

April 15, 2019

Reference No. 088210-35

Mr. Mike Bratcher New Mexico Oil Conservation Division Energy, Minerals and Natural Resources Department 811 South First Street Artesia, New Mexico 88240

Ms. Kari Vasenden Bureau of Land Management 620 E Greene Street Carlsbad, New Mexico 88220

Dear Mr. Bratcher and Ms. Vasenden

Re: Closure Request Livingston Ridge #2 SWD Water Line 2RP-2044 EOG Resources, Inc. Site Location: Sec. 1, T 22-S, R 31-E (Lat 32.41751°, Long -103.73427°) Eddy County, New Mexico

GHD Services Inc. (GHD), on behalf of EOG Resources (EOG) is requesting that no further action (NFA) status be granted for the Livingston Ridge SWD water line release (hereafter referred to as the "Site"). The Site is located within Section 1, Township 22 South, Range 31 East, in Eddy County, New Mexico (**Figure 1**).

In an Assessment Summary Report dated October 16, 2017 (**Attachment 1**) GHD recommended the following scope items be completed following delineation of the soil impacts in order to achieve NFA:

- Excavate the spill area to a depth of 4 feet below ground surface (ft bgs) and stockpile the soil to be used for future backfill at the Site. Collect soil samples and submit for chloride analysis to determine if the excavated soil can be used as backfill. See **Table 1** and **Attachment 2** laboratory reports for stockpile and confirmation sample results.
- Place a 20-mil polyethylene liner in the bottom of the excavation (see **Figure 2** for the excavation area) at a depth of 4 ft bgs.
- Backfill the excavation with clean fill material and wheel compact to grade.
- Fertilize and reseed the disturbed area with a BLM-approved seed mix.

The work scope was approved by Mr. Mike Bratcher with the New Mexico Oil Conservation Division on November 28, 2017. Ms. Shelly Tucker with the Bureau of Land Management approved the work scope on January 19, 2018 (Attachment 3). As of the date of this letter, the approved scope of work outlined above was completed and is documented in the attached completion photos (Attachment 4) and final C-141 (Attachment 5) for the Site; therefore, NFA is being requested.





Your timely response to this request is greatly appreciated. Should you have any questions, or require additional information regarding this submittal, please feel free to contact our Midland office at (432) 686-0086.

Sincerely,

GHD

Note fine

Nate Reece Environmental Scientist

JW/mk/01

Murrey

J.T. Murrey Senior Project Manager

Encl. Figure 1 – Site Location Map Figure 2 – Sample Location Map Table 1 – Summary of Soil Analytical Data Attachment 1 – Assessment Summary Report Attachment 2 – Laboratory Reports Attachment 3 – Work Plan Approvals Attachment 4 – Photo Log Attachment 5 – Final C-141

Figures

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SAMPLE LOCATION MAP

CAD File: htcADJFiles/08__1088_10-EOG-Madera Bidge 25-11088210-35(000)GN-DL001.dwg Released to Imaging: 7/7/2023 11:38:29 AM

Coordinate System: NAD 1983 (2011) StatePlane-New Mexico East (US Feet)



Tables

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Table 1Summary of Soil Analytical DataLivingston Ridge SWD #2 Water Line

	Depth							TPH	TPH	TPH	Total	
Sample ID	(feet)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	(GRO)	(DRO)	(MRO)	TPH	Chloride
Assessment Soil Sample Results												
088210-35-060917-MG-TP-1-2	2	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-1-10	10	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-060917-MG-TP-2-2	2	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-2-10	10	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	8300
088210-35-060917-MG-TP-3-2	2	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-3-10	10	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	150
088210-35-060917-MG-TP-4-2	2	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-4-10	10	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	7600
088210-35-060917-MG-TP-5-2	2	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-5-10	10	6/9/2017	<0.024	<0.048	<0.048	<0.097	<0.217	<4.8	<9.6	<48	<62.4	15000
088210-35-060917-MG-TP-6-2	2	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-6-10	10	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	5000
088210-35-060917-MG-TP-7-2	2	6/9/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-7-10	10	6/9/2017	<0.024	<0.049	<0.049	<0.097	<0.219	<4.9	<10	<50	<64.9	17000
088210-35-061217-MG-TP-8-2	2	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-8-10	10	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-9-2	2	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-9-10	10	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-10-2	2	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-10-10	10	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-11-2	2	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-11-10	10	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-12-2	2	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-12-10	10	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-13-2	2	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-13-10	10	6/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-14-2	2	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-14-10	10	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-15-2	2	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-15-10	10	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-16-2	2	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-16-10	10	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-17-2	2	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-17-10	10	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-18-2	2	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-18-10	10	6/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	360

