HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 28, 2022

Naudiea Yon
Lee Ranch Coal Co
PO Box 757
Grants, NM 87020
TEL: (505) 285-2898
FAX

RE: Lee Ranch Pit 8 OrderNo.: 2204007

Dear Naudiea Yon:

Hall Environmental Analysis Laboratory received 14 sample(s) on 3/31/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2204007**
Date Reported: **4/28/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Four Corner In Use Well
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 8:10:00 AM
Lab ID: 2204007-001 **Matrix:** AQUEOUS **Received Date:** 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Fluoride	1.2	0.50		mg/L	5	4/1/2022 1:01:06 PM
Chloride	6.9	2.5		mg/L	5	4/1/2022 1:01:06 PM
Sulfate	190	2.5		mg/L	5	4/1/2022 1:01:06 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Aluminum	ND	0.020		mg/L	1	4/4/2022 10:50:10 AM
Barium	0.043	0.0020		mg/L	1	4/4/2022 10:50:10 AM
Boron	0.20	0.040		mg/L	1	4/4/2022 10:50:10 AM
Cadmium	ND	0.0020		mg/L	1	4/4/2022 10:50:10 AM
Calcium	40	1.0		mg/L	1	4/4/2022 10:50:10 AM
Chromium	ND	0.0060		mg/L	1	4/4/2022 10:50:10 AM
Cobalt	ND	0.0060		mg/L	1	4/4/2022 10:50:10 AM
Iron	0.34	0.020	*	mg/L	1	4/4/2022 10:50:10 AM
Magnesium	24	1.0		mg/L	1	4/4/2022 10:50:10 AM
Manganese	0.0066	0.0020		mg/L	1	4/4/2022 10:50:10 AM
Molybdenum	ND	0.0080		mg/L	1	4/4/2022 10:50:10 AM
Nickel	ND	0.010		mg/L	1	4/4/2022 10:50:10 AM
Potassium	2.5	1.0		mg/L	1	4/4/2022 10:50:10 AM
Silver	ND	0.0050		mg/L	1	4/4/2022 10:50:10 AM
Sodium	130	5.0		mg/L	5	4/4/2022 10:51:27 AM
Vanadium	ND	0.050		mg/L	1	4/4/2022 10:50:10 AM
Zinc	0.073	0.010		mg/L	1	4/4/2022 10:50:10 AM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	0.49	0.050	*	mg/L	1	4/7/2022 9:56:41 AM
Manganese	0.0070	0.0020		mg/L	1	4/7/2022 9:56:41 AM
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**
Arsenic	ND	0.0010		mg/L	1	4/5/2022 3:48:05 PM
Copper	ND	0.0010		mg/L	1	4/5/2022 3:48:05 PM
Lead	ND	0.00050		mg/L	1	4/5/2022 3:48:05 PM
Selenium	ND	0.0010		mg/L	1	4/5/2022 3:48:05 PM
EPA METHOD 245.1: MERCURY						Analyst: **VP**
Mercury	ND	0.00020		mg/L	1	4/15/2022 12:36:47 PM
SODIUM ADSORPTION RATIO						Analyst: **ELS**
Sodium Absorption Ratio	3.8	0			1	4/12/2022 8:15:00 AM
TOTAL PHENOLICS BY SW-846 9067						Analyst: **JPM**
Phenolics	ND	2.5		µg/L	1	4/12/2022 8:57:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Four Corner In Use Well
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 8:10:00 AM
Lab ID: 2204007-001
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**
Conductivity	900	10		µmhos/c	1	4/5/2022 2:51:14 PM
SM4500-H+B / 9040C: PH						Analyst: **LRN**
pH	8.08		H	pH units	1	4/5/2022 2:51:14 PM
SM2320B: ALKALINITY						Analyst: **LRN**
Bicarbonate (As CaCO3)	264.6	20.00		mg/L Ca	1	4/5/2022 2:51:14 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	4/5/2022 2:51:14 PM
Total Alkalinity (as CaCO3)	264.6	20.00		mg/L Ca	1	4/5/2022 2:51:14 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	593	20.0	*	mg/L	1	4/12/2022 10:40:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Four Corner In Use Well Diss
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 8:10:00 AM
Lab ID: 2204007-002
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/1/2022 1:26:50 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD2
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 9:38:00 AM
Lab ID: 2204007-003
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Fluoride	1.1	0.50		mg/L	5	4/1/2022 2:44:02 PM
Chloride	ND	2.5		mg/L	5	4/1/2022 2:44:02 PM
Sulfate	ND	2.5		mg/L	5	4/1/2022 2:44:02 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Aluminum	ND	0.020		mg/L	1	4/4/2022 10:52:55 AM
Barium	0.070	0.0020		mg/L	1	4/4/2022 10:52:55 AM
Boron	0.12	0.040		mg/L	1	4/4/2022 10:52:55 AM
Cadmium	ND	0.0020		mg/L	1	4/4/2022 10:52:55 AM
Calcium	1.7	1.0		mg/L	1	4/4/2022 10:52:55 AM
Chromium	ND	0.0060		mg/L	1	4/4/2022 10:52:55 AM
Cobalt	ND	0.0060		mg/L	1	4/4/2022 10:52:55 AM
Iron	ND	0.020		mg/L	1	4/4/2022 10:52:55 AM
Magnesium	ND	1.0		mg/L	1	4/4/2022 10:52:55 AM
Manganese	ND	0.0020		mg/L	1	4/4/2022 10:52:55 AM
Molybdenum	ND	0.0080		mg/L	1	4/4/2022 10:52:55 AM
Nickel	ND	0.010		mg/L	1	4/4/2022 10:52:55 AM
Potassium	1.1	1.0		mg/L	1	4/4/2022 10:52:55 AM
Silver	ND	0.0050		mg/L	1	4/4/2022 10:52:55 AM
Sodium	140	5.0		mg/L	5	4/4/2022 10:54:23 AM
Vanadium	ND	0.050		mg/L	1	4/4/2022 10:52:55 AM
Zinc	0.14	0.010		mg/L	1	4/4/2022 10:52:55 AM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	0.33	0.050	*	mg/L	1	4/7/2022 9:59:48 AM
Manganese	0.0060	0.0020		mg/L	1	4/7/2022 9:59:48 AM
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**
Arsenic	ND	0.0010		mg/L	1	4/5/2022 3:50:46 PM
Copper	ND	0.0010		mg/L	1	4/5/2022 3:50:46 PM
Lead	ND	0.00050		mg/L	1	4/5/2022 3:50:46 PM
Selenium	ND	0.0010		mg/L	1	4/5/2022 3:50:46 PM
EPA METHOD 245.1: MERCURY						Analyst: **VP**
Mercury	ND	0.00020		mg/L	1	4/15/2022 12:38:55 PM
SODIUM ADSORPTION RATIO						Analyst: **ELS**
Sodium Absorption Ratio	26	0			1	4/12/2022 8:15:00 AM
TOTAL PHENOLICS BY SW-846 9067						Analyst: **JPM**
