3,000'-0"

CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Generating Station
F.M. 39 Road, Jewett, Texas 75838

TITLE

SITE LOCATION MAP

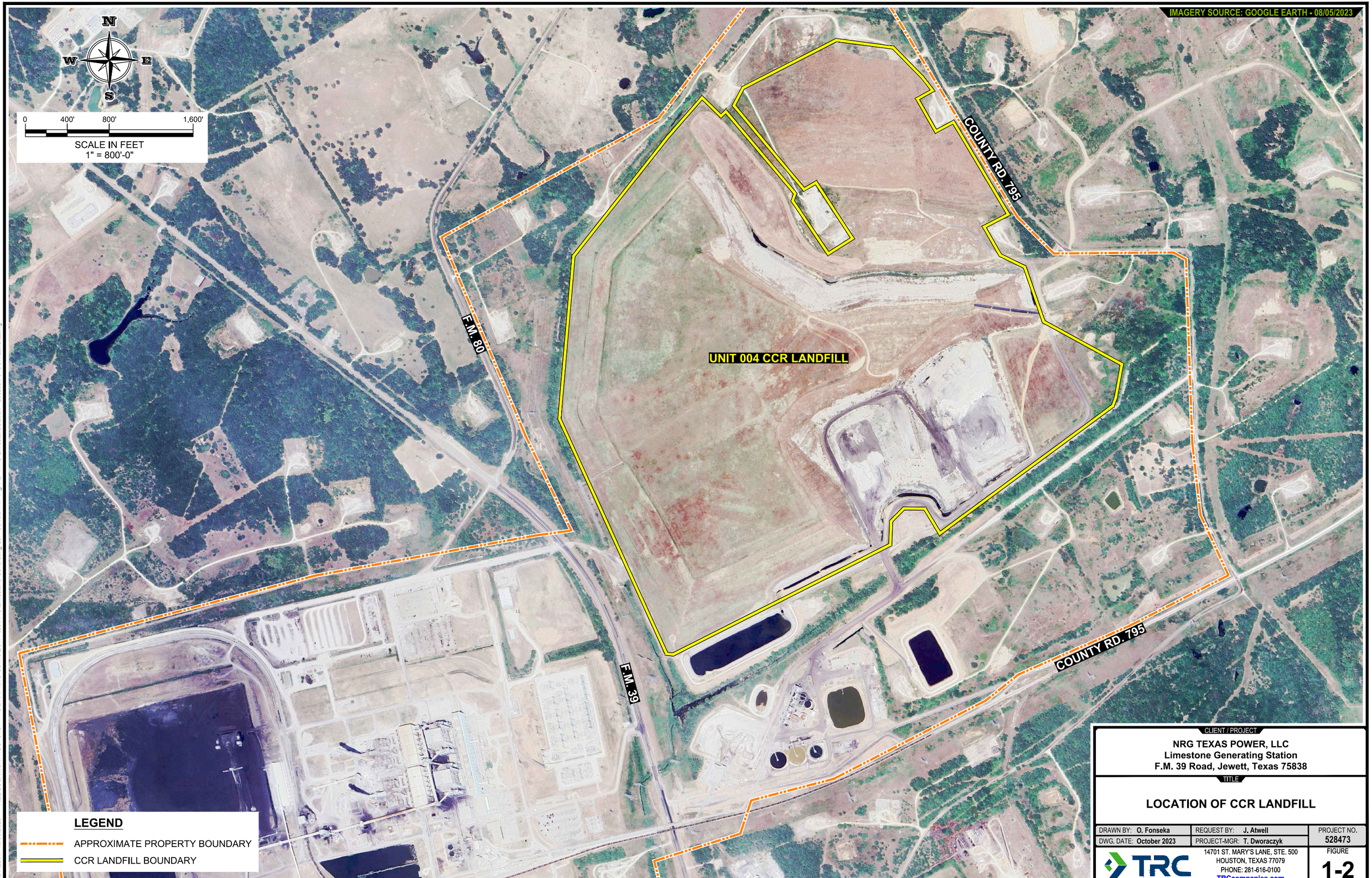
DRAWN BY: **O. Fonseka**	REQUEST BY: **J. Atwell**	PROJECT NO. **528473**
DWG. DATE: **October 2023**	PROJECT-MGR: **T. Dworaczyk**	

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

FIGURE **1-1**

LAST EDIT: 10/06/2023 - FILE LOCATION: HOU C:\OF-TRC\DRAFTING-CDrive\ECR-Files\NRG\Limestone Generating Stn - Jewett-TX\ Fig 1-1 - NRG-LimestoneStation - Site Location Map.dwg

DRAWING By: **Oskar Fonseka** - FILE NAME: Fig 1-1 - NRG-LimestoneStation - Site Location Map.dwg



CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Generating Station
F.M. 39 Road, Jewett, Texas 75838

TITLE

LOCATION OF CCR LANDFILL

DRAWN BY: **O. Fonseka**	REQUEST BY: **J. Atwell**	PROJECT NO. **528473**
DWG. DATE: **October 2023**	PROJECT-MGR: **T. Dworaczyk**	FIGURE **1-2**

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

LAST EDIT: 10/06/2023 - FILE LOCATION: HOU C:\OF-TRC\DRAFTING-CD\rvel\EOR-Files\NRG\Limestone Generating Stn - Jewett-TX\ Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

DRAWING By: **Oskar Fonseka** - FILE NAME: Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

LEGEND

- Monitor Well Location
- Landfill Background CCR Monitor Well
- Landfill CCR Monitor Well
- CCR Landfill Boundary

0 690 1,380 FT

1 " = 700 '
1:8,400

N

PROJECT:
NRG TEXAS POWER, LLC
LIMESTONE
JEWETT, TEXAS

TITLE:
CCR GROUNDWATER MONITORING NETWORKS MAP

DRAWN BY:	F. Yarbrough	PROJ. NO.:	585632.0000.0000
CHECKED BY:	J. Atwell		**FIGURE 2-1**
APPROVED BY:	A. Dworaczyk		
DATE:	January 2024		

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX, 77079
Phone 281.616.0100
www.trcsolutions.com

FILE NO.: 585632_2-1.mxd

LEGEND

- Monitor Well Location
- Landfill CCR Monitor Well
- Landfill Background CCR Monitor Well
- ***447.09*** Groundwater Elevation (FT MSL)
- ***NM*** Not Measured
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- CCR Landfill Boundary

NOTE:
GROUND'
BY HMI ON APRIL 2023

0 690 1,380
FT

1 " = 700 '
1:8,400

N

PROJECT:
NRG TEXAS POWER, LLC
LIMESTONE
JEWETT, TEXAS

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE - APRIL 2023

DRAWN BY:	F. Yarbrough	PROJ. NO.:	585632.0000.0000
CHECKED BY:	J. Atwell		**FIGURE 2-2**
APPROVED BY:	A. Dworaczyk		
DATE:	January 2024		

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX, 77079
Phone 281.616.0100
www.trcsolutions.com

FILE NO.: 585632_2-2.mxd

LEGEND

- Monitor Well Location
- Landfill CCR Monitor Well
- Landfill Background CCR Monitor Well
- ***447.08*** Groundwater Elevation (FT MSL)
- ***NM*** Not Measured
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- CCR Landfill Boundary

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST

NOTE:
GROUNDWATER ELEVATIONS MEASURED BY HMI ON OCTOBER 2023

0 690 1,380 FT

1 " = 700 '
1:8,400

N

PROJECT:
NRG TEXAS POWER, LLC
LIMESTONE
JEWETT, TEXAS

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE - OCTOBER 2023

DRAWN BY:	F. Yarbrough	PROJ. NO.:	585632.0000.0000
CHECKED BY:	J. Atwell		
APPROVED BY:	A. Dworaczyk		**FIGURE 2-3**
DATE:	January 2024		

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX, 77079
Phone 281.616.0100
www.trcsolutions.com

FILE NO.: 585632_2-3.mxd

Tables

Table 2-1
Summary of Groundwater Elevation Data
January - December 2023
Limestone Electric Generating Station - Jewett, Texas

Well Description	Monitor Well ID	Measurement Date	Top of Casing (ft. MSL)	Depth to Water (ft.)	Ground Water Elevation (ft. MSL)
Landfill					
Downgradient	MW-01	4/4/2023	420.84	2.19	418.65
	MW-01	5/1/2023	420.84	2.15	418.69
	MW-01	10/10/2023	420.84	2.67	418.17
	MW-02	4/4/2023	430.01	5.25	424.76
	MW-02	10/10/2023	430.01	6.18	423.83
	MW-17	4/4/2023	421.22	2.53	418.69
	MW-17	10/10/2023	421.22	3.10	418.12
	MW-18	4/4/2023	436.30	10.77	425.53
	MW-18	10/10/2023	436.30	11.81	424.49
	MW-19	4/4/2023	443.79	18.38	425.41
	MW-19	10/10/2023	443.79	19.45	424.34
	MW-20	4/4/2023	445.11	19.43	425.68
	MW-20	10/10/2023	445.11	20.48	424.63
	MW-21	4/4/2023	446.35	16.78	429.57
	MW-21	5/1/2023	446.35	16.75	429.60
	MW-21	10/10/2023	446.35	20.00	426.35
	MW-22	4/4/2023	447.59	16.40	431.19
	MW-22	10/10/2023	447.59	19.39	428.20
Gauge only	MW-06	4/4/2023	457.62	18.54	439.08
	MW-06	10/10/2023	457.62	19.61	438.01
	MW-09	4/4/2023	452.03	18.49	433.54
	MW-09	10/10/2023	452.03	20.22	431.81
	MW-16	4/4/2023	NM	17.39	NM
	MW-16	10/10/2023	NM	18.52	NM
Upgradient	MW-27R	4/4/2023	457.89	18.44	439.45
	MW-27R	10/10/2023	457.89	19.51	438.38
	MW-28	4/4/2023	477.52	30.43	447.09
	MW-28	5/1/2023	477.52	30.72	446.80
	MW-28	10/10/2023	477.52	30.44	447.08

Notes

MSL	Mean Sea Level
ft.	feet
NM	Not measured

Table 2-2
Summary of Groundwater Monitoring Data
January 2021 through December 2023
Limestone Electric Generating Station - Jewett, Texas

Analyte Group				NRG App III						
Analyte				Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	pH, Field
Unit				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su
Lab Method				SW6020A		E300	A4500-F C-11	E300	M2540C	NA
Well Description	Well ID	Sample Date	Duplicate							
Landfill										
Upgradient	MW-27R	01/25/2021	N	0.210	499	1800	< 0.10 U	548	3590	6.47
		03/15/2021	N	0.150	307	1830	< 0.10 U	559	4400	6.49
		04/05/2021	N	0.178	431	1890	< 0.10 U	605	4820	6.49
		10/13/2021	N	0.170	380	1760	< 0.10 U	619	3620	6.51
		04/07/2022	N	0.211	499	1700	< 0.10 U	556	5040	6.46
		10/05/2022	N	0.168	441	1660	< 0.10 U	550	5680	6.46
		04/04/2023	N	0.157	482	2230	< 0.10 U	583	5800	6.37
		10/10/2023	N	0.132	430	1770	< 0.10 U	638	3640	6.33
	MW-28	01/25/2021	N	0.231	599	2420	0.17	623	5080	5.08
		04/05/2021	N	0.217	583	2470	0.19	654	6380	5.01
		10/13/2021	N	0.187	527	2500	0.14	567	4820	4.99
		04/07/2022	N	0.244	600	2390	< 0.10 U	644	7490	5.16
		10/05/2022	N	0.182	416	1430	0.230	792	5630	5.45
		04/04/2023	N	0.217	562	2200	< 0.10 U	1080	6860	5.35
		05/01/2023	N	n/a	n/a	n/a	n/a	959	n/a	5.10
		10/10/2023	N	0.193	540	2290	0.240	748	5690	5.34
Downgradient	MW-01	01/25/2021	N	0.0337 [J]	60.9	267	0.070 J	0.381 J[U]	568	3.65
		04/05/2021	N	0.0331	49.7	290	0.070 J	< 0.200	912	3.72
		10/13/2021	N	0.0377	52.3	283	0.13	0.995	854	3.85
		04/07/2022	N	0.0463	57.5	269	< 0.10 U	< 0.200	816	4.99
		10/05/2022	N	0.0341 [J]	260.0	278	0.110	0.560	870	5.64
		04/04/2023	N	0.0356 [J]	48.6	289	< 0.100 U	< 0.200	816	4.04
		05/01/2023	N	n/a	n/a	n/a	n/a	n/a	n/a	3.75
		10/10/2023	N	0.0382	54.4	273	0.0600 J	<0.200	682	3.90
	MW-02	01/25/2021	N	0.0289 [J]	217	302	< 0.10 U	674	1200	5.50
		04/05/2021	N	0.0401	164	340	< 0.10 U	660	1610	5.68
		10/13/2021	N	0.0444	109	408	< 0.10 U	162	1240	5.63
		04/07/2022	N	0.123 [J]	137	363	< 0.10 U	352	1580	5.57
		10/05/2022	N	0.0842 [J]	132	354	< 0.10 U	271	1340	5.57
		04/04/2023	N	0.425	178	301 [JL]	< 0.10 U	664	1420	5.53
		10/10/2023	N	<0.220	147	310	<0.10 U	527 [JL]	1380	5.40
	MW-17	01/25/2021	N	0.0440 [J]	3.06	9.40	0.15	7.68	116	6.13
		04/05/2021	N	0.0258	3.12	9.81	0.16	8.33	140	6.19
		10/13/2021	N	0.0297	2.84	9.27	0.18	7.25	116	6.11
		04/07/2022	N	0.0348	3.14	8.92	< 0.10 U	7.10	120	6.28
		10/05/2022	N	0.0238 [J]	2.70	9.05	0.110	7.45	146	5.77
		04/04/2023	N	0.0249 [J]	2.38	8.60	0.120	7.79	122 [J]	5.81
		10/10/2023	N	0.0207	3.55	8.58	0.150	7.67	100.0 [J]	5.69
	MW-18	10/13/2021	N	0.0390	59.7	5.46	0.17	29.7	342	6.20
		04/07/2022	N	0.0554	67.3	6.82	< 0.10 U	29.6	344	6.30
		10/05/2022	N	0.0322 [J]	66.2	7.33	0.100	28.3	368	6.19
		04/04/2023	N	0.0443	67.1	9.64	0.110	34.3	342	6.32
		10/10/2023	N	0.0349	65.4	8.31	0.120	31.1	326	5.94
	MW-19	01/25/2021	N	0.0421 [J]	40.4	44.9	0.060 J	89.3	184	5.44
		01/25/2021	FD	0.0496 [J]	39.6	45.2	0.090 J	89.4	214	n/a
		04/05/2021	FD	0.0488	33.8	36.9	0.060 J	78.3	320	n/a
		04/05/2021	N	0.0434	33.8	47.4	0.060 J	91.5	350	5.55
		10/13/2021	FD	0.0430	36.2	40.1	0.64 [J]	92.4	352	n/a
		10/13/2021	N	0.0387	33.2	39.6	0.080 J[J]	91.2	324	5.52
		04/07/2022	FD	0.0500	33.9	37.6	< 0.10 U	91.8	346	n/a
		04/07/2022	N	0.0543	33.1	37.3	< 0.10 U	90.9	302	5.91
		10/05/2022	FD	0.0327 [J]	32.5	37.9	< 0.10 U	86.9	328	n/a
		10/05/2022	N	0.0343 [J]	34.1	37.6	< 0.10 U	85.7	328	5.59
		04/04/2023	FD	0.0468	35.2	37.2	< 0.100 U	99.2	292	n/a
		04/04/2023	N	0.0467	34.6	37.5	< 0.100 U	99.6	308	5.74
		10/10/2023	FD	0.0166 J[J]	34.0	36.8	<.10 U	96.7	292	n/a
		10/10/2023	N	0.0335 [J]	31.4	36.9	0.0600 J	96.7	308	5.64
	MW-20	01/25/2021	N	0.0463 [J]	42.5	17.4	0.21	75.8	138	6.19
		04/05/2021	N	0.0457	36.3	18.9	0.22	80.7	416	6.36

Table 2-2
Summary of Groundwater Monitoring Data
January 2021 through December 2023
Limestone Electric Generating Station - Jewett, Texas

Analyte Group				NRG App III						
Analyte				Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	pH, Field
Unit				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	su
Lab Method				SW6020A		E300	A4500-F C-11	E300	M2540C	NA
Well Description	Well ID	Sample Date	Duplicate							
Downgradient	MW-20	10/13/2021	N	0.0418	30.8	19.2	0.26	36.6	336	6.32
		04/07/2022	N	0.0568	28.9	19.0	0.080 J	26.2	354	6.38
		10/05/2022	N	0.0333 [J]	28.7	18.1	0.210	28.5	342	6.28
		04/04/2023	N	0.0461	30.8	18.2	< 0.100 U	24.0	308	6.29
		10/10/2023	N	0.0241	28.6	17.4	0.220	26.8	280	6.17
	MW-21	01/25/2021	N	0.594	98.8	44.8	< 0.10 U	377	588	5.26
		04/05/2021	N	0.594	84.8	42.8	< 0.10 U	425	770	5.26
		10/13/2021	N	NU	NU	NU	NU	NU	NU	5.26
		11/11/2021	N	0.691	70.2	28.5	< 0.10 U	354	602	5.01
		04/07/2022	N	0.754	68.4	23.4	< 0.10 U	318	620	5.89
		10/05/2022	N	0.786 [J]	73.5	20.8	< 0.10 U	306	594	5.15
		11/22/2022	N	1.48	n/a	n/a	n/a	n/a	n/a	5.37
		04/04/2023	N	1.06 [J]	62.3	17.4	< 0.100 U	292	496	5.43
		05/01/2023	N	0.734	n/a	n/a	n/a	n/a	n/a	5.33
		10/10/2023	N	0.652	55.6	14.6	<0.10 U	254	402	5.33
	MW-22	01/25/2021	N	0.0383 [J]	60.5	39.8	0.060 J	93.6	198	5.72
		04/05/2021	N	0.0491	53.6	43.0	0.060 J	99.6	372	5.56
		10/13/2021	N	0.0450	53.4	38.4	0.080 J	107	336	5.42
		04/07/2022	N	0.0487	54.0	32.5	< 0.10 U	114	372	5.54
		10/05/2022	N	0.0538 [J]	53.5	34.8	< 0.10 U	118	356	5.27
		04/04/2023	N	0.0403	59.1	33.2	< 0.100 U	135	338	5.69
		10/10/2023	N	0.018 J	50.0	33.3	0.0600 J	131	332	5.35

Notes

N	Normal sample
FD	Field Duplicate
J	Concentration is an estimated value. Result is less than the method quantittion limit but ≥ to the method detection limit.
JL	Estimated data - bias in sample, likely to be low.; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.
U	Analyte was not detected at or above the method detection limit.
NU	Resampled for analyte. Data not used.
n/a	Not analyzed
mg/L	Milligrams per liter
su	Standard units

Appendix A
Detection Monitoring Data (April 2023)

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 13, 2023

Lori Burris
TRC Corporation
14701 St. Mary's Lane
Suite 500
Houston, TX 77079

Work Order: **HS23040177**

Laboratory Results for: **NRG Limestone - Appedix III**

Dear Lori Burris,

ALS Environmental received 12 sample(s) on Apr 04, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Andy C. Neir

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Limestone - Appedix III	
WorkOrder:	**HS23040177**	

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Limestone - Appedix III	
WorkOrder:	**HS23040177**	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Andy C. Neir

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date:04/13/2023				
Project Name: NRG Limestone - Appendix III			Laboratory Job Number: HS23040177				
Reviewer Name: Andy Neir			Prep Batch Number(s): 192125,192190,R432019,R432202,R432235,R432320				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				2
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				
		Page 4 of 70					

Laboratory Review Checklist: Supporting Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 04/13/2023					
Project Name: NRG Limestone - Appendix III			Laboratory Job Number: HS23040177					
Reviewer Name: Andy Neir			Prep Batch Number(s): 192125,192190,R432019,R432202,R432235,R432320					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?	X					
		Were percent RSDs or correlation coefficient criteria met?	X					
		Was the number of standards recommended in the method used for all analytes?	X					
		Were all points generated between the lowest and highest standard used to calculate the curve?	X					
		Are ICAL data available for all instruments used?	X					
		Has the initial calibration curve been verified using an appropriate second source standard?	X					
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**						
		Was the CCV analyzed at the method-required frequency?	X					
		Were percent differences for each analyte within the method-required QC limits?	X					
		Was the ICAL curve verified for each analyte?	X					
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			3	
S3	O	**Mass spectral tuning:**						
		Was the appropriate compound for the method used for tuning?	X					
		Were ion abundance data within the method-required QC limits?	X					
S4	O	**Internal standards (IS):**						
		Were IS area counts and retention times within the method-required QC limits?	X					
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X					
		Were data associated with manual integrations flagged on the raw data?	X					
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?			X			
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X			
S8	I	**Interference Check Sample (ICS) results:**						
		Were percent recoveries within method QC limits?	X					
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		X			4	
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?	X					
		Is the MDL either adjusted or supported by the analysis of DCSs?	X					
S11	OI	**Proficiency test reports:**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X					
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X					
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?	X					
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X					
		Is documentation of the analyst's competency up-to-date and on file?	X					
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)						
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X					
S16	OI	**Laboratory standard operating procedures (SOPs):**						
		Are laboratory SOPs current and on file for each method performed?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);NA = Not Applicable; NR = Not Reviewed; R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports		
Laboratory Name: ALS Laboratory Group		LRC Date: 04/13/2023
Project Name: NRG Limestone - Appendix III		Laboratory Job Number: HS23040177
Reviewer Name: Andy Neir		Prep Batch Number(s): 192125,192190,R432019,R432202,R432235,R432320
ER#[5]	**Description**	
1	Batch 192125, Metals Method SW6020, sample MW-02, MS and MSD recovered outside the control limit for Calcium, however the result in the parent sample is greater than 4x the spike amount Batch 192190, Metals Method SW6020, sample MW-21, MS and MSD recovered outside the control limit for Calcium, however the result in the parent sample is greater than 4x the spike amount Batch R432019, Anions Method sample MW-02, MS and MSD recovered outside the control limit for Sulfate due to suspect matrix effect.	
2	The analysis for Fluoride was subcontracted to ALS Environmental in Holland, MI. Final report attached Login Notes: IDs differ - times match. COC - MW-28 Labels - MW-28R	
3	See Run Log and CCB Exceptions Report.	
4	Batch 192125, Metals Method SW6020, sample MW-02, PDS recovered outside the control limit for Calcium however the result in the parent sample is greater than 4x the spike amount Batch 192190, Metals Method SW6020, sample MW-21 PDS recovered outside the control limit for Calcium however the result in the parent sample is greater than 4x the spike amount Batch 192190, Metals Method SW6020, sample MW-21 The percent difference between the results of the sample and the serial dilution were greater than 10% for Boron	

Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177
Start Date: 11-Apr-2023 End Date: 12-Apr-2023

Run ID:ICPMS06_432302
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	11-Apr-2023 10:56	026_ICV.d	B CA NA
LLICV2	1	11-Apr-2023 10:57	027LCV2.d	B CA NA
LLICV5	1	11-Apr-2023 10:59	028LCV5.d	B CA NA
ICB	1	11-Apr-2023 11:01	029_ICB.d	B CA NA
ICSA	1	11-Apr-2023 11:05	031ICSA.d	B CA NA
ICSAB	1	11-Apr-2023 11:08	032ICSB.d	B CA NA
CCV 1	1	11-Apr-2023 11:16	035_CCV.d	B CA NA
CCB 1	1	11-Apr-2023 11:18	036_CCB.d	B CA NA
CCV 2	1	11-Apr-2023 11:41	047_CCV.d	B CA NA
CCB 2	1	11-Apr-2023 11:43	048_CCB.d	B CA NA
CCV 3	1	11-Apr-2023 12:08	059_CCV.d	B CA NA
CCB 3	1	11-Apr-2023 12:10	060_CCB.d	B CA NA
CCB 4	1	11-Apr-2023 12:35	072_CCB.d	B CA NA
CCV 4	1	11-Apr-2023 12:37	073_CCV.d	B CA NA
CCV 5	1	11-Apr-2023 12:59	084_CCV.d	B CA NA
CCB 5	1	11-Apr-2023 13:01	085_CCB.d	B CA NA
CCV 6	1	11-Apr-2023 13:23	096_CCV.d	B CA NA
CCB 6	1	11-Apr-2023 13:25	097_CCB.d	B CA NA
CCV 7	1	11-Apr-2023 13:46	108_CCV.d	B CA NA
CCB 7	1	11-Apr-2023 13:48	109_CCB.d	B CA NA
CCV 8	1	11-Apr-2023 14:14	120_CCV.d	B CA NA
CCB 8	1	11-Apr-2023 14:15	121_CCB.d	B CA NA
CCV 9	1	11-Apr-2023 14:49	132_CCV.d	B CA NA
CCB 9	1	11-Apr-2023 14:51	133_CCB.d	B CA NA
CCV 10	1	11-Apr-2023 15:14	144_CCV.d	B CA NA
CCB 10	1	11-Apr-2023 15:15	145_CCB.d	B CA NA
CCV 11	1	11-Apr-2023 15:43	156_CCV.d	B CA NA
CCB 11	1	11-Apr-2023 15:45	157_CCB.d	B CA NA
CCV 12	1	11-Apr-2023 16:08	168_CCV.d	B CA NA
CCB 12	1	11-Apr-2023 16:10	169_CCB.d	B CA NA
CCV 13	1	11-Apr-2023 16:20	173_CCV.d	B CA NA
CCB 13	1	11-Apr-2023 16:22	174_CCB.d	B CA NA
CCV 14	1	11-Apr-2023 16:46	183_CCV.d	B CA NA
CCB 14	1	11-Apr-2023 16:47	184_CCB.d	B CA NA
CCV 15	1	11-Apr-2023 17:18	195_CCV.d	B CA NA
CCB 15	1	11-Apr-2023 17:24	198_CCB.d	B CA NA
CCV 16	1	11-Apr-2023 17:54	209_CCV.d	B CA NA
CCB 16	1	11-Apr-2023 17:55	210_CCB.d	B CA NA
CCV 17	1	11-Apr-2023 18:19	221_CCV.d	B CA NA
CCB 17	1	11-Apr-2023 18:20	222_CCB.d	B CA NA
CCV 18	1	11-Apr-2023 18:43	233_CCV.d	B CA NA
CCB 18	1	11-Apr-2023 18:45	234_CCB.d	B CA NA
ICCV 19	1	11-Apr-2023 20:11	266_ICV.d	B CA NA
LLCCV2	1	11-Apr-2023 20:13	267LCV2.d	B CA NA
LLCCV5	1	11-Apr-2023 20:15	268LCV5.d	B CA NA
ICCB 19	1	11-Apr-2023 20:17	269_ICB.d	B CA NA
CCV 20	1	11-Apr-2023 20:21	271_CCV.d	B CA NA
CCB 20	1	11-Apr-2023 20:23	272_CCB.d	B CA NA
CCV 21	1	11-Apr-2023 21:39	308_CCV.d	B CA NA
CCB 21	1	11-Apr-2023 21:40	309_CCB.d	B CA NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177
Start Date: 11-Apr-2023 End Date: 12-Apr-2023

Run ID:ICPMS06_432302
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
MBLK-192125	1	11-Apr-2023 21:42	310SMPL.d	B CA
LCS-192125	1	11-Apr-2023 21:44	311SMPL.d	B CA
MW-02	1	11-Apr-2023 21:46	312SMPL.d	B CA
MW-02SD	5	11-Apr-2023 21:48	313SMPL.d	B CA
MW-02MS	1	11-Apr-2023 21:50	314SMPL.d	B CA
MW-02MSD	1	11-Apr-2023 21:52	315SMPL.d	B CA
MW-02PDS	1	11-Apr-2023 21:54	316SMPL.d	B CA
CCV 22	1	11-Apr-2023 21:56	317_CCV.d	B CA NA
CCB 22	1	11-Apr-2023 21:58	318_CCB.d	B CA NA
CCV 23	1	11-Apr-2023 22:14	326_CCV.d	B CA NA
CCB 23	1	11-Apr-2023 22:15	327_CCB.d	B CA NA
CCV 24	1	11-Apr-2023 22:33	336_CCV.d	B CA NA
CCB 24	1	11-Apr-2023 22:35	337_CCB.d	B CA NA
MW-01	1	11-Apr-2023 22:45	342SMPL.d	B CA
MW-17	1	11-Apr-2023 22:47	343SMPL.d	B CA
CCV 25	1	11-Apr-2023 22:51	345_CCV.d	B CA NA
CCB 25	1	11-Apr-2023 22:53	346_CCB.d	B CA NA
MBLK-192190	1	11-Apr-2023 22:59	348SMPL.d	B CA NA
LCS-192190	1	11-Apr-2023 23:01	349SMPL.d	B CA NA
MW-21	1	11-Apr-2023 23:03	350SMPL.d	CA NA
MW-21SD	5	11-Apr-2023 23:05	351SMPL.d	CA NA
MW-21MS	1	11-Apr-2023 23:07	352SMPL.d	B CA
MW-21MSD	1	11-Apr-2023 23:09	353SMPL.d	B CA NA
MW-21PDS	1	11-Apr-2023 23:10	354SMPL.d	CA NA
CCV 26	1	11-Apr-2023 23:14	356_CCV.d	B CA NA
CCB 26	1	11-Apr-2023 23:16	357_CCB.d	B CA NA
CCV 27	1	11-Apr-2023 23:36	367_CCV.d	B CA NA
CCB 27	1	11-Apr-2023 23:38	368_CCB.d	B CA NA
MW-18	1	11-Apr-2023 23:40	369SMPL.d	B CA
MW-19	1	11-Apr-2023 23:42	370SMPL.d	B CA
MW-20	1	11-Apr-2023 23:44	371SMPL.d	B CA
MW-22	1	11-Apr-2023 23:46	372SMPL.d	B CA
MW-27R	1	11-Apr-2023 23:48	373SMPL.d	B
MW-28	1	11-Apr-2023 23:50	374SMPL.d	B
Field Blank-01	1	11-Apr-2023 23:52	375SMPL.d	B CA
Field Dup[licate-01	1	11-Apr-2023 23:54	376SMPL.d	B CA
CCV 28	1	11-Apr-2023 23:58	378_CCV.d	B CA NA
CCB 28	1	12-Apr-2023 00:00	379_CCB.d	B CA NA
CCV 29	1	12-Apr-2023 00:16	387_CCV.d	B CA NA
CCB 29	1	12-Apr-2023 00:18	388_CCB.d	B CA NA
LLCCV2	1	12-Apr-2023 00:20	389LCV2.d	B CA NA
LLCCV5	1	12-Apr-2023 00:21	390LCV5.d	B CA NA
ICSA	1	12-Apr-2023 00:23	391ICSA.d	B CA NA
ICSAB	1	12-Apr-2023 00:26	392ICSB.d	B CA NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177
Start Date: 12-Apr-2023 End Date: 13-Apr-2023

Run ID:ICPMS06_432437
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
LLICV2	1	12-Apr-2023 11:07	025LCV2.d	B CA
LLICV5	1	12-Apr-2023 11:09	026LCV5.d	B CA
ICB	1	12-Apr-2023 11:11	027_ICB.d	B CA NA
ICV	1	12-Apr-2023 11:13	028_ICV.d	B CA NA
ICSA	1	12-Apr-2023 11:17	030ICSA.d	B CA
ICSAB	1	12-Apr-2023 11:19	031ICSB.d	B CA
CCV 1	1	12-Apr-2023 11:52	046_CCV.d	B CA NA
CCB 1	1	12-Apr-2023 11:54	047_CCB.d	B CA NA
MW-02MSD	1	12-Apr-2023 12:00	049SMPL.d	
MW-21MS	1	12-Apr-2023 12:04	051SMPL.d	NA
MW-21	10	12-Apr-2023 12:06	052SMPL.d	B
MW-21SD	50	12-Apr-2023 12:07	053SMPL.d	B
MW-21PDS	10	12-Apr-2023 12:09	054SMPL.d	B
CCV 2	1	12-Apr-2023 12:18	058_CCV.d	B CA NA
CCB 2	1	12-Apr-2023 12:20	059_CCB.d	B CA NA
MW-27R	20	12-Apr-2023 12:22	060SMPL.d	CA
MW-28	20	12-Apr-2023 12:24	061SMPL.d	CA
CCV 3	1	12-Apr-2023 12:39	067_CCV.d	B CA NA
CCB 3	1	12-Apr-2023 12:41	068_CCB.d	B CA NA
CCV 4	1	12-Apr-2023 13:04	079_CCV.d	B CA NA
CCB 4	1	12-Apr-2023 13:05	080_CCB.d	B CA NA
CCV 5	1	12-Apr-2023 13:35	091_CCV.d	B CA NA
CCB 5	1	12-Apr-2023 13:37	092_CCB.d	B CA NA
CCV 6	1	12-Apr-2023 13:51	099_CCV.d	B CA NA
CCB 6	1	12-Apr-2023 13:52	100_CCB.d	B CA NA
CCV 7	1	12-Apr-2023 14:31	111_CCV.d	B CA NA
CCB 7	1	12-Apr-2023 14:33	112_CCB.d	B CA NA
CCV 8	1	12-Apr-2023 15:03	124_CCV.d	B CA NA
CCB 8	1	12-Apr-2023 15:05	125_CCB.d	B CA NA
ICCV 9	1	12-Apr-2023 15:47	145_ICV.d	B CA NA
LLCCV2	1	12-Apr-2023 15:49	146LCV2.d	B CA
LLCCV5	1	12-Apr-2023 15:51	147LCV5.d	B CA
ICCB 9	1	12-Apr-2023 15:53	148_ICB.d	B CA NA
CCV 10	1	12-Apr-2023 15:57	150_CCV.d	B CA NA
CCB 10	1	12-Apr-2023 15:59	151_CCB.d	B CA NA
CCV 11	1	12-Apr-2023 16:30	162_CCV.d	B CA NA
CCB 11	1	12-Apr-2023 16:32	163_CCB.d	B CA NA
CCV 12	1	12-Apr-2023 17:03	174_CCV.d	B CA NA
CCB 12	1	12-Apr-2023 17:05	175_CCB.d	B CA NA
CCB 13	1	12-Apr-2023 17:30	187_CCB.d	B CA NA
CCV 13	1	12-Apr-2023 17:35	189_CCV.d	B CA NA
CCV 14	1	12-Apr-2023 17:58	200_CCV.d	B CA NA
CCB 14	1	12-Apr-2023 18:00	201_CCB.d	B CA NA
CCV 15	1	12-Apr-2023 18:12	207_CCV.d	B CA NA
CCB 15	1	12-Apr-2023 18:14	208_CCB.d	B CA NA
CCV 16	1	12-Apr-2023 18:46	219_CCV.d	B CA NA
CCB 16	1	12-Apr-2023 18:48	220_CCB.d	B CA NA
CCV 17	1	12-Apr-2023 19:06	229_CCV.d	B CA NA
CCB 17	1	12-Apr-2023 19:08	230_CCB.d	B CA NA
CCV 18	1	12-Apr-2023 19:20	236_CCV.d	B CA NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177
Start Date: 12-Apr-2023 End Date: 13-Apr-2023

Run ID:ICPMS06_432437
Instrument:ICPMS06
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCB 18	1	12-Apr-2023 19:22	237_CCB.d	B CA NA
CCV 19	1	12-Apr-2023 20:07	247_CCV.d	B CA NA
CCB 19	1	12-Apr-2023 20:09	248_CCB.d	B CA NA
CCV 20	1	12-Apr-2023 20:25	256_CCV.d	B CA NA
CCB 20	1	12-Apr-2023 20:27	257_CCB.d	B CA NA
CCV 21	1	12-Apr-2023 20:48	268_CCV.d	B CA NA
CCB 21	1	12-Apr-2023 20:50	269_CCB.d	B CA NA
CCV 22	1	12-Apr-2023 21:08	278_CCV.d	B CA NA
CCB 22	1	12-Apr-2023 21:10	279_CCB.d	B CA NA
CCV 23	1	12-Apr-2023 21:22	285_CCV.d	B CA NA
CCB 23	1	12-Apr-2023 21:23	286_CCB.d	B CA NA
CCV 24	1	12-Apr-2023 21:37	292_CCV.d	B CA NA
CCB 24	1	12-Apr-2023 21:39	293_CCB.d	B CA NA
CCV 25	1	12-Apr-2023 21:53	300_CCV.d	B CA NA
CCB 25	1	12-Apr-2023 21:55	301_CCB.d	B CA NA
ICCV 26	1	12-Apr-2023 22:22	315_ICV.d	B CA NA
LLCCV2	1	12-Apr-2023 22:24	316LCV2.d	B CA
LLCCV5	1	12-Apr-2023 22:25	317LCV5.d	B CA
ICCB 26	1	12-Apr-2023 22:27	318_ICB.d	B CA NA
CCV 27	1	12-Apr-2023 22:31	320_CCV.d	B CA NA
CCB 27	1	12-Apr-2023 22:33	321_CCB.d	B CA NA
CCV 28	1	12-Apr-2023 22:49	329_CCV.d	B CA NA
CCB 28	1	12-Apr-2023 22:51	330_CCB.d	B CA NA
CCV 29	1	12-Apr-2023 23:12	341_CCV.d	B CA NA
CCB 29	1	12-Apr-2023 23:14	342_CCB.d	B CA NA
CCV 30	1	13-Apr-2023 00:17	351_CCV.d	B CA NA
CCB 30	1	13-Apr-2023 00:19	352_CCB.d	B CA NA
CCV 31	1	13-Apr-2023 00:41	363_CCV.d	B CA NA
CCB 31	1	13-Apr-2023 00:43	364_CCB.d	B CA NA
CCV 32	1	13-Apr-2023 00:53	369_CCV.d	B CA NA
CCB 32	1	13-Apr-2023 00:55	370_CCB.d	B CA NA
LLCCV2	1	13-Apr-2023 00:56	371LCV2.d	B CA
LLCCV5	1	13-Apr-2023 00:58	372LCV5.d	B CA
ICSA	1	13-Apr-2023 01:00	373ICSA.d	B CA
ICSAB	1	13-Apr-2023 01:02	374ICSB.d	B CA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

Run ID:ICPMS06_432302
Instrument:ICPMS06
Method:SW6020A

CCB 2	Date: 11-Apr-2023 11:43	Seq: 7228469	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	16.99	14	200	

CCB 3	Date: 11-Apr-2023 12:10	Seq: 7228527	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.82	11	20	
Sodium	16.32	14	200	

CCB 5	Date: 11-Apr-2023 13:01	Seq: 7228662	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.22	11	20	
Sodium	20.49	14	200	

CCB 7	Date: 11-Apr-2023 13:48	Seq: 7228719	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.1	11	20	
Sodium	15.34	14	200	

CCB 8	Date: 11-Apr-2023 14:15	Seq: 7228870	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.93	11	20	
Sodium	44.84	14	200	

CCB 9	Date: 11-Apr-2023 14:51	Seq: 7228882	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	68.22	14	200	

CCB 10	Date: 11-Apr-2023 15:15	Seq: 7229452	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.15	11	20	
Sodium	59.64	14	200	

CCB 11	Date: 11-Apr-2023 15:45	Seq: 7229539	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.99	11	20	
Sodium	43.66	14	200	

CCB 12	Date: 11-Apr-2023 16:10	Seq: 7229551	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	37.45	14	200	

CCB 13	Date: 11-Apr-2023 16:22	Seq: 7229650	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.32	11	20	
Sodium	382	14	200	

CCB 14	Date: 11-Apr-2023 16:47	Seq: 7229657	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	47.63	14	200	

CCB 15	Date: 11-Apr-2023 17:24	Seq: 7229783	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

Run ID:ICPMS06_432302
Instrument:ICPMS06
Method:SW6020A

Boron	15.48	11	20	
Sodium	14.72	14	200	

CCB 16	Date: 11-Apr-2023 17:55	Seq: 7229889	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	13.34	11	20	
Sodium	291.1	14	200	

CCB 17	Date: 11-Apr-2023 18:20	Seq: 7229901	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	96.26	14	200	

CCB 18	Date: 11-Apr-2023 18:45	Seq: 7229913	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	193.3	14	200	

CCB 21	Date: 11-Apr-2023 21:40	Seq: 7230191	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	16.38	14	200	

CCB 22	Date: 11-Apr-2023 21:58	Seq: 7230200	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	22.77	11	20	
Sodium	20.26	14	200	

CCB 24	Date: 11-Apr-2023 22:35	Seq: 7230179	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	13.12	11	20	

CCB 26	Date: 11-Apr-2023 23:16	Seq: 7230211	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	21.92	11	20	

CCB 28	Date: 12-Apr-2023 00:00	Seq: 7230233	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	-14.96	14	200	

CCB 29	Date: 12-Apr-2023 00:18	Seq: 7230239	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	-19.82	14	200	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

Run ID:ICPMS06_432437
Instrument:ICPMS06
Method:SW6020A

CCB 1	Date: 12-Apr-2023 11:54	Seq: 7231433	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.82	11	20	
Sodium	24.14	14	200	

CCB 2	Date: 12-Apr-2023 12:20	Seq: 7231474	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.57	11	20	
Sodium	69.11	14	200	

CCB 3	Date: 12-Apr-2023 12:41	Seq: 7231516	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	16.23	14	200	

CCB 4	Date: 12-Apr-2023 13:05	Seq: 7231763	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	70.73	14	200	

CCB 5	Date: 12-Apr-2023 13:37	Seq: 7231770	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	44.63	14	200	

CCB 6	Date: 12-Apr-2023 13:52	Seq: 7231776	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	30.44	14	200	

CCB 7	Date: 12-Apr-2023 14:33	Seq: 7232098	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	41.57	14	200	

CCB 8	Date: 12-Apr-2023 15:05	Seq: 7232241	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	12.48	11	20	
Sodium	47.1	14	200	

CCB 11	Date: 12-Apr-2023 16:32	Seq: 7232551	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	16.73	14	200	

CCB 14	Date: 12-Apr-2023 18:00	Seq: 7232878	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	13.81	11	20	

CCB 15	Date: 12-Apr-2023 18:14	Seq: 7232885	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	17.25	11	20	
Sodium	26.09	14	200	

CCB 16	Date: 12-Apr-2023 18:48	Seq: 7233241	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	35.11	14	200	

CCB 17	Date: 12-Apr-2023 19:08	Seq: 7233251	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

Run ID:ICPMS06_432437
Instrument:ICPMS06
Method:SW6020A

	Sodium	321.8	14	200	
CCB 18	Date: 12-Apr-2023 19:22	Seq: 7233258	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Sodium	400.7	14	200	
CCB 19	Date: 12-Apr-2023 20:09	Seq: 7233267	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	103.7	11	20	
	Calcium	125.8	34	500	
	Sodium	2948	14	200	
CCB 20	Date: 12-Apr-2023 20:27	Seq: 7233276	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	66.56	11	20	
	Sodium	674.6	14	200	
CCB 21	Date: 12-Apr-2023 20:50	Seq: 7233288	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	75.69	11	20	
	Sodium	295.8	14	200	
CCB 22	Date: 12-Apr-2023 21:10	Seq: 7233298	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	55.52	11	20	
	Sodium	251.5	14	200	
CCB 23	Date: 12-Apr-2023 21:23	Seq: 7233305	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	47.85	11	20	
	Sodium	274.8	14	200	
CCB 24	Date: 12-Apr-2023 21:39	Seq: 7233312	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	27.92	11	20	
	Sodium	123.9	14	200	
CCB 25	Date: 12-Apr-2023 21:55	Seq: 7233320	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	33.55	11	20	
	Sodium	184.1	14	200	
ICCB 26	Date: 12-Apr-2023 22:27	Seq: 7233337	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Sodium	-25.68	14	200	
CCB 27	Date: 12-Apr-2023 22:33	Seq: 7233340	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Sodium	-27.56	14	200	
CCB 28	Date: 12-Apr-2023 22:51	Seq: 7233349	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Sodium	-28.59	14	200	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

Run ID:ICPMS06_432437
Instrument:ICPMS06
Method:SW6020A

CCB 29	Date: 12-Apr-2023 23:14	Seq: 7233361	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	-37.27	14	200	

CCB 30	Date: 13-Apr-2023 00:19	Seq: 7233366	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	-23.6	14	200	