GHD 088210-35BratcherVasenden1-Table 1

Table 1Summary of Soil Analytical DataLivingston Ridge SWD #2 Water Line

	Depth							TPH	TPH	TPH	Total	
Sample ID	(feet)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	(GRO)	(DRO)	(MRO)	TPH	Chloride
			Soil E	Boring La	boratory Resu	ults	•	:			•	
088210-35-071717-MG-SB-1-50	50	7/17/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	8300
088210-35-071717-MG-SB-1-60	60	7/17/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	8300
088210-35-071717-MG-SB-1-70	70	7/17/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	13000
088210-35-071817-MG-SB-1-80	80	7/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	11000
088210-35-071817-MG-SB-1-90	90	7/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	3400
088210-35-071817-MG-SB-2-50	50	7/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	7600
088210-35-071817-MG-SB-2-60	60	7/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	7700
088210-35-071817-MG-SB-2-70	70	7/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	6200
088210-35-071817-MG-SB-2-75	75	7/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	980
088210-35-071817-MG-SB-3-50	50	7/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	62
088210-35-071817-MG-SB-3-60	60	7/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	88
088210-35-071817-MG-SB-4-40	40	7/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	870
088210-35-071817-MG-SB-4-50	50	7/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	79
088210-35-081817-SP-SB-5-100	100	8/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	48
088210-35-081817-SP-SB-5-110	110	8/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	760
088210-35-081817-SP-SB-5-120	120	8/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	82
088210-35-081617-SP-SB-6-85	85	8/16/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-081617-SP-SB-6-95	95	8/16/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
			Excav	ation Soi	I Sample Res	ults						
088210-35-031218-MG-TP-19	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-20	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-21	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-22	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-23	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	130
088210-35-031218-MG-TP-24	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	41
088210-35-031218-MG-TP-25	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	59
088210-35-031218-MG-TP-26	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	50
088210-35-031218-MG-TP-27	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-28	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-29	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-30	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031218-MG-TP-31	4	3/12/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031318-MG-TP-32	4	3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	65
088210-35-031318-MG-TP-33	4	3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031318-MG-TP-34	4	3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	110
088210-35-031318-MG-TP-35	4	3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	67
088210-35-031318-MG-TP-36	4	3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031318-MG-TP-37	4	3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-031318-MG-TP-38	4	3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30

GHD 088210-35BratcherVasenden1-Table 1

Table 1Summary of Soil Analytical DataLivingston Ridge SWD #2 Water Line

	Depth							TPH	TPH	TPH	Total	
Sample ID	(feet)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	(GRO)	(DRO)	(MRO)	TPH	Chloride
			Stoc	kpile Soil	Sample Resu	lts						
088210-35-031318-MG-SP-1		3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	250
088210-35-031318-MG-SP-2		3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	220
088210-35-031318-MG-SP-2		3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	45
088210-35-031318-MG-SP-4		3/13/2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	140
NMOCD RRALs (Total Rank	ing Score	e = 0)	10		50				Total TP	H: 5,000		600

Notes:

All sample results are in milligrams per kilogram NA = Not Analyzed NMOCD = New Mexico Oil Conservation Division SP = Stockpile Sample RRALs = Recommended Remediation Action Limits Highlighted = Exceeds NMOCD RRAL

GHD 088210-35BratcherVasenden1-Table 1

Attachments

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Attachment 1 Assessment Summary Report



October 16, 2017

Reference No. 088210-35

Mr. Zane Kurtz Sr. Safety and Environmental Representative 5509 Champions Dr. Midland, TX 79706 VIA E-Mail: zane_kurtz@eogresources.com