Phenolics	ND	2.5		µg/L	1	4/12/2022 8:57:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD2
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 9:38:00 AM
Lab ID: 2204007-003 **Matrix:** AQUEOUS **Received Date:** 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**
Conductivity	610	10		µmhos/c	1	4/5/2022 3:36:24 PM
SM4500-H+B / 9040C: PH						Analyst: **LRN**
pH	9.43		*H	pH units	1	4/5/2022 3:36:24 PM
SM2320B: ALKALINITY						Analyst: **LRN**
Bicarbonate (As CaCO3)	221.2	20.00		mg/L Ca	1	4/5/2022 3:36:24 PM
Carbonate (As CaCO3)	89.76	2.000		mg/L Ca	1	4/5/2022 3:36:24 PM
Total Alkalinity (as CaCO3)	311.0	20.00		mg/L Ca	1	4/5/2022 3:36:24 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	371	20.0		mg/L	1	4/12/2022 10:40:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD2 Diss
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 9:38:00 AM
Lab ID: 2204007-004
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	4/1/2022 3:09:46 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD3
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 9:15:00 AM
Lab ID: 2204007-005 **Matrix:** AQUEOUS **Received Date:** 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Fluoride	0.74	0.50		mg/L	5	4/1/2022 3:35:29 PM
Chloride	ND	2.5		mg/L	5	4/1/2022 3:35:29 PM
Sulfate	18	2.5		mg/L	5	4/1/2022 3:35:29 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Aluminum	ND	0.020		mg/L	1	4/4/2022 10:55:49 AM
Barium	0.10	0.0020		mg/L	1	4/4/2022 10:55:49 AM
Boron	0.11	0.040		mg/L	1	4/4/2022 10:55:49 AM
Cadmium	ND	0.0020		mg/L	1	4/4/2022 10:55:49 AM
Calcium	1.9	1.0		mg/L	1	4/4/2022 10:55:49 AM
Chromium	ND	0.0060		mg/L	1	4/4/2022 10:55:49 AM
Cobalt	ND	0.0060		mg/L	1	4/4/2022 10:55:49 AM
Iron	ND	0.020		mg/L	1	4/4/2022 10:55:49 AM
Magnesium	ND	1.0		mg/L	1	4/4/2022 10:55:49 AM
Manganese	0.0046	0.0020		mg/L	1	4/4/2022 10:55:49 AM
Molybdenum	ND	0.0080		mg/L	1	4/4/2022 10:55:49 AM
Nickel	ND	0.010		mg/L	1	4/4/2022 10:55:49 AM
Potassium	ND	1.0		mg/L	1	4/4/2022 10:55:49 AM
Silver	ND	0.0050		mg/L	1	4/4/2022 10:55:49 AM
Sodium	120	5.0		mg/L	5	4/4/2022 10:57:20 AM
Vanadium	ND	0.050		mg/L	1	4/4/2022 10:55:49 AM
Zinc	0.051	0.010		mg/L	1	4/4/2022 10:55:49 AM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	ND	0.050		mg/L	1	4/7/2022 10:07:53 AM
Manganese	0.0047	0.0020		mg/L	1	4/7/2022 10:07:53 AM
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**
Arsenic	ND	0.0010		mg/L	1	4/5/2022 3:53:27 PM
Copper	ND	0.0010		mg/L	1	4/5/2022 3:53:27 PM
Lead	ND	0.00050		mg/L	1	4/5/2022 3:53:27 PM
Selenium	ND	0.0010		mg/L	1	4/5/2022 3:53:27 PM
EPA METHOD 245.1: MERCURY						Analyst: **VP**
Mercury	ND	0.00020		mg/L	1	4/20/2022 8:05:44 AM
SODIUM ADSORPTION RATIO						Analyst: **ELS**
Sodium Absorption Ratio	21	0			1	4/12/2022 8:15:00 AM
TOTAL PHENOLICS BY SW-846 9067						Analyst: **JPM**
Phenolics	ND	2.5		µg/L	1	4/12/2022 8:57:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD3
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 9:15:00 AM
Lab ID: 2204007-005 **Matrix:** AQUEOUS **Received Date:** 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**
Conductivity	530	10		µmhos/c	1	4/5/2022 3:55:55 PM
SM4500-H+B / 9040C: PH						Analyst: **LRN**
pH	8.59		*H	pH units	1	4/5/2022 3:55:55 PM
SM2320B: ALKALINITY						Analyst: **LRN**
Bicarbonate (As CaCO3)	239.2	20.00		mg/L Ca	1	4/5/2022 3:55:55 PM
Carbonate (As CaCO3)	9.600	2.000		mg/L Ca	1	4/5/2022 3:55:55 PM
Total Alkalinity (as CaCO3)	248.8	20.00		mg/L Ca	1	4/5/2022 3:55:55 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	341	20.0		mg/L	1	4/12/2022 10:40:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD3 Diss
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 9:15:00 AM
Lab ID: 2204007-006
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/1/2022 4:01:13 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD4
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:04:00 AM
Lab ID: 2204007-007
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Fluoride	0.85	0.50		mg/L	5	4/1/2022 4:26:57 PM
Chloride	ND	2.5		mg/L	5	4/1/2022 4:26:57 PM
Sulfate	14	2.5		mg/L	5	4/1/2022 4:26:57 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Aluminum	ND	0.020		mg/L	1	4/4/2022 10:58:56 AM
Barium	0.16	0.0020		mg/L	1	4/4/2022 10:58:56 AM
Boron	0.12	0.040		mg/L	1	4/4/2022 10:58:56 AM
Cadmium	ND	0.0020		mg/L	1	4/4/2022 10:58:56 AM
Calcium	3.3	1.0		mg/L	1	4/4/2022 10:58:56 AM
Chromium	ND	0.0060		mg/L	1	4/4/2022 10:58:56 AM
Cobalt	ND	0.0060		mg/L	1	4/4/2022 10:58:56 AM
Iron	0.026	0.020		mg/L	1	4/4/2022 10:58:56 AM
Magnesium	ND	1.0		mg/L	1	4/4/2022 10:58:56 AM
Manganese	0.0050	0.0020		mg/L	1	4/4/2022 10:58:56 AM
Molybdenum	ND	0.0080		mg/L	1	4/4/2022 10:58:56 AM
Nickel	ND	0.010		mg/L	1	4/4/2022 10:58:56 AM
Potassium	1.1	1.0		mg/L	1	4/4/2022 10:58:56 AM
Silver	ND	0.0050		mg/L	1	4/4/2022 10:58:56 AM
Sodium	100	5.0		mg/L	5	4/4/2022 11:00:34 AM
Vanadium	ND	0.050		mg/L	1	4/4/2022 10:58:56 AM
Zinc	0.049	0.010		mg/L	1	4/4/2022 10:58:56 AM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	ND	0.050		mg/L	1	4/4/2022 10:27:03 AM
Manganese	0.0048	0.0020		mg/L	1	4/4/2022 10:27:03 AM