CCB 31	Date: 13-Apr-2023 00:43	Seq: 7233378	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	-72.22	14	200	

CCB 32	Date: 13-Apr-2023 00:55	Seq: 7233384	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	-59.3	14	200	

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Work Order: HS23040177

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23040177-01	MW-01	Water		04-Apr-2023 09:50	04-Apr-2023 15:00	☐
HS23040177-02	MW-02	Water		04-Apr-2023 09:05	04-Apr-2023 15:00	☐
HS23040177-03	MW-17	Water		04-Apr-2023 10:30	04-Apr-2023 15:00	☐
HS23040177-04	MW-18	Water		04-Apr-2023 11:10	04-Apr-2023 15:00	☐
HS23040177-05	MW-19	Water		04-Apr-2023 12:30	04-Apr-2023 15:00	☐
HS23040177-06	MW-20	Water		04-Apr-2023 11:50	04-Apr-2023 15:00	☐
HS23040177-07	MW-21	Water		04-Apr-2023 12:35	04-Apr-2023 15:00	☐
HS23040177-08	MW-22	Water		04-Apr-2023 11:55	04-Apr-2023 15:00	☐
HS23040177-09	MW-27R	Water		04-Apr-2023 09:25	04-Apr-2023 15:00	☐
HS23040177-10	MW-28	Water		04-Apr-2023 10:15	04-Apr-2023 15:00	☐
HS23040177-11	Field Blank-01	Water		04-Apr-2023 12:40	04-Apr-2023 15:00	☐
HS23040177-12	Field Dup[licate-01	Water		04-Apr-2023 10:00	04-Apr-2023 15:00	☐

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-01
Collection Date: 04-Apr-2023 09:50

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-01
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0356**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 22:45
Calcium	**48.6**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 22:45
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**289**		**2.00**	**5.00**	**mg/L**	10	06-Apr-2023 15:27
Sulfate	< 0.200		0.200	0.500	mg/L	1	06-Apr-2023 19:08
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**816**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-02
Collection Date: 04-Apr-2023 09:05

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-02
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.425**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 21:46
Calcium	**178**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 21:46
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**301**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2023 16:02
Sulfate	**664**		**4.00**	**10.0**	**mg/L**	20	06-Apr-2023 16:02
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,420**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-17
Collection Date: 04-Apr-2023 10:30

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-03
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 10-Apr-2023		Analyst: JC
Boron	**0.0249**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 22:47
Calcium	**2.38**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 22:47
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**8.60**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 15:33
Sulfate	**7.79**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 15:33
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**122**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-18
Collection Date: 04-Apr-2023 11:10

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-04
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**0.0443**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 23:40
Calcium	**67.1**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 23:40
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**9.64**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:19
Sulfate	**34.3**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:19
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**342**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-19
Collection Date: 04-Apr-2023 12:30

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-05
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**0.0467**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 23:42
Calcium	**34.6**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 23:42
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**37.5**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:25
Sulfate	**99.6**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:25
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**308**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 01:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-20
Collection Date: 04-Apr-2023 11:50

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-06
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**0.0461**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 23:44
Calcium	**30.8**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 23:44
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**18.2**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:31
Sulfate	**24.0**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:31
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**308**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 12:01
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-21
Collection Date: 04-Apr-2023 12:35

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-07
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**1.06**		**0.110**	**0.200**	**mg/L**	10	12-Apr-2023 12:06
Calcium	**62.3**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 23:03
Sodium	**15.8**		**0.0140**	**0.200**	**mg/L**	1	11-Apr-2023 23:03
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**17.4**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:48
Sulfate	**292**		**1.00**	**2.50**	**mg/L**	5	06-Apr-2023 19:13
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**496**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 12:01
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-22
Collection Date: 04-Apr-2023 11:55

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-08
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**0.0403**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 23:46
Calcium	**59.1**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 23:46
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**33.2**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 16:54
Sulfate	**135**		**1.00**	**2.50**	**mg/L**	5	06-Apr-2023 19:19
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**338**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 12:01
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-27R
Collection Date: 04-Apr-2023 09:25

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-09
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**0.157**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 23:48
Calcium	**482**		**0.680**	**10.0**	**mg/L**	20	12-Apr-2023 12:22
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**2,230**		**10.0**	**25.0**	**mg/L**	50	06-Apr-2023 17:58
Sulfate	**583**		**2.00**	**5.00**	**mg/L**	10	06-Apr-2023 17:46
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**5,800**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 12:01
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: MW-28
Collection Date: 04-Apr-2023 10:15

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-10
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**0.217**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 23:50
Calcium	**562**		**0.680**	**10.0**	**mg/L**	20	12-Apr-2023 12:24
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**2,200**		**10.0**	**25.0**	**mg/L**	50	06-Apr-2023 17:52
Sulfate	**1,080**		**10.0**	**25.0**	**mg/L**	50	06-Apr-2023 17:52
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**6,860**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 12:01
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: Field Blank-01
Collection Date: 04-Apr-2023 12:40

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-11
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	< 0.0110		0.0110	0.0200	mg/L	1	11-Apr-2023 23:52
Calcium	**0.118**	J	**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 23:52
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**0.217**	J	**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 18:04
Sulfate	< 0.200		0.200	0.500	mg/L	1	06-Apr-2023 18:04
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**66.0**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 12:01
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone - Appedix III
Sample ID: Field Dup[licate-01
Collection Date: 04-Apr-2023 10:00

ANALYTICAL REPORT
WorkOrder:HS23040177
Lab ID:HS23040177-12
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 11-Apr-2023		Analyst: JC
Boron	**0.0468**		**0.0110**	**0.0200**	**mg/L**	1	11-Apr-2023 23:54
Calcium	**35.2**		**0.0340**	**0.500**	**mg/L**	1	11-Apr-2023 23:54
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**37.2**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 18:10
Sulfate	**99.2**		**0.200**	**0.500**	**mg/L**	1	06-Apr-2023 18:10
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**292**		**5.00**	**10.0**	**mg/L**	1	07-Apr-2023 12:01
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	11-Apr-2023 14:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

Batch ID: 192125 **Start Date:** 10 Apr 2023 14:00 **End Date:** 10 Apr 2023 18:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23040177-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-03		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 192190 **Start Date:** 11 Apr 2023 12:30 **End Date:** 11 Apr 2023 16:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23040177-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23040177-12		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 192125 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23040177-01	MW-01	04 Apr 2023 09:50		10 Apr 2023 14:00	11 Apr 2023 22:45	1
HS23040177-02	MW-02	04 Apr 2023 09:05		10 Apr 2023 14:00	11 Apr 2023 21:46	1
HS23040177-03	MW-17	04 Apr 2023 10:30		10 Apr 2023 14:00	11 Apr 2023 22:47	1
Batch ID: 192190 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23040177-04	MW-18	04 Apr 2023 11:10		11 Apr 2023 12:30	11 Apr 2023 23:40	1
HS23040177-05	MW-19	04 Apr 2023 12:30		11 Apr 2023 12:30	11 Apr 2023 23:42	1
HS23040177-06	MW-20	04 Apr 2023 11:50		11 Apr 2023 12:30	11 Apr 2023 23:44	1
HS23040177-07	MW-21	04 Apr 2023 12:35		11 Apr 2023 12:30	12 Apr 2023 12:06	10
HS23040177-07	MW-21	04 Apr 2023 12:35		11 Apr 2023 12:30	11 Apr 2023 23:03	1
HS23040177-08	MW-22	04 Apr 2023 11:55		11 Apr 2023 12:30	11 Apr 2023 23:46	1
HS23040177-09	MW-27R	04 Apr 2023 09:25		11 Apr 2023 12:30	12 Apr 2023 12:22	20
HS23040177-09	MW-27R	04 Apr 2023 09:25		11 Apr 2023 12:30	11 Apr 2023 23:48	1
HS23040177-10	MW-28	04 Apr 2023 10:15		11 Apr 2023 12:30	12 Apr 2023 12:24	20
HS23040177-10	MW-28	04 Apr 2023 10:15		11 Apr 2023 12:30	11 Apr 2023 23:50	1
HS23040177-11	Field Blank-01	04 Apr 2023 12:40		11 Apr 2023 12:30	11 Apr 2023 23:52	1
HS23040177-12	Field Dup[licate-01	04 Apr 2023 10:00		11 Apr 2023 12:30	11 Apr 2023 23:54	1
Batch ID: R432019 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23040177-01	MW-01	04 Apr 2023 09:50			06 Apr 2023 19:08	1
HS23040177-01	MW-01	04 Apr 2023 09:50			06 Apr 2023 15:27	10
HS23040177-02	MW-02	04 Apr 2023 09:05			06 Apr 2023 16:02	20
HS23040177-03	MW-17	04 Apr 2023 10:30			06 Apr 2023 15:33	1
HS23040177-04	MW-18	04 Apr 2023 11:10			06 Apr 2023 16:19	1
HS23040177-05	MW-19	04 Apr 2023 12:30			06 Apr 2023 16:25	1
HS23040177-06	MW-20	04 Apr 2023 11:50			06 Apr 2023 16:31	1
HS23040177-07	MW-21	04 Apr 2023 12:35			06 Apr 2023 19:13	5
HS23040177-07	MW-21	04 Apr 2023 12:35			06 Apr 2023 16:48	1
HS23040177-08	MW-22	04 Apr 2023 11:55			06 Apr 2023 19:19	5
HS23040177-08	MW-22	04 Apr 2023 11:55			06 Apr 2023 16:54	1
HS23040177-09	MW-27R	04 Apr 2023 09:25			06 Apr 2023 17:58	50
HS23040177-09	MW-27R	04 Apr 2023 09:25			06 Apr 2023 17:46	10
HS23040177-10	MW-28	04 Apr 2023 10:15			06 Apr 2023 17:52	50
HS23040177-11	Field Blank-01	04 Apr 2023 12:40			06 Apr 2023 18:04	1
HS23040177-12	Field Dup[licate-01	04 Apr 2023 10:00			06 Apr 2023 18:10	1

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R432202 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23040177-06	MW-20	04 Apr 2023 11:50			07 Apr 2023 12:01	1
HS23040177-07	MW-21	04 Apr 2023 12:35			07 Apr 2023 12:01	1
HS23040177-08	MW-22	04 Apr 2023 11:55			07 Apr 2023 12:01	1
HS23040177-09	MW-27R	04 Apr 2023 09:25			07 Apr 2023 12:01	1
HS23040177-10	MW-28	04 Apr 2023 10:15			07 Apr 2023 12:01	1
HS23040177-11	Field Blank-01	04 Apr 2023 12:40			07 Apr 2023 12:01	1
HS23040177-12	Field Dup[licate-01	04 Apr 2023 10:00			07 Apr 2023 12:01	1
Batch ID: R432235 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23040177-01	MW-01	04 Apr 2023 09:50			07 Apr 2023 01:30	1
HS23040177-02	MW-02	04 Apr 2023 09:05			07 Apr 2023 01:30	1
HS23040177-03	MW-17	04 Apr 2023 10:30			07 Apr 2023 01:30	1
HS23040177-04	MW-18	04 Apr 2023 11:10			07 Apr 2023 01:30	1
HS23040177-05	MW-19	04 Apr 2023 12:30			07 Apr 2023 01:30	1
Batch ID: R432320 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS23040177-01	MW-01	04 Apr 2023 09:50			11 Apr 2023 14:32	1
HS23040177-02	MW-02	04 Apr 2023 09:05			11 Apr 2023 14:32	1
HS23040177-03	MW-17	04 Apr 2023 10:30			11 Apr 2023 14:32	1
HS23040177-04	MW-18	04 Apr 2023 11:10			11 Apr 2023 14:32	1
HS23040177-05	MW-19	04 Apr 2023 12:30			11 Apr 2023 14:32	1
HS23040177-06	MW-20	04 Apr 2023 11:50			11 Apr 2023 14:32	1
HS23040177-07	MW-21	04 Apr 2023 12:35			11 Apr 2023 14:32	1
HS23040177-08	MW-22	04 Apr 2023 11:55			11 Apr 2023 14:32	1
HS23040177-09	MW-27R	04 Apr 2023 09:25			11 Apr 2023 14:32	1
HS23040177-10	MW-28	04 Apr 2023 10:15			11 Apr 2023 14:32	1
HS23040177-11	Field Blank-01	04 Apr 2023 12:40			11 Apr 2023 14:32	1
HS23040177-12	Field Dup[licate-01	04 Apr 2023 10:00			11 Apr 2023 14:32	1

WorkOrder: HS23040177
InstrumentID: ICPMS06
Test Code: ICP_TW
Test Number: SW6020A
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Boron	7440-42-8	0.0500	0.0467	0.0110	0.0200
A	Calcium	7440-70-2	1.00	0.936	0.0340	0.500
A	Sodium	7440-23-5	1.00	1.00	0.0140	0.200

WorkOrder: HS23040177
InstrumentID: ICS-Integrion
Test Code: 300_W
Test Number: E300
Test Name: Anions by E300.0, Rev 2.1, 1993

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Chloride	16887-00-6	0.250	9.70	0.200	0.500
A	Sulfate	14808-79-8	0.250	3.34	0.200	0.500

WorkOrder: HS23040177
InstrumentID: Balance1
Test Code: TDS_W 2540C
Test Number: M2540C
Test Name: Total Dissolved Solids by SM2540C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Dissolved Solids (Residue, Filterable)	TDS	5.00	4.00	5.00	10.0

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: 192125 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-192125** Units: **mg/L** Analysis Date: **11-Apr-2023 21:42**
Client ID: Run ID: **ICPMS06_432302** SeqNo: **7230192** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	< 0.0340	0.500								

LCS Sample ID: **LCS-192125** Units: **mg/L** Analysis Date: **11-Apr-2023 21:44**
Client ID: Run ID: **ICPMS06_432302** SeqNo: **7230193** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4702	0.0200	0.5	0	94.0	80 - 120				
Calcium	5.108	0.500	5	0	102	80 - 120				

MS Sample ID: **HS23040177-02MS** Units: **mg/L** Analysis Date: **11-Apr-2023 21:50**
Client ID: **MW-02** Run ID: **ICPMS06_432302** SeqNo: **7230196** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.8605	0.0200	0.5	0.4248	87.2	80 - 120				
Calcium	168	0.500	5	178	-202	80 - 120				SO

MSD Sample ID: **HS23040177-02MSD** Units: **mg/L** Analysis Date: **11-Apr-2023 21:52**
Client ID: **MW-02** Run ID: **ICPMS06_432302** SeqNo: **7230197** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.9039	0.0200	0.5	0.4248	95.8	80 - 120	0.8605	4.91	20	
Calcium	167.4	0.500	5	178	-213	80 - 120	168	0.33	20	SO

PDS Sample ID: **HS23040177-02PDS** Units: **mg/L** Analysis Date: **11-Apr-2023 21:54**
Client ID: **MW-02** Run ID: **ICPMS06_432302** SeqNo: **7230198** PrepDate: **10-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.8827	0.0200	0.5	0.4248	91.6	75 - 125				
Calcium	169.5	0.500	10	178	-85.0	75 - 125				SO

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: 192125 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23040177-02SD** Units: **mg/L** Analysis Date: **11-Apr-2023 21:48**
Client ID: **MW-02** Run ID: **ICPMS06_432302** SeqNo: **7230195** PrepDate: **10-Apr-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.454	0.100					0.4248	6.89	10	
Calcium	171.9	2.50					178	3.43	10	

The following samples were analyzed in this batch: HS23040177-01 HS23040177-02 HS23040177-03

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: 192190 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-192190** Units: **mg/L** Analysis Date: **11-Apr-2023 22:59**
Client ID: Run ID: **ICPMS06_432302** SeqNo: **7230202** PrepDate: **11-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	< 0.0340	0.500								
Sodium	< 0.0140	0.200								

LCS Sample ID: **LCS-192190** Units: **mg/L** Analysis Date: **11-Apr-2023 23:01**
Client ID: Run ID: **ICPMS06_432302** SeqNo: **7230203** PrepDate: **11-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4627	0.0200	0.5	0	92.5	80 - 120				
Calcium	4.817	0.500	5	0	96.3	80 - 120				
Sodium	4.603	0.200	5	0	92.1	80 - 120				

MS Sample ID: **HS23040177-07MS** Units: **mg/L** Analysis Date: **11-Apr-2023 23:07**
Client ID: **MW-21** Run ID: **ICPMS06_432302** SeqNo: **7230206** PrepDate: **11-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.27	0.0200	0.5	0.7329	107	80 - 120				E
Calcium	73.36	0.500	5	62.27	222	80 - 120				SO

MS Sample ID: **HS23040177-07MS** Units: **mg/L** Analysis Date: **12-Apr-2023 12:04**
Client ID: **MW-21** Run ID: **ICPMS06_432437** SeqNo: **7231436** PrepDate: **11-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	21.14	0.200	5	15.83	106	80 - 120				

MSD Sample ID: **HS23040177-07MSD** Units: **mg/L** Analysis Date: **11-Apr-2023 23:09**
Client ID: **MW-21** Run ID: **ICPMS06_432302** SeqNo: **7230207** PrepDate: **11-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.28	0.0200	0.5	0.7329	110	80 - 120	1.27	0.852	20	E
Calcium	72.06	0.500	5	62.27	196	80 - 120	73.36	1.79	20	SO
Sodium	21.79	0.200	5	15.83	119	80 - 120	21.93	0.617	20	

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: 192190 (0) **Instrument: ICPMS06** **Method: ICP-MS METALS BY SW6020A**

PDS Sample ID: **HS23040177-07PDS** Units: **mg/L** Analysis Date: **12-Apr-2023 12:09**
Client ID: **MW-21** Run ID: **ICPMS06_432437** SeqNo: **7231439** PrepDate: **11-Apr-2023** DF: **10**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	5.696	0.200	5	1.056	92.8	75 - 125				

PDS Sample ID: **HS23040177-07PDS** Units: **mg/L** Analysis Date: **11-Apr-2023 23:10**
Client ID: **MW-21** Run ID: **ICPMS06_432302** SeqNo: **7230208** PrepDate: **11-Apr-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	67.77	0.500	10	62.27	55.0	75 - 125				SO
Sodium	23.54	0.200	10	15.83	77.2	75 - 125				

SD Sample ID: **HS23040177-07SD** Units: **mg/L** Analysis Date: **12-Apr-2023 12:07**
Client ID: **MW-21** Run ID: **ICPMS06_432437** SeqNo: **7231438** PrepDate: **11-Apr-2023** DF: **50**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	1.421	1.00					1.056	34.6	10	R

SD Sample ID: **HS23040177-07SD** Units: **mg/L** Analysis Date: **11-Apr-2023 23:05**
Client ID: **MW-21** Run ID: **ICPMS06_432302** SeqNo: **7230205** PrepDate: **11-Apr-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	62.84	2.50					62.27	0.91	10	
Sodium	15.88	1.00					15.83	0.317	10	

The following samples were analyzed in this batch: HS23040177-04 HS23040177-05 HS23040177-06 HS23040177-07 HS23040177-08 HS23040177-09 HS23040177-10 HS23040177-11 HS23040177-12

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: R432019 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0, REV 2.1, 1993**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **06-Apr-2023 15:16**
Client ID: Run ID: **ICS-Integrion_432019** SeqNo: **7221395** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **06-Apr-2023 15:21**
Client ID: Run ID: **ICS-Integrion_432019** SeqNo: **7221396** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.5	0.500	20	0	103	90 - 110				
Sulfate	20.85	0.500	20	0	104	90 - 110				

MS Sample ID: **HS23040177-06MS** Units: **mg/L** Analysis Date: **06-Apr-2023 17:12**
Client ID: **MW-20** Run ID: **ICS-Integrion_432019** SeqNo: **7221409** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	28.04	0.500	10	18.24	98.1	80 - 120				
Sulfate	33.72	0.500	10	24	97.2	80 - 120				

MS Sample ID: **HS23040177-02MS** Units: **mg/L** Analysis Date: **06-Apr-2023 16:08**
Client ID: **MW-02** Run ID: **ICS-Integrion_432019** SeqNo: **7221402** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	472.7	10.0	200	300.6	86.1	80 - 120				
Sulfate	785.2	10.0	200	663.6	60.8	80 - 120				S

MSD Sample ID: **HS23040177-06MSD** Units: **mg/L** Analysis Date: **06-Apr-2023 17:17**
Client ID: **MW-20** Run ID: **ICS-Integrion_432019** SeqNo: **7221410** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	28.5	0.500	10	18.24	103	80 - 120	28.04	1.61	20	
Sulfate	34.09	0.500	10	24	101	80 - 120	33.72	1.08	20	

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: R432019 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY E300.0, REV 2.1, 1993

MSD Sample ID: **HS23040177-02MSD** Units: **mg/L** Analysis Date: **06-Apr-2023 16:13**
Client ID: **MW-02** Run ID: **ICS-Integrion_432019** SeqNo: **7221403** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	472	10.0	200	300.6	85.7	80 - 120	472.7	0.161	20	
Sulfate	777.7	10.0	200	663.6	57.0	80 - 120	785.2	0.97	20	S

The following samples were analyzed in this batch:

HS23040177-01	HS23040177-02	HS23040177-03	HS23040177-04
HS23040177-05	HS23040177-06	HS23040177-07	HS23040177-08
HS23040177-09	HS23040177-10	HS23040177-11	HS23040177-12

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: R432202 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-04072023** Units: **mg/L** Analysis Date: **07-Apr-2023 12:01**
Client ID: Run ID: **Balance1_432202** SeqNo: **7225571** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **LCS-04072023** Units: **mg/L** Analysis Date: **07-Apr-2023 12:01**
Client ID: Run ID: **Balance1_432202** SeqNo: **7225570** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1096	10.0	1000	0	110	85 - 115				

DUP Sample ID: **HS23040218-01DUP** Units: **mg/L** Analysis Date: **07-Apr-2023 12:01**
Client ID: Run ID: **Balance1_432202** SeqNo: **7225558** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	470	10.0					468	0.426	20	

DUP Sample ID: **HS23040177-08DUP** Units: **mg/L** Analysis Date: **07-Apr-2023 12:01**
Client ID: **MW-22** Run ID: **Balance1_432202** SeqNo: **7225551** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	340	10.0					338	0.59	20	

The following samples were analyzed in this batch: HS23040177-06 HS23040177-07 HS23040177-08 HS23040177-09 HS23040177-10 HS23040177-11 HS23040177-12

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: HS23040177

QC BATCH REPORT

Batch ID: R432235 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WBLK-04072023** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: Run ID: **Balance1_432235** SeqNo: **7226124** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **LCS-04072023** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: Run ID: **Balance1_432235** SeqNo: **7226123** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1070	10.0	1000	0	107	85 - 115				

DUP Sample ID: **HS23040177-02DUP** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: **MW-02** Run ID: **Balance1_432235** SeqNo: **7226110** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1420	10.0					1416	0.282	20	

DUP Sample ID: **HS23040078-01DUP** Units: **mg/L** Analysis Date: **07-Apr-2023 01:30**
Client ID: Run ID: **Balance1_432235** SeqNo: **7226102** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1284	10.0					1288	0.311	20	

The following samples were analyzed in this batch: HS23040177-01 HS23040177-02 HS23040177-03 HS23040177-04 HS23040177-05

Client: TRC Corporation
Project: NRG Limestone - Appedix III
WorkOrder: **HS23040177**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

Sample Receipt Checklist

Work Order ID: HS23040177 **Date/Time Received:** **04-Apr-2023 15:00**

Client Name: TRC-HOU **Received by:** **Corey Grandits**

Completed By:	/S/ Paresh M. Giga	04-Apr-2023 18:49	**Reviewed by:**	/S/ Nieka.Carson	05-Apr-2023 09:31
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **Water** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:293335/293334
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	1.8C/1.3C U/C	IR31
Cooler(s)/Kit(s):	50058	
Date/Time sample(s) sent to storage:	4/4/23 19:10	

Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes: IDs differ - times match.
COC - MW-28 Labels - MW-28R

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 2

COC ID: 293335

HS23040177

TRC Corporation

NRG Limestone - Appedix III

ALS Project Manager:

Customer Information		Project Information	
Purchase Order	179967	Project Name	NRG Limestone- Appendix III
Work Order		Project Number	
Company Name	TRC Corporation	Bill To Company	TRC Corporation
Send Report To	Lori Burris	Invoice Attn	A/P
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079
Phone	(713) 244-1000	Phone	(713) 244-1000
Fax	(713) 244-1099	Fax	(713) 244-1099
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com

A	ICP_TW (B and Ca (App III))
B	300_W (Cl, SO4)
C	Sub_Fluoride (Sub Fluoride to ALS Michigan)
D	TDS_W 2540C (TDS)
E	ICP_TW (B, Ca, and Na (App III))
F	
G	
H	
I	
J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-01	4-4-23	950	Water	2,8	3	X	X	X	X							
2	MW-02		905	Water	2,8	3	X	X	X	X							
3	MW-17		1030	Water	2,8	3	X	X	X	X							
4	MW-18		1110	Water	2,8	3	X	X	X	X							
5	MW-19		1230	Water	2,8	3	X	X	X	X							
6	MW-20		1150	Water	2,8	3	X	X	X	X							
7	MW-21		1235	Water	2,8	3		X	X	X	X						
8	MW-22		1155	Water	2,8	3	X	X	X	X							
9	MW-27R		925	Water	2,8	3	X	X	X	X							
10	MW-28		1015	Water	2,8	3	X	X	X	X							

Sampler(s) Please Print & Sign: Meron Bond + HME Team

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by: [signature] Date: 4/4/23 Time: 1500

Received by:

Relinquished by: Date: Time:

Received by (Laboratory): CH 4/4/23 1500

Logged by (Laboratory): Date: Time:

Checked by (Laboratory):

Notes: NRG Limestone ☐ PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
50058	1.8
12371	

QC Package: (Check One Box Below)

☐ Level II Std QC
☐ Level III Std QC/Raw Date
☐ Level IV SW846/CLP
☐ Other _____
☒ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document...

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Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 2 of 2

COC ID: 293334

HS23040177

WV

TRC Corporation

NRG Limestone - Appedix III

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	179967	Project Name	NRG Limestone- Appendix III	A	ICP_TW (B and Ca (App III))
Work Order		Project Number		B	300_W (Cl, SO4)
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	ICP_TW (B, Ca, and Na (App III))
				F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	mw-02 MS	4-4-23	905	Water	2,8	3	X	X	X	X							
2	mw-02 MSD		905	Water	2,8	3	X	X	X	X							
3	Field Blank		1240	Water	2,8	3	X	X	X	X							
4	Field Duplicate		1000	Water	2,8	3	X	X	X	X							
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Mason Bond + Hunt Team

Shipment Method: Drop off @ lab

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: [signature] Date: 4/4/23 Time: 1500 Received by:

Relinquished by: Date: Time: Received by (Laboratory): CC 4-4-23 1500

Logged by (Laboratory): Date: Time: Checked by (Laboratory):

Notes: NRG Limestone PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)

☐ Level II Std QC ☐ Level III Std QC/Raw Data ☐ Level IV SW846/CLP ☐ Other

☒ TRRP Checklist ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

ote: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document...

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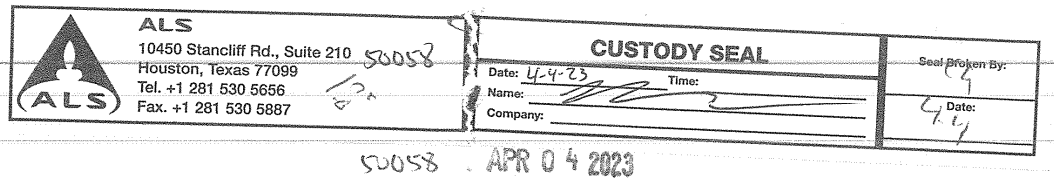
ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
50058
CUSTODY SEAL
Date: 4-4-23
Time:
Name:
Company:
Seal Broken By:
Date:
50058
APR 0 4 2023

11-Apr-2023

Andrew Neir
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS23040177** Work Order: **23040492**

Dear Andrew,

ALS Environmental received 12 samples on 06-Apr-2023 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 22.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Chelsey Cook

Electronically approved by: Chelsey Cook

Chelsey Cook
Project Manager

Client: ALS Environmental
Project: HS23040177
Work Order: **23040492**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
23040492-01	MW-01	Water	HS23040177-01	4/3/2023 09:50	4/6/2023 09:00	☐
23040492-02	MW-02	Water	HS23040177-02	4/4/2023 09:05	4/6/2023 09:00	☐
23040492-03	MW-17	Water	HS23040177-03	4/4/2023 10:30	4/6/2023 09:00	☐
23040492-04	MW-18	Water	HS23040177-04	4/4/2023 11:10	4/6/2023 09:00	☐
23040492-05	MW-19	Water	HS23040177-05	4/4/2023 12:30	4/6/2023 09:00	☐
23040492-06	MW-20	Water	HS23040177-06	4/4/2023 11:50	4/6/2023 09:00	☐
23040492-07	MW-21	Water	HS23040177-07	4/4/2023 12:35	4/6/2023 09:00	☐
23040492-08	MW-22	Water	HS23040177-08	4/4/2023 11:55	4/6/2023 09:00	☐
23040492-09	MW-27R	Water	HS23040177-09	4/4/2023 09:25	4/6/2023 09:00	☐
23040492-10	MW-28	Water	HS23040177-10	4/4/2023 10:15	4/6/2023 09:00	☐
23040492-11	Field Blank-01	Water	HS23040177-11	4/4/2023 12:40	4/6/2023 09:00	☐
23040492-12	Field Duplicate-01	Water	HS23040177-12	4/4/2023 10:00	4/6/2023 09:00	☐

Client: ALS Environmental
Project: HS23040177
WorkOrder: **23040492**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

Client:	ALS Environmental
Project:	HS23040177
Work Order:	23040492

Case Narrative

Samples for the above noted Work Order were received on 04/06/2023. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
No deviations or anomalies were noted.

Privileged and Confidential

ALS Group, USA

Date: *11-Apr-2023*

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-01	**Lab ID:**	23040492-01
Collection Date:	4/3/2023 09:50 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/7/2023 10:29 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040177 **Work Order:** 23040492
Sample ID: MW-02 **Lab ID:** 23040492-02
Collection Date: 4/4/2023 09:05 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/7/2023 10:29 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-17	**Lab ID:**	23040492-03
Collection Date:	4/4/2023 10:30 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.120**		**0.10**	**mg/L**	1	4/7/2023 10:29 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-18	**Lab ID:**	23040492-04
Collection Date:	4/4/2023 11:10 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	**0.110**		**0.10**	**mg/L**	1	4/7/2023 10:29 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-19	**Lab ID:**	23040492-05
Collection Date:	4/4/2023 12:30 PM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-20	**Lab ID:**	23040492-06
Collection Date:	4/4/2023 11:50 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-21	**Lab ID:**	23040492-07
Collection Date:	4/4/2023 12:35 PM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-22	**Lab ID:**	23040492-08
Collection Date:	4/4/2023 11:55 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	MW-27R	**Lab ID:**	23040492-09
Collection Date:	4/4/2023 09:25 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23040177 **Work Order:** 23040492
Sample ID: MW-28 **Lab ID:** 23040492-10
Collection Date: 4/4/2023 10:15 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	Field Blank-01	**Lab ID:**	23040492-11
Collection Date:	4/4/2023 12:40 PM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client:	ALS Environmental		
Project:	HS23040177	**Work Order:**	23040492
Sample ID:	Field Duplicate-01	**Lab ID:**	23040492-12
Collection Date:	4/4/2023 10:00 AM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
FLUORIDE			**A4500-F C-11**			Analyst: **QTN**
Fluoride	ND		0.10	mg/L	1	4/10/2023 04:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Batch ID: **R368036** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R368036-R368036** Units: **mg/L** Analysis Date: **4/7/2023 10:29 AM**
Client ID: Run ID: **TITRATOR 1_230407A** SeqNo: **9419430** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	ND	0.10								

LCS Sample ID: **LCS-R368036-R368036** Units: **mg/L** Analysis Date: **4/7/2023 10:29 AM**
Client ID: Run ID: **TITRATOR 1_230407A** SeqNo: **9419431** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.83	0.10	5	0	96.6	90-110	0			

MS Sample ID: **23040366-05AMS** Units: **mg/L** Analysis Date: **4/7/2023 10:29 AM**
Client ID: Run ID: **TITRATOR 1_230407A** SeqNo: **9419433** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	6.35	0.10	5	1.53	96.4	90-110	0			

MS Sample ID: **23040366-19AMS** Units: **mg/L** Analysis Date: **4/7/2023 10:29 AM**
Client ID: Run ID: **TITRATOR 1_230407A** SeqNo: **9419443** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.98	0.10	5	0.2	95.6	90-110	0			

MS Sample ID: **23040492-02AMS** Units: **mg/L** Analysis Date: **4/7/2023 10:29 AM**
Client ID: **MW-02** Run ID: **TITRATOR 1_230407A** SeqNo: **9419454** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.72	0.10	5	0.05	93.4	90-110	0			

MSD Sample ID: **23040366-05AMSD** Units: **mg/L** Analysis Date: **4/7/2023 10:29 AM**
Client ID: Run ID: **TITRATOR 1_230407A** SeqNo: **9419434** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	6.24	0.10	5	1.53	94.2	90-110	6.35	1.75	20	

MSD Sample ID: **23040366-19AMSD** Units: **mg/L** Analysis Date: **4/7/2023 10:29 AM**
Client ID: Run ID: **TITRATOR 1_230407A** SeqNo: **9419444** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.09	0.10	5	0.2	97.8	90-110	4.98	2.18	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 23040492
Project: HS23040177

QC BATCH REPORT

Batch ID: **R368036** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MSD	Sample ID: **23040492-02AMSD**				Units: **mg/L**		Analysis Date: **4/7/2023 10:29 AM**			
Client ID: **MW-02**	Run ID: **TITRATOR 1_230407A**				SeqNo: **9419455**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.7	0.10	5	0.05	93	90-110	4.72	0.425	20	

The following samples were analyzed in this batch:

23040492-01A 23040492-02A 23040492-03A
23040492-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 23040492
Project: HS23040177

QC BATCH REPORT

Batch ID: **R368190** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R368190-R368190** Units: **mg/L** Analysis Date: **4/10/2023 04:38 PM**
Client ID: Run ID: **TITRATOR 1_230410B** SeqNo: **9425722** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	ND	0.10								

LCS Sample ID: **LCS-R368190-R368190** Units: **mg/L** Analysis Date: **4/10/2023 04:38 PM**
Client ID: Run ID: **TITRATOR 1_230410B** SeqNo: **9425723** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.98	0.10	5	0	99.6	90-110	0			

MS Sample ID: **23040492-05A MS** Units: **mg/L** Analysis Date: **4/10/2023 04:38 PM**
Client ID: **MW-19** Run ID: **TITRATOR 1_230410B** SeqNo: **9425726** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5	0.10	5	0.01	99.8	90-110	0			

MSD Sample ID: **23040492-05A MSD** Units: **mg/L** Analysis Date: **4/10/2023 04:38 PM**
Client ID: **MW-19** Run ID: **TITRATOR 1_230410B** SeqNo: **9425727** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.02	0.10	5	0.01	100	90-110	5	0.399	20	

The following samples were analyzed in this batch:

23040492-05A	23040492-06A	23040492-07A
23040492-08A	23040492-09A	23040492-10A
23040492-11A	23040492-12A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

23040492

ALS - HOUSTON: ALS Environmental
Project: HS23040177

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID:** **21346**

SUBCONTRACT TO:

ALS Laboratory Group
3352 128th Ave.
Holland, MI 494249263

Phone: +1 616 399 6070

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Andy C. Neir
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Andrew.Neir@ALSGlobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS23040177
TSR:	Ron Martino

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS23040177-01**	**MW-01**	**Water**	**04 Apr 2023 09:50**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
2.	**HS23040177-02**	**MW-02**	**Water**	**04 Apr 2023 09:05**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
3.	**HS23040177-03**	**MW-17**	**Water**	**04 Apr 2023 10:30**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
4.	**HS23040177-04**	**MW-18**	**Water**	**04 Apr 2023 11:10**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
5.	**HS23040177-05**	**MW-19**	**Water**	**04 Apr 2023 12:30**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
6.	**HS23040177-06**	**MW-20**	**Water**	**04 Apr 2023 11:50**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
7.	**HS23040177-07**	**MW-21**	**Water**	**04 Apr 2023 12:35**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
8.	**HS23040177-08**	**MW-22**	**Water**	**04 Apr 2023 11:55**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
9.	**HS23040177-09**	**MW-27R**	**Water**	**04 Apr 2023 09:25**

Privileged and Confidential

23040492

ALS - HOUSTON: ALS Environmental
Project: HS23040177

Contract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 21346**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
10.	**HS23040177-10**	**MW-28**	**Water**	**04 Apr 2023 10:15**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
11.	**HS23040177-11**	**Field Blank-01**	**Water**	**04 Apr 2023 12:40**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023
12.	**HS23040177-12**	**Field Dup[licate-01**	**Water**	**04 Apr 2023 10:00**
	Fluoride by ISE 4500. EQuis EDD			11 Apr 2023

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.
HS23040177-02 = ms/msd.
Batch client samples together. MS/MSD must be performed on client sample.

QC Level: TRRP LRC (TRRP checklist only+Level II (normal))

Relinquished By: [signature] Date/Time: 4-5-23 1800

Fedex Received By: [signature] Date/Time: 4/6/23 0900

Cooler ID(s): IR3 Temperature(s): 2.0°C

Privileged and Confidential

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **ALS - HOUSTON** Date/Time Received: **06-Apr-23 09:00**

Work Order: **23040492** Received by: **KYB**

Checklist completed by Karly Yablonski (eSignature) 06-Apr-23 (Date) Reviewed by: Chelsey Cook (eSignature) 07-Apr-23 (Date)

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.0/3.0C	IR3	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	4/6/2023 12:27:49 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Privileged and Confidential

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

May 09, 2023

Lori Burris
TRC Corporation
14701 St. Mary's Lane
Suite 500
Houston, TX 77079

Work Order: **HS23050035**

Laboratory Results for: **NRG Limestone -Appendix III -Resample**

Dear Lori Burris,

ALS Environmental received 3 sample(s) on May 01, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Andy C. Neir

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Limestone -Appendix III -Resample	
WorkOrder:	**HS23050035**	

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Limestone -Appendix III -Resample	
WorkOrder:	**HS23050035**	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Andy C. Neir

Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date:05/09/2023				
Project Name: NRG Limestone -Appendix lll -Resample			Laboratory Job Number: HS23050035				
Reviewer Name: Andy Neir			Prep Batch Number(s): 193380,R434468,R434691				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
R1	OI	**Chain-of-custody (C-O-C)**					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?		X			1
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X		
		If required for the project, TICs reported?			X		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?	X				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Were all necessary corrective actions performed for the reported data?	X				
		Was applicable and available technology used to lower the SDL and minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Review Checklist: Supporting Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 05/09/2023					
Project Name: NRG Limestone -Appendix lll -Resample			Laboratory Job Number: HS23050035					
Reviewer Name: Andy Neir			Prep Batch Number(s): 193380,R434468,R434691					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
S1	OI	**Initial calibration (ICAL)**						
		Were response factors and/or relative response factors for each analyte within QC limits?	X					
		Were percent RSDs or correlation coefficient criteria met?	X					
		Was the number of standards recommended in the method used for all analytes?	X					
		Were all points generated between the lowest and highest standard used to calculate the curve?	X					
		Are ICAL data available for all instruments used?	X					
		Has the initial calibration curve been verified using an appropriate second source standard?	X					
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**						
		Was the CCV analyzed at the method-required frequency?	X					
		Were percent differences for each analyte within the method-required QC limits?	X					
		Was the ICAL curve verified for each analyte?	X					
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X					
S3	O	**Mass spectral tuning:**						
		Was the appropriate compound for the method used for tuning?	X					
		Were ion abundance data within the method-required QC limits?	X					
S4	O	**Internal standards (IS):**						
		Were IS area counts and retention times within the method-required QC limits?	X					
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X					
		Were data associated with manual integrations flagged on the raw data?	X					
S6	O	**Dual column confirmation**						
		Did dual column confirmation results meet the method-required QC?			X			
S7	O	**Tentatively identified compounds (TICs):**						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X			
S8	I	**Interference Check Sample (ICS) results:**						
		Were percent recoveries within method QC limits?	X					
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**						
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X					
S10	OI	**Method detection limit (MDL) studies**						
		Was a MDL study performed for each reported analyte?	X					
		Is the MDL either adjusted or supported by the analysis of DCSs?	X					
S11	OI	**Proficiency test reports:**						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X					
S12	OI	**Standards documentation**						
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X					
S13	OI	**Compound/analyte identification procedures**						
		Are the procedures for compound/analyte identification documented?	X					
S14	OI	**Demonstration of analyst competency (DOC)**						
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X					
		Is documentation of the analyst's competency up-to-date and on file?	X					
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)						
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X					
S16	OI	**Laboratory standard operating procedures (SOPs):**						
		Are laboratory SOPs current and on file for each method performed?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);NA = Not Applicable; NR = Not Reviewed; R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 05/09/2023
Project Name: NRG Limestone -Appendix lll -Resample	Laboratory Job Number: HS23050035
Reviewer Name: Andy Neir	Prep Batch Number(s): 193380,R434468,R434691

ER#[5]	Description
1	Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier. The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 degrees C.

Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

Client: TRC Corporation
Project: NRG Limestone -Appendix III -Resample
Work Order: HS23050035

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23050035-01	MW-01	Water		01-May-2023 10:15	01-May-2023 12:50	☐
HS23050035-02	MW-21	Water		01-May-2023 09:40	01-May-2023 12:50	☐
HS23050035-03	MW-28	Water		01-May-2023 08:55	01-May-2023 12:50	☐

Client: TRC Corporation
ANALYTICAL REPORT
Project: NRG Limestone -Appendix lll -Resample
WorkOrder:HS23050035
Sample ID: MW-01
Lab ID:HS23050035-01
Collection Date: 01-May-2023 10:15
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
PH BY SW9040C	**Method:SW9040C**						Analyst: CD
pH	**3.84**	H	**0.100**	**0.100**	**pH Units**	1	05-May-2023 14:15
Temp Deg C @pH	**19.5**	H	**0**	**0**	**DEG C**	1	05-May-2023 14:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client: TRC Corporation
ANALYTICAL REPORT
Project: NRG Limestone -Appendix lll -Resample
WorkOrder:HS23050035
Sample ID: MW-21
Lab ID:HS23050035-02
Collection Date: 01-May-2023 09:40
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 04-May-2023		Analyst: MSC
Boron	**0.734**		**0.0220**	**0.0400**	**mg/L**	2	05-May-2023 13:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
ANALYTICAL REPORT
Project: NRG Limestone -Appendix lll -Resample
WorkOrder:HS23050035
Sample ID: MW-28
Lab ID:HS23050035-03
Collection Date: 01-May-2023 08:55
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Sulfate	**959**		**4.00**	**10.0**	**mg/L**	20	08-May-2023 16:37

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: TRC Corporation
Project: NRG Limestone -Appendix III -Resample
WorkOrder: HS23050035

Batch ID: 193380 **Start Date:** 04 May 2023 15:00 **End Date:** 04 May 2023 19:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23050035-02		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: NRG Limestone -Appendix lll -Resample
WorkOrder: HS23050035

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 193380 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23050035-02	MW-21	01 May 2023 09:40		04 May 2023 15:00	05 May 2023 13:52	2
Batch ID: R434468 (0)	**Test Name :** PH BY SW9040C				**Matrix:** Water	
HS23050035-01	MW-01	01 May 2023 10:15			05 May 2023 14:15	1
Batch ID: R434691 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23050035-03	MW-28	01 May 2023 08:55			08 May 2023 16:37	20

WorkOrder: HS23050035
InstrumentID: ICPMS06
Test Code: ICP_TW
Test Number: SW6020A
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Boron	7440-42-8	0.0500	0.0467	0.0110	0.0200

WorkOrder: HS23050035
InstrumentID: ICS-Integrion
Test Code: 300_W
Test Number: E300
Test Name: Anions by E300.0, Rev 2.1, 1993

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Sulfate	14808-79-8	0.250	3.34	0.200	0.500

WorkOrder: HS23050035
InstrumentID: WetChem_HS
Test Code: pH_W_9040C
Test Number: SW9040C
Test Name: pH by SW9040C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** pH Units

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	pH	PH	0	0	0.100	0.100
A	Temp Deg C @pH	TEMP	0	0	0	0

Client: TRC Corporation
Project: NRG Limestone -Appendix III -Resample
WorkOrder: HS23050035

QC BATCH REPORT

Batch ID: 193380 (0) **Instrument: ICPMS05** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-193380** Units: **mg/L** Analysis Date: **04-May-2023 21:49**
Client ID: Run ID: **ICPMS05_434334** SeqNo: **7280376** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								

LCS Sample ID: **LCS-193380** Units: **mg/L** Analysis Date: **04-May-2023 21:51**
Client ID: Run ID: **ICPMS05_434334** SeqNo: **7280377** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5292	0.0200	0.5	0	106	80 - 120				

MS Sample ID: **HS23050054-01MS** Units: **mg/L** Analysis Date: **04-May-2023 21:57**
Client ID: Run ID: **ICPMS05_434334** SeqNo: **7280380** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6034	0.0200	0.5	0.09057	103	80 - 120				

MSD Sample ID: **HS23050054-01MSD** Units: **mg/L** Analysis Date: **04-May-2023 21:59**
Client ID: Run ID: **ICPMS05_434334** SeqNo: **7280381** PrepDate: **04-May-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6248	0.0200	0.5	0.09057	107	80 - 120	0.6034	3.47	20	

SD Sample ID: **HS23050054-01SD** Units: **mg/L** Analysis Date: **04-May-2023 21:55**
Client ID: Run ID: **ICPMS05_434334** SeqNo: **7280379** PrepDate: **04-May-2023** DF: **5**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	0.111	0.100					0.09057	0	10	

The following samples were analyzed in this batch: HS23050035-02

Client: TRC Corporation
Project: NRG Limestone -Appendix III -Resample
WorkOrder: HS23050035

QC BATCH REPORT

Batch ID: **R434468 (0)** **Instrument:** **WetChem_HS** **Method:** **PH BY SW9040C**

DUP Sample ID: **HS23050030-07DUP** Units: **pH Units** Analysis Date: **05-May-2023 14:15**
Client ID: Run ID: **WetChem_HS_434468** SeqNo: **7282121** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.18	0.100					7.2	0.278	10	
Temp Deg C @pH	19.5	0					19.5	0	10	

The following samples were analyzed in this batch: HS23050035-01

Client: TRC Corporation
Project: NRG Limestone -Appendix III -Resample
WorkOrder: HS23050035

QC BATCH REPORT

Batch ID: R434691 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0, REV 2.1, 1993**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **08-May-2023 13:58**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287541** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **08-May-2023 14:09**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287542** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	20.2	0.500	20	0	101	90 - 110				

MS Sample ID: **HS23041449-01MS** Units: **mg/L** Analysis Date: **08-May-2023 17:41**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287568** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	11.89	0.500	10	1.138	108	80 - 120				

MS Sample ID: **HS23041446-01MS** Units: **mg/L** Analysis Date: **08-May-2023 17:24**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287565** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	11.2	0.500	10	1.27	99.3	80 - 120				

MSD Sample ID: **HS23041449-01MSD** Units: **mg/L** Analysis Date: **08-May-2023 17:47**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287569** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	11.99	0.500	10	1.138	109	80 - 120	11.89	0.849	20	

MSD Sample ID: **HS23041446-01MSD** Units: **mg/L** Analysis Date: **08-May-2023 17:30**
Client ID: Run ID: **ICS-Integrion_434691** SeqNo: **7287566** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	11.13	0.500	10	1.27	98.6	80 - 120	11.2	0.616	20	

The following samples were analyzed in this batch: HS23050035-03

Client: TRC Corporation
Project: NRG Limestone -Appendix lll -Resample
WorkOrder: **HS23050035**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2023	31-Dec-2023
Oklahoma	2022-141	31-Aug-2023
Utah	TX026932022-13	31-Jul-2023

Sample Receipt Checklist

Work Order ID: HS23050035 **Date/Time Received:** **01-May-2023 12:50**

Client Name: TRC-HOU **Received by:** **Corey Grandits**

Completed By: */S/ Malcolm Burleson* (eSignature) 01-May-2023 14:32 (Date/Time) **Reviewed by:** (eSignature) (Date/Time)

Matrices: **WATER** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:289472
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	0.9/0.8C	IR31
Cooler(s)/Kit(s):	45762	
Date/Time sample(s) sent to storage:	04012023	

Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Sample	Rec'd	COC
MW-01	1	3
MW-21	1	3
MW-28	1	3

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 289472

HS23050035 IV

TRC Corporation

NRG Limestone NRG Limestone -Appendix III -Res

ALS Project Manager:

Customer Information		Project Information			
Purchase Order	20012	Project Name	NRG Limestone- Appendix III -Resa	A	ICP_TW(B (App III))
Work Order		Project Number		B	300_W (SO4)
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	ICP_TW(B, Ca, and Na (App III))
				F	pH_W_9040C
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-01	5-1-23	1015	Water	8	3						X					
2	MW-21	↓	940	Water	2,8	3	X										
3	MW-28	↓	855	Water	8	3		X									
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Mason Beal

Shipment Method: Drop Off

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hou ☐ Other _____

Results Due Date:

Relinquished by:	Date: 5-1-23	Time: 1250	Received by:	Notes: NRG Limestone□PRIVILEGED & CONFIDENTIAL
Relinquished by:	Date:	Time:	Received by (Laboratory): CA 5-1-23 1250	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.
45762	0.9
CF-0.1	

QC Package: (Check One Box Below)
☐ Level II Std QC ☒ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other _____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

ER231

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

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ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

45762

CUSTODY SEAL

Date: Time:

Name:

Company:

Seal Broken By:

Date: 5-1

45762 MAY 0 1 2023

Appendix B
Detection Monitoring Data (October 2023)

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

October 18, 2023

Lori Burris
TRC Corporation
14701 St. Mary's Lane
Suite 500
Houston, TX 77079

Work Order: **HS23100630**

Laboratory Results for: **NRG Limestone -Appendix III**

Dear Lori Burris,

ALS Environmental received 12 sample(s) on Oct 10, 2023 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
Andy C. Neir

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Limestone -Appendix III	
WorkOrder:	**HS23100630**	

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC Chapter 5,
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c)The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits.

R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.

R10 Other problems or anomalies.
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Client:	TRC Corporation	**TRRP Laboratory Data Package Cover Page**
Project:	NRG Limestone -Appendix III	
WorkOrder:	**HS23100630**	

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] _____ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Andy C. Neir

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group			LRC Date: 10/18/2023					
Project Name: NRG Limestone -Appendix lll			Laboratory Job Number: HS23100630					
Reviewer Name: Andy Neir			Prep Batch Number(s): 201988,R449144,R449292,R449336,R449338,R449362					
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]	
R1	OI	**Chain-of-custody (C-O-C)**						
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X					
		Were all departures from standard conditions described in an exception report?	X					
R2	OI	**Sample and quality control (QC) identification**						
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X					
R3	OI	**Test reports**						
		Were all samples prepared and analyzed within holding times?	X					
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X					
		Were calculations checked by a peer or supervisor?	X					
		Were all analyte identifications checked by a peer or supervisor?	X					
		Were sample detection limits reported for all analytes not detected?	X					
		Were all results for soil and sediment samples reported on a dry weight basis?			X			
		Were % moisture (or solids) reported for all soil and sediment samples?			X			
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X			
		If required for the project, TICs reported?			X			
R4	O	**Surrogate recovery data**						
		Were surrogates added prior to extraction?			X			
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X			
R5	OI	**Test reports/summary forms for blank samples**						
		Were appropriate type(s) of blanks analyzed?	X					
		Were blanks analyzed at the appropriate frequency?	X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X					
		Were blank concentrations < MQL?	X					
R6	OI	**Laboratory control samples (LCS):**						
		Were all COCs included in the LCS?	X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X					
		Were LCSs analyzed at the required frequency?	X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X					
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X					
		Was the LCSD RPD within QC limits?	X					
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**						
		Were the project/method specified analytes included in the MS and MSD?	X					
		Were MS/MSD analyzed at the appropriate frequency?	X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1	
		Were MS/MSD RPDs within laboratory QC limits?	X					
R8	OI	**Analytical duplicate data**						
		Were appropriate analytical duplicates analyzed for each matrix?	X					
		Were analytical duplicates analyzed at the appropriate frequency?	X					
		Were RPDs or relative standard deviations within the laboratory QC limits?	X					
R9	OI	**Method quantitation limits (MQLs):**						
		Are the MQLs for each method analyte included in the laboratory data package?	X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X					
R10	OI	**Other problems/anomalies**						
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				2	
		Were all necessary corrective actions performed for the reported data?	X					
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X					

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);NA = Not Applicable; NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Supporting Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 10/18/2023				
Project Name: NRG Limestone -Appendix lll			Laboratory Job Number: HS23100630				
Reviewer Name: Andy Neir			Prep Batch Number(s): 201988,R449144,R449292,R449336,R449338,R449362				
#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial calibration (ICAL)**					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)**					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			3
S3	O	**Mass spectral tuning:**					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal standards (IS):**					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw data** (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual column confirmation**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively identified compounds (TICs):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) results:**					
		Were percent recoveries within method QC limits?	X				
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method detection limit (MDL) studies**					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency test reports:**					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards documentation**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/analyte identification procedures**					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of analyst competency (DOC)**					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/validation documentation for methods** (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory standard operating procedures (SOPs):**					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable; NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Exception Reports	
Laboratory Name: ALS Laboratory Group	LRC Date: 10/18/2023
Project Name: NRG Limestone -Appendix lll	Laboratory Job Number: HS23100630
Reviewer Name: Andy Neir	Prep Batch Number(s): 201988,R449144,R449292,R449336,R449338,R449362

ER#[5]	Description
1	Batch 201988, Metals Method SW6020, sample HS23100607-19, MS and MSD were performed on unrelated sample. Batch 201988, Metals Method SW6020, sample MW-02, MS recovered outside the control limit for Sodium, however, the result in the parent sample is 4x greater than the spike amount. Batch R449292, Anions Method E300, sample MW-02, MS and MSD recovered outside the control limit for Sulfate Batch R449292, Anions Method E300, sample HS23100386-01, MS and MSD were performed on unrelated sample. Batch R449362, Anions Method E300, sample HS23100830-02, MS and MSD were performed on unrelated sample Batch R449362, Anions Method E300, sample HS23100830-01, MS and MSD were performed on unrelated sample
2	The analysis for Fluoride was subcontracted to ALS Environmental in Holland, Report and Laboratory Review Checklist are attached to the final report
3	See Run Log and CCB Exceptions Report.

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);
NA = Not Applicable;
NR = Not Reviewed;
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630
Start Date: 16-Oct-2023 End Date: 17-Oct-2023

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	16-Oct-2023 10:19	020_ICV.d	B CA NA
LLICV2	1	16-Oct-2023 10:23	022LCV2.d	B CA NA
LLICV5	1	16-Oct-2023 10:25	023LCV5.d	B CA NA
ICB	1	16-Oct-2023 10:31	025_ICB.d	B CA NA
ICSA	1	16-Oct-2023 10:33	026ICSA.d	B CA NA
ICSAB	1	16-Oct-2023 10:36	027ICSB.d	B CA NA
CCV 1	1	16-Oct-2023 10:47	030_CCV.d	B CA NA
CCB 1	1	16-Oct-2023 10:50	031_CCB.d	B CA NA
CCV 2	1	16-Oct-2023 11:15	042_CCV.d	B CA NA
CCB 2	1	16-Oct-2023 11:17	043_CCB.d	B CA NA
CCB 3	1	16-Oct-2023 11:19	044_CCB.d	B CA NA
CCV 3	1	16-Oct-2023 11:22	045_CCV.d	B CA NA
CCV 4	1	16-Oct-2023 11:47	056_CCV.d	B CA NA
CCV 5	1	16-Oct-2023 11:47	056_CCV.d	B CA NA
CCB 4	1	16-Oct-2023 11:50	057_CCB.d	B CA NA
CCB 5	1	16-Oct-2023 11:50	057_CCB.d	B CA NA
CCV 6	1	16-Oct-2023 11:52	058_CCV.d	B CA NA
CCV 7	1	16-Oct-2023 11:52	058_CCV.d	B CA NA
CCB 6	1	16-Oct-2023 11:56	059_CCB.d	B CA NA
CCB 7	1	16-Oct-2023 11:56	059_CCB.d	B CA NA
CCB 8	1	16-Oct-2023 12:35	074_CCB.d	B CA NA
CCV 8	1	16-Oct-2023 12:38	075_CCV.d	B CA NA
CCV 9	1	16-Oct-2023 13:02	086_CCV.d	B CA NA
CCB 9	1	16-Oct-2023 13:04	087_CCB.d	B CA NA
CCV 10	1	16-Oct-2023 13:29	098_CCV.d	B CA NA
CCB 10	1	16-Oct-2023 13:31	099_CCB.d	B CA NA
CCB 11	1	16-Oct-2023 13:52	100_CCB.d	B CA NA
CCV 11	1	16-Oct-2023 14:18	111_CCV.d	B CA NA
CCB 12	1	16-Oct-2023 14:20	112_CCB.d	B CA NA
CCB 13	1	16-Oct-2023 14:24	113_CCB.d	B CA NA
CCV 12	1	16-Oct-2023 14:49	124_CCV.d	B CA NA
CCB 14	1	16-Oct-2023 14:52	125_CCB.d	B CA NA
CCB 15	1	16-Oct-2023 14:55	126_CCB.d	B CA NA
CCV 13	1	16-Oct-2023 15:20	137_CCV.d	B CA NA
CCB 16	1	16-Oct-2023 15:22	138_CCB.d	B CA NA
CCB 17	1	16-Oct-2023 15:25	139_CCB.d	B CA NA
CCV 14	1	16-Oct-2023 15:27	140_CCV.d	B CA NA
CCV 15	1	16-Oct-2023 15:52	151_CCV.d	B CA NA
CCB 18	1	16-Oct-2023 15:54	152_CCB.d	B CA NA
CCV 16	1	16-Oct-2023 16:20	163_CCV.d	B CA NA
CCB 19	1	16-Oct-2023 16:22	164_CCB.d	B CA NA
CCV 17	1	16-Oct-2023 17:08	175_CCV.d	B CA NA
CCB 20	1	16-Oct-2023 17:10	176_CCB.d	B CA NA
CCV 18	1	16-Oct-2023 17:35	187_CCV.d	B CA NA
CCB 21	1	16-Oct-2023 17:37	188_CCB.d	B CA NA
CCB 22	1	16-Oct-2023 17:40	189_CCB.d	B CA NA
CCV 19	1	16-Oct-2023 18:05	200_CCV.d	B CA NA
CCB 23	1	16-Oct-2023 18:08	201_CCB.d	B CA NA
CCV 20	1	16-Oct-2023 18:29	210_CCV.d	B CA NA
CCB 24	1	16-Oct-2023 18:31	211_CCB.d	B CA NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630
Start Date: 16-Oct-2023 End Date: 17-Oct-2023

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
CCB 25	1	16-Oct-2023 20:07	214SMPL.d	B CA NA
CCV 21	1	16-Oct-2023 20:09	215_CCV.d	B CA NA
CCV 22	1	16-Oct-2023 20:31	225_CCV.d	B CA NA
CCB 26	1	16-Oct-2023 20:34	226_CCB.d	B CA NA
CCV 23	1	16-Oct-2023 21:04	228_CCV.d	B CA NA
ICCV 24	1	16-Oct-2023 21:32	240_ICV.d	B CA NA
LLCCV5	1	16-Oct-2023 21:34	241LCV5.d	B CA NA
LLCCV2	1	16-Oct-2023 21:36	242LCV2.d	B CA NA
ICCB 27	1	16-Oct-2023 21:38	243_ICB.d	B CA NA
CCV 25	1	16-Oct-2023 21:43	245_CCV.d	B CA NA
CCB 28	1	16-Oct-2023 21:45	246_CCB.d	B CA NA
CCV 26	1	16-Oct-2023 22:05	255_CCV.d	B CA NA
CCB 29	1	16-Oct-2023 22:07	256_CCB.d	B CA NA
CCV 27	1	16-Oct-2023 22:23	263_CCV.d	B CA NA
CCB 30	1	16-Oct-2023 22:25	264_CCB.d	B CA NA
CCV 28	1	16-Oct-2023 22:43	272_CCV.d	B CA NA
CCB 31	1	16-Oct-2023 22:46	273_CCB.d	B CA NA
CCV 29	1	16-Oct-2023 22:55	277_CCV.d	B CA NA
CCB 32	1	16-Oct-2023 22:57	278_CCB.d	B CA NA
CCV 30	1	16-Oct-2023 23:17	287_CCV.d	B CA NA
CCB 33	1	16-Oct-2023 23:20	288_CCB.d	B CA NA
CCV 31	1	16-Oct-2023 23:44	299_CCV.d	B CA NA
CCB 34	1	16-Oct-2023 23:47	300_CCB.d	B CA NA
ICSA	1	16-Oct-2023 23:49	301ICSA.d	B CA NA
ICSAB	1	16-Oct-2023 23:51	302ICSB.d	B CA NA
CCV 32	1	17-Oct-2023 00:05	308_CCV.d	B CA NA
CCB 35	1	17-Oct-2023 00:07	309_CCB.d	B CA NA
CCV 33	1	17-Oct-2023 00:25	317_CCV.d	B CA NA
CCB 36	1	17-Oct-2023 00:27	318_CCB.d	B CA NA
MBLK-201988	1	17-Oct-2023 00:30	319SMPL.d	B CA NA
LCS-201988	1	17-Oct-2023 00:32	320SMPL.d	B CA NA
ZZZZZZSD	100	17-Oct-2023 00:36	322SMPL.d	B CA NA
ZZZZZZMS	20	17-Oct-2023 00:39	323SMPL.d	B CA NA
ZZZZZZMSD	20	17-Oct-2023 00:41	324SMPL.d	B CA NA
ZZZZZZPDS	20	17-Oct-2023 00:43	325SMPL.d	B CA NA
CCV 34	1	17-Oct-2023 00:48	327_CCV.d	B CA NA
CCB 37	1	17-Oct-2023 00:50	328_CCB.d	B CA NA
MW-02	20	17-Oct-2023 00:52	329SMPL.d	B CA
MW-02SD	100	17-Oct-2023 00:54	330SMPL.d	B CA NA
MW-02MS	20	17-Oct-2023 00:57	331SMPL.d	CA NA
MW-02MSD	20	17-Oct-2023 00:59	332SMPL.d	B CA NA
MW-02PDS	20	17-Oct-2023 01:01	333SMPL.d	B CA NA
CCV 35	1	17-Oct-2023 01:06	335_CCV.d	B CA NA
CCB 38	1	17-Oct-2023 01:08	336_CCB.d	B CA NA
MW-01	20	17-Oct-2023 01:21	342SMPL.d	CA
MW-18	20	17-Oct-2023 01:26	344SMPL.d	CA
MW-19	20	17-Oct-2023 01:28	345SMPL.d	CA
MW-20	20	17-Oct-2023 01:31	346SMPL.d	CA
CCV 36	1	17-Oct-2023 01:33	347_CCV.d	B CA NA
CCB 39	1	17-Oct-2023 01:35	348_CCB.d	B CA NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630
Start Date: 16-Oct-2023 End Date: 17-Oct-2023

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
MW-21	20	17-Oct-2023 01:37	349SMPL.d	B CA NA
MW-22	20	17-Oct-2023 01:40	350SMPL.d	CA
MW-27R	20	17-Oct-2023 01:42	351SMPL.d	CA
MW-28	20	17-Oct-2023 01:44	352SMPL.d	CA
Field Duplicate-01	20	17-Oct-2023 01:49	354SMPL.d	CA
CCV 37	1	17-Oct-2023 02:00	359_CCV.d	B CA NA
CCB 40	1	17-Oct-2023 02:02	360_CCB.d	B CA NA
CCV 38	1	17-Oct-2023 02:05	361_CCV.d	B CA NA
CCB 41	1	17-Oct-2023 02:07	362_CCB.d	B CA NA
LLCCV2	1	17-Oct-2023 02:09	363LCV2.d	B CA NA
LLCCV5	1	17-Oct-2023 02:11	364LCV5.d	B CA NA
ICSA	1	17-Oct-2023 02:14	365ICSA.d	B CA NA
ICSAB	1	17-Oct-2023 02:16	366ICSB.d	B CA NA

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630
Start Date: 17-Oct-2023 End Date: 18-Oct-2023

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
ICV	1	17-Oct-2023 11:51	052_ICV.d	B CA NA
LLICV2	1	17-Oct-2023 11:56	054LCV2.d	B CA
LLICV5	1	17-Oct-2023 11:58	055LCV5.d	B CA
ICB	1	17-Oct-2023 12:08	057_ICB.d	B CA NA
ICSA	1	17-Oct-2023 12:10	058ICSA.d	B CA
ICSAB	1	17-Oct-2023 12:12	059ICSB.d	B CA
CCV 1	1	17-Oct-2023 12:18	061_CCV.d	B CA NA
CCB 1	1	17-Oct-2023 12:20	062_CCB.d	B CA NA
CCB 2	1	17-Oct-2023 12:27	064_CCB.d	B CA NA
CCV 2	1	17-Oct-2023 12:29	065_CCV.d	B CA NA
CCV 3	1	17-Oct-2023 12:54	076_CCV.d	B CA NA
CCB 3	1	17-Oct-2023 12:56	077_CCB.d	B CA NA
CCB 4	1	17-Oct-2023 12:58	078_CCB.d	B CA NA
CCV 4	1	17-Oct-2023 13:01	079_CCV.d	B CA NA
CCV 5	1	17-Oct-2023 13:25	090_CCV.d	B CA NA
CCV 6	1	17-Oct-2023 13:25	090_CCV.d	B CA NA
CCB 5	1	17-Oct-2023 13:28	091_CCB.d	B CA NA
CCB 6	1	17-Oct-2023 13:28	091_CCB.d	B CA NA
CCB 7	1	17-Oct-2023 13:30	092_CCB.d	B CA NA
CCV 7	1	17-Oct-2023 13:32	093_CCV.d	B CA NA
MW-02MS	1	17-Oct-2023 13:35	094SMPL.d	
MW-17	1	17-Oct-2023 13:53	102SMPL.d	CA
CCV 8	1	17-Oct-2023 13:57	104_CCV.d	B CA NA
CCB 8	1	17-Oct-2023 14:00	105_CCB.d	B CA NA
CCV 9	1	17-Oct-2023 14:02	106_CCV.d	B CA NA
ICCV 10	1	17-Oct-2023 14:32	117_ICV.d	B CA NA
LLCCV2	1	17-Oct-2023 14:36	119LCV2.d	B CA
LLCCV5	1	17-Oct-2023 14:41	121LCV5.d	B CA
ICCB 9	1	17-Oct-2023 14:46	123_ICB.d	B CA NA
CCV 11	1	17-Oct-2023 14:48	124_CCV.d	B CA NA
CCB 10	1	17-Oct-2023 14:50	125_CCB.d	B CA NA
MW-01	1	17-Oct-2023 15:06	132SMPL.d	B
MW-18	1	17-Oct-2023 15:09	133SMPL.d	B
MW-19	1	17-Oct-2023 15:11	134SMPL.d	B
CCB 11	1	17-Oct-2023 15:13	135SMPL.d	B CA NA
CCV 12	1	17-Oct-2023 15:15	136_CCV.d	B CA NA
CCB 12	1	17-Oct-2023 15:18	137_CCB.d	B CA NA
ICCV 13	1	17-Oct-2023 16:31	157_ICV.d	B CA NA
LLCCV2	1	17-Oct-2023 16:36	159LCV2.d	B CA
LLCCV5	1	17-Oct-2023 16:38	160LCV5.d	B CA
ICCB 13	1	17-Oct-2023 16:43	162_ICB.d	B CA NA
CCV 14	1	17-Oct-2023 16:47	163_CCV.d	B CA NA
CCB 14	1	17-Oct-2023 16:49	164_CCB.d	B CA NA
MW-17	1	17-Oct-2023 16:52	165SMPL.d	B
MW-20	1	17-Oct-2023 16:54	166SMPL.d	B
MW-22	1	17-Oct-2023 16:56	167SMPL.d	B
MW-27R	1	17-Oct-2023 16:59	168SMPL.d	B
MW-28	1	17-Oct-2023 17:01	169SMPL.d	B
Field Blank-01	1	17-Oct-2023 17:03	170SMPL.d	B CA
Field Duplicate-01	1	17-Oct-2023 17:05	171SMPL.d	B

FORM 13 - ANALYSIS RUN LOG

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630
Start Date: 17-Oct-2023 End Date: 18-Oct-2023

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

Sample No.	D/F	Time	FileID	Analytes
MW-02MS	1	17-Oct-2023 17:08	172SMPL.d	B
CCV 15	1	17-Oct-2023 17:14	175_CCV.d	B CA NA
CCB 15	1	17-Oct-2023 17:17	176_CCB.d	B CA NA
CCV 16	1	17-Oct-2023 17:42	187_CCV.d	B CA NA
CCB 16	1	17-Oct-2023 17:44	188_CCB.d	B CA NA
CCV 17	1	17-Oct-2023 17:46	189_CCV.d	B CA NA
CCV 18	1	17-Oct-2023 17:49	190_CCV.d	B CA NA
CCB 17	1	17-Oct-2023 17:56	192_CCB.d	B CA NA
CCV 19	1	17-Oct-2023 18:21	203_CCV.d	B CA NA
CCB 18	1	17-Oct-2023 18:24	204_CCB.d	B CA NA
CCB 19	1	17-Oct-2023 18:26	205_CCB.d	B CA NA
CCV 20	1	17-Oct-2023 18:51	216_CCV.d	B CA NA
CCB 20	1	17-Oct-2023 18:53	217_CCB.d	B CA NA
CCV 21	1	17-Oct-2023 19:18	228_CCV.d	B CA NA
CCB 21	1	17-Oct-2023 19:20	229_CCB.d	B CA NA
CCV 22	1	17-Oct-2023 19:45	240_CCV.d	B CA NA
CCB 22	1	17-Oct-2023 19:47	241_CCB.d	B CA NA
CCV 23	1	17-Oct-2023 20:00	245_CCV.d	B CA NA
CCB 23	1	17-Oct-2023 20:02	246_CCB.d	B CA NA
CCV 24	1	17-Oct-2023 20:27	257_CCV.d	B CA NA
CCB 24	1	17-Oct-2023 20:29	258_CCB.d	B CA NA
CCV 25	1	17-Oct-2023 20:41	260_CCV.d	B CA NA
CCV 26	1	17-Oct-2023 21:02	269_CCV.d	B CA NA
CCB 25	1	17-Oct-2023 21:04	270_CCB.d	B CA NA
CCV 27	1	17-Oct-2023 21:20	277_CCV.d	B CA NA
CCB 26	1	17-Oct-2023 21:22	278_CCB.d	B CA NA
CCV 28	1	17-Oct-2023 21:32	280_CCV.d	B CA NA
CCV 29	1	17-Oct-2023 21:46	285_CCV.d	B CA NA
CCB 27	1	17-Oct-2023 21:49	286_CCB.d	B CA NA
CCV 30	1	17-Oct-2023 22:07	294_CCV.d	B CA NA
CCB 28	1	17-Oct-2023 22:09	295_CCB.d	B CA NA
CCV 31	1	17-Oct-2023 22:34	306_CCV.d	B CA NA
CCB 29	1	17-Oct-2023 22:36	307_CCB.d	B CA NA
CCV 32	1	17-Oct-2023 22:48	309_CCV.d	B CA NA
ICCV 33	1	17-Oct-2023 23:53	336_ICV.d	B CA NA
LLCCV5	1	17-Oct-2023 23:55	337LCV5.d	B CA
LLCCV2	1	17-Oct-2023 23:57	338LCV2.d	B CA
ICCB 30	1	18-Oct-2023 00:00	339_ICB.d	B CA NA
CCV 34	1	18-Oct-2023 00:05	341_CCV.d	B CA NA
CCB 31	1	18-Oct-2023 00:07	342_CCB.d	B CA NA
LLCCV2	1	18-Oct-2023 00:10	343LCV2.d	B CA
LLCCV5	1	18-Oct-2023 00:12	344LCV5.d	B CA
ICSA	1	18-Oct-2023 00:14	345ICSA.d	B CA
ICSAB	1	18-Oct-2023 00:17	346ICSB.d	B CA

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

ICB	Date: 16-Oct-2023 10:31	Seq: 7610785	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.46	11	20	

CCB 1	Date: 16-Oct-2023 10:50	Seq: 7610791	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	21.31	11	20	
Sodium	39.86	14	200	

CCB 2	Date: 16-Oct-2023 11:17	Seq: 7610793	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	27.65	11	20	
Sodium	38.22	14	200	

CCB 3	Date: 16-Oct-2023 11:19	Seq: 7610794	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	18.26	11	20	

CCB 5	Date: 16-Oct-2023 11:50	Seq: 7611081	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	26.91	11	20	
Calcium	102.5	34	500	
Sodium	330	14	200	

CCB 4	Date: 16-Oct-2023 11:50	Seq: 7610798	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	26.91	11	20	
Calcium	102.5	34	500	
Sodium	330	14	200	

CCB 6	Date: 16-Oct-2023 11:56	Seq: 7610800	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	28.52	11	20	
Sodium	74.58	14	200	

CCB 7	Date: 16-Oct-2023 11:56	Seq: 7611083	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	28.52	11	20	
Sodium	74.58	14	200	

CCB 8	Date: 16-Oct-2023 12:35	Seq: 7611096	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Sodium	155	14	200	

CCB 9	Date: 16-Oct-2023 13:04	Seq: 7611076	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	61.33	11	20	
Calcium	115	34	500	
Sodium	339.6	14	200	

CCB 10	Date: 16-Oct-2023 13:31	Seq: 7611371	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	55.28	11	20	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

	Calcium	118.5	34	500	
	Sodium	208.2	14	200	
CCB 11	Date: 16-Oct-2023 13:52	Seq: 7611372	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	44.01	11	20	
CCB 12	Date: 16-Oct-2023 14:20	Seq: 7611444	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	30.81	11	20	
	Sodium	105.2	14	200	
CCB 13	Date: 16-Oct-2023 14:24	Seq: 7611450	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	17.02	11	20	
CCB 14	Date: 16-Oct-2023 14:52	Seq: 7611538	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	26.37	11	20	
	Sodium	39.41	14	200	
CCB 15	Date: 16-Oct-2023 14:55	Seq: 7611539	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	13.33	11	20	
	Sodium	-15.12	14	200	
CCB 16	Date: 16-Oct-2023 15:22	Seq: 7611707	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	20.74	11	20	
	Calcium	38.3	34	500	
	Sodium	80	14	200	
CCB 17	Date: 16-Oct-2023 15:25	Seq: 7611708	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	13.14	11	20	
	Sodium	24.01	14	200	
CCB 18	Date: 16-Oct-2023 15:54	Seq: 7611810	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	16.3	11	20	
	Calcium	210	34	500	
	Sodium	1369	14	200	
CCB 19	Date: 16-Oct-2023 16:22	Seq: 7612170	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	31.81	11	20	
	Sodium	92.89	14	200	
CCB 20	Date: 16-Oct-2023 17:10	Seq: 7612369	D/F: 1	Units: ug/L	
	Analyte	**Result**	**MDL**	**Report Limit**	
	Boron	49.44	11	20	
	Sodium	111.5	14	200	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

CCB 21	Date: 16-Oct-2023 17:37	Seq: 7612381	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	46.14	11	20	
Calcium	705	34	500	
Sodium	584.3	14	200	

CCB 22	Date: 16-Oct-2023 17:40	Seq: 7612382	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	18.97	11	20	
Calcium	168.4	34	500	
Sodium	172.9	14	200	

CCB 23	Date: 16-Oct-2023 18:08	Seq: 7612394	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	31.11	11	20	
Calcium	463	34	500	
Sodium	2663	14	200	

CCB 24	Date: 16-Oct-2023 18:31	Seq: 7612419	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	29.06	11	20	
Calcium	101.6	34	500	
Sodium	3540	14	200	

CCB 25	Date: 16-Oct-2023 20:07	Seq: 7612965	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	15.01	11	20	
Sodium	23.08	14	200	

CCB 26	Date: 16-Oct-2023 20:34	Seq: 7612976	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	32.08	11	20	
Calcium	405.4	34	500	
Sodium	635.6	14	200	

CCB 28	Date: 16-Oct-2023 21:45	Seq: 7612996	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	48.1	34	500	
Sodium	31.76	14	200	

CCB 29	Date: 16-Oct-2023 22:07	Seq: 7613000	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	42.48	11	20	
Calcium	145.2	34	500	
Sodium	148.6	14	200	

CCB 30	Date: 16-Oct-2023 22:25	Seq: 7613008	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	26.87	11	20	
Calcium	364.2	34	500	
Sodium	442.9	14	200	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

CCB 31	Date: 16-Oct-2023 22:46	Seq: 7613017	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	18.52	11	20	
Calcium	66.23	34	500	
Sodium	193.9	14	200	

CCB 32	Date: 16-Oct-2023 22:57	Seq: 7613028	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	14.61	11	20	
Calcium	83.53	34	500	
Sodium	68.22	14	200	

CCB 33	Date: 16-Oct-2023 23:20	Seq: 7613038	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	14.3	11	20	
Calcium	79.93	34	500	
Sodium	58.48	14	200	

CCB 34	Date: 16-Oct-2023 23:47	Seq: 7613050	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.6	11	20	
Calcium	64.38	34	500	
Sodium	54.99	14	200	

CCB 35	Date: 17-Oct-2023 00:07	Seq: 7613076	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	68.7	34	500	
Sodium	57.65	14	200	

CCB 36	Date: 17-Oct-2023 00:27	Seq: 7613085	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	56.77	34	500	
Sodium	40.18	14	200	

CCB 37	Date: 17-Oct-2023 00:50	Seq: 7613095	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.76	11	20	
Calcium	66.47	34	500	
Sodium	58.7	14	200	

CCB 38	Date: 17-Oct-2023 01:08	Seq: 7613072	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	14.7	11	20	
Calcium	84	34	500	
Sodium	66.32	14	200	

CCB 39	Date: 17-Oct-2023 01:35	Seq: 7613111	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	69.7	34	500	
Sodium	66.22	14	200	

CCB 40	Date: 17-Oct-2023 02:02	Seq: 7613123	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449157
Instrument:ICPMS07
Method:SW6020A

	Boron	16.98	11	20
	Calcium	170.7	34	500
	Sodium	91.26	14	200

CCB 41 Date: 17-Oct-2023 02:07 Seq: 7613125 D/F: 1 Units: ug/L

Analyte	Result	MDL	Report Limit
Boron	20.07	11	20
Calcium	109	34	500
Sodium	89.75	14	200

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

CCB 1	Date: 17-Oct-2023 12:20	Seq: 7614459	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	123.3	34	500	

CCB 2	Date: 17-Oct-2023 12:27	Seq: 7614461	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	-17.68	11	20	

CCB 3	Date: 17-Oct-2023 12:56	Seq: 7614464	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	13.29	11	20	
Calcium	442.2	34	500	

CCB 4	Date: 17-Oct-2023 12:58	Seq: 7614465	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	167.7	34	500	

CCB 6	Date: 17-Oct-2023 13:28	Seq: 7614507	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	127	34	500	

CCB 5	Date: 17-Oct-2023 13:28	Seq: 7614456	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	127	34	500	

CCB 7	Date: 17-Oct-2023 13:30	Seq: 7614508	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	57.29	34	500	

CCB 8	Date: 17-Oct-2023 14:00	Seq: 7614586	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	11.3	11	20	
Calcium	75.12	34	500	

CCB 10	Date: 17-Oct-2023 14:50	Seq: 7615190	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	17.06	11	20	

CCB 11	Date: 17-Oct-2023 15:13	Seq: 7615200	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	297.9	34	500	

CCB 12	Date: 17-Oct-2023 15:18	Seq: 7615202	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	23.84	11	20	
Calcium	74.15	34	500	

CCB 14	Date: 17-Oct-2023 16:49	Seq: 7615594	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	35.65	34	500	

CCB 15	Date: 17-Oct-2023 17:17	Seq: 7615597	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	93.25	34	500	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

CCB 16	Date: 17-Oct-2023 17:44	Seq: 7615609	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	20.55	11	20	
Calcium	315.2	34	500	

CCB 18	Date: 17-Oct-2023 18:24	Seq: 7615645	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	22.92	11	20	
Calcium	348.1	34	500	

CCB 19	Date: 17-Oct-2023 18:26	Seq: 7615646	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	175.8	34	500	

CCB 20	Date: 17-Oct-2023 18:53	Seq: 7616044	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	34.58	11	20	
Calcium	215.7	34	500	

CCB 21	Date: 17-Oct-2023 19:20	Seq: 7616056	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	28.73	11	20	
Calcium	147.6	34	500	

CCB 22	Date: 17-Oct-2023 19:47	Seq: 7616068	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	39.03	11	20	
Calcium	590.4	34	500	

CCB 23	Date: 17-Oct-2023 20:02	Seq: 7616073	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	13.31	11	20	
Calcium	39.16	34	500	

CCB 24	Date: 17-Oct-2023 20:29	Seq: 7616085	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	41.85	34	500	

CCB 25	Date: 17-Oct-2023 21:04	Seq: 7616097	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	256.5	11	20	
Calcium	1336	34	500	

CCB 26	Date: 17-Oct-2023 21:22	Seq: 7616100	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	86.79	11	20	
Calcium	106.6	34	500	

CCB 27	Date: 17-Oct-2023 21:49	Seq: 7616128	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	61.45	11	20	

CCB EXCEPTIONS REPORT

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Run ID:ICPMS07_449322
Instrument:ICPMS07
Method:SW6020A

CCB 28	Date: 17-Oct-2023 22:09	Seq: 7616107	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	66.4	11	20	
Calcium	50.8	34	500	

CCB 29	Date: 17-Oct-2023 22:36	Seq: 7616119	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	61.93	11	20	
Calcium	1628	34	500	

ICCB 30	Date: 18-Oct-2023 00:00	Seq: 7616154	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Calcium	151.9	34	500	

CCB 31	Date: 18-Oct-2023 00:07	Seq: 7616135	D/F: 1	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	
Boron	22.21	11	20	
Calcium	174.1	34	500	

Client: TRC Corporation
Project: NRG Limestone -Appendix III
Work Order: HS23100630

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23100630-01	MW-01	Water		10-Oct-2023 09:25	10-Oct-2023 13:20	☐
HS23100630-02	MW-02	Water		10-Oct-2023 08:40	10-Oct-2023 13:20	☐
HS23100630-03	MW-17	Water		10-Oct-2023 10:05	10-Oct-2023 13:20	☐
HS23100630-04	MW-18	Water		10-Oct-2023 11:00	10-Oct-2023 13:20	☐
HS23100630-05	MW-19	Water		10-Oct-2023 11:05	10-Oct-2023 13:20	☐
HS23100630-06	MW-20	Water		10-Oct-2023 10:15	10-Oct-2023 13:20	☐
HS23100630-07	MW-21	Water		10-Oct-2023 09:40	10-Oct-2023 13:20	☐
HS23100630-08	MW-22	Water		10-Oct-2023 09:05	10-Oct-2023 13:20	☐
HS23100630-09	MW-27R	Water		10-Oct-2023 09:55	10-Oct-2023 13:20	☐
HS23100630-10	MW-28	Water		10-Oct-2023 09:10	10-Oct-2023 13:20	☐
HS23100630-11	Field Blank-01	Water		10-Oct-2023 11:20	10-Oct-2023 13:20	☐
HS23100630-12	Field Duplicate-01	Water		10-Oct-2023 10:00	10-Oct-2023 13:20	☐

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-01
Collection Date: 10-Oct-2023 09:25

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-01
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0382**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 15:06
Calcium	**54.4**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:21
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**273**		**2.00**	**5.00**	**mg/L**	10	16-Oct-2023 14:52
Sulfate	< 0.200		0.200	0.500	mg/L	1	17-Oct-2023 10:44
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**682**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-02
Collection Date: 10-Oct-2023 08:40

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-02
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	< 0.220		0.220	0.400	mg/L	20	17-Oct-2023 00:52
Calcium	**147**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 00:52
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**310**		**4.00**	**10.0**	**mg/L**	20	16-Oct-2023 14:58
Sulfate	**527**		**4.00**	**10.0**	**mg/L**	20	16-Oct-2023 14:58
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**1,380**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-17
Collection Date: 10-Oct-2023 10:05

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-03
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0207**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 16:52
Calcium	**3.55**		**0.0340**	**0.500**	**mg/L**	1	17-Oct-2023 13:53
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**8.58**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 15:15
Sulfate	**7.67**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 15:15
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**100.0**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 12:00
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-18
Collection Date: 10-Oct-2023 11:00

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-04
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0349**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 15:09
Calcium	**65.4**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:26
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**8.31**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 15:50
Sulfate	**31.1**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 15:50
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**326**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-19
Collection Date: 10-Oct-2023 11:05

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-05
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0335**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 15:11
Calcium	**31.4**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:28
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**36.9**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 15:55
Sulfate	**96.7**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 15:55
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**308**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-20
Collection Date: 10-Oct-2023 10:15

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-06
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0241**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 16:54
Calcium	**28.6**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:31
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**17.4**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 16:01
Sulfate	**26.8**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 16:01
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**280**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-21
Collection Date: 10-Oct-2023 09:40

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-07
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.652**		**0.220**	**0.400**	**mg/L**	20	17-Oct-2023 01:37
Calcium	**55.6**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:37
Sodium	**14.4**		**0.280**	**4.00**	**mg/L**	20	17-Oct-2023 01:37
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**14.6**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 16:07
Sulfate	**254**		**1.00**	**2.50**	**mg/L**	5	16-Oct-2023 16:13
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**402**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

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Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-22
Collection Date: 10-Oct-2023 09:05

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-08
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0178**	J	**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 16:56
Calcium	**50.0**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:40
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**33.3**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 16:18
Sulfate	**131**		**1.00**	**2.50**	**mg/L**	5	17-Oct-2023 10:50
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**332**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-27R
Collection Date: 10-Oct-2023 09:55

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-09
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.132**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 16:59
Calcium	**430**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:42
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**1,770**		**10.0**	**25.0**	**mg/L**	50	16-Oct-2023 16:24
Sulfate	**638**		**10.0**	**25.0**	**mg/L**	50	16-Oct-2023 16:24
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**3,640**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: MW-28
Collection Date: 10-Oct-2023 09:10

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-10
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.193**		**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:01
Calcium	**540**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:44
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**2,290**		**10.0**	**25.0**	**mg/L**	50	16-Oct-2023 16:30
Sulfate	**748**		**10.0**	**25.0**	**mg/L**	50	16-Oct-2023 16:30
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**5,690**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: Field Blank-01
Collection Date: 10-Oct-2023 11:20

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-11
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	< 0.0110		0.0110	0.0200	mg/L	1	17-Oct-2023 17:03
Calcium	**2.65**		**0.0340**	**0.500**	**mg/L**	1	17-Oct-2023 17:03
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	< 0.200		0.200	0.500	mg/L	1	16-Oct-2023 16:36
Sulfate	< 0.200		0.200	0.500	mg/L	1	16-Oct-2023 16:36
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**108**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Privileged and Confidential

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
Sample ID: Field Duplicate-01
Collection Date: 10-Oct-2023 10:00

ANALYTICAL REPORT
WorkOrder:HS23100630
Lab ID:HS23100630-12
Matrix:Water

ANALYSES	RESULT	QUAL	SDL	MQL	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020A**			Prep:SW3010A / 16-Oct-2023		Analyst: MSC
Boron	**0.0166**	J	**0.0110**	**0.0200**	**mg/L**	1	17-Oct-2023 17:05
Calcium	**34.0**		**0.680**	**10.0**	**mg/L**	20	17-Oct-2023 01:49
ANIONS BY E300.0, REV 2.1, 1993		**Method:E300**					Analyst: TH
Chloride	**36.8**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 16:41
Sulfate	**96.7**		**0.200**	**0.500**	**mg/L**	1	16-Oct-2023 16:41
TOTAL DISSOLVED SOLIDS BY SM2540C -2011		**Method:M2540C**					Analyst: DC
Total Dissolved Solids (Residue, Filterable)	**292**		**5.00**	**10.0**	**mg/L**	1	16-Oct-2023 13:30
SUBCONTRACT ANALYSIS - FLOURIDE		**Method:NA**					Analyst: SUBHO
Subcontract Analysis	See Attached		0			1	16-Oct-2023 09:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