Dear Mr. Kurtz:

Re: Assessment Summary Report Livingston Ridge SWD Water Line 2RP-2044 EOG Resources, Inc. Site Location: Sec. 1, T 22-S, R 31-E (Lat 32.41751°, Long -103.73427°) Eddy County, New Mexico

GHD Services, Inc. (GHD) is pleased to present this report for the above referenced site. Assessment activities were performed at the Livingston Ridge SWD Water Line (hereafter referred to as the "Site"), from June 9 to August 18, 2017 by GHD. The Site is located within Section 1, Township 22 South, Range 31 East, in Eddy County, New Mexico (Figure 1). The property is owned by the U.S. Bureau of Land Management (BLM).

The Site is an active pipeline located approximately 30 miles east-northeast of Carlsbad, New Mexico. According to EOG Resources, Inc. (EOG) supplied Site information, a release of approximately 50 barrels (bbls) of crude oil and 3,200 bbls of produced water occurred when a flowline ruptured. Approximately 30 bbls of crude oil and 480 bbls of produced water were recovered after the release utilizing vacuum trucks. The release was discovered on October 27, 2013. A C-141 Form was submitted to the New Mexico Oil Conservation Division (NMOCD) and the BLM on November 5, 2013 and remediation permit (RP) number 2RP-2044 was assigned.

Initial delineation samples were collected on November 4, 2013 in five areas within the release area (green outlined area on Figure 2) by Yates Petroleum Corporation (Yates). Thirty-nine samples were collected from depths ranging from 2 to 16 feet below ground surface (ft. bgs) and submitted for laboratory analyses. The samples were submitted to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, total petroleum hydrocarbons (TPH) gasoline and diesel range organics by EPA Method 8015M, and chlorides by Method SM4500CL-B analysis.

None of the samples contained BTEX or TPH constituents above the laboratory reporting limits. Chloride concentrations ranged from 6,280 to 29,600 milligrams per kilogram (mg/kg).



Additional vertical delineation samples were collected on January 16, 2014 by Yates utilizing a core drill rig. Twenty-four samples were collected from depths ranging from 20 to 55 ft. bgs within three areas of the release area. The samples were submitted to Cardinal for chloride analysis by Method SM4500CL-B. Chloride concentrations ranged from 128 to 14,800 mg/kg. A sample collected from one boring centrally located in the release area contained a chloride concentration of 752 mg/kg at a depth 55 ft. bgs. This sample represented the deepest chloride concentration greater than the NMOCD Recommended Remedial Action Level (RRAL) of 600 mg/kg established for this Site (see below).

1. Recommended Remediation Action Limits

There are relatively few groundwater wells in the area of the Site with which to obtain a depth to groundwater. Based on information available from the New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System website, the closest well with a reported depth to water is approximately 3.5 miles from the site. The depth to groundwater measured in this well was 448 feet below ground surface (ft. bgs).

Based on information available from the United States Geological Survey (USGS) website, the closest USGS gauging site, approximately 2.7 miles southeast of the site, indicates groundwater at a depth of approximately 125 feet below ground surface (ft. bgs) in 1988. The well information is included in Appendix A.

Groundwater was not encountered in soil boring SB-5 that was advanced to a depth of 130 ft. bgs during GHD's assessment activities.

There do not appear to be any wellhead protection areas and no surface water bodies within 200 ft. to 1000 ft. of the Site. Therefore, the preliminary total ranking score for the Site is 0 (see table below).

Based on this score, the applicable NMOCD Site-specific RRALs are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 5,000 mg/kg for total TPH, and 600 mg/kg for chlorides.

In an August 28, 2017 telephone conversation between Bernard Bockisch of GHD and Jim Griswold, NMOCD Environmental Bureau Chief, GHD was informed that the NMOCD is accepting chloride concentrations of 600 mg/kg for assessment clean up levels.