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**
Arsenic	ND	0.0010		mg/L	1	4/5/2022 4:28:20 PM
Copper	ND	0.0010		mg/L	1	4/5/2022 4:28:20 PM
Lead	ND	0.00050		mg/L	1	4/5/2022 4:28:20 PM
Selenium	ND	0.0010		mg/L	1	4/5/2022 4:28:20 PM
EPA METHOD 245.1: MERCURY						Analyst: **VP**
Mercury	ND	0.00020		mg/L	1	4/20/2022 8:07:54 AM
SODIUM ADSORPTION RATIO						Analyst: **ELS**
Sodium Absorption Ratio	13	0			1	4/12/2022 8:15:00 AM
TOTAL PHENOLICS BY SW-846 9067						Analyst: **JPM**
Phenolics	ND	2.5		µg/L	1	4/12/2022 8:57:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD4
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:04:00 AM
Lab ID: 2204007-007
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**
Conductivity	460	10		µmhos/c	1	4/5/2022 4:10:21 PM
SM4500-H+B / 9040C: PH						Analyst: **LRN**
pH	8.39		H	pH units	1	4/5/2022 4:10:21 PM
SM2320B: ALKALINITY						Analyst: **LRN**
Bicarbonate (As CaCO3)	214.1	20.00		mg/L Ca	1	4/5/2022 4:10:21 PM
Carbonate (As CaCO3)	2.800	2.000		mg/L Ca	1	4/5/2022 4:10:21 PM
Total Alkalinity (as CaCO3)	216.9	20.00		mg/L Ca	1	4/5/2022 4:10:21 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	296	20.0		mg/L	1	4/12/2022 10:40:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD4 Diss
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:04:00 AM
Lab ID: 2204007-008
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/1/2022 5:18:25 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD5
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 8:46:00 AM
Lab ID: 2204007-009 **Matrix:** AQUEOUS **Received Date:** 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Fluoride	0.60	0.50		mg/L	5	4/1/2022 5:44:11 PM
Chloride	5.4	2.5		mg/L	5	4/1/2022 5:44:11 PM
Sulfate	220	2.5		mg/L	5	4/1/2022 5:44:11 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Aluminum	ND	0.020		mg/L	1	4/4/2022 11:08:29 AM
Barium	0.017	0.0020		mg/L	1	4/4/2022 11:08:29 AM
Boron	0.13	0.040		mg/L	1	4/4/2022 11:08:29 AM
Cadmium	ND	0.0020		mg/L	1	4/4/2022 11:08:29 AM
Calcium	47	1.0		mg/L	1	4/4/2022 11:08:29 AM
Chromium	ND	0.0060		mg/L	1	4/4/2022 11:08:29 AM
Cobalt	ND	0.0060		mg/L	1	4/4/2022 11:08:29 AM
Iron	0.48	0.020	*	mg/L	1	4/4/2022 11:08:29 AM
Magnesium	31	1.0		mg/L	1	4/4/2022 11:08:29 AM
Manganese	0.014	0.0020		mg/L	1	4/4/2022 11:08:29 AM
Molybdenum	ND	0.0080		mg/L	1	4/4/2022 11:08:29 AM
Nickel	ND	0.010		mg/L	1	4/4/2022 11:08:29 AM
Potassium	2.2	1.0		mg/L	1	4/4/2022 11:08:29 AM
Silver	ND	0.0050		mg/L	1	4/4/2022 11:08:29 AM
Sodium	91	1.0		mg/L	1	4/4/2022 11:08:29 AM
Vanadium	ND	0.050		mg/L	1	4/4/2022 11:08:29 AM
Zinc	0.059	0.010		mg/L	1	4/4/2022 11:08:29 AM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	0.78	0.25	*	mg/L	5	4/4/2022 11:51:28 AM
Manganese	0.014	0.0020		mg/L	1	4/4/2022 10:31:36 AM
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**
Arsenic	ND	0.0010		mg/L	1	4/5/2022 4:33:43 PM
Copper	ND	0.0010		mg/L	1	4/5/2022 4:33:43 PM
Lead	ND	0.00050		mg/L	1	4/5/2022 4:33:43 PM
Selenium	ND	0.0010		mg/L	1	4/5/2022 4:33:43 PM
EPA METHOD 245.1: MERCURY						Analyst: **VP**
Mercury	ND	0.00020		mg/L	1	4/20/2022 8:10:01 AM
SODIUM ADSORPTION RATIO						Analyst: **ELS**
Sodium Absorption Ratio	2.6	0			1	4/12/2022 8:15:00 AM
TOTAL PHENOLICS BY SW-846 9067						Analyst: **JPM**
Phenolics	ND	2.5		µg/L	1	4/25/2022 8:26:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Estimated value
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD5
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 8:46:00 AM
Lab ID: 2204007-009
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**
Conductivity	840	10		µmhos/c	1	4/5/2022 4:23:09 PM
SM4500-H+B / 9040C: PH						Analyst: **LRN**
pH	7.85		H	pH units	1	4/5/2022 4:23:09 PM
SM2320B: ALKALINITY						Analyst: **LRN**
Bicarbonate (As CaCO3)	223.3	20.00		mg/L Ca	1	4/5/2022 4:23:09 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	4/5/2022 4:23:09 PM
Total Alkalinity (as CaCO3)	223.3	20.00		mg/L Ca	1	4/5/2022 4:23:09 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	554	20.0	*	mg/L	1	4/12/2022 10:40:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: PLD5 Diss
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 8:46:00 AM
Lab ID: 2204007-010
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/1/2022 6:09:56 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Pit 8 Wells
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:30:00 AM
Lab ID: 2204007-011
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Fluoride	0.68	0.10		mg/L	1	4/1/2022 6:35:40 PM
Chloride	1.5	0.50		mg/L	1	4/1/2022 6:35:40 PM
Sulfate	12	0.50		mg/L	1	4/1/2022 6:35:40 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Aluminum	ND	0.020		mg/L	1	4/4/2022 11:11:39 AM
Barium	0.19	0.0020		mg/L	1	4/4/2022 11:11:39 AM
Boron	0.11	0.040		mg/L	1	4/4/2022 11:11:39 AM
Cadmium	ND	0.0020		mg/L	1	4/4/2022 11:11:39 AM
Calcium	3.9	1.0		mg/L	1	4/4/2022 11:11:39 AM
Chromium	ND	0.0060		mg/L	1	4/4/2022 11:11:39 AM
Cobalt	ND	0.0060		mg/L	1	4/4/2022 11:11:39 AM
Iron	0.020	0.020		mg/L	1	4/4/2022 11:11:39 AM