Batch ID: 201988 **Start Date:** 16 Oct 2023 08:00 **End Date:** 16 Oct 2023 08:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS23100630-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-03		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-06		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-08		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-09		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-10		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-11		10 (mL)	10 (mL)	1	120 plastic HNO3
HS23100630-12		10 (mL)	10 (mL)	1	120 plastic HNO3

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 201988 (0)	**Test Name :** ICP-MS METALS BY SW6020A				**Matrix:** Water	
HS23100630-01	MW-01	10 Oct 2023 09:25		16 Oct 2023 08:00	17 Oct 2023 15:06	1
HS23100630-01	MW-01	10 Oct 2023 09:25		16 Oct 2023 08:00	17 Oct 2023 01:21	20
HS23100630-02	MW-02	10 Oct 2023 08:40		16 Oct 2023 08:00	17 Oct 2023 00:52	20
HS23100630-03	MW-17	10 Oct 2023 10:05		16 Oct 2023 08:00	17 Oct 2023 16:52	1
HS23100630-03	MW-17	10 Oct 2023 10:05		16 Oct 2023 08:00	17 Oct 2023 13:53	1
HS23100630-04	MW-18	10 Oct 2023 11:00		16 Oct 2023 08:00	17 Oct 2023 15:09	1
HS23100630-04	MW-18	10 Oct 2023 11:00		16 Oct 2023 08:00	17 Oct 2023 01:26	20
HS23100630-05	MW-19	10 Oct 2023 11:05		16 Oct 2023 08:00	17 Oct 2023 15:11	1
HS23100630-05	MW-19	10 Oct 2023 11:05		16 Oct 2023 08:00	17 Oct 2023 01:28	20
HS23100630-06	MW-20	10 Oct 2023 10:15		16 Oct 2023 08:00	17 Oct 2023 16:54	1
HS23100630-06	MW-20	10 Oct 2023 10:15		16 Oct 2023 08:00	17 Oct 2023 01:31	20
HS23100630-07	MW-21	10 Oct 2023 09:40		16 Oct 2023 08:00	17 Oct 2023 01:37	20
HS23100630-08	MW-22	10 Oct 2023 09:05		16 Oct 2023 08:00	17 Oct 2023 16:56	1
HS23100630-08	MW-22	10 Oct 2023 09:05		16 Oct 2023 08:00	17 Oct 2023 01:40	20
HS23100630-09	MW-27R	10 Oct 2023 09:55		16 Oct 2023 08:00	17 Oct 2023 16:59	1
HS23100630-09	MW-27R	10 Oct 2023 09:55		16 Oct 2023 08:00	17 Oct 2023 01:42	20
HS23100630-10	MW-28	10 Oct 2023 09:10		16 Oct 2023 08:00	17 Oct 2023 17:01	1
HS23100630-10	MW-28	10 Oct 2023 09:10		16 Oct 2023 08:00	17 Oct 2023 01:44	20
HS23100630-11	Field Blank-01	10 Oct 2023 11:20		16 Oct 2023 08:00	17 Oct 2023 17:03	1
HS23100630-12	Field Duplicate-01	10 Oct 2023 10:00		16 Oct 2023 08:00	17 Oct 2023 17:05	1
HS23100630-12	Field Duplicate-01	10 Oct 2023 10:00		16 Oct 2023 08:00	17 Oct 2023 01:49	20
Batch ID: R449144 (0)	**Test Name :** SUBCONTRACT ANALYSIS - FLOURIDE				**Matrix:** Water	
HS23100630-01	MW-01	10 Oct 2023 09:25			16 Oct 2023 09:10	1
HS23100630-02	MW-02	10 Oct 2023 08:40			16 Oct 2023 09:10	1
HS23100630-03	MW-17	10 Oct 2023 10:05			16 Oct 2023 09:10	1
HS23100630-04	MW-18	10 Oct 2023 11:00			16 Oct 2023 09:10	1
HS23100630-05	MW-19	10 Oct 2023 11:05			16 Oct 2023 09:10	1
HS23100630-06	MW-20	10 Oct 2023 10:15			16 Oct 2023 09:10	1
HS23100630-07	MW-21	10 Oct 2023 09:40			16 Oct 2023 09:10	1
HS23100630-08	MW-22	10 Oct 2023 09:05			16 Oct 2023 09:10	1
HS23100630-09	MW-27R	10 Oct 2023 09:55			16 Oct 2023 09:10	1
HS23100630-10	MW-28	10 Oct 2023 09:10			16 Oct 2023 09:10	1
HS23100630-11	Field Blank-01	10 Oct 2023 11:20			16 Oct 2023 09:10	1
HS23100630-12	Field Duplicate-01	10 Oct 2023 10:00			16 Oct 2023 09:10	1

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
WorkOrder: HS23100630

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R449292 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23100630-01	MW-01	10 Oct 2023 09:25			16 Oct 2023 14:52	10
HS23100630-02	MW-02	10 Oct 2023 08:40			16 Oct 2023 14:58	20
HS23100630-03	MW-17	10 Oct 2023 10:05			16 Oct 2023 15:15	1
HS23100630-04	MW-18	10 Oct 2023 11:00			16 Oct 2023 15:50	1
HS23100630-05	MW-19	10 Oct 2023 11:05			16 Oct 2023 15:55	1
HS23100630-06	MW-20	10 Oct 2023 10:15			16 Oct 2023 16:01	1
HS23100630-07	MW-21	10 Oct 2023 09:40			16 Oct 2023 16:13	5
HS23100630-07	MW-21	10 Oct 2023 09:40			16 Oct 2023 16:07	1
HS23100630-08	MW-22	10 Oct 2023 09:05			16 Oct 2023 16:18	1
HS23100630-09	MW-27R	10 Oct 2023 09:55			16 Oct 2023 16:24	50
HS23100630-10	MW-28	10 Oct 2023 09:10			16 Oct 2023 16:30	50
HS23100630-11	Field Blank-01	10 Oct 2023 11:20			16 Oct 2023 16:36	1
HS23100630-12	Field Duplicate-01	10 Oct 2023 10:00			16 Oct 2023 16:41	1
Batch ID: R449336 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23100630-01	MW-01	10 Oct 2023 09:25			16 Oct 2023 12:00	1
HS23100630-02	MW-02	10 Oct 2023 08:40			16 Oct 2023 12:00	1
HS23100630-03	MW-17	10 Oct 2023 10:05			16 Oct 2023 12:00	1
Batch ID: R449338 (0)	**Test Name :** TOTAL DISSOLVED SOLIDS BY SM2540C-2011				**Matrix:** Water	
HS23100630-04	MW-18	10 Oct 2023 11:00			16 Oct 2023 13:30	1
HS23100630-05	MW-19	10 Oct 2023 11:05			16 Oct 2023 13:30	1
HS23100630-06	MW-20	10 Oct 2023 10:15			16 Oct 2023 13:30	1
HS23100630-07	MW-21	10 Oct 2023 09:40			16 Oct 2023 13:30	1
HS23100630-08	MW-22	10 Oct 2023 09:05			16 Oct 2023 13:30	1
HS23100630-09	MW-27R	10 Oct 2023 09:55			16 Oct 2023 13:30	1
HS23100630-10	MW-28	10 Oct 2023 09:10			16 Oct 2023 13:30	1
HS23100630-11	Field Blank-01	10 Oct 2023 11:20			16 Oct 2023 13:30	1
HS23100630-12	Field Duplicate-01	10 Oct 2023 10:00			16 Oct 2023 13:30	1
Batch ID: R449362 (0)	**Test Name :** ANIONS BY E300.0, REV 2.1, 1993				**Matrix:** Water	
HS23100630-01	MW-01	10 Oct 2023 09:25			17 Oct 2023 10:44	1
HS23100630-08	MW-22	10 Oct 2023 09:05			17 Oct 2023 10:50	5

WorkOrder: HS23100630
InstrumentID: ICPMS07
Test Code: ICP_TW
Test Number: SW6020A
Test Name: ICP-MS Metals by SW6020A

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Boron	7440-42-8	0.0125	0.0200	0.0110	0.0200
A	Calcium	7440-70-2	0.0500	0.0428	0.0340	0.500
A	Sodium	7440-23-5	0.0500	0.0614	0.0140	0.200

WorkOrder: HS23100630
InstrumentID: Subcontract
Test Code: Sub_Flouride
Test Number: NA
Test Name: Subcontract Analysis - Flouride

METHOD DETECTION / REPORTING LIMITS

Matrix:

Units:

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Subcontract Analysis		0	0	0	0

WorkOrder: HS23100630
InstrumentID: ICS-Integrion
Test Code: 300_W
Test Number: E300
Test Name: Anions by E300.0, Rev 2.1, 1993

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Chloride	16887-00-6	0.500	0.348	0.200	0.500
A	Sulfate	14808-79-8	0.500	0.432	0.200	0.500

WorkOrder: HS23100630
InstrumentID: Balance1
Test Code: TDS_W 2540C
Test Number: M2540C
Test Name: Total Dissolved Solids by SM2540C

METHOD DETECTION / REPORTING LIMITS

Matrix: Aqueous **Units:** mg/L

Type	Analyte	CAS	DCS Spike	DCS	MDL	PQL
A	Total Dissolved Solids (Residue, Filterable)	TDS	5.00	4.00	5.00	10.0

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: 201988 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

MBLK Sample ID: **MBLK-201988** Units: **mg/L** Analysis Date: **17-Oct-2023 00:30**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613086** PrepDate: **16-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	< 0.0110	0.0200								
Calcium	0.0628	0.500								J
Sodium	0.02461	0.200								J

LCS Sample ID: **LCS-201988** Units: **mg/L** Analysis Date: **17-Oct-2023 00:32**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613087** PrepDate: **16-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4275	0.0200	0.5	0	85.5	80 - 120				
Calcium	4.792	0.500	5	0	95.8	80 - 120				
Sodium	4.923	0.200	5	0	98.5	80 - 120				

MS Sample ID: **HS23100630-02MS** Units: **mg/L** Analysis Date: **17-Oct-2023 17:08**
Client ID: Run ID: **ICPMS07_449322** SeqNo: **7615475** PrepDate: **16-Oct-2023** DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5385	0.0200	0.5	0	108	80 - 120				

MS Sample ID: **HS23100607-19MS** Units: **mg/L** Analysis Date: **17-Oct-2023 00:39**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613090** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.099	0.400	0.25	0.9349	65.6	80 - 120				S
Calcium	136	10.0	10	122.3	137	80 - 120				SO
Sodium	229.6	4.00	20	205.8	119	80 - 120				O

MS Sample ID: **HS23100630-02MS** Units: **mg/L** Analysis Date: **17-Oct-2023 00:57**
Client ID: **MW-02** Run ID: **ICPMS07_449157** SeqNo: **7613098** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	152.1	10.0	5	147.3	96.1	80 - 120				O
Sodium	79.91	4.00	5	76.81	62.2	80 - 120				SO

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: 201988 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

MSD Sample ID: **HS23100630-02MSD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:59**
Client ID: **MW-02** Run ID: **ICPMS07_449157** SeqNo: **7613099** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4434	0.400	0.51	0	86.9	80 - 120	0.4053	8.97	20	
Calcium	152.1	10.0	5	147.3	96.1	80 - 120	152.1	0.00135	20	O
Sodium	82.45	4.00	5	76.81	113	80 - 120	79.91	3.13	20	O

MSD Sample ID: **HS23100607-19MSD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:41**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613091** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	1.103	0.400	2.5	0.9349	6.73	80 - 120	1.099	0.391	20	S
Calcium	135.5	10.0	10	122.3	132	80 - 120	136	0.367	20	SO
Sodium	223.7	4.00	20	205.8	89.6	80 - 120	229.6	2.58	20	O

PDS Sample ID: **HS23100630-02PDS** Units: **mg/L** Analysis Date: **17-Oct-2023 01:01**
Client ID: **MW-02** Run ID: **ICPMS07_449157** SeqNo: **7613069** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	9.681	0.400	10	0.06681	96.1	75 - 125				
Calcium	332.7	10.0	200	147.3	92.7	75 - 125				
Sodium	266.7	4.00	200	76.81	95.0	75 - 125				

PDS Sample ID: **HS23100607-19PDS** Units: **mg/L** Analysis Date: **17-Oct-2023 00:43**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613092** PrepDate: **16-Oct-2023** DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	10.04	0.400	10	0.9349	91.1	75 - 125				
Calcium	314.3	10.0	200	122.3	96.0	75 - 125				
Sodium	406.7	4.00	200	205.8	100	75 - 125				

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: 201988 (0) **Instrument: ICPMS07** **Method: ICP-MS METALS BY SW6020A**

SD Sample ID: **HS23100630-02SD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:54**
Client ID: **MW-02** Run ID: **ICPMS07_449157** SeqNo: **7613097** PrepDate: **16-Oct-2023** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 1.10	2.00					0.06681	0	10	
Calcium	150	50.0					147.3	1.85	10	
Sodium	76.47	20.0					76.81	0.433	10	

SD Sample ID: **HS23100607-19SD** Units: **mg/L** Analysis Date: **17-Oct-2023 00:36**
Client ID: Run ID: **ICPMS07_449157** SeqNo: **7613089** PrepDate: **16-Oct-2023** DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Boron	< 1.10	2.00					0.9349	0	10	
Calcium	124.4	50.0					122.3	1.7	10	
Sodium	219.3	20.0					205.8	6.58	10	

The following samples were analyzed in this batch:

HS23100630-01	HS23100630-02	HS23100630-03	HS23100630-04
HS23100630-05	HS23100630-06	HS23100630-07	HS23100630-08
HS23100630-09	HS23100630-10	HS23100630-11	HS23100630-12

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: R449292 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0, REV 2.1, 1993**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **16-Oct-2023 14:34**
Client ID: Run ID: **ICS-Integrion_449292** SeqNo: **7613618** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	< 0.200	0.500								
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **16-Oct-2023 14:46**
Client ID: Run ID: **ICS-Integrion_449292** SeqNo: **7613619** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.46	0.500	20	0	97.3	90 - 110				
Sulfate	19	0.500	20	0	95.0	90 - 110				

MS Sample ID: **HS23100630-02MS** Units: **mg/L** Analysis Date: **16-Oct-2023 15:03**
Client ID: **MW-02** Run ID: **ICS-Integrion_449292** SeqNo: **7613622** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	493.5	10.0	200	310.4	91.6	80 - 120				
Sulfate	650.1	10.0	200	527	61.6	80 - 120				S

MS Sample ID: **HS23100386-01MS** Units: **mg/L** Analysis Date: **16-Oct-2023 17:28**
Client ID: Run ID: **ICS-Integrion_449292** SeqNo: **7613641** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	46	0.500	10	37.4	85.9	80 - 120				
Sulfate	179.7	0.500	10	170.8	88.9	80 - 120				EO

MSD Sample ID: **HS23100630-02MSD** Units: **mg/L** Analysis Date: **16-Oct-2023 15:09**
Client ID: **MW-02** Run ID: **ICS-Integrion_449292** SeqNo: **7613623** PrepDate: DF: **20**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	497.6	10.0	200	310.4	93.6	80 - 120	493.5	0.835	20	
Sulfate	658	10.0	200	527	65.5	80 - 120	650.1	1.21	20	S

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: **R449292 (0)** **Instrument:** **ICS-Integrion** **Method:** **ANIONS BY E300.0, REV 2.1, 1993**

MSD Sample ID: **HS23100386-01MSD** Units: **mg/L** Analysis Date: **16-Oct-2023 17:34**
Client ID: Run ID: **ICS-Integrion_449292** SeqNo: **7613642** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	45.84	0.500	10	37.4	84.3	80 - 120	46	0.351	20	
Sulfate	178.3	0.500	10	170.8	75.4	80 - 120	179.7	0.751	20	SEO

The following samples were analyzed in this batch:

HS23100630-01	HS23100630-02	HS23100630-03	HS23100630-04
HS23100630-05	HS23100630-06	HS23100630-07	HS23100630-08
HS23100630-09	HS23100630-10	HS23100630-11	HS23100630-12

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: R449336 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-10016023** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: Run ID: **Balance1_449336** SeqNo: **7614384** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **WLCS-10162023** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: Run ID: **Balance1_449336** SeqNo: **7614383** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1074	10.0	1000	0	107	85 - 115				

DUP Sample ID: **HS23100630-02DUP** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: **MW-02** Run ID: **Balance1_449336** SeqNo: **7614376** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1378	10.0					1380	0.145	20	

DUP Sample ID: **HS23100607-19DUP** Units: **mg/L** Analysis Date: **16-Oct-2023 12:00**
Client ID: Run ID: **Balance1_449336** SeqNo: **7614363** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1152	10.0					1156	0.347	20	

The following samples were analyzed in this batch: HS23100630-01 HS23100630-02 HS23100630-03

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: R449338 (0) **Instrument:** Balance1 **Method:** TOTAL DISSOLVED SOLIDS BY SM2540C-2011

MBLK Sample ID: **WMBLK-10162023** Units: **mg/L** Analysis Date: **16-Oct-2023 13:30**
Client ID: Run ID: **Balance1_449338** SeqNo: **7614418** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	< 5.00	10.0								

LCS Sample ID: **WLCS-10162023** Units: **mg/L** Analysis Date: **16-Oct-2023 13:30**
Client ID: Run ID: **Balance1_449338** SeqNo: **7614417** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	1096	10.0	1000	0	110	85 - 115				

DUP Sample ID: **HS23100630-10DUP** Units: **mg/L** Analysis Date: **16-Oct-2023 13:30**
Client ID: **MW-28** Run ID: **Balance1_449338** SeqNo: **7614413** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	5692	10.0					5688	0.0703	20	

DUP Sample ID: **HS23100630-04DUP** Units: **mg/L** Analysis Date: **16-Oct-2023 13:30**
Client ID: **MW-18** Run ID: **Balance1_449338** SeqNo: **7614406** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Filterable)	326	10.0					326	0	20	

The following samples were analyzed in this batch:

HS23100630-04	HS23100630-05	HS23100630-06	HS23100630-07
HS23100630-08	HS23100630-09	HS23100630-10	HS23100630-11
HS23100630-12			

Client: TRC Corporation
Project: NRG Limestone -Appendix III
WorkOrder: HS23100630

QC BATCH REPORT

Batch ID: R449362 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY E300.0, REV 2.1, 1993**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **17-Oct-2023 09:16**
Client ID: Run ID: **ICS-Integrion_449362** SeqNo: **7615050** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	< 0.200	0.500								

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **17-Oct-2023 09:22**
Client ID: Run ID: **ICS-Integrion_449362** SeqNo: **7615051** PrepDate: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.76	0.500	20	0	98.8	90 - 110				

MS Sample ID: **HS23100830-02MS** Units: **mg/L** Analysis Date: **17-Oct-2023 12:17**
Client ID: Run ID: **ICS-Integrion_449362** SeqNo: **7615073** PrepDate: DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	2213	50.0	1000	1426	78.7	80 - 120				S

MS Sample ID: **HS23100830-01MS** Units: **mg/L** Analysis Date: **17-Oct-2023 11:24**
Client ID: Run ID: **ICS-Integrion_449362** SeqNo: **7615067** PrepDate: DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	2355	50.0	1000	1626	72.9	80 - 120				S

MSD Sample ID: **HS23100830-02MSD** Units: **mg/L** Analysis Date: **17-Oct-2023 12:23**
Client ID: Run ID: **ICS-Integrion_449362** SeqNo: **7615074** PrepDate: DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	2213	50.0	1000	1426	78.7	80 - 120	2213	0.0145	20	S

MSD Sample ID: **HS23100830-01MSD** Units: **mg/L** Analysis Date: **17-Oct-2023 11:30**
Client ID: Run ID: **ICS-Integrion_449362** SeqNo: **7615068** PrepDate: DF: **100**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	2360	50.0	1000	1626	73.4	80 - 120	2355	0.225	20	S

The following samples were analyzed in this batch: HS23100630-01 HS23100630-08

Client: TRC Corporation
Project: NRG Limestone -Appendix lll
WorkOrder: **HS23100630**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356	27-Mar-2024
California	2919; 2024	30-Apr-2024
Dept of Defense	L23-358	31-May-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2023-2024	30-Apr-2024
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

Sample Receipt Checklist

Work Order ID: HS23100630 **Date/Time Received:** **10-Oct-2023 13:20**

Client Name: TRC-HOU **Received by:** **Malcolm Burleson**

Completed By:	/S/ Belinda Gomez	10-Oct-2023 16:29	**Reviewed by:**	/S/ Nieka.Carson	11-Oct-2023 10:36
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **w** Carrier name: **Client**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	2 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	10/10/23 1629	ir31
Cooler(s)/Kit(s):	50575	
Date/Time sample(s) sent to storage:	10/10/23 1630	

Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Cincinnati, OH +1 513 733 5336
Fort Collins, CO +1 970 490 1511
Everett, WA +1 425 356 2600
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 305027

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206611	Project Name	NRG Limestone- Appendix III	A	ICP_TW (B and Ca (App III))
Work Order		Project Number	528473.0000.0000	B	300_W (Cl, SO4)
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	ICP_TW (B, Ca, and Na (App III))
				F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G
1	MW-01	10-10-23	925	Water	2,8	3	X	X	X	X			
2	MW-02		840	Water	2,8	3	X	X	X	X			
3	MW-17		1005	Water	2,8	3	X	X	X	X			
4	MW-18		1100	Water	2,8	3	X	X	X	X			
5	MW-19		1105	Water	2,8	3	X	X	X	X			
6	MW-20		1015	Water	2,8	3	X	X	X	X			
7	MW-21		940	Water	2,8	3		X	X	X	X		
8	MW-22		905	Water	2,8	3	X	X	X	X			
9	MW-27R		955	Water	2,8	3	X	X	X	X			
10	MW-28		910	Water	2,8	3	X	X	X	X			

HS2310063O
TRC Corporation
NRG Limestone -Appendix III -Resample

Sampler(s) Please Print & Sign: Mason Bond + Hall Team

Shipment Method: Drop Off @ Lab

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date: 1320	Time: 10-10-23	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): 10/10/2023 1320
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG Limestone PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
	1163
305075	5.9+2
	-0.1C

QC Package: (Check One Box Below)
☐ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☒ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Houston, TX +1 281 530 5656
Spring City, PA +1 610 948 4903
South Charleston, WV +1 304 356 3168
Middletown, PA +1 717 944 5541
Salt Lake City, UT +1 801 266 7700
York, PA +1 717 505 5280

Chain of Custody Form

COC ID: 305026

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	206611	Project Name	NRG Limestone- Appendix III	A	ICP_TW (B and Ca (App III))
Work Order		Project Number	528473.0000.0000	B	300_W (Cl, SO4)
Company Name	TRC Corporation	Bill To Company	TRC Corporation	C	Sub_Fluoride (Sub Fluoride to ALS Michigan)
Send Report To	Lori Burris	Invoice Attn	A/P	D	TDS_W 2540C (TDS)
Address	14701 St. Mary's Lane Suite 500	Address	14701 St. Mary's Lane Suite 500	E	ICP_TW (B, Ca, and Na (App III))
				F	
City/State/Zip	Houston, TX 77079	City/State/Zip	Houston TX 77079	G	
Phone	(713) 244-1000	Phone	(713) 244-1000	H	
Fax	(713) 244-1099	Fax	(713) 244-1099	I	
e-Mail Address	LBurris@trcsolutions.com	e-Mail Address	apinvoiceapproval@trcsolutions.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	Id
1	MW-02 MS	10-10-23	840	Water	2,8	3	X	X	X	X				
2	MW-02 MSD		840	Water	2,8	3	X	X	X	X				
3	Field Blank -01		1120	Water	2,8	3	X	X	X	X				
4	Field Duplicate -01		1000	Water	2,8	3	X	X	X	X				
5														
6														
7														
8														
9														
10														

HS23100630
TRC Corporation
NRG Limestone -Appendix III -Resample

Sampler(s) Please Print & Sign: Marcus Beal + HWT Team

Shipment Method: Drop Off @ lab

Required Turnaround Time: (Check Box) ☐ STD 10 Wk Days ☒ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
	10-10-23	1320	
Relinquished by:	Date:	Time:	Received by (Laboratory):
			10/10/2023 1320
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: NRG Limestone PRIVILEGED & CONFIDENTIAL

Cooler ID	Cooler Temp.
	IR-31
50575	5.9 IR
	-0.1C

QC Package: (Check One Box Below)
☐ Level II Std QC
☐ Level III Std QC/Raw Data
☐ Level IV SW846/CLP
☐ Other
☒ TRRP Checklist
☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 10-10-23 Time:

Name:

Company:

Seal Broken By:

Date: OCT 10 2023

16-Oct-2023

Andrew Neir
ALS Environmental
10450 Stancliff Rd
Suite 210
Houston, TX 77099

Re: **HS23100630** Work Order: **23101026**

Dear Andrew,

ALS Environmental received 12 samples on 11-Oct-2023 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 24.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Chelsey Cook

Electronically approved by: Chelsey Cook

Chelsey Cook
Project Manager

Client: ALS Environmental
Project: HS23100630
Work Order: **23101026**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
23101026-01	MW-01	Water	HS23100630-01	10/10/2023 09:25	10/11/2023 09:00	☐
23101026-02	MW-02	Water	HS23100630-02	10/10/2023 08:40	10/11/2023 09:00	☐
23101026-03	MW-17	Water	HS23100630-03	10/10/2023 10:05	10/11/2023 09:00	☐
23101026-04	MW-18	Water	HS23100630-04	10/10/2023 11:00	10/11/2023 09:00	☐
23101026-05	MW-19	Water	HS23100630-05	10/10/2023 11:05	10/11/2023 09:00	☐
23101026-06	MW-20	Water	HS23100630-06	10/10/2023 10:15	10/11/2023 09:00	☐
23101026-07	MW-21	Water	HS23100630-07	10/10/2023 09:40	10/11/2023 09:00	☐
23101026-08	MW-22	Water	HS23100630-08	10/10/2023 09:05	10/11/2023 09:00	☐
23101026-09	MW-27R	Water	HS23100630-09	10/10/2023 09:55	10/11/2023 09:00	☐
23101026-10	MW-28	Water	HS23100630-10	10/10/2023 09:10	10/11/2023 09:00	☐
23101026-11	Field Blank-01	Water	HS23100630-11	10/10/2023 11:20	10/11/2023 09:00	☐
23101026-12	Field Duplicate-01	Water	HS23100630-12	10/10/2023 10:00	10/11/2023 09:00	☐

WET CHEMISTRY DATA ASSESSMENT CHECKLIST

Wet Chemistry	Batch Number: TITRATOR1_231013A, TITRATOR1_231013B	Instrument ID: TITRATOR1
Method: FL_4500C_W	Work order Number (s): 23101026	
Analyst Name: QN	Date: 10/13/2022 Reviewer Name: RM	Date: 10/13/23

	A[1]	Description	Yes	No	NA[2]	NR[3]	ER#[4]
R1	I	Chain-of-Custody					
		1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?			X		
		2) Were all departures from standard conditions described in an exception report?			X		
R2	I	**SAMPLE AND QUALITY CONTROL (QC) IDENTIFICATION**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?			X		
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?			X		
R3	I	**TEST REPORTS**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample quantitation limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			X		
		7) Was % moisture (or solids) reported for all soil and sediment samples?			X		
		8) If required for the project, TICs reported?			X		
R4	I	**SURROGATE RECOVERY DATA**					
		1) Were surrogates added prior to extraction?			X		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	I	**TEST REPORTS/SUMMMARY FORMS FOR BLANK SAMPLES**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < ½ MQL?	X				
R6	I	**LABORATORY CONTROL SAMPLES (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS and LCSD %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X				
		6) Was the LCSD RPD within QC limits?	X				
R7	I	**MATRIX SPIKE (MS) AND MATRIX SPIKE DUPLICATE (MSD) DATA**					
		1) Were the project or method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS and MSD %Rs within the laboratory QC limits?	X				
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	I	**ANALYTICAL DUPLICATE DATA (IF REQUIRED)**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	I	**METHOD QUANTITATION LIMITS (MQLS):**					
		1) Are the MQLs for each method analyte listed and included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs included in the laboratory data package?			X		
R10	I	**OTHER PROBLEMS/ANOMALIES**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		2) Were all necessary corrective actions performed for the reported data?	X				
		3) If requested, is the justification for elevated SQLs documented?			X		

S1	I	**INITIAL CALIBRATION (ICAL)**					
		1) Were response factors (RFs) and/or relative response factors (RRFs) for each analyte within the QC limits?			X		
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	I	**INITIAL AND CONTINUING CALIBRATION VERIFICATION (ICCV AND CCV) AND**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the organic CCB < MDL?	X				
S3	I	**MASS SPECTRAL TUNING:**					
		1) Was the appropriate compound for the method used for tuning?			X		
		2) Were ion abundance data within the method-required QC limits?			X		
S4	I	**INTERNAL STANDARDS (IS):**					
		Were IS area counts within the method-required QC limits?			X		
S5	I	**RAW DATA**					
		1) Were the raw data (e.g., chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	I	**DUAL COLUMN CONFIRMATION (IF REQUIRED)**					
		Did dual column confirmation results meet the method-required QC?			X		
S7	I	**TENTATIVELY IDENTIFIED COMPOUNDS (TICS):**					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**INTERFERENCE CHECK SAMPLE (ICS) RESULTS:**					
		Were percent recoveries within method QC limits?			X		
S9	I	**SERIAL DILUTIONS, POST DIGESTION SPIKES, AND METHOD OF STANDARD**					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	I	**PROFICIENCY TEST REPORTS:**					
		Are proficiency testing or inter-laboratory comparison results on file?	X				
S11	I	**METHOD DETECTION LIMIT (MDL) STUDIES**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S12	I	**STANDARDS DOCUMENTATION**					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	I	**COMPOUND/ANALYTE IDENTIFICATION PROCEDURES**					
		Are the procedures for compound/analyte identification documented?	X				
S14	I	**DEMONSTRATION OF ANALYST COMPETENCY (DOC)**					
		1) Was DOC conducted consistent with NELAC 5C or ISO/IEC 4.2.2?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	I	**VERIFICATION/VALIDATION DOCUMENTATION FOR METHODS**					
		Are all the methods used to generate the data documented, verified, and validated, where applicable, (NELAC 5.10.2 or ISO/IEC 17025 Section 5.4.5)?	X				
S16	I	**LABORATORY STANDARD OPERATING PROCEDURES (SOPS):**					
		Are laboratory SOPs current and on file for each method performed?	X				

1 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
2 NA = Not applicable.
3 NR = Not Reviewed.
4 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

WET CHEMISTRY DATA ASSESSMENT CHECKLIST

Wet Chemistry	Batch Number:	

ER #[1]	DESCRIPTION
1	
2	
3	
4	
5	
6	

1 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked on the LRC)

Client: ALS Environmental
Project: HS23100630
WorkOrder: **23101026**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

Client:	ALS Environmental
Project:	HS23100630
Work Order:	23101026

Case Narrative

Samples for the above noted Work Order were received on 10/11/2023. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Wet Chemistry:
No deviations or anomalies were noted.

Privileged and Confidential

ALS Group, USA

Date: *16-Oct-23*

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-01
Collection Date: 10/10/2023 09:25 AM

Work Order: 23101026
Lab ID: 23101026-01
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.0600**	J	**0.058**	**0.10**	**mg/L**	1	10/13/2023 11:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-02
Collection Date: 10/10/2023 08:40 AM

Work Order: 23101026
Lab ID: 23101026-02
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	U		0.058	0.10	mg/L	1	10/13/2023 11:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-17
Collection Date: 10/10/2023 10:05 AM

Work Order: 23101026
Lab ID: 23101026-03
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.150**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 11:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-18
Collection Date: 10/10/2023 11:00 AM

Work Order: 23101026
Lab ID: 23101026-04
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.120**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 11:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-19
Collection Date: 10/10/2023 11:05 AM

Work Order: 23101026
Lab ID: 23101026-05
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.0600**	J	**0.058**	**0.10**	**mg/L**	1	10/13/2023 11:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-20
Collection Date: 10/10/2023 10:15 AM

Work Order: 23101026
Lab ID: 23101026-06
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.220**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 11:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-21
Collection Date: 10/10/2023 09:40 AM

Work Order: 23101026
Lab ID: 23101026-07
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	U		0.058	0.10	mg/L	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-22
Collection Date: 10/10/2023 09:05 AM

Work Order: 23101026
Lab ID: 23101026-08
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.0600**	J	**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-27R
Collection Date: 10/10/2023 09:55 AM

Work Order: 23101026
Lab ID: 23101026-09
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	U		0.058	0.10	mg/L	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: MW-28
Collection Date: 10/10/2023 09:10 AM

Work Order: 23101026
Lab ID: 23101026-10
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	**0.240**		**0.058**	**0.10**	**mg/L**	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ALS Environmental
Project: HS23100630
Sample ID: Field Blank-01
Collection Date: 10/10/2023 11:20 AM

Work Order: 23101026
Lab ID: 23101026-11
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	U		0.058	0.10	mg/L	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *16-Oct-23*

Client: ALS Environmental
Project: HS23100630
Sample ID: Field Duplicate-01
Collection Date: 10/10/2023 10:00 AM

Work Order: 23101026
Lab ID: 23101026-12
Matrix: WATER

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
FLUORIDE		Method: **A4500-F C-11**					Analyst: **QTN**
Fluoride	U		0.058	0.10	mg/L	1	10/13/2023 15:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 16-Oct-23

Client: ALS Environmental

Work Order: 23101026

Project: HS23100630

QC BATCH REPORT

Batch ID: **R385587** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R385587-R385587** Units: **mg/L** Analysis Date: **10/13/2023 11:07 AM**

Client ID: Run ID: **TITRATOR 1_231013A** SeqNo: **10084714** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	U	0.10								

LCS Sample ID: **LCS-R385587-R385587** Units: **mg/L** Analysis Date: **10/13/2023 11:07 AM**

Client ID: Run ID: **TITRATOR 1_231013A** SeqNo: **10084715** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.15	0.10	5	0	103	90-111	0			

MS Sample ID: **23101001-07AMS** Units: **mg/L** Analysis Date: **10/13/2023 11:07 AM**

Client ID: Run ID: **TITRATOR 1_231013A** SeqNo: **10084717** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.46	0.10	5	0.28	104	90-111	0			

MS Sample ID: **23101026-02AMS** Units: **mg/L** Analysis Date: **10/13/2023 11:07 AM**

Client ID: **MW-02** Run ID: **TITRATOR 1_231013A** SeqNo: **10084733** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.05	0.10	5	0.04	100	90-111	0			

MSD Sample ID: **23101001-07AMSD** Units: **mg/L** Analysis Date: **10/13/2023 11:07 AM**

Client ID: Run ID: **TITRATOR 1_231013A** SeqNo: **10084718** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.49	0.10	5	0.28	104	90-111	5.46	0.548	20	

MSD Sample ID: **23101026-02AMSD** Units: **mg/L** Analysis Date: **10/13/2023 11:07 AM**

Client ID: **MW-02** Run ID: **TITRATOR 1_231013A** SeqNo: **10084734** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.98	0.10	5	0.04	98.8	90-111	5.05	1.4	20	

The following samples were analyzed in this batch:

23101026-01A	23101026-02A	23101026-03A
23101026-04A	23101026-05A	23101026-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 23101026
Project: HS23100630

QC BATCH REPORT

Batch ID: **R385616** Instrument ID **Titrator 1** Method: **A4500-F C-11**

MBLK Sample ID: **MB-R385616-R385616** Units: **mg/L** Analysis Date: **10/13/2023 03:28 PM**
Client ID: Run ID: **TITRATOR 1_231013B** SeqNo: **10086013** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	U	0.10								

LCS Sample ID: **LCS-R385616-R385616** Units: **mg/L** Analysis Date: **10/13/2023 03:28 PM**
Client ID: Run ID: **TITRATOR 1_231013B** SeqNo: **10086014** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.1	0.10	5	0	102	90-111	0			

MS Sample ID: **23101043-05AMS** Units: **mg/L** Analysis Date: **10/13/2023 03:28 PM**
Client ID: Run ID: **TITRATOR 1_231013B** SeqNo: **10086026** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	4.98	0.10	5	0.1	97.6	90-111	0			

MSD Sample ID: **23101043-05AMSD** Units: **mg/L** Analysis Date: **10/13/2023 03:28 PM**
Client ID: Run ID: **TITRATOR 1_231013B** SeqNo: **10086027** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluoride	5.1	0.10	5	0.1	100	90-111	4.98	2.38	20	

The following samples were analyzed in this batch:

23101026-07A	23101026-08A	23101026-09A
23101026-10A	23101026-11A	23101026-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

23101026

ALS - HOUSTON: ALS Environmental

Project: HS23100630

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: **Texas**

COC ID: **23479**

SUBCONTRACT TO:

ALS Group USA, Corp.
3352 - 128th Ave
Holland, MI 494249263

Phone: +1 616 399 6070

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Andy C. Neir
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Andrew.Neir@ALSGlobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS23100630
TSR:	Ron Martino

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23100630-01**	**MW-01**	**Water**	**10 Oct 2023 09:25**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
2.	**HS23100630-02**	**MW-02** (MS/MSD)	**Water**	**10 Oct 2023 08:40**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
3.	**HS23100630-03**	**MW-17**	**Water**	**10 Oct 2023 10:05**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
4.	**HS23100630-04**	**MW-18**	**Water**	**10 Oct 2023 11:00**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
5.	**HS23100630-05**	**MW-19**	**Water**	**10 Oct 2023 11:05**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
6.	**HS23100630-06**	**MW-20**	**Water**	**10 Oct 2023 10:15**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
7.	**HS23100630-07**	**MW-21**	**Water**	**10 Oct 2023 09:40**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
8.	**HS23100630-08**	**MW-22**	**Water**	**10 Oct 2023 09:05**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
9.	**HS23100630-09**	**MW-27R**	**Water**	**10 Oct 2023 09:55**

Subcontract Chain of Custody

SAMPLING STATE: **Texas** **COC ID: 23479**

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
10.	**HS23100630-10**	**MW-28**	**Water**	**10 Oct 2023 09:10**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
11.	**HS23100630-11**	**Field Blank-01**	**Water**	**10 Oct 2023 11:20**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023
12.	**HS23100630-12**	**Field Duplicate-01**	**Water**	**10 Oct 2023 10:00**
	Fluoride by ISE 4500. EQuis EDD			17 Oct 2023

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: TRRP LRC (TRRP checklist only+Level II (normal))

Relinquished By: LA Date/Time: 10-10-23 1800

Received By: Date/Time: 10-11-23 0900

Cooler ID(s): Temperature(s): 3.1C OPZ

Privileged and Confidential

ALS Group, USA
Holland, Michigan

Sample Receipt Checklist

Client Name: **ALS - HOUSTON** Date/Time Received: **11-Oct-23 09:00**

Work Order: **23101026** Received by: **JD**

Checklist completed by Jason Delinger (eSignature) 11-Oct-23 (Date) Reviewed by: Chelsey Cook (eSignature) 11-Oct-23 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.1/3.1 C	DF2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/11/2023 2:21:57 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Privileged and Confidential

Appendix C
Laboratory Data Quality Review

DATA USABILITY SUMMARY

Lori Burris of TRC Environmental Corporation (TRC) reviewed one (1) data package from ALS Global Laboratories (ALS) for the analysis of groundwater samples collected April 4, 2023, at the NRG Limestone Electric Generating Station (Limestone) in Jewett, Texas. Data were reviewed for conformance to the requirements of the guidance document, *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13) (TCEQ 2010). Lori Burris verified that at the time the laboratory data were generated for the project, ALS was NELAC-accredited under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analysis requested on the chain-of-custody documentation. ALS's National Environmental Laboratory Accreditation Program (NELAP) certification is included in the laboratory data package.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the property. These data are used for compliance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) Coal Combustion Residuals (CCR) detection monitoring programs. Data are also used for statistical analysis of potential statistically significant increases (SSI).

Analyses requested included:

- EPA 300.0 – Inorganic Anions (Chloride and Sulfate) by ion chromatography;
- A4500-F C-11 – Fluoride by ion selective electrode;
- SW-846 6020A – Metals (Calcium, Boron and Sodium) by inductively coupled plasma-mass spectrometry (ICP/MS); and
- SM2540C – Total Dissolved Solids (TDS) by drying.

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this DUS.

The following laboratory submittals and field data were examined:

- the reportable data,
- the laboratory review checklists, and
- field sampling logs.

The results of supporting quality control (QC) analyses were summarized on the Laboratory Review Checklist (LRC) and Exception Report (ER) in the analytical report which was included in this review.

The LRC, associated ER, and reportable data included in this review are attached to this Data Usability Summary (DUS).

DATA REVIEW/VALIDATION RESULTS

Introduction

Ten (10) groundwater samples, one (1) duplicate groundwater sample and one (1) field blank were analyzed for chloride, sulfate, fluoride, metals, and TDS. In addition, groundwater sample MW-21 was also analyzed for sodium. Table 1 lists the field identifications cross-referenced to laboratory identifications.

Analytical Results

The data package contains a minimum of one (1) quality control batch per analytical method analyzed. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Not-detected results are reported as less than the value of the sample detection limit (SDL) as defined by the TRRP rule. The project Sampling and Analysis Plan (SAP) states that quality control percent recoveries of 70% to 130% indicate sufficient accuracy and a relative percent difference (RPD) of 30% indicates adequate precision. Therefore, these limits were used for comparison during this review for accuracy and precision. Data qualified as part of this review are shown in Table 2.

Preservation and Holding Times

The samples were evaluated for agreement with the chain-of-custody. The laboratory mis-labeled the Field Duplicate-01 sample as “Field Dup[licate-01”. The samples were received in the appropriate containers with the paperwork filled out properly, except for MW-28R being listed as MW-28 on the chain-of-custody. The laboratory sample receipt checklist stated the samples were received at a temperature of 1.8°C. Samples reported in the data package were prepared and analyzed within holding times.

Calibrations

According to the LRC, initial and continuing calibration data met EPA, Standard Method (SM) and SW-846 Method requirements for boron, chloride, sulfate, fluoride and TDS. Metals continuing calibration blanks (CCBs) had detections of boron and sodium. Associated samples MW-01 and MW-17 were qualified as estimated (J) for boron due to CCB contamination.

Blanks

Metals, chloride, sulfate, fluoride, and TDS were reported as not-detected in the method blanks.

One field blank (Field Blank-01) was collected and analyzed as part of this data package. Estimated detections of calcium (0.118J mg/L) and chloride (0.217J mg/L) and a detection of TDS (66.0 mg/L) were identified in the field blank (Field Blank-01). Associated sample MW-17 was reported for TDS less than 2X the field blank concentration and was qualified as estimated, due to field blank contamination.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for chloride, sulfate, fluoride, metals and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for fluoride batch R368036 analyzed on sample MW-02, fluoride batch R368190 analyzed on site sample MW-19, boron batch 192125

analyzed on site sample MW-02, boron and sodium in batch 192190 analyzed on site sample MW-21 and sulfate in batch R432019 analyzed on site samples MW-20 and MW-02 were within QC acceptance criteria. MS/MSD analysis is not a requirement of TDS method SM2540C.

Metals batch 1192125 MS/MSD analyzed on site sample MW-02 and batch 192190 MS/MSD analyzed on site sample MW-21 had calcium recovery outside acceptance criteria. However, the amount of calcium spiked was less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, this MS/MSD was not used for qualification purposes.

Chloride batch R432019 had two MS/MSDs analyzed and was within acceptance criteria for the MS/MSD analyzed on site sample MW-20. The MS/MSD analyzed on site sample MW-02 had low recovery for chloride. Sample MW-02 was qualified as estimated low (JL) for chloride, due to low MS/MSD recovery.

Post Digestion Spike and Serial Dilution

The metals post digestion spikes (PDSs) was outside acceptance limits for calcium. However, the amount of calcium spiked was less than 4X the unspiked parent sample and was not used for qualification purposes. The serial dilution for metals analyzed on site sample MW-02 was within laboratory acceptance criteria. However, the serial dilution for metals analyzed on site sample MW-21 had elevated percent difference for boron. Sample MW-21 was qualified as estimated (J) for boron, due to serial dilution outside acceptance criteria.

Laboratory Duplicates

Laboratory duplicate for TDS analyzed on site samples MW-02 and MW-22 were within QC acceptance criteria.

Field Precision

One (1) field duplicate sample was included in this data package (MW-19/Field Duplicate-01). Both sample and duplicate, MW-19/Field Duplicate-01, were reported as detected for boron, calcium, chloride, sulfate, and TDS. The relative percent difference (RPD) between sample and duplicate was within the QC acceptance criteria of 30% for the listed compounds.

Sample/duplicate precision calculations are included in Table 3.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the Limestone site.

The data user is advised that samples MW-01 and MW-17 were qualified as estimated (J) for boron due to CCB contamination. Sample MW-17 was reported for TDS less than 2X the field blank concentration and was qualified as estimated (J), due to field blank contamination. Sample MW-02 was qualified as estimated low (JL) for chloride, due to low MS/MSD recovery. Sample MW-21 was qualified as estimated (J) for boron, due to serial dilution outside acceptance criteria.

References:

TCEQ. 2010. TRRP 13: Review and Reporting of COC Concentration Data. Texas Commission for Environmental Quality, Austin, Texas.

Environmental Resources Management (ERM). October 2017. Sampling and Analysis Plan. W.A. Parish Electric Generating Station, Thompsons, Texas.

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23040177-01	MW-01	Groundwater
HS23040177-02	MW-02	Groundwater
HS23040177-03	MW-17	Groundwater
HS23040177-04	MW-18	Groundwater
HS23040177-05	MW-19	Groundwater
HS23040177-06	MW-20	Groundwater
HS23040177-07	MW-21	Groundwater
HS23040177-08	MW-22	Groundwater
HS23040177-09	MW-27R	Groundwater
HS23040177-10	MW-28R	Groundwater
HS23040177-11	Field Blank-01	Water
HS23040177-12	Field Duplicate-01	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
MW-01 MW-17	Boron	J	CCB contamination.
MW-17	TDS	J	Field blank contamination.
MW-02	Chloride	JL	Low MS/MSD recovery.
MW-21	Boron	J	Elevated serial dilution percent difference.

U – Not-detected

J – Estimated data; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.

UJ – The analyte was analyzed for but was not detected above the reported sample detection limit. The associated value is an estimate and may be inaccurate or imprecise.

L – Bias in sample, likely to be low.

H – Bias in sample likely to be high.

Table 3 – Field Precision

Field Identification	Analyte	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD[a]	Qualified
MW-19/Field Duplicate-01	Boron	0.0467	0.0468	0	A
	Calcium	34.6	35.2	2	A
	Chloride	37.5	37.2	1	A
	Sulfate	99.6	99.2	0	A
	TDS	308	292	5	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data.
A* - Acceptable Data where results were less than 5X the MQL and the difference between sample and duplicate was less than 2X the MQL.
X – Outside the TRRP-13/SAP acceptance criteria of 30% RPD.
J – Estimated detected.
U – Not-detected.

DATA USABILITY SUMMARY

Lori Burris of TRC Environmental Corporation (TRC) reviewed one (1) data package from ALS Global Laboratories (ALS) for the analysis of a groundwater sample collected May 1, 2023, at the NRG Limestone Electric Generating Station (Limestone) in Jewett, Texas. Data were reviewed for conformance to the requirements of the guidance document, *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13) (TCEQ 2010). Lori Burris verified that at the time the laboratory data were generated for the project, ALS was NELAC-accredited under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analysis requested on the chain-of-custody documentation. ALS's National Environmental Laboratory Accreditation Program (NELAP) certification is included in the laboratory data package.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the property. These data are used for compliance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) Coal Combustion Residuals (CCR) detection monitoring programs. Data are also used for statistical analysis of potential statistically significant increases (SSI).

Analyses requested included:

- EPA 300.0 – Inorganic Anions (Sulfate) by ion chromatography;
- SW-846 6020A – Metals (Boron) by inductively coupled plasma-mass spectrometry (ICP/MS); and
- SW-846 9040C – pH by electrometric measurement.

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this DUS.

The following laboratory submittals and field data were examined:

- the reportable data,
- the laboratory review checklists, and
- field sampling logs.

The results of supporting quality control (QC) analyses were summarized on the Laboratory Review Checklist (LRC) and Exception Report (ER) in the analytical report which was included in this review.

The LRC, associated ER, and reportable data included in this review are attached to this Data Usability Summary (DUS).

DATA REVIEW/VALIDATION RESULTS

Introduction

Three (3) groundwater samples were collected and analyzed for boron (MW-21), sulfate (MW-28) and pH (MW-01). Sample MW-01 was analyzed for pH as a field check and was not evaluated during this review as pH is a field test. Table 1 lists the field identifications cross-referenced to laboratory identifications.

Analytical Results

The data package contains a minimum of one (1) quality control batch per analytical method analyzed. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Not-detected results are reported as less than the value of the sample detection limit (SDL) as defined by the TRRP rule. The project Sampling and Analysis Plan (SAP) states that quality control percent recoveries of 70% to 130% indicate sufficient accuracy and a relative percent difference (RPD) of 30% indicates adequate precision. Therefore, these limits were used for comparison during this review for accuracy and precision. No data were qualified as part of this review (see Table 2).

Preservation and Holding Times

The samples were evaluated for agreement with the chain-of-custody. The samples were received in the appropriate containers. The chain-of-custody indicated three sample containers were provided; however, the laboratory received one container for each sample. The laboratory sample receipt checklist stated the samples were received at a temperature of 0.8°C. The samples reported in the data package were prepared and analyzed within holding times. pH is an immediate field test and was analyzed out of holding time and qualified by the laboratory.

Calibrations

According to the LRC, initial and continuing calibration data met EPA and SW-846 Method requirements for boron and sulfate.

Blanks

Boron and sulfate were reported as not-detected in the method blanks.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for boron and sulfate.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for boron and sulfate were analyzed on samples not associated with the project site and were not used for qualification purposes.

Post Digestion Spike and Serial Dilution

The serial dilution for boron was analyzed on a sample not associated with the project site and a post digestion spike was not analyzed.

Laboratory Duplicates

Laboratory duplicates were not analyzed as part of this data package.

Field Precision

Field duplicate samples were not analyzed as part of this data package.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the Limestone site.

References:

TCEQ. 2010. TRRP 13: Review and Reporting of COC Concentration Data. Texas Commission for Environmental Quality, Austin, Texas.

Environmental Resources Management (ERM). October 2017. Sampling and Analysis Plan. W.A. Parish Electric Generating Station, Thompsons, Texas.

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23050035-01	MW-01	Groundwater
HS23050035-02	MW-21	Groundwater
HS23050035-03	MW-28	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
No data were qualified as part of this review.			

U – Not-detected

J – Estimated data; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.

UJ – The analyte was analyzed for but was not detected above the reported sample detection limit. The associated value is an estimate and may be inaccurate or imprecise.

L – Bias in sample, likely to be low.

H – Bias in sample likely to be high.

DATA USABILITY SUMMARY

Lori Burris of TRC Environmental Corporation (TRC) reviewed one (1) data package from ALS Global Laboratories (ALS) for the analysis of groundwater samples collected October 10, 2023, at the NRG Limestone Electric Generating Station (Limestone) in Jewett, Texas. Data were reviewed for conformance to the requirements of the guidance document, *Review and Reporting of COC Concentration Data* (RG-366/TRRP-13) (TCEQ 2010). Lori Burris verified that at the time the laboratory data were generated for the project, ALS was NELAC-accredited under the Texas Laboratory Accreditation Program for the matrices, analytes, and methods of analysis requested on the chain-of-custody documentation. ALS's National Environmental Laboratory Accreditation Program (NELAP) certification is included in the laboratory data package.

Intended Use of Data: To provide current data on concentrations of chemicals of concern (COCs) in the groundwater at the property. These data are used for compliance with the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) Coal Combustion Residuals (CCR) detection monitoring programs. Data are also used for statistical analysis of potential statistically significant increases (SSI).

Analyses requested included:

- EPA 300.0 – Inorganic Anions (Chloride and Sulfate) by ion chromatography;
- A4500-F C-11 – Fluoride by ion selective electrode;
- SW-846 6020A – Metals (Calcium, Boron and Sodium) by inductively coupled plasma-mass spectrometry (ICP/MS); and
- SM2540C – Total Dissolved Solids (TDS) by drying.

Data were reviewed and validated as described in *Review and Reporting of COC Concentration Data,* (RG-366/TRRP-13) and the results of the review/validation are discussed in this DUS.

The following laboratory submittals and field data were examined:

- the reportable data,
- the laboratory review checklists, and
- field sampling logs.

The results of supporting quality control (QC) analyses were summarized on the Laboratory Review Checklist (LRC) and Exception Report (ER) in the analytical report which was included in this review.

The LRC, associated ER, and reportable data included in this review are attached to this Data Usability Summary (DUS).

DATA REVIEW/VALIDATION RESULTS

Introduction

Ten (10) groundwater samples, one (1) duplicate groundwater sample and one (1) field blank were analyzed for chloride, sulfate, fluoride, calcium, boron, and TDS. In addition, groundwater sample MW-21 was also analyzed for sodium. Table 1 lists the field identifications cross-referenced to laboratory identifications.

Analytical Results

The data package contains a minimum of one (1) quality control batch per analytical method analyzed. The quality control batch identifies the laboratory QC samples that correspond to the designated field samples. Not-detected results are reported as less than the value of the sample detection limit (SDL) as defined by the TRRP rule. The project Sampling and Analysis Plan (SAP) states that quality control percent recoveries of 70% to 130% indicate sufficient accuracy and a relative percent difference (RPD) of 30% indicates adequate precision. Therefore, these limits were used for comparison during this review for accuracy and precision. Data qualified as part of this review are shown in Table 2.

Preservation and Holding Times

The samples were evaluated for agreement with the chain-of-custody. The samples were received in the appropriate containers with the paperwork filled out properly, except for MW-28R being listed as MW-28 on the chain-of-custody. The laboratory sample receipt checklist stated the samples were received at a temperature of 5.8°C. Samples reported in the data package were prepared and analyzed within holding times.

Calibrations

According to the LRC, initial and continuing calibration data met EPA, Standard Method (SM) and SW-846 Method requirements for chloride, sulfate, fluoride and TDS. Metals continuing calibration blanks (CCBs) had detections of boron, calcium and sodium. Associated sample MW-19 was qualified as estimated (J) for boron due to CCB contamination.

Blanks

Chloride, sulfate, fluoride, and TDS were reported as not-detected in the method blanks. Metals method blank was reported as estimated detected for calcium (0.0628J mg/L) and sodium (0.02461J mg/L). Associated samples were reported as greater than 2X the method blank concentrations for calcium and sodium; therefore, no data were qualified.

One field blank (Field Blank-01) was collected and analyzed as part of this data package. Estimated detections of calcium (2.65 mg/L) and TDS (108 mg/L) were identified in the field blank (Field Blank-01). Associated sample MW-17 was reported for TDS less than 2X the field blank concentration and was qualified as estimated (J), due to field blank contamination.

Laboratory Control Samples

Laboratory control samples (LCS) met the QC acceptance criteria for chloride, sulfate, fluoride, metals and TDS.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) samples for fluoride batch R385587 analyzed on sample MW-02 was within QC acceptance criteria. Sulfate batch R449362 and Fluoride batch R385616 MS/MSDs were analyzed on samples not associated with the project site and were not evaluated. MS/MSD analysis is not a requirement of TDS method SM2540C.

Metals batch 201988 MS/MSD analyzed on site sample MW-02 had sodium recovery outside acceptance criteria. However, the amount of sodium spiked was less than 4X the unspiked parent sample and may not represent the matrix effect; therefore, this MS/MSD was not used for qualification purposes.

Chloride/sulfate batch R449292 MS/MSD analyzed on site sample MW-02 had low sulfate recovery. Sample MW-02 was qualified as estimated low (JL) for sulfate, due to low MS/MSD recovery.

Post Digestion Spike and Serial Dilution

The metals post digestion spike (PDS) and serial dilution analyzed on site sample MW-02 was within laboratory acceptance criteria.

Laboratory Duplicates

Laboratory duplicate for TDS analyzed on site samples MW-02 and MW-28R were within QC acceptance criteria.

Field Precision

One (1) field duplicate sample was included in this data package (MW-19/Field Duplicate-01). Both sample and duplicate, MW-19/Field Duplicate-01, were reported as detected for boron, calcium, chloride, sulfate, fluoride and TDS. The relative percent difference (RPD) between sample and duplicate was within the QC acceptance criteria of 30% for calcium, chloride, sulfate, fluoride and TDS. Samples MW-19 and Field Duplicate-1 were qualified as estimated (J) for boron, due to sample/precision outside acceptance criteria.

Sample/duplicate precision calculations are included in Table 3.

Summary

The groundwater analytical data are usable for the purpose of determining current concentrations of COCs in this medium at the Limestone site.

The data user is advised that sample MW-19 was qualified as estimated (J) for boron due to CCB contamination. Associated sample MW-17 was reported for TDS less than 2X the field blank concentration and was qualified as estimated (J), due to field blank contamination. Sample MW-02 was qualified as estimated low (JL) for sulfate, due to low MS/MSD recovery. Samples MW-19 and Field Duplicate-1 were qualified as estimated (J) for boron, due to sample/precision outside acceptance criteria.

References:

TCEQ. 2010. TRRP 13: Review and Reporting of COC Concentration Data. Texas Commission for Environmental Quality, Austin, Texas.

Environmental Resources Management (ERM). October 2017. Sampling and Analysis Plan. W.A. Parish Electric Generating Station, Thompsons, Texas.

Table 1 – Cross-Reference between Laboratory and Field Identifications

Laboratory Identification	Field Identification	Matrix Type
HS23100630-01	MW-01	Groundwater
HS23100630-02	MW-02	Groundwater
HS23100630-03	MW-17	Groundwater
HS23100630-04	MW-18	Groundwater
HS23100630-05	MW-19	Groundwater
HS23100630-06	MW-20	Groundwater
HS23100630-07	MW-21	Groundwater
HS23100630-08	MW-22	Groundwater
HS23100630-09	MW-27R	Groundwater
HS23100630-10	MW-28R	Groundwater
HS23100630-11	Field Blank-01	Water
HS23100630-12	Field Duplicate-01	Groundwater

Table 2 – Qualified Analytical Data

Field Identification	Analyte	Qualification	Reason for Qualification
MW-19	Boron	J	CCB contamination and sample/duplicate precision oustide acceptance criteria.
MW-17	TDS	J	Field blank contamination.
MW-02	Sulfate	JL	Low MS/MSD recovery.
Field Duplicate-01	Boron	J	Sample/duplicate precision oustide acceptance criteria.

U – Not-detected

J – Estimated data; the reported quantitation limit or sample concentration is approximated due to exceedance of one or more QC requirements.

UJ – The analyte was analyzed for but was not detected above the reported sample detection limit. The associated value is an estimate and may be inaccurate or imprecise.

L – Bias in sample, likely to be low.

H – Bias in sample likely to be high.

Table 3 – Field Precision

Field Identification	Analyte	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD[a]	Qualified
MW-19/Field Duplicate-01	Boron	0.0335	0.0166J	68	X
	Calcium	31.4	34.0	8	A
	Chloride	36.9	36.8	0	A
	Sulfate	96.7	96.7	0	A
	TDS	308	292	5	A
	Fluoride	0.060	0.058	3	A

[a] RPD = ((SR - DR)*200)/(SR + DR)
A - Acceptable Data.
A* - Acceptable Data where results were less than 5X the MQL and the difference between sample and duplicate was less than 2X the MQL.
X – Outside the TRRP-13/SAP acceptance criteria of 30% RPD.
J – Estimated detected.
U – Not-detected.

Appendix D
Alternative Source Demonstrations

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: February 27, 2023
Facility Name: NRG-Limestone Generating Station
Permit or Registration No.: CCR 115

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: _____ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

NRG Texas Power LLC
910 Louisiana St.
Houston, TX 77002

February 24, 2023

Ms. Gulay Aki, P.E.
Section Manager
Industrial and Hazardous Waste Permits Section – MC-130
Texas Commission on Environmental Quality
PO Box 13087
Austin, Texas 78711-3087

Subject: CCR ASDs for SWMU Landfill 001, APH Preheater Pond 021, and FDG Emergency Pond 020
NRG Texas W.A Parish Electric Generating Station Industrial
Solid Waste Registration No. 31631 EPA Identification No. TXD097311849
RN10088312/CN603207218, CCR RN 108

Transmitted via email CCRNotify@tceq.texas.gov

Dear Ms. Aki,

Please find enclosed the Alternate Source Demonstrations (ASDS) for the NRG Texas W.A. Parish Electric Generating Station SWMU Landfill 001, Air Preheater Pond 021, and FDG Emergency Pond 020.

Please do not hesitate to contact me at craig.eckberg@nrg.com or Mr. Carl Burch of my staff at carl.burch@nrg.com or phone at 281-271-9664 if you need additional information or wish to discuss the ASDS.

Sincerely,

C.R.E.

Craig Eckberg
Sr. Director, Environmental Services
NRG Energy, South Region

Cc: Tony Dworaczyk, PG (TRC Project Manager)
Carl Burch (NRG Senior Manager)
Robert Been (NRG Sr. Environmental Specialist, W.A. Parish)

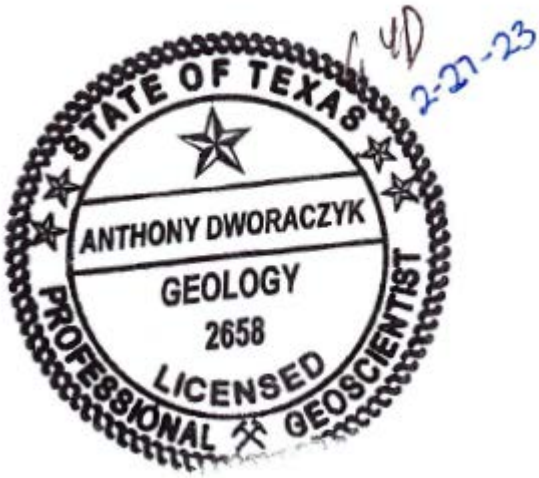
Alternative Source Demonstration

Limestone Electric Generating Station
Landfill (Unit 004)

New Coal Combustion Residuals (CCR) Registration No. CCR115
Industrial Solid Waste Registration No. 32490
EPA Identification No. TXD000837336
RN100542927/CN603207218

February 2023

Prepared For
NRG Texas Power, LLC
Jewett, Texas



Gregory E. Tieman, L.R.S.
Senior Client Service Manager

Tony Dworaczyk, P.G.
Project Manager

14701 St. Mary's Lane, Suite 500, Houston, TX 77079, ● 713.244.1073 Phone ● www.TRCcompanies.com

I hereby certify that the alternative source demonstration presented within this document for the NRG Limestone Coal Ash Disposal Landfill CCR Unit has been prepared to meet the requirements of 30 TAC 352.4; 352.941(c); and 352.1321. This document is accurate and has been prepared in accordance with good geosciences practices, including the consideration of applicable industry standards, and with the requirements of 30 TAC 352.4; 352.941(c); and 352.1321.

Name: Tony Dworaczyk **Expiration Date:** 1/30/2025

Company: TRC Environmental Corporation **Date:** 9/20/2024

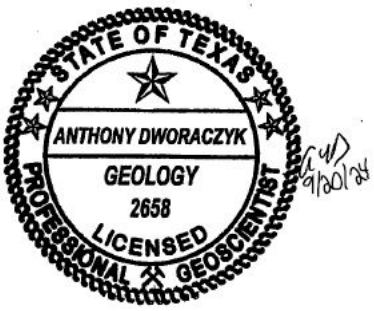


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Figure 3 METGCD Well Map

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Attachment 1 Boring Logs

Executive Summary

The NRG Texas Power, LLC (NRG) Limestone Electric Generating Station (Station) is located approximately seven miles northwest of Jewett, Texas and approximately 0.5 miles north of the intersection of Limestone, Freestone, and Leon Counties. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Station has one active CCR unit, the Landfill (Unit 004), that is managed pursuant to 30 TAC Chapter 352, which is the subject of this Alternative Source Demonstration (ASD).

The 11th semi-annual groundwater detection monitoring event was conducted on October 5, 2022. Statistical evaluation of the Appendix III monitoring parameters was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. One apparent SSI: boron; was identified. TRC, on behalf of NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on December 16, 2022.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results are the second data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for the apparent SSI at the Landfill, based on the following lines of reasoning:

- Numerous historical and active natural gas wells and their associated well pads and surface pits are located immediately surrounding and within the footprint of the Landfill. Well pits associated with the natural gas wells contribute spent completion or workover fluids to groundwater that contain constituents that are also CCR Rule Appendix III detection monitoring constituents;
- As shown on the boring logs for the Landfill CCR groundwater monitoring network, lignite and shale seams that contain trace amounts of boron are present at the Landfill and several monitor wells were installed into and screened across these seams;
- The Jewett lignite surface mine is located approximately 1.5 south of the Landfill; and
- Natural variations in groundwater geochemistry likely related to changes in pH, ion exchanges, electrical conductivity (EC), and/or salinity.

Therefore, NRG will continue performing semi-annual detection monitoring for the Landfill per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) Limestone Electric Generating Station (Station) is located approximately seven miles northwest of Jewett, Texas and approximately 0.5 miles north of the intersection of Limestone, Freestone, and Leon Counties. The Station is bisected by Farm-to-Market Road 39 (FM 39), which runs north-south through the middle of the Station. The western portion of the Station is located in Limestone County and includes the electricity generating portion of the Station. The eastern portion of the Station is located in Freestone County and includes the solid waste disposal area (SWDA).

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015). CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has one active CCR-management unit – Landfill (Unit 004).

The Landfill is located within the eastern portion of the Station as shown on Figure 1. The Landfill was constructed in 1980 and is used for the final disposition of CCR. The western half of the Landfill has reached capacity and historically had been closed and capped prior to the effective date of the CCR Rule (October 19, 2015). CCR is currently being placed at the southern part of the eastern portion of the Landfill.

1.1.1 Groundwater Monitoring Program

The certified CCR monitoring well network for the Landfill consists of two upgradient background monitoring wells (MW-27R and MW-28) and eight downgradient monitoring wells (MW-1, MW-2, MW-17, MW-18, MW-19, MW-20, MW-21, and MW-22). A groundwater potentiometric surface map was prepared by TRC for the October 2022 semiannual detection monitoring event and is provided in this ASD as Figure 2. The direction of groundwater flow beneath the Landfill was to the south - southwest.

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual

detection monitoring events were documented in the *Annual Groundwater Monitoring Report, Landfill (Unit 004)* (ERM 2018a) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the Landfill per the federal CCR Rule and 30 TAC Chapter 352. As of the October 2022 sampling event, a total of 11 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the second half 2021 (April). The October 2022 semi-annual detection monitoring event analytical results, including the November 22, 2022 verification sampling results, are the third data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD to evaluate one apparent SSI above background levels for the 11th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the Landfill.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Waco Sheet* (BEG 1972), the Station is primarily located within the outcrop of the Calvert Bluff Formation of the Wilcox Group. Minor portions of the southeast corner of the Station are located within the outcrop of the Carrizo Sand and minor portions of the southwest corner of the Station are immediately underlain by alluvium. The Calvert Bluff Formation underlies both the Carrizo Sand and alluvium where present.

The Landfill is located solely within the outcrop of the Calvert Bluff Formation (BEG 1972); however, site investigation data indicate the Landfill may also be located within the outcrop of the Carrizo Sand. The Calvert Bluff Formation consists mostly of mudstone interbedded with fine sandstone, lignite, and ironstone concretions. The mudstone contains silt and very fine sand laminae. The Carrizo Sand consists of very fine sand with partings of silty clay, carbonaceous clay, and ironstone. The Carrizo Sand and the Wilcox Group comprise the Carrizo-Wilcox aquifer, which is recognized by the Texas Water Development Board (TWDB) as a major aquifer system in Texas. The Station is located within the outcrop, or the recharge zone, of the Carrizo-Wilcox aquifer (TWDB 2011).

Site investigations were conducted at the Station by Espey, Huston & Associated in 1986; Radian International in 1996 and 1997; EPRI in 2007, and Environmental Resources Management, Inc. (ERM) in 2016. The results of these investigations were summarized in the October 2017 *Ground Water Monitoring Networks for Coal Combustion Residual (CCR) Rule Compliance* report (ERM 2017b). Surficial material at the Landfill consists of in-situ or reworked clay from the Axtell-Tabor soil association. This clay is the source material for the Landfill liner and cap. Boring logs indicate the surficial material is underlain by interbedded clays, silts, and sands of the Quaternary alluvium, Carrizo Sand, and Calvert Bluff Formation. The boundaries between these units are generally indistinguishable.

2.2 Surrounding Area

2.2.1 Oil and Gas Production Wells

The Station and surrounding vicinity are densely populated with historical and current oil and gas activities consisting primarily of the installation and operation of natural gas production wells. Numerous active natural gas wells and their associated well pads, surface pits, subsurface pipelines, and

infrastructure are located immediately surrounding and within the footprint of the Landfill. Figure 3 is a Mid-East Texas Groundwater Conservation District (METGCD) well map showing the locations of wells in the vicinity of the Landfill. The map is limited to Freestone and Leon counties and does not show wells in Limestone County immediately west of the Landfill. This figure demonstrates the extent to which non-CCR sources of constituents to groundwater pervade the vicinity of the Landfill.

Surface well pits typically contain spent completion fluids or workover fluids. Completion or workover fluids are often brine-containing liquids that are used for well testing and are chemically compatible with the formation fluids; and the spent fluids contained in the pits would have come into contact with formation fluids. According to the United States Geological Survey (USGS) National Produced Waters Geochemical Database, water co-produced with hydrocarbons (referred to as "produced water" or "formation water") from geologic formations underlying the Site has the following composition (USGS 2018):

- pH ranging from 4.67 standard units (SU) to 5.6 SU;
- Calcium ranging from 12,560 milligrams per liter (mg/L) to 33,520 mg/L;
- Chloride ranging from 56,980 mg/L to 96,200 mg/L;
- Sulfate ranging from 480 mg/L to 1,790 mg/L; and
- Total dissolved solids (TDS) ranging from 98,330 mg/L to 152,970 mg/L.

Considering the composition of the formation water with which the completion or workover fluids came into contact and the typical brine composition of these fluids, potential releases of these fluids would be expected to affect groundwater quality within the immediate vicinity and downgradient of the natural gas well pads and surface pits. Even minor releases of these fluids could increase the concentrations of calcium, chloride, sulfate, and TDS and decrease the pH in the nearby Landfill upgradient and downgradient monitoring wells.

2.2.2 Lignite Mine

Approximately 1.5 miles south of the Landfill is the Jewett lignite mine. The Jewett Mine is a 35,000-acre surface-mine complex. The mine, which is one of the largest in Texas, produced about 5.3 million short tons of lignite per year, according to the U.S. Department of Energy (USDOE). The 31-year-old mine provided lignite for combustion at the Station. In 2018, NRG decided to close the mine and is in the process of performing reclamation.

In 2020, the Jewett Mine had four final pits containing water ranging from approximately 340 million to 1.5 billion gallons. The estimated volumes remaining in the pits in 2020 were as follows:

- E-South Final Pit: 342,000,000 gallons;
- RP-D9 Final Pit: 403,000,000 gallons;

- B-North Final Pit: 375,000,000 gallons; and
- BX Final Pit: 1,290,000,000 gallons.

The pits can have depths greater than 100 feet. The groundwater potentiometric surface is generally understood to be above the bottom of the pits. Multiple seams of lignite at varying depths below the ground surface were removed from these pits during mining.

According to the U.S Department of Energy, Office of Scientific and Technical Information*, Trace elements in Texas Lignite*, 1983, during coal mining and utilization, trace elements are released into the environment. Certain of these elements may have beneficial or neutral effects while other trace elements are potentially harmful. On a national basis, nine of these elements: antimony, arsenic, boron, cadmium, germanium, mercury, molybdenum, selenium, and silver; are commonly found in concentrations greater than the levels present in typical crustal rocks. Because of the conditions under which Gulf Coast lignites were deposited and the nature of lignites in general, the modes of occurrence and concentrations of trace elements in Texas lignites are different from coals found elsewhere in the United States. Based on a limited data set of 38 lignite samples from Arkansas, Mississippi, and Alabama compiled in 1975, Gulf Coast lignites were identified as having higher levels of boron, lanthanum, lead, selenium, uranium, yttrium, and zirconium than other US coal regions.

2.2.3 Lignite/Shale Seams in Monitoring Wells

A review of the boring logs for the Landfill monitoring network identified lignite seams and shale starting at around 37 feet below ground surface (bgs) in some of the borings. As noted on the boring logs in Attachment 1, monitor wells were completed across these lignite and shale seams. Although lignite seams and shale are not noted in all of the borings for the monitoring network, the presences of these minerals in the subsurface would have an effect on groundwater quality for the region.

As noted above, lignite contains trace elements that are released into the environment, which include boron. As presented in the Geological Survey Bulletin 1314-A, *Geochemical Investigations of Some Black Shales and Associated Rocks,* trace elements of *boron*, barium, gallium, and strontium are found in the upper cretaceous shales of Texas. The following section discusses the geochemistry of the groundwater in the area.

2.3 Groundwater Geochemistry and Boron in Groundwater

Boron is normally considered to be a minor constituent in groundwater since it is generally present in low concentrations (Palmucci & Rusi, 2014). Apart from a potential boron source area, the primary origin of boron in groundwater is typically associated with the processes of sorption and desorption from mineral surfaces including soil and bedrock (Ravenscroft & McArthur, 2004). Boron is often cited

as a contaminant trace chemical and usually occurs as a non-ionized form as H_3BO_3 in soils at pH <8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the concentration of boron in groundwater include weathering, human activity, evaporative concentration, ion-exchange, EC, and pH. Ravenscroft & McArthur (2004) investigated the mechanism of regional boron enrichment in groundwater and the results indicated that the main process resulting in boron enrichment in groundwater was flushing by fresh groundwater. The desorption of boron from mineral surfaces could be affected by pH, ionic strength, salinity, and the HCO_3/CO_3 ratio. Decreases in pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH in rocks, soils, and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

Additional investigations confirmed that the presence of boron in groundwater depends on the EC (salinity), such that the concentration of boron increases with increasing EC. Halim et al. (2010) reported that the increae in Cl^- contributes to an increase in EC value since a strong linear correlation (R^2 = 0.88) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between elevated concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) determined that the concentration of boron in groundwater was related to SO_4^{2-} and the age affect.

Regarding concentrations of boron in groundwater at the Landfill, the source of boron is more likely natural rather than anthropogenic. Therefore, the increase in concentration of boron at MW-21 can be related to natural variations in groundwater geochemistry related to pH, ion exchanges, EC, and salinity.

Section 3
Alternative Source Demonstration

The 11th semi-annual detection monitoring event was conducted on October 5, 2022 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. One apparent SSI was identified: boron.

The UTLs and sampling results for the for the apparent SSI are provided in Table 1 below.

Table 1 SSI – April 2022 Semi-annual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-21 (DG)	NA	0.44	10/05/2022	1.48	mg/L

Notes: DG = Downgradient
mg/L = milligrams per Liter

Alternative sources for the apparent SSI encompass a range of apparent lines of reasoning and include the following non-CCR sources located in the vicinity of the Landfill:

- As presented in Section 2, the Station and surrounding vicinity are densely populated with historical and current oil and gas activities consisting primarily of natural gas production wells;
- Monitor wells were completed into and screened across both lignite and shale seams that are a source of trace elements such as boron; and
- A lignite mine is located immediately south of the Landfill and mining operations can impact the groundwater quality and pH of groundwater over a long period of time.

Acidity is transported from a mine in groundwater or by surface water runoff that can then infiltrate into groundwater. Through migration, such groundwater can impact groundwater quality at and in the vicinity of the Landfill. During the course of historical detection monitoring at the Landfill, the pH of groundwater at MW-21 has remained within the range of 5.0 to 5.6 S.U. As discussed in Section 2.2, low pH (< 6) conditions are favorable for the dissolution of boron from mineral surfaces in the soil and bedrock.

In summary, the apparent boron SSI in MW-21 for the 11th semi-annual detection monitoring event is most likely related to other non-CCR off-site sources (oil and gas activities or the historic lignite mine), the apparent presence of lignite seams withing the screened portion of monitor wells, or natural variations in groundwater geochemistry (acidic pH conditions) rather than a release to groundwater from the Landfill.

Section 4
Conclusions

Based on statistical evaluation of the October 5, 2022 semi-annual detection monitoring event analytical results, one apparent SSI: boron; was identified for the Landfill. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSI:

- Numerous historical and active natural gas wells and their associated well pads and surface pits are located immediately surrounding and within the footprint of the Landfill. Well pits associated with the natural gas wells contribute spent completion or workover fluids to groundwater that contain constituents that are also CCR Rule Appendix III detection monitoring constituents;
- As shown on the boring logs for the Landfill CCR groundwater monitoring network, lignite and shale seams that contain trace amounts of boron are present at the Landfill and several monitor wells were installed into and screened across these seams;
- The Jewett lignite surface mine is located approximately 1.5 south of the Landfill; and
- Natural variations in groundwater geochemistry likely related to changes in pH, ion exchanges, EC, and/or salinity.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources and/or natural variations in groundwater geochemistry, rather than a release from the Landfill have been demonstrated to be responsible for the apparent SSI observed. Based on this successful ASD, NRG will continue semi-annual detection monitoring for the Landfill per 30 TAC Chapter 352.

Section 5
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Figures

CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Generating Station
F.M. 39 Road, Jewett, Texas 75838

TITLE

LOCATION OF CCR LANDFILL

DRAWN BY: **O. Fonseka**	REQUEST BY: **J. Atwell**	PROJECT NO. **528473**
DWG. DATE: **October 2023**	PROJECT-MGR: **T. Dworaczyk**	FIGURE **1**

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

LAST EDIT: 10/06/2023 - FILE LOCATION: HOU C:\OF-TRC\DRAFTING-CDrive\ECR-Files\NRG\Limestone Generating Stn - Jewett-TX\ Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

DRAWING By: **Oskar Fonseka** - FILE NAME: Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

LEGEND

- Monitor Well Location
- Landfill CCR Monitor Well
- Landfill Background CCR Monitor Well
- ***446.68*** Groundwater Elevation (FT MSL)
- ***NM*** Not Measured
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- CCR Landfill Boundary

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST

NOTE:
GROUNDWATER ELEVATIONS MEASURED BY HMI ON JANUARY 25, 2021

0 690 1,380 FT

1 " = 700 '
1:8,400

N

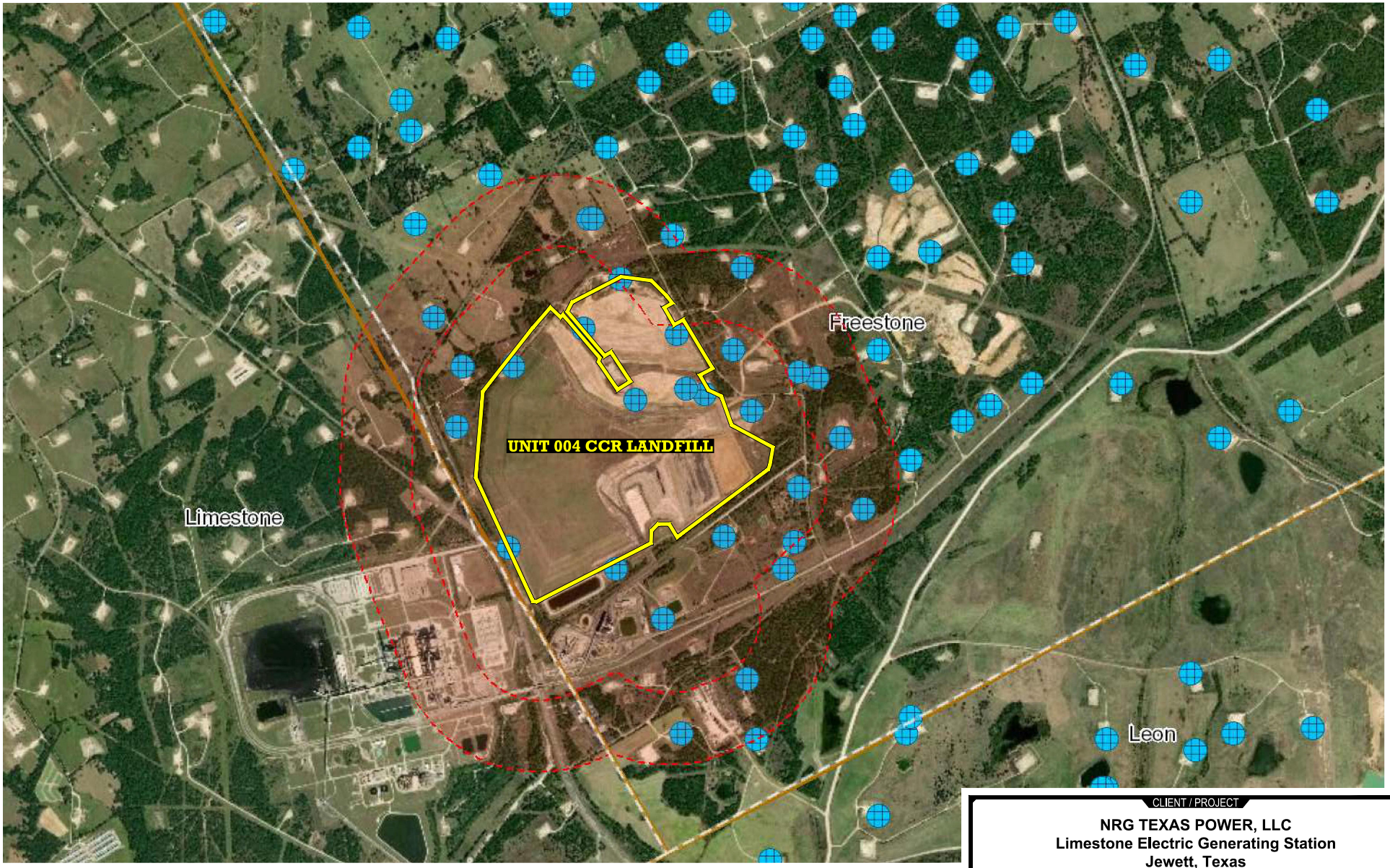
PROJECT:
NRG TEXAS POWER, LLC
LIMESTONE
JEWETT, TEXAS

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE - OCTOBER 2022

DRAWN BY: F. YARBROUGH	PROJ. NO.: 477046.0001.0000
CHECKED BY: J. ATWELL	**FIGURE 2**
APPROVED BY: A. DWORACZYK	
DATE: JANUARY 2024	

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX, 77079
Phone 281.616.0100
www.trcsolutions.com

FILE NO.: 477046_2-3_December.mxd



July 3, 2019

polygonLayer

- Override 1
- METGCD Wells

METGCD Wells

- Yes
- Counties

1:36,112

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

Halff Associates, Inc.
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Electric Generating Station
Jewett, Texas

TITLE

OIL AND GAS WELL MAP

DRAWN BY: O. Fonseka	REQUEST BY: T. Dworaczyk	PROJECT NO. 528473
DWG. DATE: October 2023	PROJECT-MGR: T. Dworaczyk	

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

FIGURE 3

Attachments

Attachment 1 Boring Logs

ESPEY, HUSTON & ASSOCIATES, INC.
ENGINEERING & ENVIRONMENTAL CONSULTANTS

HOLE NO. MW-1

DRILLING LOG

HOLE NO.	MW-1
LOCATION	Limestone Electric Generating Station
GROUND ELEV.	±418.06'
DRILL ANGLE	0°
COLLAR ELEV.	None
DRILL DIRECTION	Vertical
TOTAL DEPTH	60'
STARTED	10/1/86
ELEV. DATUM	Surface
COMPLETED	10/1/86

	DEPTH	DATE	TIME
FIRST FREE WATER			
BAILED WATER LEVEL			
STATIC WATER LEVEL	4.88	10/7/86	1635

PROJECT NO.	8754
SHEET	1 OF 1
PROJECT/SITE	Houston Lighting & Power
GEO/ENG.	Clyde Smith
CONTRACTOR	Reed & Morris
DRILLER	Ray Reed
RIG MODEL	CFD-1
HOLE TYPE	Rotary
HOLE DIAMETER	5"
DRILL FLUID	H_2O

TESTS	SAMPLES	COMPLETION

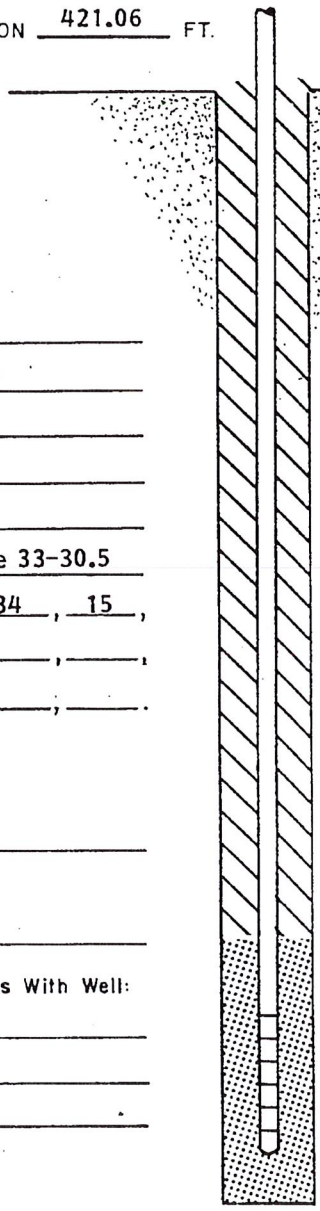
ELEV.	DEPTH	LEGEND	CLASSIFICATION/DESCRIPTION	RECOV.	SAMPLES	DRILLING REMARKS
	5		Brown sand and clay			
	10		Light gray, fine grained sand with minor amounts gray clay and ironstone			
	15					
	20					
	25		Gray silty clay			
	30					
	35		Interbedded brown to tan sand and gray clay			
	40		- very lignitic 39-41'			
	45		Fine gray sand with thin interbeds of gray clay			
	50					
	55		Gray clay			
	60		T.D. at 60'			

WELL COMPLETION RECORD

JOB NO. 8754 WELL NO. MW1 GEOLOGIST Clyde Smith

CLIENT HL&P DRILLER Reed & Morris

TOP OF CASING ELEVATION 421.06 FT. STICK-UP 3.0 FT.



DETAILS OF CONSTRUCTION:

Date Completed 10/1/86

Hole Diameter (in) 7 7/8

Screen Size (in) .010

Screen Length (ft) 20

Casing Size (in) 4

Packer Depth (ft) Bentonite 33-30.5

Centralizer Depths (ft) 54, 34, 15,

_____, _____, _____, _____, _____,

_____, _____, _____, _____, _____.

Completion Technique:

1) Sand Placement Method

Tremie

2) Grout Placement Method

Tremie

Description of Potential Problems With Well:

None

MATERIALS

CEMENT (sks) 12

SAND (ft^3) 8

PVC (ft) 38.5

TOP OF BENTONITE PACK 30.5 FT.

TOP OF SAND PACK 33 FT.

TOP OF SCREEN 35.5 FT.

BOTTOM OF SCREEN 55.5 FT.

BOTTOM OF HOLE 56 FT.