Magnesium	ND	1.0		mg/L	1	4/4/2022 11:11:39 AM
Manganese	ND	0.0020		mg/L	1	4/4/2022 11:11:39 AM
Molybdenum	ND	0.0080		mg/L	1	4/4/2022 11:11:39 AM
Nickel	ND	0.010		mg/L	1	4/4/2022 11:11:39 AM
Potassium	1.5	1.0		mg/L	1	4/4/2022 11:11:39 AM
Silver	ND	0.0050		mg/L	1	4/4/2022 11:11:39 AM
Sodium	110	5.0		mg/L	5	4/4/2022 11:13:18 AM
Vanadium	ND	0.050		mg/L	1	4/4/2022 11:11:39 AM
Zinc	0.10	0.010		mg/L	1	4/4/2022 11:11:39 AM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	0.055	0.050		mg/L	1	4/7/2022 10:11:09 AM
Manganese	0.0034	0.0020		mg/L	1	4/7/2022 10:11:09 AM
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**
Arsenic	ND	0.0010		mg/L	1	4/5/2022 4:36:24 PM
Copper	0.011	0.0010		mg/L	1	4/5/2022 4:36:24 PM
Lead	ND	0.00050		mg/L	1	4/5/2022 4:36:24 PM
Selenium	ND	0.0010		mg/L	1	4/5/2022 4:36:24 PM
EPA METHOD 245.1: MERCURY						Analyst: **VP**
Mercury	ND	0.00020		mg/L	1	4/20/2022 8:12:08 AM
SODIUM ADSORPTION RATIO						Analyst: **ELS**
Sodium Absorption Ratio	13	0			1	4/12/2022 8:15:00 AM
TOTAL PHENOLICS BY SW-846 9067						Analyst: **JPM**
Phenolics	ND	2.5		µg/L	1	4/25/2022 8:26:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Pit 8 Wells
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:30:00 AM
Lab ID: 2204007-011
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**
Conductivity	490	10		µmhos/c	1	4/5/2022 6:35:22 PM
SM4500-H+B / 9040C: PH						Analyst: **LRN**
pH	8.77		*H	pH units	1	4/5/2022 6:35:22 PM
SM2320B: ALKALINITY						Analyst: **LRN**
Bicarbonate (As CaCO3)	218.5	20.00		mg/L Ca	1	4/5/2022 6:35:22 PM
Carbonate (As CaCO3)	18.48	2.000		mg/L Ca	1	4/5/2022 6:35:22 PM
Total Alkalinity (as CaCO3)	237.0	20.00		mg/L Ca	1	4/5/2022 6:35:22 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	306	20.0		mg/L	1	4/12/2022 10:40:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Pit 8 Wells Diss
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:30:00 AM
Lab ID: 2204007-012
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/1/2022 7:01:24 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Dr. Arroyo
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:51:00 AM
Lab ID: 2204007-013
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Fluoride	0.54	0.10		mg/L	1	4/1/2022 7:52:52 PM
Chloride	0.96	0.50		mg/L	1	4/1/2022 7:52:52 PM
Sulfate	11	0.50		mg/L	1	4/1/2022 7:52:52 PM
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Aluminum	ND	0.020		mg/L	1	4/4/2022 11:14:57 AM
Barium	0.16	0.0020		mg/L	1	4/4/2022 11:14:57 AM
Boron	0.092	0.040		mg/L	1	4/4/2022 11:14:57 AM
Cadmium	ND	0.0020		mg/L	1	4/4/2022 11:14:57 AM
Calcium	2.7	1.0		mg/L	1	4/4/2022 11:14:57 AM
Chromium	ND	0.0060		mg/L	1	4/4/2022 11:14:57 AM
Cobalt	ND	0.0060		mg/L	1	4/4/2022 11:14:57 AM
Iron	ND	0.020		mg/L	1	4/4/2022 11:14:57 AM
Magnesium	ND	1.0		mg/L	1	4/4/2022 11:14:57 AM
Manganese	0.0034	0.0020		mg/L	1	4/4/2022 11:14:57 AM
Molybdenum	ND	0.0080		mg/L	1	4/4/2022 11:14:57 AM
Nickel	ND	0.010		mg/L	1	4/4/2022 11:14:57 AM
Potassium	1.2	1.0		mg/L	1	4/4/2022 11:14:57 AM
Silver	ND	0.0050		mg/L	1	4/4/2022 11:14:57 AM
Sodium	89	1.0		mg/L	1	4/4/2022 11:14:57 AM
Vanadium	ND	0.050		mg/L	1	4/4/2022 11:14:57 AM
Zinc	0.065	0.010		mg/L	1	4/4/2022 11:14:57 AM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	ND	0.050		mg/L	1	4/4/2022 10:35:50 AM
Manganese	0.0053	0.0020		mg/L	1	4/4/2022 10:35:50 AM
EPA 200.8: DISSOLVED METALS						Analyst: **bcv**
Arsenic	ND	0.0010		mg/L	1	4/5/2022 4:44:28 PM
Copper	0.0045	0.0010		mg/L	1	4/5/2022 4:44:28 PM
Lead	ND	0.00050		mg/L	1	4/5/2022 4:44:28 PM
Selenium	ND	0.0010		mg/L	1	4/5/2022 4:44:28 PM
EPA METHOD 245.1: MERCURY						Analyst: **VP**
Mercury	ND	0.00020		mg/L	1	4/20/2022 8:16:33 AM
SODIUM ADSORPTION RATIO						Analyst: **ELS**
Sodium Absorption Ratio	13	0			1	4/12/2022 8:15:00 AM
TOTAL PHENOLICS BY SW-846 9067						Analyst: **JPM**
Phenolics	ND	2.5		µg/L	1	4/25/2022 8:26:00 AM
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Dr. Arroyo
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:51:00 AM
Lab ID: 2204007-013 **Matrix:** AQUEOUS **Received Date:** 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **LRN**
Conductivity	390	10		µmhos/c	1	4/5/2022 6:50:07 PM
SM4500-H+B / 9040C: PH						Analyst: **LRN**
pH	8.34		H	pH units	1	4/5/2022 6:50:07 PM
SM2320B: ALKALINITY						Analyst: **LRN**
Bicarbonate (As CaCO3)	186.2	20.00		mg/L Ca	1	4/5/2022 6:50:07 PM
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	4/5/2022 6:50:07 PM
Total Alkalinity (as CaCO3)	187.4	20.00		mg/L Ca	1	4/5/2022 6:50:07 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**
Total Dissolved Solids	251	20.0		mg/L	1	4/12/2022 10:40:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lee Ranch Coal Co
Client Sample ID: Dr. Arroyo Diss
Project: Lee Ranch Pit 8
Collection Date: 3/31/2022 10:51:00 AM
Lab ID: 2204007-014
Matrix: AQUEOUS
Received Date: 3/31/2022 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **LRN**
Nitrogen, Nitrate (As N)	0.10	0.10		mg/L	1	4/1/2022 8:18:35 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ANALYTICAL REPORT