NOTE: ALL DEPTHS ARE REFERENCED TO "DEPTH BELOW GROUND SURFACE"

STATE OF TEXAS WELL REPORT for Tracking #178434

Owner:	**NRG Texas Power Limestone Station**	Owner Well #:	**MW-17**
Address:	**Rt. 1 BoX 85 Jewett, TX 75846**	Grid #:	**39-64-1**
Well Location:	**FM 39 N. Jewett, TX 75846**	Latitude:	**31° 05' 14" N**
		Longitude:	**096° 07' 26" W**
Well County:	**Limestone**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/20/2009** Drilling End Date: **4/20/2009**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.5**	**0**	**55**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**38**	**55**	**Gravel**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**36**	**4, Portland**
	36	**38**	**2, Bentonite**
	38	**55**	**12 Sand**

Seal Method: **Grout**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: **46 ft.** below land surface on **2009-04-20** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Advanced Drilling Systems, Inc.**

904 W. Tidwell
Houston, TX 77091

Driller Name: **David Rogers** License Number: **52037**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1**	**Yellowish red SILTY CLAY with abundant Red Mottling**
1	**5**	**Gray very SILTY SAND moist, with some**
		clayey sand seams
		- very silty
5	**12**	**Gray CLAYEY SAND with abundant strong**
		brown mottling
		- very silty
		- some black lignite seams
		- wet
		- abundant yellowish brown mottling
		- abuundant strong brown
		- very moist
12	**16**	**Gray, very SILTY SAND**
		- very moist
		- very fine grained
		- some yellowish brown mottling
		- very silty

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
2	**New**	**PVC**	**Casing 0-40 sch-40**
2	**New**	**PVC**	**Slotted 40-55 0.01**

16-20: Strong brown SILTY CLAY with abundant silty sand seams
- some yellowish brown clayey sand seams
20-26: Yellowish brown CLAYEY SAND with
abundant gray hard brittle clay seams
- some brownish yellow limonitic iron seams
- abundant dark gray clay seams
- very moist
- very silty
26-31: Brown very silty sand, very fine grained
31-42: Brown CLAYEY SAND with abundant
gray clay seams
- very moist
- some muscovite flakes
- abundant dark gray clay seams
- very moist
- some strong brown silty sand seams
- very silty
- very abundant dark gray seams
42-53: Dark gray SILTY SAND, fine grained,
abundant dark gray silty clay seams
- very silty
- saturated @ 46 bgs.
- abundant dark gray silty clay seams
- very silty
- very moist
53-55: Very dark gray CLAY, firm
- some light gray silt seams
- lignite seams

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

MW-19
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-19 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10507460.00 ' E. Coord. 3574645.00 ' Surface Elevation 440.94 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 443.79 ' Stickup 2.85 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
440.94	0					0-5	0-1.6	SANDY CLAY: Yellowish-brown (10YR 6/4), dry, crumbly, hard, sand is less than 10 percent, PP=4.0 TSF
440							1.6-6.2	SILTY SAND: Light yellowish-brown (10YR 6/4), dry to damp, firm to hard, semi-plastic; thinly laminated. PP=3.5-4.5 TSF
	5					5-10		
435							6.2-8	SANDY CLAY: Light yellowish-brown (10YR 6/4) to yellowish-brown (10YR 5/8), dry to damp, stiff to hard; semi-plastic; thinly laminated.
							8-10	No Recovery
	10					10-15	10-18.5	SILTY SAND: Dark yellowish-brown (10YR 4/6), dry to damp becoming wet at 15.5 to 15.8 feet then dry to damp 15.8 to 18, stiff to hard; soft, friable; thinly bedded. @16.8 feet thin lens of rocks, sand is well sorted;. rootlets at 10.3 feet.
430								
	15					15-20		
425								
							18.5-20	No Recovery
	20							

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-19
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-19 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10507460.00 ' E. Coord. 3574645.00 ' Surface Elevation 440.94 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 443.79 ' Stickup 2.85 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
420	20					20-25	20-34	SILTY SAND: Light olive-brown (2.5Y 5/3), damp becoming moist at 25 to 25.8 feet, damp 25.5 to 28 feet, damp to moist 28 to 30 feet, soft, friable, thinly bedded; some lenticular clay nodules from 30 to 34 feet.
415	25					25-30		
410	30					30-35		
405	35						34-35.4	No Recovery T.D. = 35.40 '
	40							

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-20
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-20 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 39.40 ' Boring Diam. 9.00 "

N. Coord. 10507730.00 ' E. Coord. 3574995.00 ' Surface Elevation 442.12 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 29.00 ' Sump Length 0.40 '

Top of Casing Elevation 445.11 ' Stickup 2.99 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Driling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
442.12	0				0-5	0-0.7	SANDY CLAY: Mottled light yellowish-brown (10YR 5/4) and light brownish-gray (10YR 6/2), dry, firm, brittle; sand less than 10 percent, thinly laminated.
						0.7-1.6	SILTY SAND: Yellowish-brown (10YR 5/4), dry, soft, friable; sand is fine grained, subangular, silt approximately 10 percent.
440						1.6-4	SANDY CLAY: Mottled light yellowish-brown (10YR 5/4) and light brownish-gray (10YR 6/2), dry, firm to stiff, brittle; sand less than 10 percent, thinly laminated. PP=2.5-3.5 TSF
						4-5	No Recovery
	5				5-10	5-8.5	SANDY CLAY: Very dark brown (7.5YR 2.3/3), dry, hard, brittle. PP=4.5+TSF @6.8 feet becomes strong brown (7.5YR 4/6); @7.8 feet becomes light olive brown (2.5 Y 5/3) with some angular rock fragments.
435							
						8.5-10	No Recovery
	10				10-15	10-25	SILTY SAND: Light yellowish-brown (2.5Y 6/4) and light gray (2.5Y 7/2) interbedded, dry, friable, well sorted, silt approximately 10 percent. @13.1 feet possible cross-bedding with rip-up (clay) clasts. @17.8 becomes damp, silt content increases to approximately 30 percent.
430							
	15				15-20		
425							
	20						

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10/14/16

ERM Environmental Resources Management

MW-20 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-20 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 39.40 ' Boring Diam. 9.00 "

N. Coord. 10507730.00 ' E. Coord. 3574995.00 ' Surface Elevation 442.12 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 29.00 ' Sump Length 0.40 '

Top of Casing Elevation 445.11 ' Stickup 2.99 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Driling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20				20-25		
420							
	25				25-30	25-39.4	SILTY SAND: Olive-brown (2.5Y 4/4), damp to wet (becomes wet at 30-30.8 and 35-35.5 feet), soft, friable. Thinly laminated clay lenses at 37.7 to 37.8 ft. and 38.8 to 39.1 ft., damp, brittle.
415							
	30				30-35		
410							
	35				35-39.4		
405							
	40						T.D. = 39.40 '

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ERM Environmental Resources Management

MW-21
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-21 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10508050.00 ' E. Coord. 3575406.00 ' Surface Elevation 443.46 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 446.35 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
443.46	0				0-5	0-0.8	SANDY CLAY: Mottled yellowish-brown (10YR 5/4) and yellowish-red (10 YR 4/6), dry, stiff, brittle. PP=3.5 TSF
						0.8-1.2	SILTY SAND: Strong brown (7.5 YR 5/6), dry, soft, friable, well sorted. Silt approx. 10 percent.
						1.2-2.9	SANDY CLAY: Dark yellowish-brown interlaminated with light brownish-gray (10YR 6/2), dry to damp, firm, semi-plastic. PP=2.5 TSF
440						2.9-8	SILTY SAND: Strong brown (7.5 YR 5/6) to yellowish-brown (10YR 4/4), dry, soft, friable, well sorted. Silt approx. 10 percent. @6.1 becomes dark brown (7.5YR 7/2).
	5				5-10		
435						8-10	No Recovery
	10				10-15	10-19.5	SILTY SAND: Mottled dark yellowish-brown (10YR 4/4) and gray (10YR 5/1)dry, soft, friable, silt content about 40 percent. @11.2 feet becomes yellowish-brown (10YR 5/6) interlaminated with gray (10YR 5/1); @13.1 feet silt content decreases to 10 percent.
430							
	15				15-20		
425						19.5-24.5	SILTY SAND: Yellowish-brown (10YR 5/4), moist, soft, friable, thinly bedded with well developed partings. @22.0 to 22.5 and 23.0 to 24.5 feet silt content increases to 40 percent.
	20						

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ERM Environmental Resources Management

MW-21
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-21 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10508050.00 ' E. Coord. 3575406.00 ' Surface Elevation 443.46 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 446.35 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
420	20					20-25		
	25					25-30	24.5-31.4	SILTY SAND: Olive brown (2.5Y 4/5), moist, soft, friable, thinly bedded with well developed partings.
415	30					30-35.4		
410	35						31.4-31.9 31.9-35.4	CLAY: Interlaminated with silty sand. Clay is black (7.5YR 2.5/1), damp, semi-plastic, soft. Silty sand is brown (10YR 4/3), damp, soft, friable. SILTY SAND: mottled yellowish brown (10YR 5/6) and light brownish-gray (10YR 6/2), damp becomes wet at 32.2 to 33 feet, laminated.
405	40							T.D. = 35.40 '

STATE OF TEXAS 10/16/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-22
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-22 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.00 ' Boring Diam. 9.00 "

N. Coord. 10508270.00 ' E. Coord. 3575669.00 ' Surface Elevation 444.68 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 24.50 ' Sump Length 0.40 '

Top of Casing Elevation 447.59 ' Stickup 2.91 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
444.68	0				0-5	0-1.6	SILTY SAND: Strong brown (7.5YR 5/6), dry, soft, friable.
						1.6-3.5	SANDY CLAY: Interlaminated dark yellowish-brown (10YR 4/4) and light brownish-gray (10YR 6/2), damp, semi-plastic. PP=2.5 TSF
						3.5-5	No Recovery
440	5				5-10	5-7.5	SILTY SAND: Strong brown (7.5YR 5/6), dry, soft, friable.
						7.5-8.5	SANDY CLAY: Interlaminated dark yellowish-brown (10YR 4/4) and light brownish-gray (10YR 6/2), damp, semi-plastic.
						8.5-10	No Recovery
435	10				10-15	10-19	SILTY SAND: Interlaminated gray (7.5YR 6/1 and strong brown (7.5 YR 5/6), damp, loose, friable, well sorted, well developed partings. @11.0 to 11.6 bioturbation; @12.5 lenticular clay nodules (interclasts); @13.0 silt content increases to 40 percent.
430	15				15-20		
						19-24	SILTY SAND: Interlaminated silty sand and sandy clay. Silty sand as above. Sandy clay is strong brown, dry to damp, crumbly.
425	20						

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ERM Environmental Resources Management

MW-22
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-22 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.00 ' Boring Diam. 9.00 "

N. Coord. 10508270.00 ' E. Coord. 3575669.00 ' Surface Elevation 444.68 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 24.50 ' Sump Length 0.40 '

Top of Casing Elevation 447.59 ' Stickup 2.91 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-25		
420	25					25-30	24-30	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent. @25.7 feet, silt content increases to 40 percent. @28.1 silt content decreases to 10 percent.
415	30					30-35	30-31	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent.
							31-31.8	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 40 percent.
							31.8-35	SILTY SAND: Brown, damp to moist, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent.
410	35							T.D. = 35.00 '
405	40							

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 45.00 ' Boring Diam. 9.00 "

N. Coord. 10505630.00 ' E. Coord. 3571983.00 ' Surface Elevation 434.36 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 30.00 ' Sump Length 0.40 '

Top of Casing Elevation 437.25 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

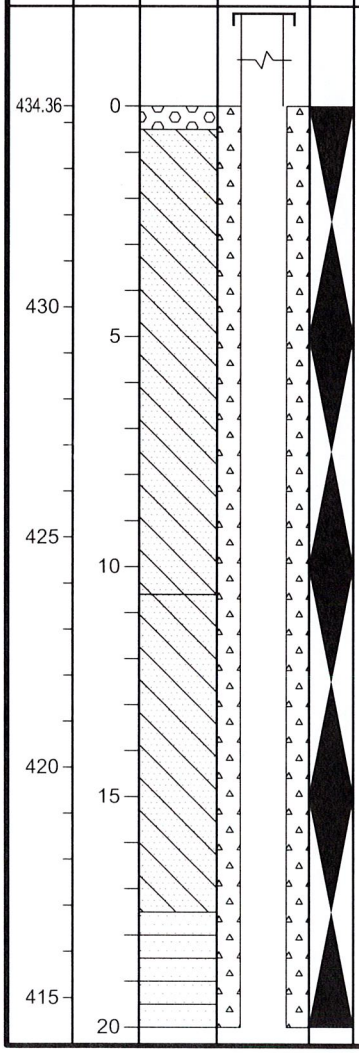
Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer



Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0-5	0-0.5	GRAVEL: Roadbase - crushed limestone with silt matrix. greenish-gray (Gley 1/6/10Y).
	0.5-10.6	SANDY CLAY: Fill Material - Light yellowish- brown (10YR 6/4), dry, thinly laminated, brittle. PP =1.0 TSF
5-10		
10-15	10.6-10.61	LIGNITE: Black organic plant material consisting of decaying rootlets and grass.
	10.61-17.5	SANDY CLAY: Dark red (2.5 YR 3/6), dry, firm to stiff, rootlets at 13.4 ft., becomes thinly bedded at 14.3 ft. Sharp basal contact.
15-20		
	17.5-27.4	SILTY SAND: Very dark grayish-brown (10YR 3/2) grading down to light gray (10YR 7/1), soft, friable; thinly bedded, sand is fine grained, well sorted, subangular to angular. @23.1 becomes mottled with dark yellowish-brown.

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ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 45.00 ' Boring Diam. 9.00 "

N. Coord. 10505630.00 ' E. Coord. 3571983.00 ' Surface Elevation 434.36 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 30.00 ' Sump Length 0.40 '

Top of Casing Elevation 437.25 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

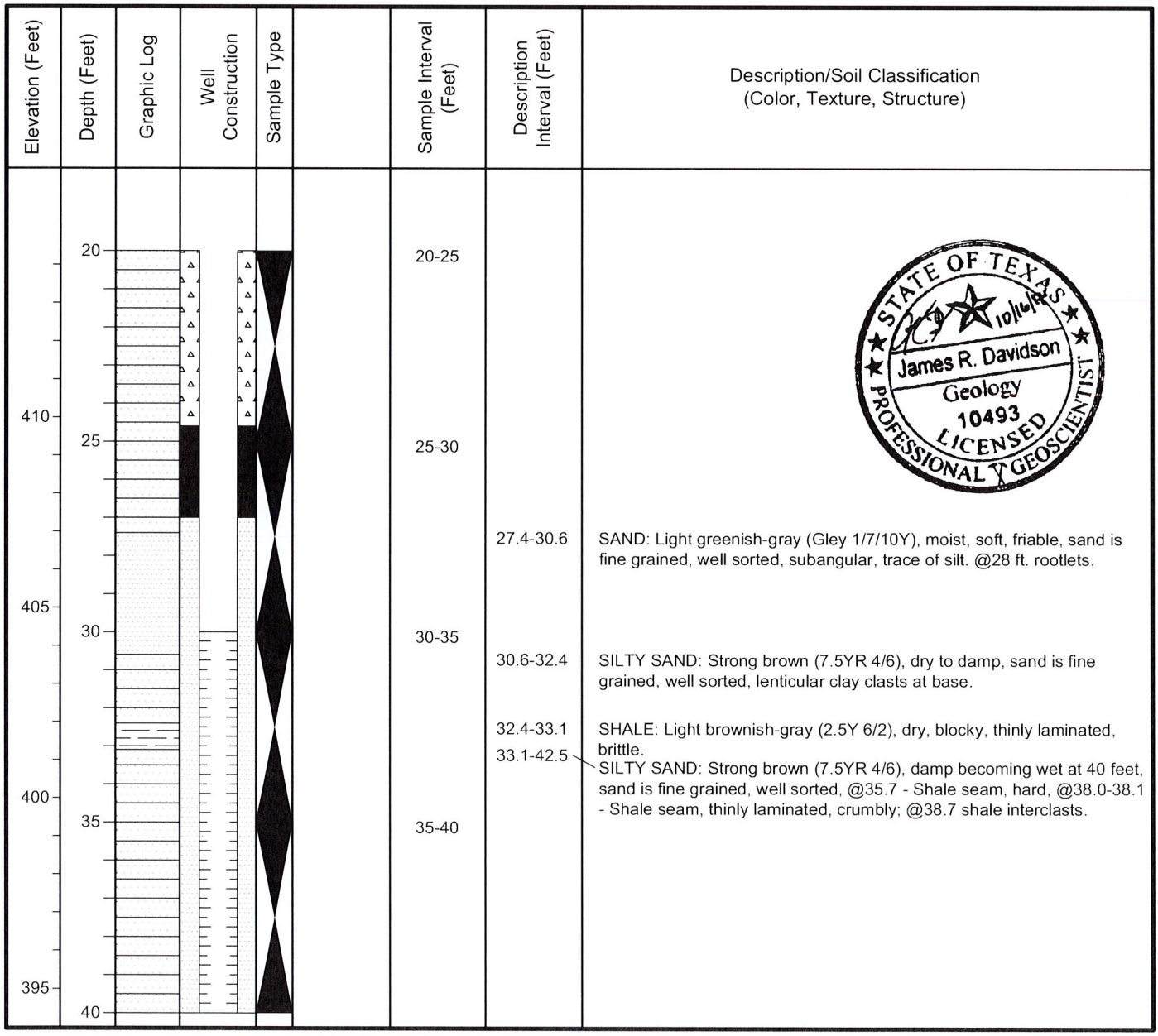
Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer



ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 45.00 ' Boring Diam. 9.00 "

N. Coord. 10505630.00 ' E. Coord. 3571983.00 ' Surface Elevation 434.36 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 30.00 ' Sump Length 0.40 '

Top of Casing Elevation 437.25 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40					40-45		
							42.5-43.3	SHALE: Light brownish-gray (2.5Y 6/2), dry, blocky, thinly laminated, brittle.
							43.3-45	Silty Sand
390	45							T.D. = 45.00 '
385	50							
380	55							
375	60							

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10/14/16

ERM Environmental Resources Management

MW-28 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 70.00' Boring Diam. 9.00 "

N. Coord. 10511130.00 ' E. Coord. 3573967.00 ' Surface Elevation 474.57 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
474.57	0				0-5	0-5	NOT SAMPLED: Hydrovac
470	5				5-10	5-18	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30 %: fine grained, subangular. @ 10 ft, sand content decreases to approx. 10%, breaks along laminae.
465	10				10-15		
460	15				15-20		
455	20					18-18.4	CLAYEY SAND: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly bedded, fine grained, uncemented, cohesive, well sorted, subangular, clay approx. 40% - dry, damp.
						18.4-22.5	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-28 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 70.00' Boring Diam. 9.00 "

N. Coord. 10511130.00 ' E. Coord. 3573967.00 ' Surface Elevation 474.57 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

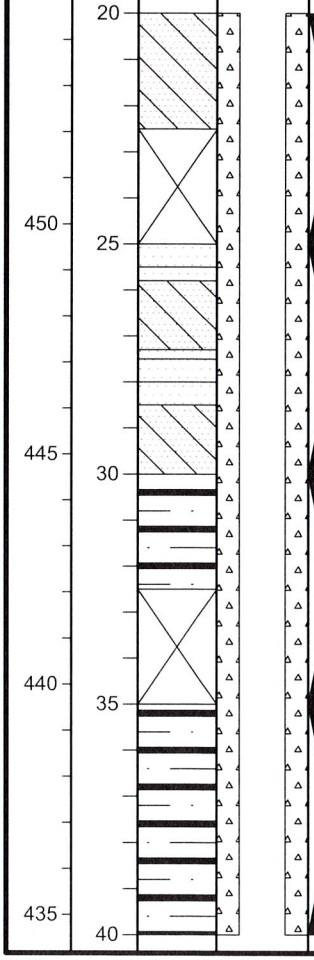
Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer



Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
20-25		
	22.5-25	No Recovery
25-30	25-25.8	SILTY SAND: Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, damp to moist, cohesive, silt approx. 10%
	25.8-27.3	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
	27.3-28.5	SILTY SAND: Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, dry to damp, cohesive, silt approx. 10%
	28.5-30	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
30-35	30-32.5	INTERBEDDED CLAY AND SAND: Silty Sand - 30-30.3 ft, 31.2-31.4 ft, 32.2-32.4 ft. - Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, damp to moist, cohesive, silt approx. 10%. Sandy Clay - 30.3-31.2 ft, 31.4-32.2 ft, 32.4-32.5 ft. - 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
	32.5-35	No Recovery
35-40	35-40	INTERBEDDED CLAY AND SAND: Thinly bedded, alternating Silty Sand and Shale. Silty Sand - 7.5YR/5/8 Strong brown, fine grained, uncemented, well sorted, subangular, dry to damp. Shale - 7.5YR/5/1 Gray, non-plastic, dry, 2.0 TSF, trace sand.

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-28
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 70.00' Boring Diam. 9.00 "

N. Coord. 10511130.00 ' E. Coord. 3573967.00 ' Surface Elevation 474.57 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40					40-45	40-45	INTERBEDDED CLAY AND SAND: Shale - 40-40.4 ft, 40.8-41.1 ft, 41.4-43.8 ft, 44.2-45 ft. - non-plastic, thinly laminated, breaks along laminae, trace sand. Silty Sand - 40.4-40.8 ft, 41.1-41.4 ft, 43.8-44.2 ft. - 7.5YR/5/8 Strong brown, fine grained, uncemented, subangular, well sorted, damp to moist.
430	45					45-50	45-50	INTERBEDDED CLAY AND SAND: Thinly bedded, alternating Silty Sand and Shale. Silty Sand - 7.5YR/6/1 Gray, fine grained, uncemented, subangular, well sorted, dry to damp. Shale - Gley 1/2.5/10Y Greenish Black, non-plastic, dry, trace sand.
425	50					50-55	50-56.6	SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout. @ 52.9-53.2 Silty Sand seam - 7.5YR/4/3 Brown, fine grained, uncemented, subangular, wet.
420	55					55-60		
							56.6-57.1	SILTY SAND: 7.5YR/4/2 Brown, fine grained, uncemented, subangular, wet to saturated
							57.1-58.5	SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout
							58.5-60	No Recovery
415	60							

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-28
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

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Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
410	60					60-65	60-60.7 60.7-69.5	INTERBEDDED CLAY AND SAND: Thinly alternating Silty Sand and Shale. Silty Sand - 7.5YR/6/1 Gray, fine grained, uncemented, subangular, well sorted, dry to damp. Shale - Gley 1/2.5/10Y Greenish Black, non-plastic, dry, trace sand. SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout. @ 61.5-61.7 - Silty Sand lense, 7.5YR/4/2 Brown
405	65					65-70		
400	70							T.D. = 70.00'
395	75							
	80							

STATE OF TEXAS
James R. Davidson
Geology
10493
LICENSED
PROFESSIONAL GEOSCIENTIST
10/16/16

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: August 31, 2023
Facility Name: NRG-Limestone Generating Station
Permit or Registration No.: CCR 115

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: _____ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

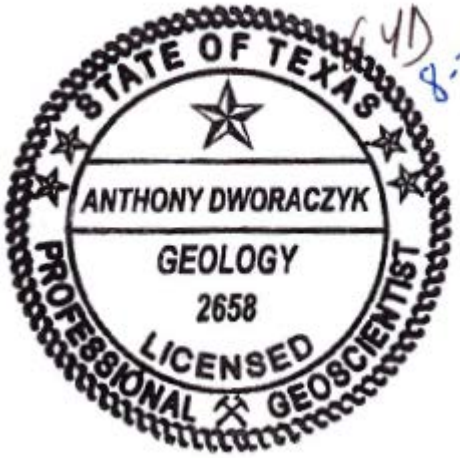
Alternative Source Demonstration

Limestone Electric Generating Station
Landfill (Unit 004)

TCEQ Coal Combustion Residuals (CCR) Registration No. CCR115
Industrial Solid Waste Registration No. 32490
EPA Identification No. TXD000837336
RN100542927/CN603207218

August 2023

Prepared For
NRG Texas Power, LLC
Jewett, Texas



Gregory E. Tieman, L.R.S.
Senior Client Service Manager

Tony Dworaczyk, P.G.
Project Manager

14701 St. Mary's Lane, Suite 500, Houston, TX 77079, ● 713.244.1073 Phone ● www.TRCcompanies.com

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Figure 2 Potentiometric Flow Map – April 2023

Figure 3 METGCD Well Map

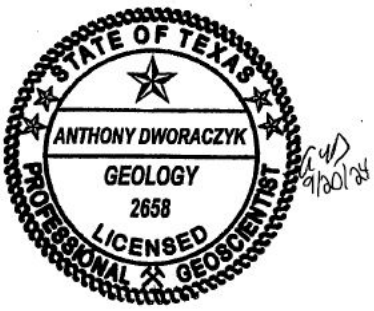
Attachments

Attachment 1 Boring Logs

I hereby certify that the alternative source demonstration presented within this document for the NRG Limestone Coal Ash Disposal Landfill CCR Unit has been prepared to meet the requirements of 30 TAC 352.4; 352.941(c); and 352.1321. This document is accurate and has been prepared in accordance with good geosciences practices, including the consideration of applicable industry standards, and with the requirements of 30 TAC 352.4; 352.941(c); and 352.1321.

Name: Tony Dworaczyk **Expiration Date:** 1/30/2025

Company: TRC Environmental Corporation **Date:** 9/20/2024



Executive Summary

The NRG Texas Power, LLC (NRG) Limestone Electric Generating Station (Station) is located approximately seven miles northwest of Jewett, Texas and approximately 0.5 miles north of the intersection of Limestone, Freestone, and Leon Counties. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Station has one active CCR unit, the Landfill (Unit 004), that is managed pursuant to 30 TAC Chapter 352, which is the subject of this Alternative Source Demonstration (ASD).

The 12th semi-annual groundwater detection monitoring event was conducted on April 4, 2023. Verification sampling was performed on May 1, 2023. Statistical evaluation of the Appendix III monitoring parameters was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Three apparent SSIs: boron, sulfate, and pH; were identified. TRC, on behalf of NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on June 12, 2023.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 2023 verification sample results, are the fourth data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for the apparent SSIs at the Landfill, based on the following lines of reasoning:

- Numerous historical and active natural gas wells and their associated well pads and surface pits are located immediately surrounding and within the footprint of the Landfill. Well pits associated with the natural gas wells contribute spent completion or workover fluids to groundwater that contain constituents that are also CCR Rule Appendix III detection monitoring constituents;
- As shown on the boring logs for the Landfill CCR groundwater monitoring network, lignite and shale seams that contain trace amounts of boron are present at the Landfill and several monitor wells were installed into and screened across these seams;
- The Jewett lignite surface mine is located approximately 1.5 miles south of the Landfill; and
- Natural variations in groundwater geochemistry likely related to changes in pH, ion exchanges, electrical conductivity (EC), and/or salinity.

Therefore, NRG will continue performing semi-annual detection monitoring for the Landfill per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) Limestone Electric Generating Station (Station) is located approximately seven miles northwest of Jewett, Texas and approximately 0.5 miles north of the intersection of Limestone, Freestone, and Leon Counties. The Station is bisected by Farm-to-Market Road 39 (FM 39), which runs north-south through the middle of the Station. The western portion of the Station is located in Limestone County and includes the electricity generating portion of the Station. The eastern portion of the Station is located in Freestone County and includes the solid waste disposal area (SWDA).

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015). CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has one active CCR-management unit – Landfill (Unit 004).

The Landfill is located within the eastern portion of the Station as shown on Figure 1. The Landfill was constructed in 1980 and is used for the final disposition of CCR. The western half of the Landfill has reached capacity and historically had been closed and capped prior to the effective date of the CCR Rule (October 19, 2015). CCR is currently being placed at the southern part of the eastern portion of the Landfill.

1.1.1 Groundwater Monitoring Program

The certified CCR monitoring well network for the Landfill consists of two upgradient background monitoring wells (MW-27R and MW-28) and eight downgradient monitoring wells (MW-01, MW-02, MW-17, MW-18, MW-19, MW-20, MW-21, and MW-22). A groundwater potentiometric surface map was prepared by TRC for the April 2023 semi-annual detection monitoring event and is provided in this ASD as Figure 2. The direction of groundwater flow beneath the Landfill was to the south - southwest.

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual

detection monitoring events were documented in the *Annual Groundwater Monitoring Report, Landfill (Unit 004)* (ERM 2018a) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the Landfill per the federal CCR Rule and 30 TAC Chapter 352. As of the April 2023 sampling event, a total of 12 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 2023 verification sampling results , are the fourth data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD to evaluate three apparent SSIs above background levels: boron, sulfate, and pH; for the 12th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the Landfill.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Waco Sheet* (BEG 1972), the Station is primarily located within the outcrop of the Calvert Bluff Formation of the Wilcox Group. Minor portions of the southeast corner of the Station are located within the outcrop of the Carrizo Sand and minor portions of the southwest corner of the Station are immediately underlain by alluvium. The Calvert Bluff Formation underlies both the Carrizo Sand and alluvium where present.

The Landfill is located solely within the outcrop of the Calvert Bluff Formation (BEG 1972); however, site investigation data indicate the Landfill may also be located within the outcrop of the Carrizo Sand. The Calvert Bluff Formation consists mostly of mudstone interbedded with fine sandstone, lignite, and ironstone concretions. The mudstone contains silt and very fine sand laminae. The Carrizo Sand consists of very fine sand with partings of silty clay, carbonaceous clay, and ironstone. The Carrizo Sand and the Wilcox Group comprise the Carrizo-Wilcox aquifer, which is recognized by the Texas Water Development Board (TWDB) as a major aquifer system in Texas. The Station is located within the outcrop, or the recharge zone, of the Carrizo-Wilcox aquifer (TWDB 2011).

Site investigations were conducted at the Station by Espey, Huston & Associated in 1986; Radian International in 1996 and 1997; EPRI in 2007, and Environmental Resources Management, Inc. (ERM) in 2016. The results of these investigations were summarized in the October 2017 *Ground Water Monitoring Networks for Coal Combustion Residual (CCR) Rule Compliance* report (ERM 2017b). Surficial material at the Landfill consists of in-situ or reworked clay from the Axtell-Tabor soil association. This clay is the source material for the Landfill liner and cap. Boring logs indicate the surficial material is underlain by interbedded clays, silts, and sands of the Quaternary alluvium, Carrizo Sand, and Calvert Bluff Formation. The boundaries between these units are generally indistinguishable.

2.2 Surrounding Area

2.2.1 Oil and Gas Production Wells

The Station and surrounding vicinity are densely populated with historical and current oil and gas activities consisting primarily of the installation and operation of natural gas production wells. Numerous active natural gas wells and their associated well pads, surface pits, subsurface pipelines, and infrastructure are

located immediately surrounding and within the footprint of the Landfill. Figure 3 is a Mid-East Texas Groundwater Conservation District (METGCD) well map showing the locations of wells in the vicinity of the Landfill. The map is limited to Freestone and Leon counties and does not show wells in Limestone County immediately west of the Landfill. This figure demonstrates the extent to which non-CCR sources of constituents to groundwater pervade the vicinity of the Landfill.

Surface well pits typically contain spent completion fluids or workover fluids. Completion or workover fluids are often brine-containing liquids that are used for well testing and are chemically compatible with the formation fluids; and the spent fluids contained in the pits would have come into contact with formation water According to the United States Geological Survey (USGS) National Produced Waters Geochemical Database, water co-produced with hydrocarbons (referred to as "produced water" or "formation water") from geologic formations underlying the Site has the following composition (USGS 2018):

- pH ranging from 4.67 standard units (SU) to 5.6 SU;
- Calcium ranging from 12,560 milligrams per liter (mg/L) to 33,520 mg/L;
- Chloride ranging from 56,980 mg/L to 96,200 mg/L;
- Sulfate ranging from 480 mg/L to 1,790 mg/L; and
- Total dissolved solids (TDS) ranging from 98,330 mg/L to 152,970 mg/L.

Considering the composition of the formation water with which the completion or workover fluids came into contact and the typical brine composition of these fluids, potential releases of these fluids would be expected to affect groundwater quality within the immediate vicinity and downgradient of the natural gas well pads and surface pits. Even minor releases of these fluids could increase the concentrations of calcium, chloride, sulfate, and TDS and decrease the pH in the nearby Landfill upgradient and downgradient monitoring wells.

2.2.2 Lignite Mine

Approximately 1.5 miles south of the Landfill is the Jewett lignite mine. The Jewett Mine is a 35,000-acre surface-mine complex. The mine, which is one of the largest in Texas, produced about 5.3 million short tons of lignite per year, according to the U.S. Department of Energy (USDOE). The 31-year-old mine provided lignite for combustion at the Station. In 2018, NRG decided to close the mine and is in the process of performing reclamation.

In 2020, the Jewett Mine had four final pits containing water ranging from approximately 340 million to 1.5 billion gallons. The estimated volumes remaining in the pits in 2020 were as follows:

- E-South Final Pit: 342,000,000 gallons;
- RP-D9 Final Pit: 403,000,000 gallons;
- B-North Final Pit: 375,000,000 gallons; and

- BX Final Pit: 1,290,000,000 gallons.

The pits can have depths greater than 100 feet. The groundwater potentiometric surface is generally understood to be above the bottom of the pits. Multiple seams of lignite at varying depths below the ground surface were removed from these pits during mining.

According to the U.S Department of Energy, Office of Scientific and Technical Information*, Trace elements in Texas Lignite*, 1983, during coal mining and utilization, trace elements are released into the environment. Certain of these elements may have beneficial or neutral effects while other trace elements are potentially harmful. On a national basis, nine of these elements: antimony, arsenic, boron, cadmium, germanium, mercury, molybdenum, selenium, and silver; are commonly found in concentrations greater than the levels present in typical crustal rocks. Because of the conditions under which Gulf Coast lignites were deposited and the nature of lignites in general, the modes of occurrence and concentrations of trace elements in Texas lignites are different from coals found elsewhere in the United States. Based on a limited data set of 38 lignite samples from Arkansas, Mississippi, and Alabama compiled in 1975, Gulf Coast lignites were identified as having higher levels of boron, lanthanum, lead, selenium, uranium, yttrium, and zirconium than other US coal regions.

2.2.3 Lignite/Shale Seams in Monitoring Wells

A review of the boring logs for the Landfill monitoring network identified lignite seams and shale starting at around 37 feet below ground surface (bgs) in some of the borings. As noted on the boring logs in Attachment 1, monitor wells were completed across these lignite and shale seams. Although lignite seams and shale are not noted in all of the borings for the monitoring network, the presences of these minerals in the subsurface would have an effect on groundwater quality for the region.

As noted above, lignite contains trace elements that are released into the environment, which include boron. As presented in the Geological Survey Bulletin 1314-A, *Geochemical Investigations of Some Black Shales and Associated Rocks,* trace elements of boron, barium, gallium, and strontium are found in the upper cretaceous shales of Texas. The following section discusses the geochemistry of the groundwater in the area.

2.3 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes.

2.3.1 Boron in Groundwater

Boron is normally considered to be a minor constituent in groundwater since it is generally present in low concentrations (Palmucci & Rusi, 2014). Apart from a potential boron source area, the primary origin of boron in groundwater is typically associated with the processes of sorption and desorption from mineral surfaces including soil and bedrock (Ravenscroft & McArthur, 2004). Boron is often cited as a contaminant trace chemical and usually occurs as a non-ionized form as H_3BO_3 in soils at pH <8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the concentration of boron in groundwater include weathering, human activity, evaporative concentration, ion-exchange, EC, and pH. Ravenscroft & McArthur (2004) investigated the mechanism of regional boron enrichment in groundwater and the results indicated that the main process resulting in boron enrichment in groundwater was flushing by fresh groundwater. The desorption of boron from mineral surfaces could be affected by pH, ionic strength, salinity, and the HCO_3/CO_3 ratio. Decreases in pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH in rocks, soils, and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

Additional investigations confirmed that the presence of boron in groundwater depends on the EC (salinity), such that the concentration of boron increases with increasing EC. Halim et al. (2010) reported that the increae in Cl^- contributes to an increase in EC value since a strong linear correlation ($R^2 = 0.88$) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between elevated concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) determined that the concentration of boron in groundwater was related to SO_4^{2-} and the age affect.

Regarding concentrations of boron in groundwater at the Landfill, the source of boron is more likely natural rather than anthropogenic. Therefore, the increase in concentration of boron at MW-21 can be related to natural variations in groundwater geochemistry related to pH, ion exchanges, EC, and salinity.

2.3.2 Sulfate in Groundwater

The presence of sulfate is ubiquitous in groundwater, having both natural and anthropogenic sources. There are many potential sources of sulfate in groundwater including mineral dissolution, atmospheric deposition, and other anthropogenic sources (mining, fertilizer, synthetic detergents, industrial wastewater etc.) (Miao et al., 2012). As groundwater moves through soil and rock formations that contain sulfate minerals, a portion of the sulfate dissolves into the groundwater. Minerals that contain sulfate include magnesium sulfate (Epsom salt), sodium sulfate (Glauber's salt), and calcium sulfate (gypsum). Gypsum is an important contributor to elevated concentrations of sulfate in groundwater aquifers.

Elevated concentrations of sulfate in groundwater are common in the western part of the United States (MDH, 2008).

Sulfate is mobile in soil and can impact groundwater quality. Multiple investigations have indicated that atmospheric deposition, dissolution of gypsum, and oxidation of sulfide minerals can contribute to the concentrations of sulfate in groundwater.

Regarding the concentration of sulfate in groundwater at the Landfill, the source of sulfate is more likely natural rather than anthropogenic. Therefore, the increase in concentration of sulfate may be related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

2.3.3 pH

The one apparent pH SSI identified in MW-01 appears to be related to natural variations in groundwater quality as impacted by oil and gas activity in the area and the presence of lignite in the subsurface resulting in changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP) and are also related to changes in the measured concentrations of CCR constituents.

Section 3
Alternative Source Demonstration

The 12th semi-annual detection monitoring event was conducted on April 4, 2023 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Three apparent SSI was identified: boron, sulfate, and pH.

As part of the ASD activities, verification sampling was conducted on May 1, 2023 for the initial three apparent SSIs. Statistical evaluation to identify SSIs for the verification sampling was performed within 60 days of sample collection. Three apparent SSIs were confirmed for boron, sulfate, and pH. Based on the results of the verification sampling and statistical analysis, NRG notified the TCEQ of its intent to prepare an ASD on June 12, 2023, addressing the apparent SSIs for boron, sulfate, and pH.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 1 SSI – April 2023 Semi-annual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-21 (DG)	NA	0.44	05/01/2023	0.734	mg/L
Sulfate	MW-28 (UG)	NA	890	05/01/2023	959	mg/L
pH	MW-01 (DG)	4.1	7.6	05/01/2023	3.75	s.u.

Notes: DG = Downgradient
UG = Upgradient
mg/L = milligrams per Liter

Alternative sources for the apparent SSIs encompass a range of apparent lines of reasoning and include the following non-CCR sources located in the vicinity of the Landfill:

- The Station and surrounding vicinity are densely populated with historical and current oil and gas activities consisting primarily of natural gas production wells;
- Monitor wells were completed into and screened across both lignite and shale seams that are a source of trace elements such as boron; and
- A lignite mine is located immediately south of the Landfill and mining operations can impact the groundwater quality and pH of groundwater over a long period of time.

Acidity is transported from a mine in groundwater or by surface water runoff that can then infiltrate into groundwater. Through migration, such groundwater, can impact groundwater quality at and in the vicinity of the Landfill. During the course of historical detection monitoring at the Landfill, the pH of

groundwater at MW-21 has remained within the range of 5.0 to 5.6 S.U. As discussed in Section 2.2, low pH (< 6) conditions are favorable for the dissolution of boron from mineral surfaces in the soil and bedrock.

In addition to MW-21, pH at MW-01 was low for the April 2023 monitoring event. As discussed above, acidity is transported from a mine in groundwater or by surface water runoff that can then infiltrate into groundwater. Therefore, it is anticipated that the apparent SSI for pH for MW-01 is associated with the historical lignite mining and/or the oil and gas activities at the Station.

Finally, the concentration of sulfate at MW-28 was slightly greater than its UTL. MW-28 is located hydraulically upgradient of the Landfill and would likely not be related to a release from the Landfill. Therefore, the potential sulfate SSI is related to natural variations in groundwater quality.

In summary, the apparent SSIs for boron, sulfate, and pH for the 12th semi-annual detection monitoring event are most likely related to other non-CCR off-site sources (oil and gas activities or the historic lignite mine), the apparent presence of lignite seams within the screened portion of the monitor wells, or natural variations in groundwater geochemistry (acidic pH conditions) rather than a release to groundwater from the Landfill. In particular, the apparent SSI in upgradient monitor well MW-28 for sulfate is related to natural variations in groundwater geochemistry associated with mineral dissolution and/or atmospheric deposition (Einsiedl & Mayer, 2005; Pu et al., 2012).

Section 4
Conclusions

Based on statistical evaluation of the April 4, 2023 semi-annual detection monitoring event analytical results, and the May 2023 verification sampling events analytical results, three apparent SSIs: boron, sulfate, and pH; were identified for the Landfill. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- Numerous historical and active natural gas wells and their associated well pads and surface pits are located immediately surrounding and within the footprint of the Landfill. Well pits associated with the natural gas wells contribute spent completion or workover fluids to groundwater that contain constituents that are also CCR Rule Appendix III detection monitoring constituents;
- As shown on the boring logs for the Landfill CCR groundwater monitoring network, lignite and shale seams that contain trace amounts of boron are present at the Landfill and several monitor wells were installed into and screened across these seams;
- The Jewett lignite surface mine is located approximately 1.5 south of the Landfill; and
- Natural variations in groundwater geochemistry likely related to changes in pH, ion exchanges, EC, and/or salinity.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources and/or natural variations in groundwater geochemistry, rather than a release from the Landfill have been demonstrated to be responsible for the apparent SSIs observed. Based on this successful ASD, NRG will continue semi-annual detection monitoring for the Landfill per 30 TAC Chapter 352.

Section 5
References

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Figures

CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Generating Station
F.M. 39 Road, Jewett, Texas 75838

TITLE

LOCATION OF CCR LANDFILL

DRAWN BY: **O. Fonseka**	REQUEST BY: **J. Atwell**	PROJECT NO. **528473**
DWG. DATE: **October 2023**	PROJECT-MGR: **T. Dworaczyk**	FIGURE **1**

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

LAST EDIT: 10/06/2023 - FILE LOCATION: HOU C:\OF-TRC\DRAFTING-CDrive\ECR-Files\NRG\Limestone Generating Stn - Jewett-TX\ Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

DRAWING By: **Oskar Fonseka** - FILE NAME: Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

LEGEND

- Monitor Well Location
- Landfill CCR Monitor Well
- Landfill Background CCR Monitor Well
- ***447.09*** Groundwater Elevation (FT MSL)
- ***NM*** Not Measured
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- CCR Landfill Boundary

NOTE:
GROUND'
BY HMI ON APRIL 2023

0 690 1,380
FT

1 " = 700 '
1:8,400

N

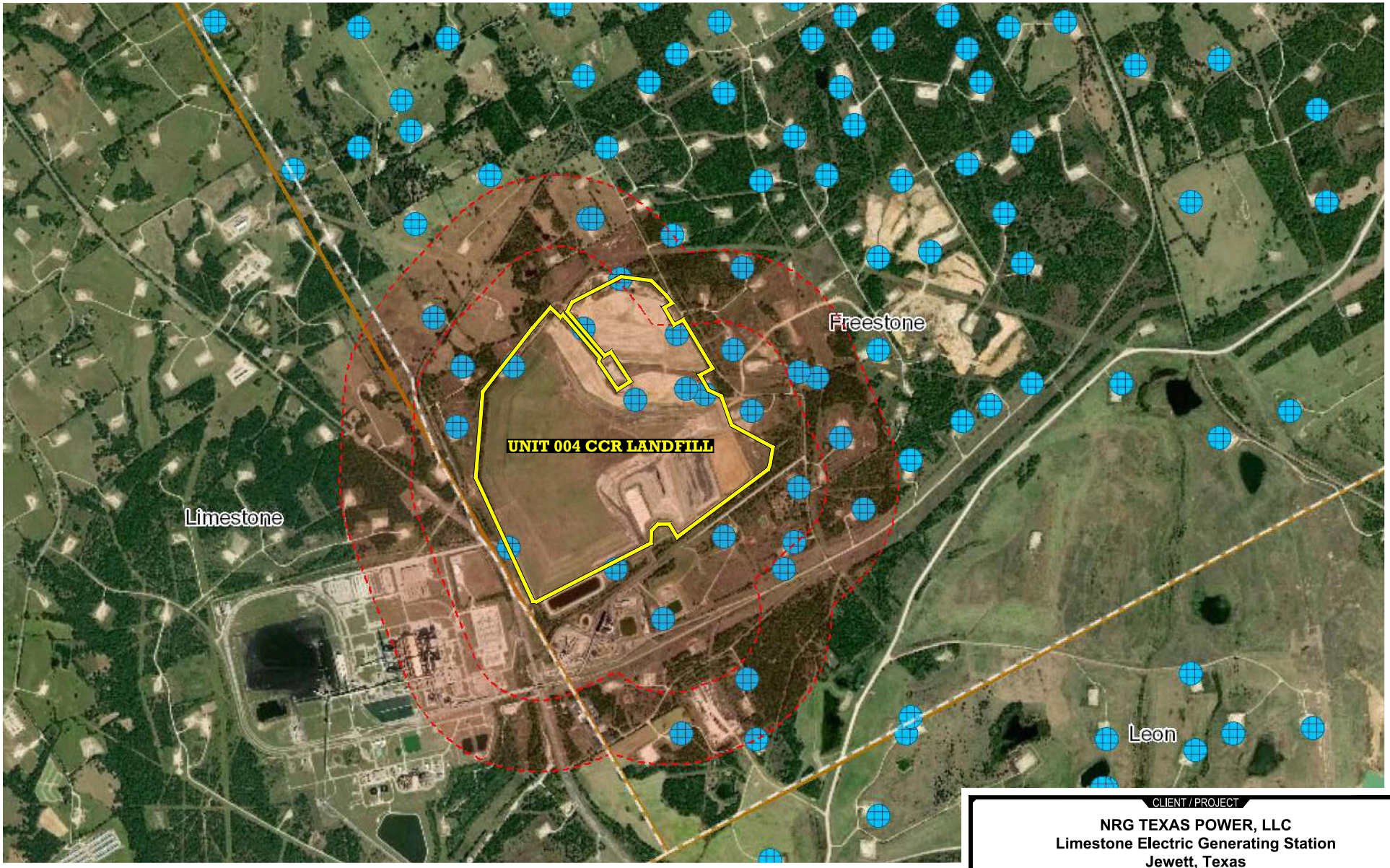
PROJECT:
NRG TEXAS POWER, LLC
LIMESTONE
JEWETT, TEXAS

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE - APRIL 2023

DRAWN BY:	F. Yarbrough	PROJ. NO.:	585632.0000.0000
CHECKED BY:	J. Atwell		**FIGURE 2**
APPROVED BY:	A. Dworaczyk		
DATE:	January 2024		

TRC
14701 St. Mary's Lane, Suite 500
Houston, TX, 77079
Phone 281.616.0100
www.trcsolutions.com

FILE NO.: 585632_2-2.mxd



July 3, 2019

polygonLayer

- Override 1
- METGCD Wells

METGCD Wells

- Yes
- Counties

1:36,112

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

Halff Associates, Inc.
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Electric Generating Station
Jewett, Texas

TITLE

OIL AND GAS WELL MAP

DRAWN BY: O. Fonseka	REQUEST BY: T. Dworaczyk	PROJECT NO. 528473
DWG. DATE: October 2023	PROJECT-MGR: T. Dworaczyk	

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

FIGURE 3

Attachments

ESPEY, HUSTON & ASSOCIATES, INC.
ENGINEERING & ENVIRONMENTAL CONSULTANTS

HOLE NO. MW-1

DRILLING LOG

HOLE NO.	MW-1
LOCATION	Limestone Electric Generating Station
GROUND ELEV.	±418.06'
DRILL ANGLE	0°
COLLAR ELEV.	None
DRILL DIRECTION	Vertical
TOTAL DEPTH	60'
STARTED	10/1/86
ELEV. DATUM	Surface
COMPLETED	10/1/86

	DEPTH	DATE	TIME
FIRST FREE WATER			
BAILED WATER LEVEL			
STATIC WATER LEVEL	4.88	10/7/86	1635

PROJECT NO.	8754
SHEET	1 OF 1
PROJECT/SITE	Houston Lighting & Power
GEO/ENG.	Clyde Smith
CONTRACTOR	Reed & Morris
DRILLER	Ray Reed
RIG MODEL	CFD-1
HOLE TYPE	Rotary
HOLE DIAMETER	5"
DRILL FLUID	H_2O

TESTS	SAMPLES	COMPLETION

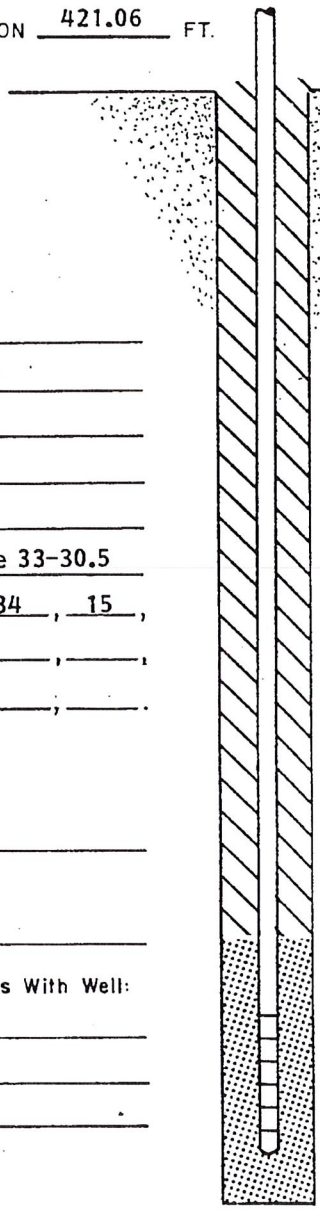
ELEV.	DEPTH	LEGEND	CLASSIFICATION/DESCRIPTION	RECOV.	SAMPLES	DRILLING REMARKS
	5		Brown sand and clay			
	10		Light gray, fine grained sand with minor amounts gray clay and ironstone			
	15					
	20					
	25		Gray silty clay			
	30					
	35		Interbedded brown to tan sand and gray clay			
	40		- very lignitic 39-41'			
	45		Fine gray sand with thin interbeds of gray clay			
	50					
	55		Gray clay			
	60		T.D. at 60'			

WELL COMPLETION RECORD

JOB NO. 8754 WELL NO. MW1 GEOLOGIST Clyde Smith

CLIENT HL&P DRILLER Reed & Morris

TOP OF CASING ELEVATION 421.06 FT. STICK-UP 3.0 FT.



DETAILS OF CONSTRUCTION:

Date Completed 10/1/86

Hole Diameter (in) 7 7/8

Screen Size (in) .010

Screen Length (ft) 20

Casing Size (in) 4

Packer Depth (ft) Bentonite 33-30.5

Centralizer Depths (ft) 54, 34, 15,

_____, _____, _____, _____, _____,

_____, _____, _____, _____, _____.

Completion Technique:

1) Sand Placement Method

Tremie

2) Grout Placement Method

Tremie

Description of Potential Problems With Well:

None

MATERIALS

CEMENT (sks) 12

SAND (ft^3) 8

PVC (ft) 38.5

TOP OF BENTONITE PACK 30.5 FT.

TOP OF SAND PACK 33 FT.

TOP OF SCREEN 35.5 FT.

BOTTOM OF SCREEN 55.5 FT.

BOTTOM OF HOLE 56 FT.

NOTE: ALL DEPTHS ARE REFERENCED TO "DEPTH BELOW GROUND SURFACE"

STATE OF TEXAS WELL REPORT for Tracking #178434

Owner:	**NRG Texas Power Limestone Station**	Owner Well #:	**MW-17**
Address:	**Rt. 1 BoX 85 Jewett, TX 75846**	Grid #:	**39-64-1**
Well Location:	**FM 39 N. Jewett, TX 75846**	Latitude:	**31° 05' 14" N**
		Longitude:	**096° 07' 26" W**
Well County:	**Limestone**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/20/2009** Drilling End Date: **4/20/2009**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.5**	**0**	**55**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**38**	**55**	**Gravel**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**36**	**4, Portland**
	36	**38**	**2, Bentonite**
	38	**55**	**12 Sand**

Seal Method: **Grout**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: **46 ft.** below land surface on **2009-04-20** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Advanced Drilling Systems, Inc.**

904 W. Tidwell
Houston, TX 77091

Driller Name: **David Rogers** License Number: **52037**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1**	**Yellowish red SILTY CLAY with abundant Red Mottling**
1	**5**	**Gray very SILTY SAND moist, with some**
		clayey sand seams
		- very silty
5	**12**	**Gray CLAYEY SAND with abundant strong**
		brown mottling
		- very silty
		- some black lignite seams
		- wet
		- abundant yellowish brown mottling
		- abuundant strong brown
		- very moist
12	**16**	**Gray, very SILTY SAND**
		- very moist
		- very fine grained
		- some yellowish brown mottling
		- very silty

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
2	**New**	**PVC**	**Casing 0-40 sch-40**
2	**New**	**PVC**	**Slotted 40-55 0.01**

16-20: Strong brown SILTY CLAY with abundant silty sand seams
- some yellowish brown clayey sand seams
20-26: Yellowish brown CLAYEY SAND with
abundant gray hard brittle clay seams
- some brownish yellow limonitic iron seams
- abundant dark gray clay seams
- very moist
- very silty
26-31: Brown very silty sand, very fine grained
31-42: Brown CLAYEY SAND with abundant
gray clay seams
- very moist
- some muscovite flakes
- abundant dark gray clay seams
- very moist
- some strong brown silty sand seams
- very silty
- very abundant dark gray seams
42-53: Dark gray SILTY SAND, fine grained,
abundant dark gray silty clay seams
- very silty
- saturated @ 46 bgs.
- abundant dark gray silty clay seams
- very silty
- very moist
53-55: Very dark gray CLAY, firm
- some light gray silt seams
- lignite seams

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

MW-19
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-19 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10507460.00 ' E. Coord. 3574645.00 ' Surface Elevation 440.94 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 443.79 ' Stickup 2.85 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
440.94	0					0-5	0-1.6	SANDY CLAY: Yellowish-brown (10YR 6/4), dry, crumbly, hard, sand is less than 10 percent, PP=4.0 TSF
440							1.6-6.2	SILTY SAND: Light yellowish-brown (10YR 6/4), dry to damp, firm to hard, semi-plastic; thinly laminated. PP=3.5-4.5 TSF
	5					5-10		
435							6.2-8	SANDY CLAY: Light yellowish-brown (10YR 6/4) to yellowish-brown (10YR 5/8), dry to damp, stiff to hard; semi-plastic; thinly laminated.
							8-10	No Recovery
	10					10-15	10-18.5	SILTY SAND: Dark yellowish-brown (10YR 4/6), dry to damp becoming wet at 15.5 to 15.8 feet then dry to damp 15.8 to 18, stiff to hard; soft, friable; thinly bedded. @16.8 feet thin lens of rocks, sand is well sorted;. rootlets at 10.3 feet.
430								
	15					15-20		
425								
							18.5-20	No Recovery
	20							

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-19
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-19 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10507460.00 ' E. Coord. 3574645.00 ' Surface Elevation 440.94 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 443.79 ' Stickup 2.85 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
420	20					20-25	20-34	SILTY SAND: Light olive-brown (2.5Y 5/3), damp becoming moist at 25 to 25.8 feet, damp 25.5 to 28 feet, damp to moist 28 to 30 feet, soft, friable, thinly bedded; some lenticular clay nodules from 30 to 34 feet.
415	25					25-30		
410	30					30-35		
405	35						34-35.4	No Recovery T.D. = 35.40 '
	40							

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-20
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-20 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 39.40 ' Boring Diam. 9.00 "

N. Coord. 10507730.00 ' E. Coord. 3574995.00 ' Surface Elevation 442.12 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 29.00 ' Sump Length 0.40 '

Top of Casing Elevation 445.11 ' Stickup 2.99 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Driling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
442.12	0				0-5	0-0.7	SANDY CLAY: Mottled light yellowish-brown (10YR 5/4) and light brownish-gray (10YR 6/2), dry, firm, brittle; sand less than 10 percent, thinly laminated.
						0.7-1.6	SILTY SAND: Yellowish-brown (10YR 5/4), dry, soft, friable; sand is fine grained, subangular, silt approximately 10 percent.
440						1.6-4	SANDY CLAY: Mottled light yellowish-brown (10YR 5/4) and light brownish-gray (10YR 6/2), dry, firm to stiff, brittle; sand less than 10 percent, thinly laminated. PP=2.5-3.5 TSF
						4-5	No Recovery
	5				5-10	5-8.5	SANDY CLAY: Very dark brown (7.5YR 2.3/3), dry, hard, brittle. PP=4.5+TSF @6.8 feet becomes strong brown (7.5YR 4/6); @7.8 feet becomes light olive brown (2.5 Y 5/3) with some angular rock fragments.
435							
						8.5-10	No Recovery
	10				10-15	10-25	SILTY SAND: Light yellowish-brown (2.5Y 6/4) and light gray (2.5Y 7/2) interbedded, dry, friable, well sorted, silt approximately 10 percent. @13.1 feet possible cross-bedding with rip-up (clay) clasts. @17.8 becomes damp, silt content increases to approximately 30 percent.
430							
	15				15-20		
425							
	20						

STATE OF TEXAS
James R. Davidson
Geology
10493
LICENSED
PROFESSIONAL GEOSCIENTIST
10/14/16

ERM Environmental Resources Management

MW-20 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-20 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 39.40 ' Boring Diam. 9.00 "

N. Coord. 10507730.00 ' E. Coord. 3574995.00 ' Surface Elevation 442.12 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 29.00 ' Sump Length 0.40 '

Top of Casing Elevation 445.11 ' Stickup 2.99 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Driling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20				20-25		
420							
	25				25-30	25-39.4	SILTY SAND: Olive-brown (2.5Y 4/4), damp to wet (becomes wet at 30-30.8 and 35-35.5 feet), soft, friable. Thinly laminated clay lenses at 37.7 to 37.8 ft. and 38.8 to 39.1 ft., damp, brittle.
415							
	30				30-35		
410							
	35				35-39.4		
405							
	40						T.D. = 39.40 '

STATE OF TEXAS 10/6/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-21
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-21 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10508050.00 ' E. Coord. 3575406.00 ' Surface Elevation 443.46 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 446.35 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
443.46	0				0-5	0-0.8	SANDY CLAY: Mottled yellowish-brown (10YR 5/4) and yellowish-red (10 YR 4/6), dry, stiff, brittle. PP=3.5 TSF
						0.8-1.2	SILTY SAND: Strong brown (7.5 YR 5/6), dry, soft, friable, well sorted. Silt approx. 10 percent.
						1.2-2.9	SANDY CLAY: Dark yellowish-brown interlaminated with light brownish-gray (10YR 6/2), dry to damp, firm, semi-plastic. PP=2.5 TSF
440						2.9-8	SILTY SAND: Strong brown (7.5 YR 5/6) to yellowish-brown (10YR 4/4), dry, soft, friable, well sorted. Silt approx. 10 percent. @6.1 becomes dark brown (7.5YR 7/2).
	5				5-10		
435						8-10	No Recovery
	10				10-15	10-19.5	SILTY SAND: Mottled dark yellowish-brown (10YR 4/4) and gray (10YR 5/1)dry, soft, friable, silt content about 40 percent. @11.2 feet becomes yellowish-brown (10YR 5/6) interlaminated with gray (10YR 5/1); @13.1 feet silt content decreases to 10 percent.
430							
	15				15-20		
425						19.5-24.5	SILTY SAND: Yellowish-brown (10YR 5/4), moist, soft, friable, thinly bedded with well developed partings. @22.0 to 22.5 and 23.0 to 24.5 feet silt content increases to 40 percent.
	20						

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-21
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-21 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10508050.00 ' E. Coord. 3575406.00 ' Surface Elevation 443.46 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 446.35 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
420	20					20-25		
	25					25-30	24.5-31.4	SILTY SAND: Olive brown (2.5Y 4/5), moist, soft, friable, thinly bedded with well developed partings.
415	30					30-35.4		
410	35						31.4-31.9 31.9-35.4	CLAY: Interlaminated with silty sand. Clay is black (7.5YR 2.5/1), damp, semi-plastic, soft. Silty sand is brown (10YR 4/3), damp, soft, friable. SILTY SAND: mottled yellowish brown (10YR 5/6) and light brownish-gray (10YR 6/2), damp becomes wet at 32.2 to 33 feet, laminated.
405	40							T.D. = 35.40 '

STATE OF TEXAS 10/16/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-22
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-22 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.00 ' Boring Diam. 9.00 "

N. Coord. 10508270.00 ' E. Coord. 3575669.00 ' Surface Elevation 444.68 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 24.50 ' Sump Length 0.40 '

Top of Casing Elevation 447.59 ' Stickup 2.91 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
444.68	0				0-5	0-1.6	SILTY SAND: Strong brown (7.5YR 5/6), dry, soft, friable.
						1.6-3.5	SANDY CLAY: Interlaminated dark yellowish-brown (10YR 4/4) and light brownish-gray (10YR 6/2), damp, semi-plastic. PP=2.5 TSF
						3.5-5	No Recovery
440	5				5-10	5-7.5	SILTY SAND: Strong brown (7.5YR 5/6), dry, soft, friable.
						7.5-8.5	SANDY CLAY: Interlaminated dark yellowish-brown (10YR 4/4) and light brownish-gray (10YR 6/2), damp, semi-plastic.
						8.5-10	No Recovery
435	10				10-15	10-19	SILTY SAND: Interlaminated gray (7.5YR 6/1 and strong brown (7.5 YR 5/6), damp, loose, friable, well sorted, well developed partings. @11.0 to 11.6 bioturbation; @12.5 lenticular clay nodules (interclasts); @13.0 silt content increases to 40 percent.
430	15				15-20		
						19-24	SILTY SAND: Interlaminated silty sand and sandy clay. Silty sand as above. Sandy clay is strong brown, dry to damp, crumbly.
425	20						

STATE OF TEXAS
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ERM Environmental Resources Management

MW-22
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-22 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.00 ' Boring Diam. 9.00 "

N. Coord. 10508270.00 ' E. Coord. 3575669.00 ' Surface Elevation 444.68 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 24.50 ' Sump Length 0.40 '

Top of Casing Elevation 447.59 ' Stickup 2.91 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-25		
420	25					25-30	24-30	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent. @25.7 feet, silt content increases to 40 percent. @28.1 silt content decreases to 10 percent.
415	30					30-35	30-31	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent.
							31-31.8	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 40 percent.
							31.8-35	SILTY SAND: Brown, damp to moist, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent.
410	35							T.D. = 35.00 '
405	40							

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 45.00 ' Boring Diam. 9.00 "

N. Coord. 10505630.00 ' E. Coord. 3571983.00 ' Surface Elevation 434.36 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 30.00 ' Sump Length 0.40 '

Top of Casing Elevation 437.25 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

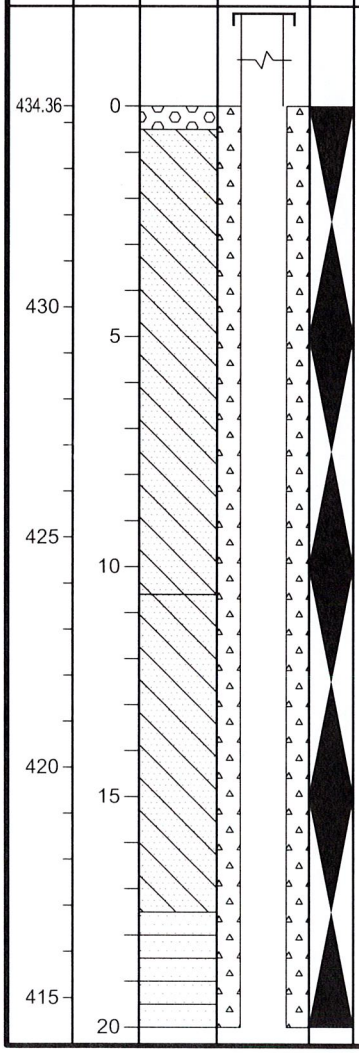
Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer



Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0-5	0-0.5	GRAVEL: Roadbase - crushed limestone with silt matrix. greenish-gray (Gley 1/6/10Y).
	0.5-10.6	SANDY CLAY: Fill Material - Light yellowish- brown (10YR 6/4), dry, thinly laminated, brittle. PP =1.0 TSF
5-10		
10-15	10.6-10.61	LIGNITE: Black organic plant material consisting of decaying rootlets and grass.
	10.61-17.5	SANDY CLAY: Dark red (2.5 YR 3/6), dry, firm to stiff, rootlets at 13.4 ft., becomes thinly bedded at 14.3 ft. Sharp basal contact.
15-20		
	17.5-27.4	SILTY SAND: Very dark grayish-brown (10YR 3/2) grading down to light gray (10YR 7/1), soft, friable; thinly bedded, sand is fine grained, well sorted, subangular to angular. @23.1 becomes mottled with dark yellowish-brown.

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ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 45.00 ' Boring Diam. 9.00 "

N. Coord. 10505630.00 ' E. Coord. 3571983.00 ' Surface Elevation 434.36 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 30.00 ' Sump Length 0.40 '

Top of Casing Elevation 437.25 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

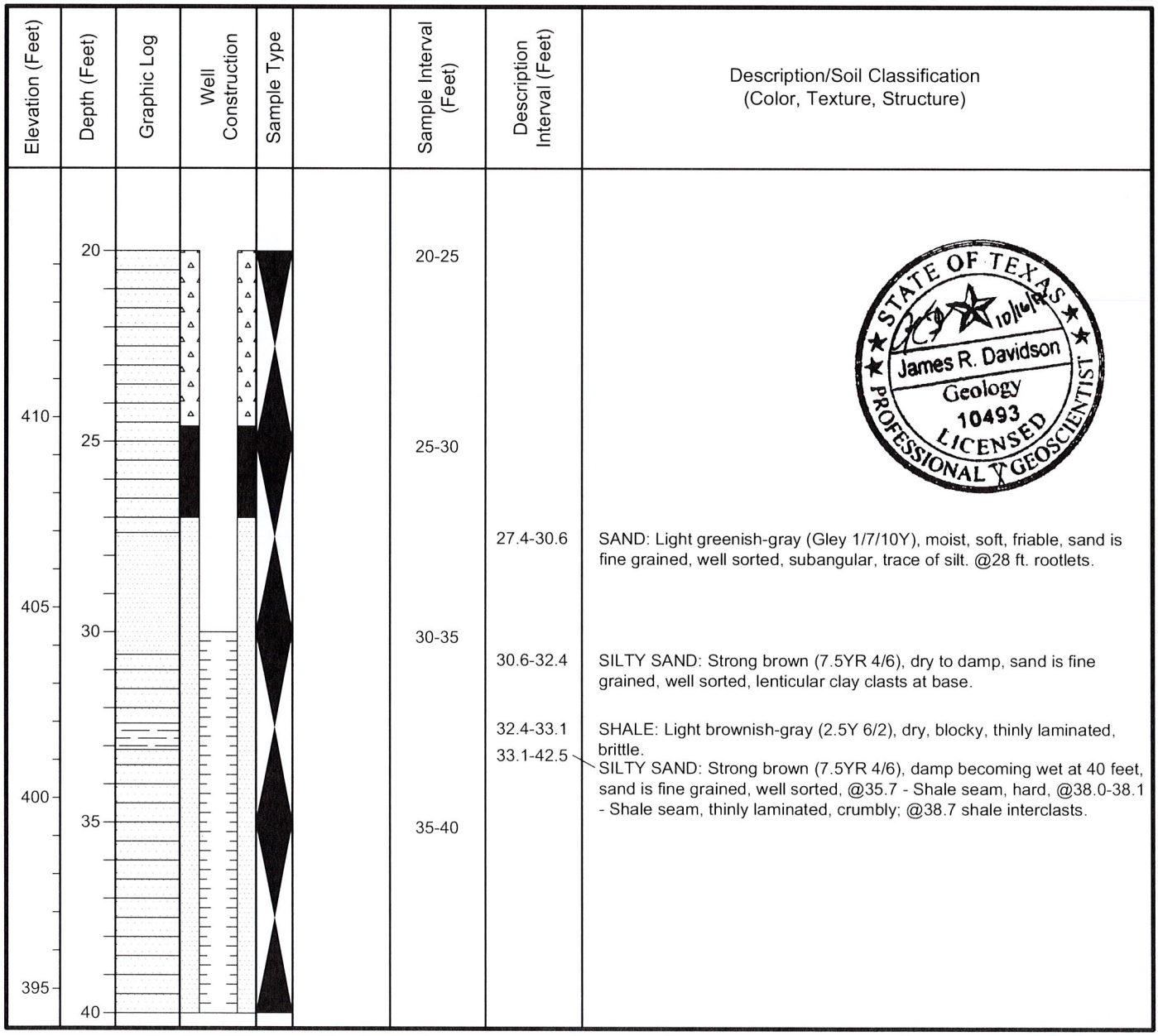
Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer



ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

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Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 30.00 ' Sump Length 0.40 '

Top of Casing Elevation 437.25 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40					40-45		
							42.5-43.3	SHALE: Light brownish-gray (2.5Y 6/2), dry, blocky, thinly laminated, brittle.
							43.3-45	Silty Sand
390	45							T.D. = 45.00 '
385	50							
380	55							
375	60							

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ERM Environmental Resources Management

MW-28 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 70.00' Boring Diam. 9.00 "

N. Coord. 10511130.00 ' E. Coord. 3573967.00 ' Surface Elevation 474.57 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
474.57	0				0-5	0-5	NOT SAMPLED: Hydrovac
470	5				5-10	5-18	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30 %: fine grained, subangular. @ 10 ft, sand content decreases to approx. 10%, breaks along laminae.
465	10				10-15		
460	15				15-20		
455	20					18-18.4	CLAYEY SAND: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly bedded, fine grained, uncemented, cohesive, well sorted, subangular, clay approx. 40% - dry, damp.
						18.4-22.5	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-28 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 70.00' Boring Diam. 9.00 "

N. Coord. 10511130.00 ' E. Coord. 3573967.00 ' Surface Elevation 474.57 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

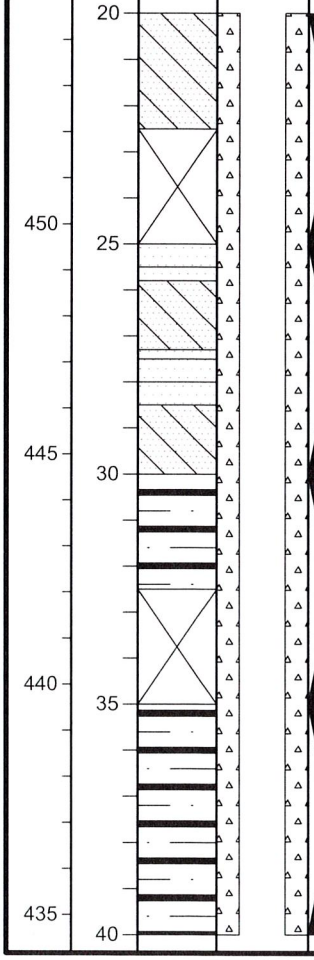
Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer



Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
20-25		
	22.5-25	No Recovery
25-30	25-25.8	SILTY SAND: Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, damp to moist, cohesive, silt approx. 10%
	25.8-27.3	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
	27.3-28.5	SILTY SAND: Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, dry to damp, cohesive, silt approx. 10%
	28.5-30	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
30-35	30-32.5	INTERBEDDED CLAY AND SAND: Silty Sand - 30-30.3 ft, 31.2-31.4 ft, 32.2-32.4 ft. - Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, damp to moist, cohesive, silt approx. 10%. Sandy Clay - 30.3-31.2 ft, 31.4-32.2 ft, 32.4-32.5 ft. - 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
	32.5-35	No Recovery
35-40	35-40	INTERBEDDED CLAY AND SAND: Thinly bedded, alternating Silty Sand and Shale. Silty Sand - 7.5YR/5/8 Strong brown, fine grained, uncemented, well sorted, subangular, dry to damp. Shale - 7.5YR/5/1 Gray, non-plastic, dry, 2.0 TSF, trace sand.

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-28
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 70.00' Boring Diam. 9.00 "

N. Coord. 10511130.00 ' E. Coord. 3573967.00 ' Surface Elevation 474.57 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40					40-45	40-45	INTERBEDDED CLAY AND SAND: Shale - 40-40.4 ft, 40.8-41.1 ft, 41.4-43.8 ft, 44.2-45 ft. - non-plastic, thinly laminated, breaks along laminae, trace sand. Silty Sand - 40.4-40.8 ft, 41.1-41.4 ft, 43.8-44.2 ft. - 7.5YR/5/8 Strong brown, fine grained, uncemented, subangular, well sorted, damp to moist.
430	45					45-50	45-50	INTERBEDDED CLAY AND SAND: Thinly bedded, alternating Silty Sand and Shale. Silty Sand - 7.5YR/6/1 Gray, fine grained, uncemented, subangular, well sorted, dry to damp. Shale - Gley 1/2.5/10Y Greenish Black, non-plastic, dry, trace sand.
425	50					50-55	50-56.6	SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout. @ 52.9-53.2 Silty Sand seam - 7.5YR/4/3 Brown, fine grained, uncemented, subangular, wet.
420	55					55-60		
							56.6-57.1	SILTY SAND: 7.5YR/4/2 Brown, fine grained, uncemented, subangular, wet to saturated
							57.1-58.5	SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout
							58.5-60	No Recovery
415	60							

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

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Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
410	60					60-65	60-60.7 60.7-69.5	INTERBEDDED CLAY AND SAND: Thinly alternating Silty Sand and Shale. Silty Sand - 7.5YR/6/1 Gray, fine grained, uncemented, subangular, well sorted, dry to damp. Shale - Gley 1/2.5/10Y Greenish Black, non-plastic, dry, trace sand. SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout. @ 61.5-61.7 - Silty Sand lense, 7.5YR/4/2 Brown
405	65					65-70		
400	70							T.D. = 70.00'
395	75							
	80							

STATE OF TEXAS
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10/16/16

Texas Commission on Environmental Quality

Waste Permits Division Correspondence Cover Sheet

Date: January 31, 2024
Facility Name: NRG-Limestone Generating Station
Permit or Registration No.: CCR 115

Nature of Correspondence:
☒ Initial/New
☐ Response/Revision to TCEQ Tracking No.: _____ (from subject line of TCEQ letter regarding initial submission)

Affix this cover sheet to the front of your submission to the Waste Permits Division. Check appropriate box for type of correspondence. Contact WPD at (512) 239-2335 if you have questions regarding this form.

Table 1 - Municipal Solid Waste Correspondence

Applications	Reports and Notifications
☐ New Notice of Intent	☐ Alternative Daily Cover Report
☐ Notice of Intent Revision	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Compost Report
☐ New Registration (including Subchapter T)	☒ Groundwater Alternate Source Demonstration
☐ Major Amendment	☐ Groundwater Corrective Action
☐ Minor Amendment	☐ Groundwater Monitoring Report
☐ Limited Scope Major Amendment	☐ Groundwater Background Evaluation
☐ Notice Modification	☐ Landfill Gas Corrective Action
☐ Non-Notice Modification	☐ Landfill Gas Monitoring
☐ Transfer/Name Change Modification	☐ Liner Evaluation Report
☐ Temporary Authorization	☐ Soil Boring Plan
☐ Voluntary Revocation	☐ Special Waste Request
☐ Subchapter T Disturbance Non-Enclosed Structure	☐ Other:
☐ Other:	

Table 2 - Industrial & Hazardous Waste Correspondence

Applications	Reports and Responses
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ CCR Registration	☐ Extension Request
☐ CCR Registration Major Amendment	☐ Groundwater Monitoring Report
☐ CCR Registration Minor Amendment	☐ Interim Status Change
☐ Class 3 Modification	☐ Interim Status Closure Plan
☐ Class 2 Modification	☐ Soil Core Monitoring Report
☐ Class 1 ED Modification	☐ Treatability Study
☐ Class 1 Modification	☐ Trial Burn Plan/Result
☐ Endorsement	☐ Unsaturated Zone Monitoring Report
☐ Temporary Authorization	☐ Waste Minimization Report
☐ Voluntary Revocation	☐ Other:
☐ 335.6 Notification	
☐ Other:	

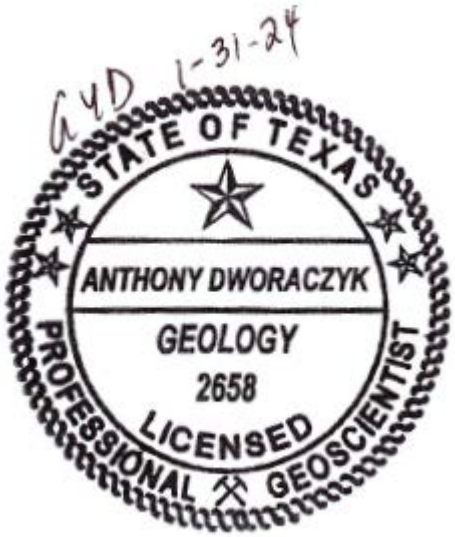
Alternative Source Demonstration

Limestone Electric Generating Station
Landfill (Unit 004)

TCEQ Coal Combustion Residuals (CCR) Registration No. CCR115
Industrial Solid Waste Registration No. 32490
EPA Identification No. TXD000837336
RN100542927/CN603207218

January 2024

Prepared For
NRG Texas Power, LLC
Jewett, Texas



Gregory E. Tieman, L.R.S.
Senior Client Service Manager

Tony Dworaczyk, P.G.
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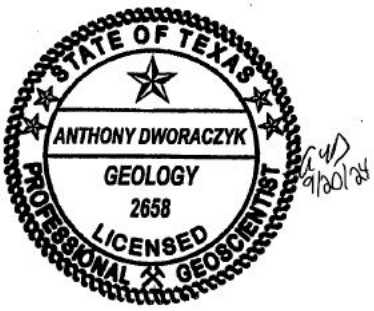
Attachments

Attachment 1 Boring Logs

I hereby certify that the alternative source demonstration presented within this document for the NRG Limestone Coal Ash Disposal Landfill CCR Unit has been prepared to meet the requirements of 30 TAC 352.4; 352.941(c); and 352.1321. This document is accurate and has been prepared in accordance with good geosciences practices, including the consideration of applicable industry standards, and with the requirements of 30 TAC 352.4; 352.941(c); and 352.1321.

Name: Tony Dworaczyk **Expiration Date:** 1/30/2025

Company: TRC Environmental Corporation **Date:** 9/20/2024



Executive Summary

The NRG Texas Power, LLC (NRG) Limestone Electric Generating Station (Station) is located approximately seven miles northwest of Jewett, Texas and approximately 0.5 miles north of the intersection of Limestone, Freestone, and Leon Counties. Units managing coal combustion residuals (CCR) at the Station are subject to the requirements of 30 Texas Administrative Code (TAC) Chapter 352. CCR generated at the Station consists of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge. The Station has one active CCR unit, the Landfill (Unit 004), that is managed pursuant to 30 TAC Chapter 352, which is the subject of this Alternative Source Demonstration (ASD).

The 13th semi-annual groundwater detection monitoring event was conducted on October 10, 2023. Verification sampling was not performed for this sampling event. Statistical evaluation of the Appendix III monitoring parameters was performed within 60 days of sample collection to identify apparent statistically significant increases (SSIs) above background pursuant to 30 TAC 352 Subpart H. Two apparent SSI: boron and pH were identified. TRC, on behalf of NRG notified the Texas Commission on Environmental Quality (TCEQ) of its intent to prepare an ASD on December 9, 2023.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the second half 2019 (July) through the first half 2021 (April). The April 2023 semi-annual detection monitoring event analytical results, including the May 2023 verification sample results, are the fourth data set statistically evaluated using the new background water quality data set.

This ASD successfully identified alternative sources for the apparent SSIs at the Landfill, based on the following lines of reasoning:

- Numerous historical and active natural gas wells and their associated well pads and surface pits are located immediately surrounding and within the footprint of the Landfill. Well pits associated with the natural gas wells contribute spent completion or workover fluids to groundwater that contain constituents that are also CCR Rule Appendix III detection monitoring constituents;
- As shown on the boring logs for the Landfill CCR groundwater monitoring network, lignite and shale seams that contain trace amounts of boron are present at the Landfill and several monitor wells were installed into and screened across these seams;
- The Jewett lignite surface mine is located approximately 1.5 miles south of the Landfill; and
- Natural variations in groundwater geochemistry likely related to changes in pH, ion exchanges, electrical conductivity (EC), and/or salinity.

Therefore, NRG will continue performing semi-annual detection monitoring for the Landfill per 30 TAC Chapter 352.

Section 1
Introduction

1.1 Background

The NRG Texas Power, LLC (NRG) Limestone Electric Generating Station (Station) is located approximately seven miles northwest of Jewett, Texas and approximately 0.5 miles north of the intersection of Limestone, Freestone, and Leon Counties. The Station is bisected by Farm-to-Market Road 39 (FM 39), which runs north-south through the middle of the Station. The western portion of the Station is located in Limestone County and includes the electricity generating portion of the Station. The eastern portion of the Station is located in Freestone County and includes the solid waste disposal area (SWDA).

Management of coal combustion residuals (CCR) at the Station is performed pursuant to 30 Texas Administrative Code (TAC) Chapter 352, which became effective during June 2021. Prior to this, management of CCR was performed pursuant to the United States Environmental Protection Agency (USEPA) final rule for the regulation and management of CCR under the Resource Conservation and Recovery Act (RCRA) Title 40, Code of Federal Regulations, Part 257 (40 CFR §257) (CCR Rule, effective date October 17, 2015). CCR generated at the Station consist of fly ash, bottom ash, and flue gas desulfurization (FGD) scrubber sludge, which have been classified by the TCEQ as Class II nonhazardous waste. The Station has one active CCR-management unit – Landfill (Unit 004).

The Landfill is located within the eastern portion of the Station as shown on Figure 1. The Landfill was constructed in 1980 and is used for the final disposition of CCR. The western half of the Landfill has reached capacity and historically had been closed and capped prior to the effective date of the CCR Rule (October 19, 2015). CCR is currently being placed at the southern part of the eastern portion of the Landfill.

1.1.1 Groundwater Monitoring Program

The certified CCR monitoring well network for the Landfill consists of two upgradient background monitoring wells (MW-27R and MW-28) and eight downgradient monitoring wells (MW-01, MW-02, MW-17, MW-18, MW-19, MW-20, MW-21, and MW-22). A groundwater potentiometric surface map was prepared by TRC for the October 2023 semi-annual detection monitoring event and is provided in this ASD as Figure 2. The direction of groundwater flow beneath the Landfill was to the south - southwest.

On behalf of NRG, Environmental Resources Management, Inc. (ERM) conducted eight independent background groundwater detection monitoring events for both the Appendix III and IV CCR constituents between April 2015 and August 2017 per §257.94(b) of the federal CCR Rule and the first semi-annual detection monitoring event in October 2017. Results of the eight background and first semi-annual

detection monitoring events were documented in the *Annual Groundwater Monitoring Report, Landfill (Unit 004)* (ERM 2018a) pursuant to §257.90(e).

The Station has continued to conduct semi-annual detection monitoring at the Landfill per the federal CCR Rule and 30 TAC Chapter 352. As of the April 2023 sampling event, a total of 12 semi-annual detection monitoring events have now been performed. Following each semi-annual detection monitoring sampling event, the results have been evaluated for potential SSIs, and ASDs have been prepared as needed. Since implementation of 30 TAC Chapter 352, the ASDs have been submitted to TCEQ for review and approval. The semi-annual detection monitoring activities and ASDs have been included in the Annual Groundwater Monitoring and Corrective Action reports, which have been placed into the Facility Operating Record (FOR) and posted to NRG's publicly accessible website.

As previously described in the ASD for the third semi-annual detection monitoring event, persistent, unresolvable issues with data quality necessitated establishment of a new background water quality data set. The new background water quality data set was developed for both Appendix III and Appendix IV CCR constituents collected quarterly from the third half 2019 (July) through the first half 2021 (April). The October 2023 semi-annual detection monitoring event analytical results are the fifth data set statistically evaluated using the new background water quality data set.

1.2 Purpose

TRC prepared this ASD to evaluate two apparent SSIs above background levels: boron and pH; for the 13th semi-annual detection monitoring event in accordance with 30 TAC Chapter 352.

Section 2
Site Geology and Hydrogeology

This section provides information about the geology and hydrogeology of the Station and the area at and surrounding the Landfill.

2.1 Hydrogeology

Based on the *Geologic Atlas of Texas, Waco Sheet* (BEG 1972), the Station is primarily located within the outcrop of the Calvert Bluff Formation of the Wilcox Group. Minor portions of the southeast corner of the Station are located within the outcrop of the Carrizo Sand and minor portions of the southwest corner of the Station are immediately underlain by alluvium. The Calvert Bluff Formation underlies both the Carrizo Sand and alluvium where present.

The Landfill is located solely within the outcrop of the Calvert Bluff Formation (BEG 1972); however, site investigation data indicate the Landfill may also be located within the outcrop of the Carrizo Sand. The Calvert Bluff Formation consists mostly of mudstone interbedded with fine sandstone, lignite, and ironstone concretions. The mudstone contains silt and very fine sand laminae. The Carrizo Sand consists of very fine sand with partings of silty clay, carbonaceous clay, and ironstone. The Carrizo Sand and the Wilcox Group comprise the Carrizo-Wilcox aquifer, which is recognized by the Texas Water Development Board (TWDB) as a major aquifer system in Texas. The Station is located within the outcrop, or the recharge zone, of the Carrizo-Wilcox aquifer (TWDB 2011).

Site investigations were conducted at the Station by Espey, Huston & Associated in 1986; Radian International in 1996 and 1997; EPRI in 2007, and Environmental Resources Management, Inc. (ERM) in 2016. The results of these investigations were summarized in the October 2017 *Ground Water Monitoring Networks for Coal Combustion Residual (CCR) Rule Compliance* report (ERM 2017b). Surficial material at the Landfill consists of in-situ or reworked clay from the Axtell-Tabor soil association. This clay is the source material for the Landfill liner and cap. Boring logs indicate the surficial material is underlain by interbedded clays, silts, and sands of the Quaternary alluvium, Carrizo Sand, and Calvert Bluff Formation. The boundaries between these units are generally indistinguishable.

2.2 Surrounding Area

2.2.1 Oil and Gas Production Wells

The Station and surrounding vicinity are densely populated with historical and current oil and gas activities consisting primarily of the installation and operation of natural gas production wells. Numerous active natural gas wells and their associated well pads, surface pits, subsurface pipelines, and infrastructure are

located immediately surrounding and within the footprint of the Landfill. Figure 3 is a Mid-East Texas Groundwater Conservation District (METGCD) well map showing the locations of wells in the vicinity of the Landfill. The map is limited to Freestone and Leon counties and does not show wells in Limestone County immediately west of the Landfill. This figure demonstrates the extent to which non-CCR sources of constituents to groundwater pervade the vicinity of the Landfill.

Surface well pits typically contain spent completion fluids or workover fluids. Completion or workover fluids are often brine-containing liquids that are used for well testing and are chemically compatible with the formation fluids; and the spent fluids contained in the pits would have come into contact with formation water According to the United States Geological Survey (USGS) National Produced Waters Geochemical Database, water co-produced with hydrocarbons (referred to as "produced water" or "formation water") from geologic formations underlying the Site has the following composition (USGS 2018):

- pH ranging from 4.67 standard units (SU) to 5.6 SU;
- Calcium ranging from 12,560 milligrams per liter (mg/L) to 33,520 mg/L;
- Chloride ranging from 56,980 mg/L to 96,200 mg/L;
- Sulfate ranging from 480 mg/L to 1,790 mg/L; and
- Total dissolved solids (TDS) ranging from 98,330 mg/L to 152,970 mg/L.

Considering the composition of the formation water with which the completion or workover fluids came into contact and the typical brine composition of these fluids, potential releases of these fluids would be expected to affect groundwater quality within the immediate vicinity and downgradient of the natural gas well pads and surface pits. Even minor releases of these fluids could increase the concentrations of calcium, chloride, sulfate, and TDS and decrease the pH in the nearby Landfill upgradient and downgradient monitoring wells.

2.2.2 Lignite Mine

Approximately 1.5 miles south of the Landfill is the Jewett lignite mine. The Jewett Mine is a 35,000-acre surface-mine complex. The mine, which is one of the largest in Texas, produced about 5.3 million short tons of lignite per year, according to the U.S. Department of Energy (USDOE). The 31-year-old mine provided lignite for combustion at the Station. In 2018, NRG decided to close the mine and is in the process of performing reclamation.