April 14, 2022

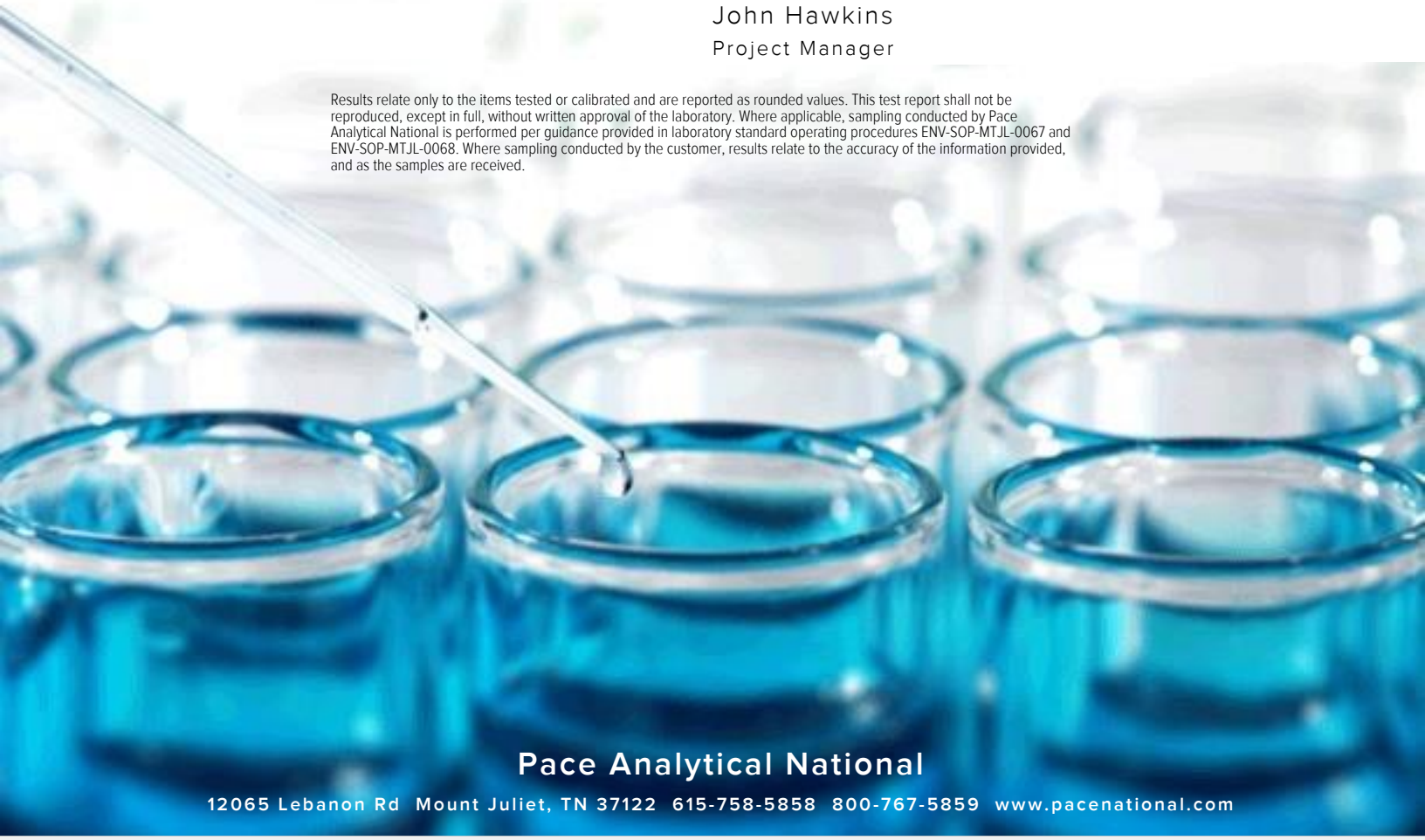
Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1478609
Samples Received:	04/05/2022
Project Number:	
Description:	

Report To: Andy Freeman
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

2204007-001E FOUR CORNERS IN USE WELL L1478609-01 GW

Collected by | Collected date/time 03/31/22 08:10 | Received date/time 04/05/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1843967	1	04/07/22 23:19	04/08/22 15:53	LDT	Mt. Juliet, TN

2204007-003E PLD2 L1478609-02 GW

Collected by | Collected date/time 03/31/22 09:38 | Received date/time 04/05/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1843967	1	04/07/22 23:19	04/08/22 15:56	LDT	Mt. Juliet, TN

2204007-005E PLD3 L1478609-03 GW

Collected by | Collected date/time 03/31/22 09:15 | Received date/time 04/05/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1843967	1	04/07/22 23:19	04/08/22 15:59	LDT	Mt. Juliet, TN

2204007-007E PLD4 L1478609-04 GW

Collected by | Collected date/time 03/31/22 10:04 | Received date/time 04/05/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1843967	1	04/07/22 23:19	04/08/22 16:01	LDT	Mt. Juliet, TN

2204007-009E PLD5 L1478609-05 GW

Collected by | Collected date/time 03/31/22 08:46 | Received date/time 04/05/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1843967	1	04/07/22 23:19	04/08/22 16:04	LDT	Mt. Juliet, TN

2204007-011E PIT 8 WELLS L1478609-06 GW

Collected by | Collected date/time 03/31/22 10:30 | Received date/time 04/05/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1843967	1	04/07/22 23:19	04/08/22 16:05	LDT	Mt. Juliet, TN

2204007-013E DR. ARROYO L1478609-07 GW

Collected by | Collected date/time 03/31/22 10:51 | Received date/time 04/05/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 4500CN E-2016	WG1843969	1	04/10/22 13:01	04/13/22 10:17	LDT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/08/2022 15:53	WG1843967

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/08/2022 15:56	WG1843967

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/08/2022 15:59	WG1843967

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND	J6	0.00500	1	04/08/2022 16:01	WG1843967

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/08/2022 16:04	WG1843967

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/08/2022 16:05	WG1843967

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Cyanide	ND		0.00500	1	04/13/2022 10:17	WG1843969

QUALITY CONTROL SUMMARY

L1478609-01,02,03,04,05,06

Method Blank (MB)

(MB) R3779093-1 04/08/22 15:47

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1478595-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1478595-05 04/08/22 15:51 • (DUP) R3779093-3 04/08/22 15:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

L1478609-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1478609-03 04/08/22 15:59 • (DUP) R3779093-6 04/08/22 16:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3779093-2 04/08/22 15:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.103	103	87.1-120	

L1478609-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1478609-01 04/08/22 15:53 • (MS) R3779093-4 04/08/22 15:54 • (MSD) R3779093-5 04/08/22 15:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0901	0.0971	90.1	97.1	1	90.0-110			7.48	20

L1478609-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1478609-04 04/08/22 16:01 • (MS) R3779093-7 04/08/22 16:02 • (MSD) R3779093-8 04/08/22 16:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.0892	0.0893	89.2	89.3	1	90.0-110	J6	J6	0.112	20

QUALITY CONTROL SUMMARY

L1478609-07

Method Blank (MB)

(MB) R3780476-1 04/13/22 10:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L1478609-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1478609-07 04/13/22 10:17 • (DUP) R3780476-3 04/13/22 10:18

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	2.72		20

L1478620-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1478620-01 04/13/22 10:19 • (DUP) R3780476-4 04/13/22 10:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3780476-2 04/13/22 10:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cyanide	0.100	0.0946	94.6	87.1-120	

L1478844-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1478844-03 04/13/22 10:34 • (MS) R3780476-5 04/13/22 10:35 • (MSD) R3780476-6 04/13/22 10:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.102	0.0982	102	98.2	1	90.0-110			3.80	20

L1478844-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1478844-04 04/13/22 10:39 • (MS) R3780476-7 04/13/22 10:40 • (MSD) R3780476-8 04/13/22 10:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	0.100	ND	0.100	0.0992	100	99.2	1	90.0-110			0.803	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY:	PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS:	12065 Lebanon Rd			ACCOUNT #:	EMAIL:
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

L1478609

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2204007-001E	Four Corner In Use Well	500AMBHDP F-NAOH	Aqueous	3/31/2022 8:10:00 AM	1	Total Cyanide	-01
2	2204007-003E	PLD2	500AMBHDP F-NAOH	Aqueous	3/31/2022 9:38:00 AM	1	Total Cyanide	-02
3	2204007-005E	PLD3	500AMBHDP F-NAOH	Aqueous	3/31/2022 9:15:00 AM	1	Total Cyanide	-03
4	2204007-007E	PLD4	500AMBHDP F-NAOH	Aqueous	3/31/2022 10:04:00 AM	1	Total Cyanide	-04
5	2204007-009E	PLD5	500AMBHDP F-NAOH	Aqueous	3/31/2022 8:46:00 AM	1	Total Cyanide	-05
6	2204007-011E	Pit 8 Wells	500AMBHDP F-NAOH	Aqueous	3/31/2022 10:30:00 AM	1	Total Cyanide	-06
7	2204007-013E	Dr. Arroyo	500AMBHDP F-NAOH	Aqueous	3/31/2022 10:51:00 AM	1	Total Cyanide	-07

1044

Sample Receipt Checklist

COC Seal Present/Intact:	✓ Y N	If Applicable	
COC Signed/Accurate:	✓ Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	✓ Y N	Pres.Correct/Check:	✓ Y N
Correct bottles used:	✓ Y N		
Sufficient volume sent:	✓ Y N		
RAD Screen <0.5 mR/hr:	✓ Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: CMC	Date: 4/1/2022	Time: 8:49 AM	Received By: Patricia Smith	Date: 4/5/22	Time: 0930
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ✓ RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY
Temp of samples °C Attempt to Cool ?
Comments:

DRA 7-2-310=23 552859479591

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072800** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0030								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072802** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	128	50	150			
Barium	ND	0.0030	0.002000	0	99.3	50	150			
Boron	ND	0.040	0.04000	0	99.0	50	150			
Cadmium	ND	0.0020	0.002000	0	80.6	50	150			
Calcium	ND	1.0	0.5000	0	99.6	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	90.3	50	150			
Iron	ND	0.050	0.02000	0	110	50	150			
Magnesium	ND	1.0	0.5000	0	101	50	150			
Manganese	ND	0.0020	0.002000	0	88.4	50	150			
Molybdenum	ND	0.0080	0.008000	0	68.3	50	150			
Nickel	ND	0.010	0.005000	0	97.0	50	150			
Potassium	ND	1.0	0.5000	0	107	50	150			
Silver	ND	0.0050	0.005000	0	94.7	50	150			
Sodium	ND	1.0	0.5000	0	98.2	50	150			
Vanadium	ND	0.050	0.01000	0	99.8	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**

28-Apr-22

Client: Lee Ranch Coal Co

Project: Lee Ranch Pit 8

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072802** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.012	0.010	0.01000	0	120	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072804** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.58	0.020	0.5000	0	116	85	115			S
Barium	0.48	0.0030	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.1	85	115			
Calcium	47	1.0	50.00	0	93.8	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.8	85	115			
Iron	0.51	0.050	0.5000	0	102	85	115			
Magnesium	48	1.0	50.00	0	95.4	85	115			
Manganese	0.48	0.0020	0.5000	0	96.2	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.6	85	115			
Nickel	0.47	0.010	0.5000	0	93.5	85	115			
Potassium	47	1.0	50.00	0	94.6	85	115			
Silver	0.096	0.0050	0.1000	0	96.4	85	115			
Sodium	48	1.0	50.00	0	96.6	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	98.8	85	115			

Sample ID: **2204007-007CMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PLD4**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072853** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.52	0.050	0.5000	0.03292	97.7	70	130			
Manganese	0.50	0.0020	0.5000	0.004770	98.2	70	130			

Sample ID: **2204007-007CMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PLD4**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.55	0.050	0.5000	0.03292	104	70	130	5.58	20	
Manganese	0.50	0.0020	0.5000	0.004770	98.7	70	130	0.520	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**

28-Apr-22

Client: Lee Ranch Coal Co

Project: Lee Ranch Pit 8

Sample ID: **2204007-009CMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PLD5**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072856** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.52	0.0020	0.5000	0.01421	101	70	130			

Sample ID: **2204007-009CMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PLD5**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.51	0.0020	0.5000	0.01421	98.3	70	130	2.89	20	

Sample ID: **2204007-009CMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PLD5**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072905** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.2	0.25	2.500	0.7772	97.9	70	130			

Sample ID: **2204007-009CMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PLD5**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072906** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.5	0.25	2.500	0.7772	109	70	130	7.89	20	