In 2020, the Jewett Mine had four final pits containing water ranging from approximately 340 million to 1.5 billion gallons. The estimated volumes remaining in the pits in 2020 were as follows:

- E-South Final Pit: 342,000,000 gallons;
- RP-D9 Final Pit: 403,000,000 gallons;
- B-North Final Pit: 375,000,000 gallons; and

- BX Final Pit: 1,290,000,000 gallons.

The pits can have depths greater than 100 feet. The groundwater potentiometric surface is generally understood to be above the bottom of the pits. Multiple seams of lignite at varying depths below the ground surface were removed from these pits during mining.

According to the U.S Department of Energy, Office of Scientific and Technical Information*, Trace elements in Texas Lignite*, 1983, during coal mining and utilization, trace elements are released into the environment. Certain of these elements may have beneficial or neutral effects while other trace elements are potentially harmful. On a national basis, nine of these elements: antimony, arsenic, boron, cadmium, germanium, mercury, molybdenum, selenium, and silver; are commonly found in concentrations greater than the levels present in typical crustal rocks. Because of the conditions under which Gulf Coast lignites were deposited and the nature of lignites in general, the modes of occurrence and concentrations of trace elements in Texas lignites are different from coals found elsewhere in the United States. Based on a limited data set of 38 lignite samples from Arkansas, Mississippi, and Alabama compiled in 1975, Gulf Coast lignites were identified as having higher levels of boron, lanthanum, lead, selenium, uranium, yttrium, and zirconium than other US coal regions.

2.2.3 Lignite/Shale Seams in Monitoring Wells

A review of the boring logs for the Landfill monitoring network identified lignite seams and shale starting at around 37 feet below ground surface (bgs) in some of the borings. As noted on the boring logs in Attachment 1, monitor wells were completed across these lignite and shale seams. Although lignite seams and shale are not noted in all of the borings for the monitoring network, the presences of these minerals in the subsurface would have an effect on groundwater quality for the region.

As noted above, lignite contains trace elements that are released into the environment, which include boron. As presented in the Geological Survey Bulletin 1314-A, *Geochemical Investigations of Some Black Shales and Associated Rocks,* trace elements of boron, barium, gallium, and strontium are found in the upper cretaceous shales of Texas. The following section discusses the geochemistry of the groundwater in the area.

2.3 Groundwater Geochemistry

Understanding the geochemistry of groundwater is essential to examining the groundwater monitoring data, explaining the relationships between the characteristics of the groundwater, and analyzing both natural and potential anthropogenic impacts on groundwater. Separate from potential source areas of contamination, geochemical processes are critical in controlling the chemical composition of groundwater, including carbonate equilibrium, oxidation-reduction reactions, and adsorption-desorption processes.

2.3.1 Boron in Groundwater

Boron is normally considered to be a minor constituent in groundwater since it is generally present in low concentrations (Palmucci & Rusi, 2014). Apart from a potential boron source area, the primary origin of boron in groundwater is typically associated with the processes of sorption and desorption from mineral surfaces including soil and bedrock (Ravenscroft & McArthur, 2004). Boron is often cited as a contaminant trace chemical and usually occurs as a non-ionized form as H_3BO_3 in soils at pH <8.5, but above this pH, it exists as an anion, $B(OH)_4^-$ (Upadhyaya et al., 2014).

The factors that may influence the concentration of boron in groundwater include weathering, human activity, evaporative concentration, ion-exchange, EC, and pH. Ravenscroft & McArthur (2004) investigated the mechanism of regional boron enrichment in groundwater and the results indicated that the main process resulting in boron enrichment in groundwater was flushing by fresh groundwater. The desorption of boron from mineral surfaces could be affected by pH, ionic strength, salinity, and the HCO_3/CO_3 ratio. Decreases in pH will increase the dissolution of boron from the mineral surfaces. Boron adsorption favors high pH and boron desorption favors low pH in rocks, soils, and organic matters (Hollis et al., 1988; Keren & Communar, 2009; Tabelin et al., 2014).

Additional investigations confirmed that the presence of boron in groundwater depends on the EC (salinity), such that the concentration of boron increases with increasing EC. Halim et al. (2010) reported that the increae in Cl^- contributes to an increase in EC value since a strong linear correlation ($R^2 = 0.88$) between EC and Cl^- was observed. Palmucci & Rusi (2014) observed a clear correlation between elevated concentrations of boron and the chloride-sodium facies, which are characterized by high saline content, negative redox potential, and low value of the SO_4^{2-}/Cl^- ratio. Rodriguez-Espinosa et al. (2020) determined that the concentration of boron in groundwater was related to SO_4^{2-} and the age affect.

Regarding concentrations of boron in groundwater at the Landfill, the source of boron is more likely natural rather than anthropogenic. Therefore, the increase in concentration of boron at MW-21 can be related to natural variations in groundwater geochemistry related to pH, ion exchanges, EC, and salinity.

2.3.2 pH

The one apparent pH SSI identified in MW-01 appears to be related to natural variations in groundwater quality as impacted by oil and gas activity in the area and the presence of lignite in the subsurface resulting in changes in the geochemistry of the uppermost aquifer system such as pH and oxidation-reduction potential (ORP) and are also related to changes in the measured concentrations of CCR constituents.

Section 3
Alternative Source Demonstration

The 13th semi-annual detection monitoring event was conducted on October 10, 2023 per 30 TAC Chapter 352. Statistical evaluation of the results (comparison of downgradient monitoring results to 95 percent confidence/95 percent coverage upper tolerance limits [UTLs]) was performed within 60 days of sample collection to identify apparent SSIs above background pursuant to 30 TAC 352, Subpart H. Two apparent SSI was identified: boron and pH.

verification sampling was not conducted for the initial tow apparent SSIs. NRG notified the TCEQ of its intent to prepare an ASD on December 9, 2023, addressing the apparent SSIs for boron, sulfate, and pH.

The UTLs and sampling results for the for the apparent SSIs are provided in Table 1 below.

Table 1 SSI – April 2023 Semi-annual Detection Monitoring Event

ANALYTE	WELL	LTL	UTL	SAMPLE DATE	VALUE	UNIT
Boron	MW-21 (DG)	NA	0.44	05/01/2023	0.652	mg/L
pH	MW-01 (DG)	4.1	7.6	05/01/2023	3.90	s.u.

Notes: DG = Downgradient
UG = Upgradient
mg/L = milligrams per Liter

Alternative sources for the apparent SSIs encompass a range of apparent lines of reasoning and include the following non-CCR sources located in the vicinity of the Landfill:

- The Station and surrounding vicinity are densely populated with historical and current oil and gas activities consisting primarily of natural gas production wells;
- Monitor wells were completed into and screened across both lignite and shale seams that are a source of trace elements such as boron; and
- A lignite mine is located immediately south of the Landfill and mining operations can impact the groundwater quality and pH of groundwater over a long period of time.

Acidity is transported from a mine in groundwater or by surface water runoff that can then infiltrate into groundwater. Through migration, such groundwater, can impact groundwater quality at and in the vicinity of the Landfill. During historical detection monitoring at the Landfill, the pH of groundwater at MW-21 has remained within the range of 5.0 to 5.6 S.U. As discussed in Section 2.2, low pH (< 6) conditions are favorable for the dissolution of boron from mineral surfaces in the soil and bedrock.

In addition to MW-21, pH at MW-01 was low for the April 2023 monitoring event. As discussed above, acidity is transported from a mine in groundwater or by surface water runoff that can then infiltrate into groundwater. Therefore, it is anticipated that the apparent SSI for pH for MW-01 is associated with the historical lignite mining and/or the oil and gas activities at the Station.

In summary, the apparent SSIs for boron and pH for the 13th semi-annual detection monitoring event are most likely related to other non-CCR off-site sources (oil and gas activities or the historic lignite mine), the apparent presence of lignite seams within the screened portion of the monitor wells, or natural variations in groundwater geochemistry (acidic pH conditions) rather than a release to groundwater from the Landfill

Section 4
Conclusions

Based on statistical evaluation of the October 10, 2023 semi-annual detection monitoring event analytical results, two apparent SSIs: boron and pH; were identified for the Landfill. This ASD has identified the following lines of reasoning that support alternative sources for the apparent SSIs:

- Numerous historical and active natural gas wells and their associated well pads and surface pits are located immediately surrounding and within the footprint of the Landfill. Well pits associated with the natural gas wells contribute spent completion or workover fluids to groundwater that contain constituents that are also CCR Rule Appendix III detection monitoring constituents;
- As shown on the boring logs for the Landfill CCR groundwater monitoring network, lignite and shale seams that contain trace amounts of boron are present at the Landfill and several monitor wells were installed into and screened across these seams;
- The Jewett lignite surface mine is located approximately 1.5 south of the Landfill; and
- Natural variations in groundwater geochemistry likely related to changes in pH, ion exchanges, EC, and/or salinity.

Therefore, based on the lines of reasoning presented in this ASD, alternative sources and/or natural variations in groundwater geochemistry, rather than a release from the Landfill have been demonstrated to be responsible for the apparent SSIs observed. Based on this successful ASD, NRG will continue semi-annual detection monitoring for the Landfill per 30 TAC Chapter 352.

Section 5
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Figures

CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Generating Station
F.M. 39 Road, Jewett, Texas 75838

TITLE

LOCATION OF CCR LANDFILL

DRAWN BY: **O. Fonseka**	REQUEST BY: **J. Atwell**	PROJECT NO. **528473**
DWG. DATE: **October 2023**	PROJECT-MGR: **T. Dworaczyk**	FIGURE **1**

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

LAST EDIT: 10/06/2023 - FILE LOCATION: HOU C:\OF-TRC\DRAFTING-CDrive\ECR-Files\NRG\Limestone Generating Stn - Jewett-TX\ Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

DRAWING By: **Oskar Fonseka** - FILE NAME: Fig 1-2 - NRG-LimestoneStation - Location of CCR Landfill.dwg

LEGEND

- Monitor Well Location
- Landfill CCR Monitor Well
- Landfill Background CCR Monitor Well
- ***447.08*** Groundwater Elevation (FT MSL)
- ***NM*** Not Measured
- Groundwater Flow Direction
- Groundwater Elevation Contour - Dashed where Inferred (FT MSL)
- CCR Landfill Boundary

STATE OF TEXAS
ANTHONY DWORACZYK
GEOLOGY
2658
LICENSED
PROFESSIONAL GEOSCIENTIST

NOTE:
GROUNDWATER ELEVATIONS MEASURED BY HMI ON OCTOBER 2023

0 690 1,380 FT

1 " = 700 '
1:8,400

N

PROJECT:
NRG TEXAS POWER, LLC
LIMESTONE
JEWETT, TEXAS

TITLE:
GROUNDWATER POTENTIOMETRIC SURFACE - OCTOBER 2023

DRAWN BY:	F. Yarbrough	PROJ. NO.:	585632.0000.0000
CHECKED BY:	J. Atwell		
APPROVED BY:	A. Dworaczyk		**FIGURE 2**
DATE:	January 2024		

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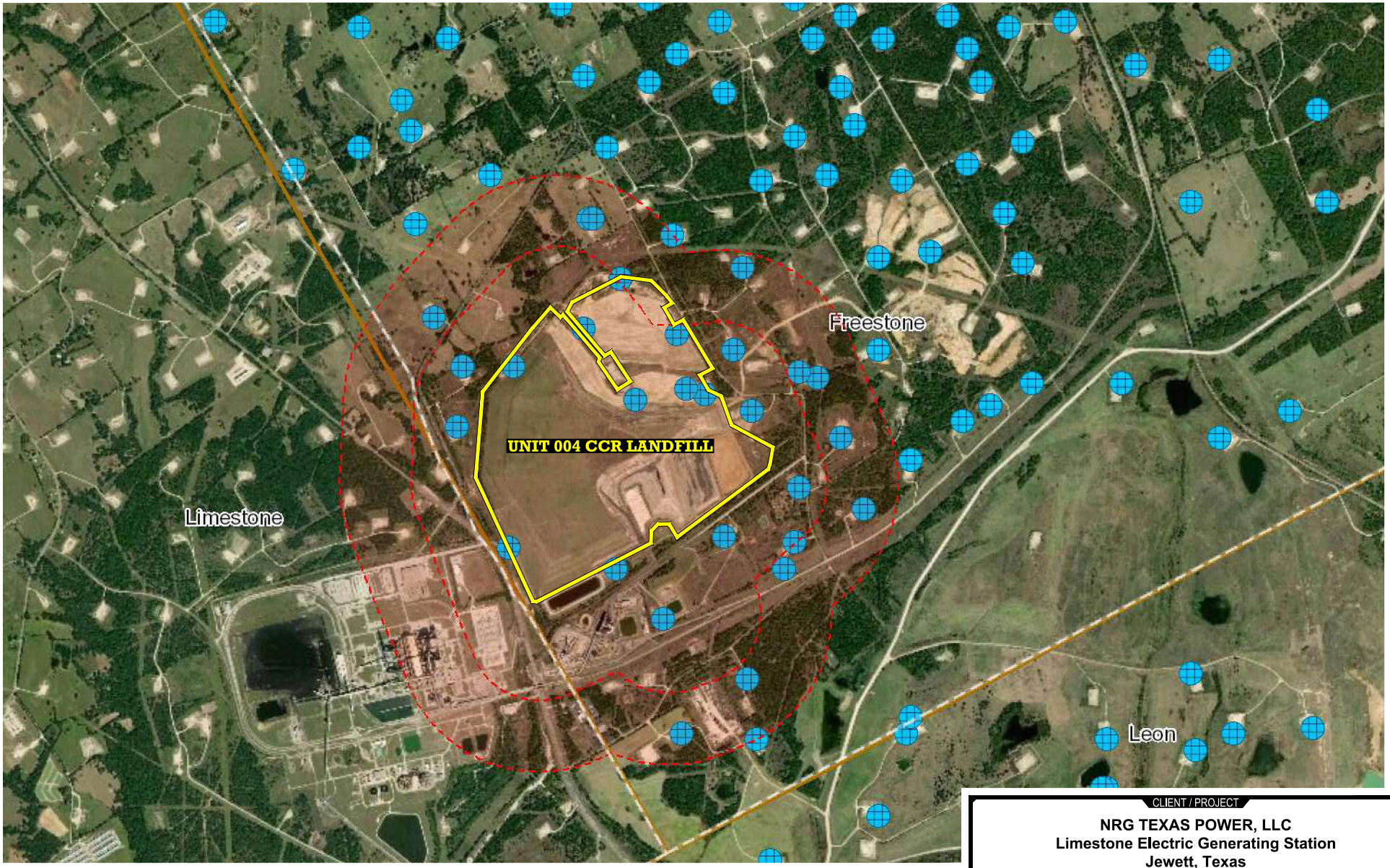
www.trcsolutions.com

FILE NO.: 585632_2-3.mxd



July 3, 2019

polygonLayer

- Override 1
- METGCD Wells

METGCD Wells

- Yes
- Counties

1:36,112

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

Halff Associates, Inc.
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

CLIENT / PROJECT

NRG TEXAS POWER, LLC
Limestone Electric Generating Station
Jewett, Texas

TITLE

OIL AND GAS WELL MAP

DRAWN BY: O. Fonseka	REQUEST BY: T. Dworaczyk	PROJECT NO. 528473
DWG. DATE: October 2023	PROJECT-MGR: T. Dworaczyk	

TRC
14701 ST. MARY'S LANE, STE. 500
HOUSTON, TEXAS 77079
PHONE: 281-616-0100
TRCcompanies.com

FIGURE 3

Attachments

ESPEY, HUSTON & ASSOCIATES, INC.
ENGINEERING & ENVIRONMENTAL CONSULTANTS

HOLE NO. MW-1

DRILLING LOG

HOLE NO.	MW-1
LOCATION	Limestone Electric Generating Station
GROUND ELEV.	±418.06'
DRILL ANGLE	0°
COLLAR ELEV.	None
DRILL DIRECTION	Vertical
TOTAL DEPTH	60'
STARTED	10/1/86
ELEV. DATUM	Surface
COMPLETED	10/1/86

	DEPTH	DATE	TIME
FIRST FREE WATER			
BAILED WATER LEVEL			
STATIC WATER LEVEL	4.88	10/7/86	1635

PROJECT NO.	8754
SHEET	1 OF 1
PROJECT/SITE	Houston Lighting & Power
GEO/ENG.	Clyde Smith
CONTRACTOR	Reed & Morris
DRILLER	Ray Reed
RIG MODEL	CFD-1
HOLE TYPE	Rotary
HOLE DIAMETER	5"
DRILL FLUID	H_2O

TESTS	SAMPLES	COMPLETION

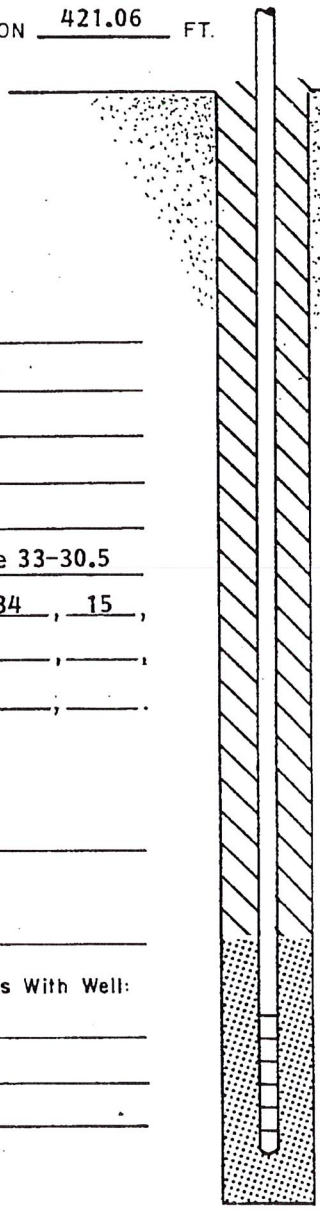
ELEV.	DEPTH	LEGEND	CLASSIFICATION/DESCRIPTION	RECOV.	SAMPLES	DRILLING REMARKS
	5		Brown sand and clay			
	10		Light gray, fine grained sand with minor amounts gray clay and ironstone			
	15					
	20					
	25		Gray silty clay			
	30					
	35		Interbedded brown to tan sand and gray clay			
	40		- very lignitic 39-41'			
	45		Fine gray sand with thin interbeds of gray clay			
	50					
	55		Gray clay			
	60		T.D. at 60'			

WELL COMPLETION RECORD

JOB NO. 8754 WELL NO. MW1 GEOLOGIST Clyde Smith

CLIENT HL&P DRILLER Reed & Morris

TOP OF CASING ELEVATION 421.06 FT. STICK-UP 3.0 FT.



DETAILS OF CONSTRUCTION:

Date Completed 10/1/86

Hole Diameter (in) 7 7/8

Screen Size (in) .010

Screen Length (ft) 20

Casing Size (in) 4

Packer Depth (ft) Bentonite 33-30.5

Centralizer Depths (ft) 54, 34, 15,

_____, _____, _____, _____, _____,

_____, _____, _____, _____, _____.

Completion Technique:

1) Sand Placement Method

Tremie

2) Grout Placement Method

Tremie

Description of Potential Problems With Well:

None

MATERIALS

CEMENT (sks) 12

SAND (ft^3) 8

PVC (ft) 38.5

TOP OF BENTONITE PACK 30.5 FT.

TOP OF SAND PACK 33 FT.

TOP OF SCREEN 35.5 FT.

BOTTOM OF SCREEN 55.5 FT.

BOTTOM OF HOLE 56 FT.

NOTE: ALL DEPTHS ARE REFERENCED TO "DEPTH BELOW GROUND SURFACE"

STATE OF TEXAS WELL REPORT for Tracking #178434

Owner:	**NRG Texas Power Limestone Station**	Owner Well #:	**MW-17**
Address:	**Rt. 1 BoX 85 Jewett, TX 75846**	Grid #:	**39-64-1**
Well Location:	**FM 39 N. Jewett, TX 75846**	Latitude:	**31° 05' 14" N**
		Longitude:	**096° 07' 26" W**
Well County:	**Limestone**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Monitor**

Drilling Start Date: **4/20/2009** Drilling End Date: **4/20/2009**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8.5**	**0**	**55**

Drilling Method: **Hollow Stem Auger**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**38**	**55**	**Gravel**	**20/40**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**36**	**4, Portland**
	36	**38**	**2, Bentonite**
	38	**55**	**12 Sand**

Seal Method: **Grout**

Sealed By: **Driller**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: **46 ft.** below land surface on **2009-04-20** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **No Data**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	**No Data**

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Advanced Drilling Systems, Inc.**

904 W. Tidwell
Houston, TX 77091

Driller Name: **David Rogers** License Number: **52037**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

From (ft)	To (ft)	Description
0	**1**	**Yellowish red SILTY CLAY with abundant Red Mottling**
1	**5**	**Gray very SILTY SAND moist, with some**
		clayey sand seams
		- very silty
5	**12**	**Gray CLAYEY SAND with abundant strong**
		brown mottling
		- very silty
		- some black lignite seams
		- wet
		- abundant yellowish brown mottling
		- abuundant strong brown
		- very moist
12	**16**	**Gray, very SILTY SAND**
		- very moist
		- very fine grained
		- some yellowish brown mottling
		- very silty

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
2	**New**	**PVC**	**Casing 0-40 sch-40**
2	**New**	**PVC**	**Slotted 40-55 0.01**

16-20: Strong brown SILTY CLAY with abundant silty sand seams
- some yellowish brown clayey sand seams
20-26: Yellowish brown CLAYEY SAND with
abundant gray hard brittle clay seams
- some brownish yellow limonitic iron seams
- abundant dark gray clay seams
- very moist
- very silty
26-31: Brown very silty sand, very fine grained
31-42: Brown CLAYEY SAND with abundant
gray clay seams
- very moist
- some muscovite flakes
- abundant dark gray clay seams
- very moist
- some strong brown silty sand seams
- very silty
- very abundant dark gray seams
42-53: Dark gray SILTY SAND, fine grained,
abundant dark gray silty clay seams
- very silty
- saturated @ 46 bgs.
- abundant dark gray silty clay seams
- very silty
- very moist
53-55: Very dark gray CLAY, firm
- some light gray silt seams
- lignite seams

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

ERM Environmental Resources Management

MW-19
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-19 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10507460.00 ' E. Coord. 3574645.00 ' Surface Elevation 440.94 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 443.79 ' Stickup 2.85 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
440.94	0					0-5	0-1.6	SANDY CLAY: Yellowish-brown (10YR 6/4), dry, crumbly, hard, sand is less than 10 percent, PP=4.0 TSF
440							1.6-6.2	SILTY SAND: Light yellowish-brown (10YR 6/4), dry to damp, firm to hard, semi-plastic; thinly laminated. PP=3.5-4.5 TSF
	5					5-10		
435							6.2-8	SANDY CLAY: Light yellowish-brown (10YR 6/4) to yellowish-brown (10YR 5/8), dry to damp, stiff to hard; semi-plastic; thinly laminated.
							8-10	No Recovery
	10					10-15	10-18.5	SILTY SAND: Dark yellowish-brown (10YR 4/6), dry to damp becoming wet at 15.5 to 15.8 feet then dry to damp 15.8 to 18, stiff to hard; soft, friable; thinly bedded. @16.8 feet thin lens of rocks, sand is well sorted;. rootlets at 10.3 feet.
430								
	15					15-20		
425								
							18.5-20	No Recovery
	20							

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-19
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-19 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10507460.00 ' E. Coord. 3574645.00 ' Surface Elevation 440.94 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 443.79 ' Stickup 2.85 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
420	20					20-25	20-34	SILTY SAND: Light olive-brown (2.5Y 5/3), damp becoming moist at 25 to 25.8 feet, damp 25.5 to 28 feet, damp to moist 28 to 30 feet, soft, friable, thinly bedded; some lenticular clay nodules from 30 to 34 feet.
415	25					25-30		
410	30					30-35		
405	35						34-35.4	No Recovery T.D. = 35.40 '
	40							

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-20
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-20 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 39.40 ' Boring Diam. 9.00 "

N. Coord. 10507730.00 ' E. Coord. 3574995.00 ' Surface Elevation 442.12 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 29.00 ' Sump Length 0.40 '

Top of Casing Elevation 445.11 ' Stickup 2.99 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Driling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
442.12	0				0-5	0-0.7	SANDY CLAY: Mottled light yellowish-brown (10YR 5/4) and light brownish-gray (10YR 6/2), dry, firm, brittle; sand less than 10 percent, thinly laminated.
						0.7-1.6	SILTY SAND: Yellowish-brown (10YR 5/4), dry, soft, friable; sand is fine grained, subangular, silt approximately 10 percent.
440						1.6-4	SANDY CLAY: Mottled light yellowish-brown (10YR 5/4) and light brownish-gray (10YR 6/2), dry, firm to stiff, brittle; sand less than 10 percent, thinly laminated. PP=2.5-3.5 TSF
						4-5	No Recovery
	5				5-10	5-8.5	SANDY CLAY: Very dark brown (7.5YR 2.3/3), dry, hard, brittle. PP=4.5+TSF @6.8 feet becomes strong brown (7.5YR 4/6); @7.8 feet becomes light olive brown (2.5 Y 5/3) with some angular rock fragments.
435							
						8.5-10	No Recovery
	10				10-15	10-25	SILTY SAND: Light yellowish-brown (2.5Y 6/4) and light gray (2.5Y 7/2) interbedded, dry, friable, well sorted, silt approximately 10 percent. @13.1 feet possible cross-bedding with rip-up (clay) clasts. @17.8 becomes damp, silt content increases to approximately 30 percent.
430							
	15				15-20		
425							
	20						

STATE OF TEXAS
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10/14/16

ERM Environmental Resources Management

MW-20 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-20 Date Drilled 2016-05-17

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 39.40 ' Boring Diam. 9.00 "

N. Coord. 10507730.00 ' E. Coord. 3574995.00 ' Surface Elevation 442.12 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 29.00 ' Sump Length 0.40 '

Top of Casing Elevation 445.11 ' Stickup 2.99 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Driling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20				20-25		
420							
	25				25-30	25-39.4	SILTY SAND: Olive-brown (2.5Y 4/4), damp to wet (becomes wet at 30-30.8 and 35-35.5 feet), soft, friable. Thinly laminated clay lenses at 37.7 to 37.8 ft. and 38.8 to 39.1 ft., damp, brittle.
415							
	30				30-35		
410							
	35				35-39.4		
405							
	40						T.D. = 39.40 '

STATE OF TEXAS 10/6/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-21
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-21 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10508050.00 ' E. Coord. 3575406.00 ' Surface Elevation 443.46 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 446.35 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
443.46	0				0-5	0-0.8	SANDY CLAY: Mottled yellowish-brown (10YR 5/4) and yellowish-red (10 YR 4/6), dry, stiff, brittle. PP=3.5 TSF
						0.8-1.2	SILTY SAND: Strong brown (7.5 YR 5/6), dry, soft, friable, well sorted. Silt approx. 10 percent.
						1.2-2.9	SANDY CLAY: Dark yellowish-brown interlaminated with light brownish-gray (10YR 6/2), dry to damp, firm, semi-plastic. PP=2.5 TSF
440						2.9-8	SILTY SAND: Strong brown (7.5 YR 5/6) to yellowish-brown (10YR 4/4), dry, soft, friable, well sorted. Silt approx. 10 percent. @6.1 becomes dark brown (7.5YR 7/2).
	5				5-10		
435						8-10	No Recovery
	10				10-15	10-19.5	SILTY SAND: Mottled dark yellowish-brown (10YR 4/4) and gray (10YR 5/1)dry, soft, friable, silt content about 40 percent. @11.2 feet becomes yellowish-brown (10YR 5/6) interlaminated with gray (10YR 5/1); @13.1 feet silt content decreases to 10 percent.
430							
	15				15-20		
425						19.5-24.5	SILTY SAND: Yellowish-brown (10YR 5/4), moist, soft, friable, thinly bedded with well developed partings. @22.0 to 22.5 and 23.0 to 24.5 feet silt content increases to 40 percent.
	20						

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-21
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-21 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.40 ' Boring Diam. 9.00 "

N. Coord. 10508050.00 ' E. Coord. 3575406.00 ' Surface Elevation 443.46 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 25.00 ' Sump Length 0.40 '

Top of Casing Elevation 446.35 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
420	20					20-25		
	25					25-30	24.5-31.4	SILTY SAND: Olive brown (2.5Y 4/5), moist, soft, friable, thinly bedded with well developed partings.
415	30					30-35.4		
410	35						31.4-31.9 31.9-35.4	CLAY: Interlaminated with silty sand. Clay is black (7.5YR 2.5/1), damp, semi-plastic, soft. Silty sand is brown (10YR 4/3), damp, soft, friable. SILTY SAND: mottled yellowish brown (10YR 5/6) and light brownish-gray (10YR 6/2), damp becomes wet at 32.2 to 33 feet, laminated.
405	40							T.D. = 35.40 '

STATE OF TEXAS 10/16/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-22
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-22 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.00 ' Boring Diam. 9.00 "

N. Coord. 10508270.00 ' E. Coord. 3575669.00 ' Surface Elevation 444.68 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 24.50 ' Sump Length 0.40 '

Top of Casing Elevation 447.59 ' Stickup 2.91 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
444.68	0				0-5	0-1.6	SILTY SAND: Strong brown (7.5YR 5/6), dry, soft, friable.
						1.6-3.5	SANDY CLAY: Interlaminated dark yellowish-brown (10YR 4/4) and light brownish-gray (10YR 6/2), damp, semi-plastic. PP=2.5 TSF
						3.5-5	No Recovery
440	5				5-10	5-7.5	SILTY SAND: Strong brown (7.5YR 5/6), dry, soft, friable.
						7.5-8.5	SANDY CLAY: Interlaminated dark yellowish-brown (10YR 4/4) and light brownish-gray (10YR 6/2), damp, semi-plastic.
						8.5-10	No Recovery
435	10				10-15	10-19	SILTY SAND: Interlaminated gray (7.5YR 6/1 and strong brown (7.5 YR 5/6), damp, loose, friable, well sorted, well developed partings. @11.0 to 11.6 bioturbation; @12.5 lenticular clay nodules (interclasts); @13.0 silt content increases to 40 percent.
430	15				15-20		
						19-24	SILTY SAND: Interlaminated silty sand and sandy clay. Silty sand as above. Sandy clay is strong brown, dry to damp, crumbly.
425	20						

STATE OF TEXAS
10/10/16
James R. Davidson
Geology
10493
LICENSED
PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-22
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-22 Date Drilled 2016-05-18

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 35.00 ' Boring Diam. 9.00 "

N. Coord. 10508270.00 ' E. Coord. 3575669.00 ' Surface Elevation 444.68 ' Ft. MSL Datum

Screen: Type Schedule 40 PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type Schedule 40 PVC Diam. 2.00 " Length 24.50 ' Sump Length 0.40 '

Top of Casing Elevation 447.59 ' Stickup 2.91 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Bruce Milton

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	20					20-25		
420	25					25-30	24-30	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent. @25.7 feet, silt content increases to 40 percent. @28.1 silt content decreases to 10 percent.
415	30					30-35	30-31	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent.
							31-31.8	SILTY SAND: Brown, moist to wet, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 40 percent.
							31.8-35	SILTY SAND: Brown, damp to moist, soft, friable, laminated. breaks along parting surfaces. Silt content approx. 10 percent.
410	35							T.D. = 35.00 '
405	40							

STATE OF TEXAS 10/10/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 45.00 ' Boring Diam. 9.00 "

N. Coord. 10505630.00 ' E. Coord. 3571983.00 ' Surface Elevation 434.36 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 30.00 ' Sump Length 0.40 '

Top of Casing Elevation 437.25 ' Stickup 2.89 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

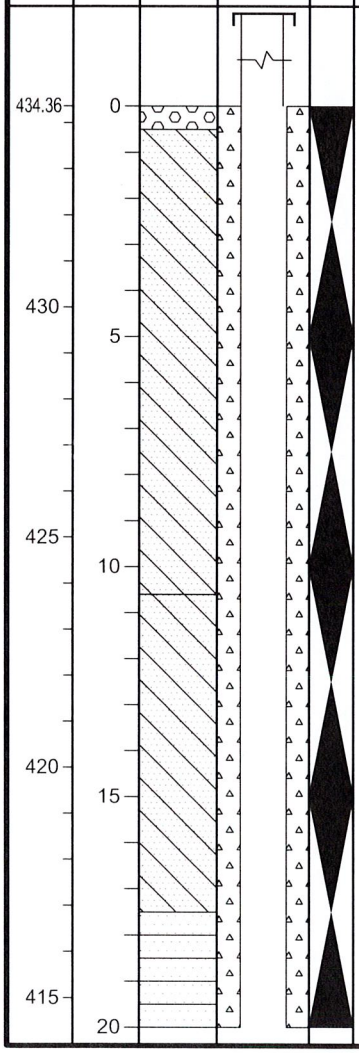
Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Mike Kristoff

SKETCH MAP

NOTES

PP = Pocket Penetrometer



Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
0-5	0-0.5	GRAVEL: Roadbase - crushed limestone with silt matrix. greenish-gray (Gley 1/6/10Y).
	0.5-10.6	SANDY CLAY: Fill Material - Light yellowish- brown (10YR 6/4), dry, thinly laminated, brittle. PP =1.0 TSF
5-10		
10-15	10.6-10.61	LIGNITE: Black organic plant material consisting of decaying rootlets and grass.
	10.61-17.5	SANDY CLAY: Dark red (2.5 YR 3/6), dry, firm to stiff, rootlets at 13.4 ft., becomes thinly bedded at 14.3 ft. Sharp basal contact.
15-20		
	17.5-27.4	SILTY SAND: Very dark grayish-brown (10YR 3/2) grading down to light gray (10YR 7/1), soft, friable; thinly bedded, sand is fine grained, well sorted, subangular to angular. @23.1 becomes mottled with dark yellowish-brown.

STATE OF TEXAS 10/14/16 James R. Davidson Geology 10493 LICENSED PROFESSIONAL GEOSCIENTIST

ERM Environmental Resources Management

MW-23
DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-23 Date Drilled 2016-04-13

Project Limestone CCR Rule Well Installation Owner NRG Energy

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SKETCH MAP

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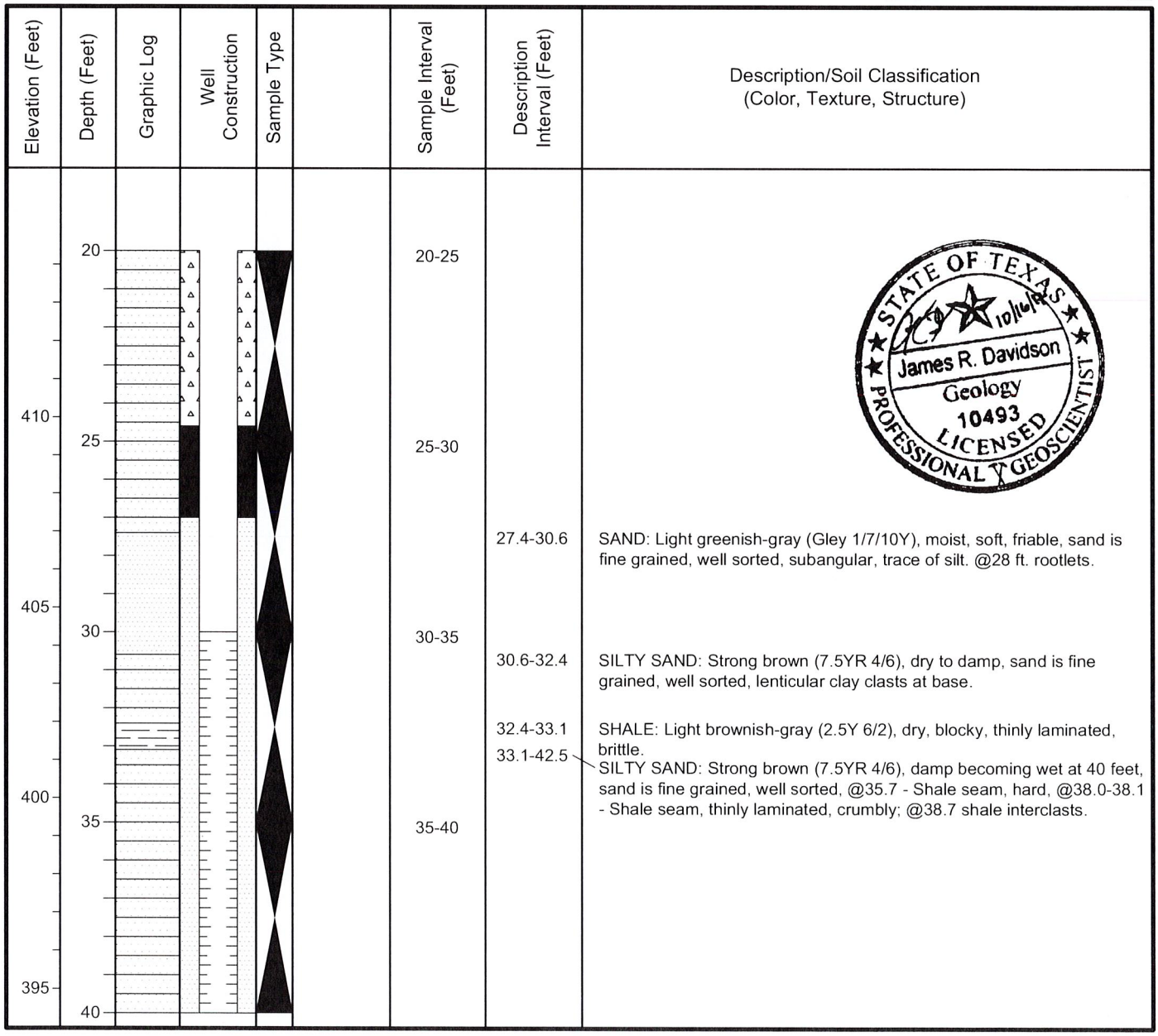

ERM Environmental Resources Management

MW-23
DRILLING LOG

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SKETCH MAP

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PP = Pocket Penetrometer

Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type		Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
	40					40-45		
							42.5-43.3	SHALE: Light brownish-gray (2.5Y 6/2), dry, blocky, thinly laminated, brittle.
							43.3-45	Silty Sand
390	45							T.D. = 45.00 '
385	50							
380	55							
375	60							

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10/14/16

ERM Environmental Resources Management

MW-28 DRILLING LOG

Proj. No. 0345059 Boring/Well ID MW-28 Date Drilled 2016-04-14

Project Limestone CCR Rule Well Installation Owner NRG Energy

Location Limestone EGS Boring T.D. 70.00' Boring Diam. 9.00 "

N. Coord. 10511130.00 ' E. Coord. 3573967.00 ' Surface Elevation 474.57 ' Ft. MSL Datum

Screen: Type PVC Diam. 2.00 " Length 10.00 ' Slot Size 0.01 "

Casing: Type PVC Diam. 2.00 " Length 50.00 ' Sump Length 0.40 '

Top of Casing Elevation 477.52 ' Stickup 2.95 '

Depth to Water: 1. Ft. 0.00 ( ) 2. Ft. 0.00 ( )

Drilling Company Best Drilling Services Driller Sonny Tobola

Drilling Method Hollow Stem Auger Log By Don Whitley

SKETCH MAP

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Elevation (Feet)	Depth (Feet)	Graphic Log	Well Construction	Sample Type	Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
474.57	0				0-5	0-5	NOT SAMPLED: Hydrovac
470	5				5-10	5-18	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30 %: fine grained, subangular. @ 10 ft, sand content decreases to approx. 10%, breaks along laminae.
465	10				10-15		
460	15				15-20		
455	20					18-18.4	CLAYEY SAND: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly bedded, fine grained, uncemented, cohesive, well sorted, subangular, clay approx. 40% - dry, damp.
						18.4-22.5	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.

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ERM Environmental Resources Management

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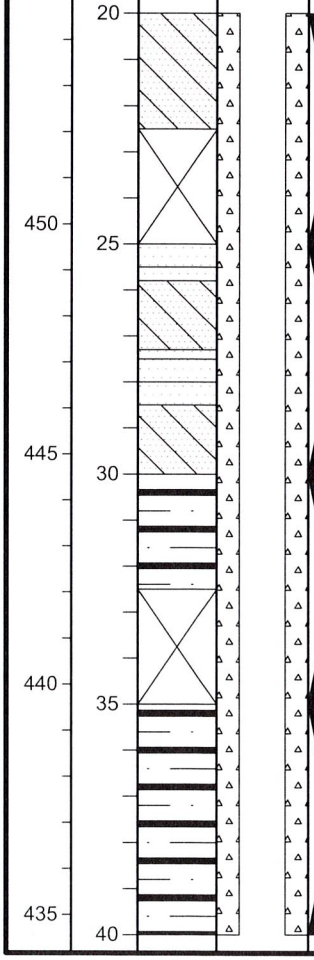

Sample Interval (Feet)	Description Interval (Feet)	Description/Soil Classification (Color, Texture, Structure)
20-25		
	22.5-25	No Recovery
25-30	25-25.8	SILTY SAND: Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, damp to moist, cohesive, silt approx. 10%
	25.8-27.3	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
	27.3-28.5	SILTY SAND: Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, dry to damp, cohesive, silt approx. 10%
	28.5-30	SANDY CLAY: 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
30-35	30-32.5	INTERBEDDED CLAY AND SAND: Silty Sand - 30-30.3 ft, 31.2-31.4 ft, 32.2-32.4 ft. - Gley 1/7/10Y Light Greenish Gray, fine grained, subangular to subrounded, uncemented, well sorted, damp to moist, cohesive, silt approx. 10%. Sandy Clay - 30.3-31.2 ft, 31.4-32.2 ft, 32.4-32.5 ft. - 7.5YR/5/4 Brown and 7.5YR/7/1 Light Gray, thinly laminated, damp, semi- to non-plastic, 2.0-2.5 TSF, sand approx. 30% - fine grained, subangular, lenticular pockets of sand - fine grained, subangular, 7.5YR/5/8 strong brown.
	32.5-35	No Recovery
35-40	35-40	INTERBEDDED CLAY AND SAND: Thinly bedded, alternating Silty Sand and Shale. Silty Sand - 7.5YR/5/8 Strong brown, fine grained, uncemented, well sorted, subangular, dry to damp. Shale - 7.5YR/5/1 Gray, non-plastic, dry, 2.0 TSF, trace sand.

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	40					40-45	40-45	INTERBEDDED CLAY AND SAND: Shale - 40-40.4 ft, 40.8-41.1 ft, 41.4-43.8 ft, 44.2-45 ft. - non-plastic, thinly laminated, breaks along laminae, trace sand. Silty Sand - 40.4-40.8 ft, 41.1-41.4 ft, 43.8-44.2 ft. - 7.5YR/5/8 Strong brown, fine grained, uncemented, subangular, well sorted, damp to moist.
430	45					45-50	45-50	INTERBEDDED CLAY AND SAND: Thinly bedded, alternating Silty Sand and Shale. Silty Sand - 7.5YR/6/1 Gray, fine grained, uncemented, subangular, well sorted, dry to damp. Shale - Gley 1/2.5/10Y Greenish Black, non-plastic, dry, trace sand.
425	50					50-55	50-56.6	SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout. @ 52.9-53.2 Silty Sand seam - 7.5YR/4/3 Brown, fine grained, uncemented, subangular, wet.
420	55					55-60		
							56.6-57.1	SILTY SAND: 7.5YR/4/2 Brown, fine grained, uncemented, subangular, wet to saturated
							57.1-58.5	SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout
							58.5-60	No Recovery
415	60							

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410	60					60-65	60-60.7 60.7-69.5	INTERBEDDED CLAY AND SAND: Thinly alternating Silty Sand and Shale. Silty Sand - 7.5YR/6/1 Gray, fine grained, uncemented, subangular, well sorted, dry to damp. Shale - Gley 1/2.5/10Y Greenish Black, non-plastic, dry, trace sand. SHALE: Gley 1/2.5/10Y Greenish Black, non-plastic, dry to damp, thinly laminated, breaks along laminae, trace sand, has thin beds of fine grained sand throughout. @ 61.5-61.7 - Silty Sand lense, 7.5YR/4/2 Brown
405	65					65-70		
400	70							T.D. = 70.00'
395	75							
	80							

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