Sample ID: **MB-66677**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **66677**	RunNo: **87067**
Prep Date: **4/6/2022**	Analysis Date: **4/7/2022**	SeqNo: **3077619** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.050								
Manganese	ND	0.0020								

Sample ID: **LLLCS-66677**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **66677**	RunNo: **87067**
Prep Date: **4/6/2022**	Analysis Date: **4/7/2022**	SeqNo: **3077621** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.050	0.02000	0	134	50	150			
Manganese	0.0021	0.0020	0.002000	0	105	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **LCS-66677**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **66677**	RunNo: **87067**
Prep Date: ***4/6/2022***	Analysis Date: ***4/7/2022***	SeqNo: **3077623** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.51	0.050	0.5000	0	102	85	115			
Manganese	0.48	0.0020	0.5000	0	96.4	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072912** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Barium	ND	0.0020								
Boron	ND	0.040								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Molybdenum	ND	0.0080								
Nickel	ND	0.010								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072913** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020	0.01000	0	128	50	150			
Barium	ND	0.0020	0.002000	0	99.3	50	150			
Boron	ND	0.040	0.04000	0	99.0	50	150			
Cadmium	ND	0.0020	0.002000	0	80.6	50	150			
Calcium	ND	1.0	0.5000	0	99.6	50	150			
Chromium	0.0062	0.0060	0.006000	0	103	50	150			
Cobalt	ND	0.0060	0.006000	0	90.3	50	150			
Iron	0.022	0.020	0.02000	0	110	50	150			
Magnesium	ND	1.0	0.5000	0	101	50	150			
Manganese	ND	0.0020	0.002000	0	88.4	50	150			
Molybdenum	ND	0.0080	0.008000	0	68.3	50	150			
Nickel	ND	0.010	0.005000	0	97.0	50	150			
Potassium	ND	1.0	0.5000	0	107	50	150			
Silver	ND	0.0050	0.005000	0	94.7	50	150			
Sodium	ND	1.0	0.5000	0	98.2	50	150			
Vanadium	ND	0.050	0.01000	0	99.8	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**

28-Apr-22

Client: Lee Ranch Coal Co

Project: Lee Ranch Pit 8

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072913** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.012	0.010	0.01000	0	120	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A86961**	RunNo: **86961**
Prep Date:	Analysis Date: **4/4/2022**	SeqNo: **3072914** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.58	0.020	0.5000	0	116	85	115			S
Barium	0.48	0.0020	0.5000	0	96.9	85	115			
Boron	0.51	0.040	0.5000	0	102	85	115			
Cadmium	0.48	0.0020	0.5000	0	95.1	85	115			
Calcium	47	1.0	50.00	0	93.8	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.8	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Magnesium	48	1.0	50.00	0	95.4	85	115			
Manganese	0.48	0.0020	0.5000	0	96.2	85	115			
Molybdenum	0.49	0.0080	0.5000	0	98.6	85	115			
Nickel	0.47	0.010	0.5000	0	93.5	85	115			
Potassium	47	1.0	50.00	0	94.6	85	115			
Silver	0.096	0.0050	0.1000	0	96.4	85	115			
Sodium	48	1.0	50.00	0	96.6	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	98.8	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A87015**	RunNo: **87015**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074674** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Copper	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A87015**	RunNo: **87015**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074675** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	95.9	50	150			
Copper	0.0011	0.0010	0.001000	0	106	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.0012	0.0010	0.001000	0	118	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A87015**	RunNo: **87015**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074676** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	102	85	115			
Copper	0.027	0.0010	0.02500	0	108	85	115			
Lead	0.013	0.00050	0.01250	0	105	85	115			
Selenium	0.026	0.0010	0.02500	0	103	85	115			

Sample ID: **2204007-013DMSLL**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **Dr. Arroyo**	Batch ID: **A87015**	RunNo: **87015**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074707** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.030	0.0010	0.02500	0	118	70	130			
Copper	0.030	0.0010	0.02500	0.004484	103	70	130			
Lead	0.012	0.00050	0.01250	0	94.6	70	130			
Selenium	0.031	0.0010	0.02500	0	123	70	130			

Sample ID: **2204007-013DMSDL**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **Dr. Arroyo**	Batch ID: **A87015**	RunNo: **87015**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3074708** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **2204007-013DMSDL** SampType: **MSD** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **Dr. Arroyo** Batch ID: **A87015** RunNo: **87015**
Prep Date: Analysis Date: **4/5/2022** SeqNo: **3074708** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.029	0.0010	0.02500	0	115	70	130	2.87	20	
Copper	0.029	0.0010	0.02500	0.004484	98.9	70	130	3.84	20	
Lead	0.012	0.00050	0.01250	0	92.7	70	130	2.07	20	
Selenium	0.029	0.0010	0.02500	0	117	70	130	4.44	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **MB-66868**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **66868**	RunNo: **87278**
Prep Date: **4/15/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086429** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66868**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **66868**	RunNo: **87278**
Prep Date: **4/15/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0.0001500	0	104	50	150			

Sample ID: **LCS-66868**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **66868**	RunNo: **87278**
Prep Date: **4/15/2022**	Analysis Date: **4/15/2022**	SeqNo: **3086431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	85	115			

Sample ID: **MB-66909**	SampType: **MBLK**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **PBW**	Batch ID: **66909**	RunNo: **87356**
Prep Date: **4/18/2022**	Analysis Date: **4/20/2022**	SeqNo: **3089945** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCSLL-66909**	SampType: **LCSLL**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **BatchQC**	Batch ID: **66909**	RunNo: **87356**
Prep Date: **4/18/2022**	Analysis Date: **4/20/2022**	SeqNo: **3089946** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020	0.0001500	0	84.4	50	150			

Sample ID: **LCS-66909**	SampType: **LCS**	TestCode: **EPA Method 245.1: Mercury**
Client ID: **LCSW**	Batch ID: **66909**	RunNo: **87356**
Prep Date: **4/18/2022**	Analysis Date: **4/20/2022**	SeqNo: **3089947** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.3	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R86958**	RunNo: **86958**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3072704** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R86958**	RunNo: **86958**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3072705** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Sulfate	9.4	0.50	10.00	0	94.1	90	110			

Sample ID: **2204007-002AMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Four Corner In Use**	Batch ID: **R86958**	RunNo: **86958**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3072709** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	0.5000	1.036	92.3	79.7	110			
Chloride	12	0.50	5.000	7.048	100	86.3	114			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.02920	97.3	93.5	110			

Sample ID: **2204007-002AMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Four Corner In Use**	Batch ID: **R86958**	RunNo: **86958**
Prep Date:	Analysis Date: **4/1/2022**	SeqNo: **3072710** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.10	0.5000	1.036	93.9	79.7	110	0.553	20	
Chloride	12	0.50	5.000	7.048	101	86.3	114	0.448	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.02920	97.9	93.5	110	0.652	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**

28-Apr-22

Client: Lee Ranch Coal Co

Project: Lee Ranch Pit 8

Sample ID: **MB-66783**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**							
Client ID: **PBW**	Batch ID: **66783**	RunNo: **87154**							
Prep Date: **4/12/2022**	Analysis Date: **4/12/2022**	SeqNo: **3081604**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	ND	2.5								

Sample ID: **LCS-66783**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**							
Client ID: **LCSW**	Batch ID: **66783**	RunNo: **87154**							
Prep Date: **4/12/2022**	Analysis Date: **4/12/2022**	SeqNo: **3081605**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	12	2.5	20.00	0	61.8	58.1	107			

Sample ID: **LCSD-66783**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**							
Client ID: **LCSS02**	Batch ID: **66783**	RunNo: **87154**							
Prep Date: **4/12/2022**	Analysis Date: **4/12/2022**	SeqNo: **3081606**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	12	2.5	20.00	0	61.8	58.1	107	0	20	

Sample ID: **MB-67036**	SampType: **MBLK**	TestCode: **Total Phenolics by SW-846 9067**							
Client ID: **PBW**	Batch ID: **67036**	RunNo: **87471**							
Prep Date: **4/25/2022**	Analysis Date: **4/25/2022**	SeqNo: **3095173**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	ND	2.5								

Sample ID: **LCS-67036**	SampType: **LCS**	TestCode: **Total Phenolics by SW-846 9067**							
Client ID: **LCSW**	Batch ID: **67036**	RunNo: **87471**							
Prep Date: **4/25/2022**	Analysis Date: **4/25/2022**	SeqNo: **3095174**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	13	2.5	20.00	0	66.8	58.1	107			

Sample ID: **LCSD-67036**	SampType: **LCSD**	TestCode: **Total Phenolics by SW-846 9067**							
Client ID: **LCSS02**	Batch ID: **67036**	RunNo: **87471**							
Prep Date: **4/25/2022**	Analysis Date: **4/25/2022**	SeqNo: **3095175**	Units: **µg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phenolics	14	2.5	20.00	0	68.8	58.1	107	2.92	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **lcs-1 100.2uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R87028**	RunNo: **87028**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3075403** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	100.2	0	100	85	115			

Sample ID: **lcs-2 100.2uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R87028**	RunNo: **87028**
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3075427** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	100.2	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **mb-1 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R87028**	RunNo: **87028**							
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3075482**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-1 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R87028**	RunNo: **87028**							
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3075483**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	73.64	20.00	80.00	0	92.0	90	110			

Sample ID: **mb-2 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R87028**	RunNo: **87028**							
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3075505**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-2 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R87028**	RunNo: **87028**							
Prep Date:	Analysis Date: **4/5/2022**	SeqNo: **3075506**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	73.84	20.00	80.00	0	92.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2204007**
28-Apr-22

Client: Lee Ranch Coal Co
Project: Lee Ranch Pit 8

Sample ID: **MB-66702**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **66702**	RunNo: **87163**
Prep Date: **4/7/2022**	Analysis Date: **4/12/2022**	SeqNo: **3081901** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-66702**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **66702**	RunNo: **87163**
Prep Date: **4/7/2022**	Analysis Date: **4/12/2022**	SeqNo: **3081902** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Lee Ranch Coal Co** Work Order Number: **2204007** RcptNo: 1

Received By: **Kasandra Payan** **3/31/2022 4:33:00 PM**

Completed By: **Cheyenne Cason** **4/1/2022 8:44:11 AM**

Reviewed By: IO 4/1/22

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
	Samples were collected the same day and chilled.		
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 8 7 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: JR 4/1/22

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

Poured off and filtered ~100mls from unpreserved volume for dissolved NO3 analysis on all samples, Filter lot # FJ4820. Used 7 Filters. JR 4/1/22

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.5	Good	Not Present			
2	9.3	Good	Not Present			

Chain-of-Custody Record

Client: Lee Ranch

Mailing Address: PO Box 757 Grants, NM 87020

Phone #: 505 285 3062

email : Mnewman@Peabodyenergy.com / NYon@peabodyenergy.com

QA/QC Package:
☐ Standard

Accreditation:
☐ NELAC ☐ Az Compliance ☐ Other

☐ EDD (Type)

Turn-Around Time:
Standard X Rush

Project Name: Lee Ranch Pit 8

PO#: 453211349

Project Manager: Naudiea Yon

Sampler: Myron Newman

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 9.8 - 0.3 = 9.5

Date	Time	Matrix		Container Type and #	Preservative Type	HEAL No.
3/31/2022	810	WT	FOUR CORNER INUSE WELL			2204007
	938	WT	PLD2			001/002
	915	WT	PLD3			~~002~~ 003/004
	1004	WT	PLD4			005/006
	846	WT	PLD5			007/008
	1030	WT	PIT 8 WELLS			009/010
	1051	WT	DR. ARROYO*			011/012
						013/014
						~~015~~
						016

Date: 3/31/2022 **Time:** 1208 **Relinquished by:** Myron Newman / Naudiea Yon

Received by: **Via:** courier **Date:** 3/31/22 **Time:** 16:33

Date: **Time:** **Relinquished by:**

Received by: **Via:** **Date** **Time**

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Abse						

See The Attached Parameters Lis

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

LR Wells
Max: **32/yr.**

Test for:	Hall Bottels
pH	(1) 500mL NP plastic,
Conductivity	(1) 250mL HNO3 plastic
Total Dissolved Solids	(1) 125mL HNO3 plastic
Dissolved Sodium	(1) 125mL H2SO4 plastic
Dissolved Potassium	(1) 500mL NaOH Plastiic
Dissolved Calcium	(1) 1L Amber H2So4 Glass
Magnesium	
Sodium Adsorption Ratio	
Bicarbonate as CaCO3	
Carbonate as CaCO3	
Chloride	
Fluoride	
Sulfate	
Dissolved Nitrate	
Total Phenols	
Dissolved Aluminum	
Dissolved Arsenic	
Dissolved Barium	
Dissolved Boron	
Dissolved Cadmium	
Dissolved Chromium	
Dissolved Cobalt	
Dissolved Copper	
Total Cyanide	
Dissolved Iron	
Total Iron	
Dissolved Lead	
Dissolved Manganese	
Total Manganese	
Total Mercury	
Dissolved Molybdenum	
Dissolved Nickel	
Dissolved Selenium	
Dissolved Silver	
Dissolved Vanadium	
Dissolved Zinc	
Static Water Level	