New Mexico Oil Conservation Division Site Assessment	
Ranking Criteria	Score
Depth to Ground Water (> 100 ft. bgs)	0
Wellhead Protection Area (> 1000 ft. from water source, > 200 ft. from domestic source)	0
Distance to Surface Body Water (200-1000 ft.)	0
Ranking Criteria Total Score	0*



New Mexico Oil Conservation Division Site Assessment

*Because the ranking criteria total score is 0, NMOCD established RRALs are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 5,000 mg/kg for TPH¹, and 600 mg/kg for chlorides.

1. NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993.

2. Assessment Activities

GHD and SDR Enterprises, LLC (SDR) performed additional delineation from June 9 to August 18, 2017 that included the collection of 36 soil samples from 18 test pits and 18 samples from 6 soil borings. Soil samples were collected from 2 ft. bgs and 10 ft. bgs in each test pit and submitted to Hall Environmental Analysis Laboratory (HEAL) located in Albuquerque, New Mexico. Two samples (TP-5 and TP-7) were submitted for TPH (gasoline, diesel, and motor oil range) by EPA Method 8015 BTEX by EPA Method 8021B. All of the samples were submitted for chloride analysis by EPA 300.

BTEX and TPH constituents were not detected above the laboratory reporting limits and chlorides ranged from below the laboratory reporting limit to 17,000 mg/kg. Chloride was detected above the NMOCD RRAL in five of the test pit samples (TP-2, TP-4, TP-5, TP-6, and TP-7) all at depths of 10 ft. bgs. These test pits were located in the southern area of the release. The analytical data is summarized on Table 1 and the laboratory reports are included in Appendix A.

The horizontal and vertical extent of the chloride concentrations within the northern portion of the spill area had been delineated to below the RRAL for chloride. However, the horizontal and vertical extent of chloride concentrations in the southern portion of the impacted area was not fully assessed.

Further soil sampling and soil boring activities were performed by GHD and Enviro-Drill, Inc. of Albuquerque, New Mexico from July 17 through 19, 2017 to assess the vertical extent of chloride concentrations in the soil in the southern portion of the impacted area. Thirteen additional soil samples were collected from four soil borings (SB-1 to SB-4) at depths ranging from 40 ft. bgs to 90 ft. bgs. The samples were submitted to HEAL for analysis of chloride by EPA Method 300.0.

Soil Boring ID	Depth	Chloride Concentration in mg/kg
SB-1	50	8,300
SB-1	60	8,300
SB-1	70	13,000
SB-1	80	11,000
SB-1	90	3,400

Chloride concentrations in these samples ranged from 62 to 13,000 mg/kg. A summary of the soil boring laboratory results is presented in the following table.



Soil Boring ID	Depth	Chloride Concentration in mg/kg
SB-2	50	7,600
SB-2	60	7,700
SB-2	70	6,200
SB-2	75	980
SB-3	50	62
SB-3	60	88
SB-4	40	870
SB-4	50	79
SB-5 (near SB-1)	100	48
SB-5 (near SB-1)	110	760
SB-5 (near SB-1)	120	82
SB-6 (near SB-2)	85	<30
SB-6 (near SB-2)	95	<30

The analytical data is summarized on Table 1 and the laboratory reports are included in Appendix A.

Two additional soil borings, SB-5 and SB-6 were advanced in close proximity to SB-1 and SB-2, respectively between August 16 and 18, 2017. Borings SB-1 and SB-2 experienced drilling refusal at depths of 90 and 75 ft. bgs. The two additional soil borings (SB-5 and SB-6) were advanced to collect additional samples from below these depths.

Three soil samples were collected from SB-5 (near SB-1) from 100, 110, and 120 ft. bgs and two samples were collected from SB-6 (near SB-2) at depths of 85 and 95 ft. bgs. The samples were submitted to HEAL for analysis of chloride by EPA Method 300.0.

Soils at the Site consisted primarily of clayey sands and silty sands with the sands being either very fine or fine grained. A clay with sand unit was encountered at varying depths in all of the soil borings. The soil boring logs are included as Appendix C.

Based on the collected assessment data, it appears that the vertical and horizontal extent of chlorideimpacted soil has been fully assessed as shown on Figure 2.

3. Summary and Recommendations

Based on the assessment of the chloride concentrations, GHD recommends the following:

- Excavating the spill area to a depth of 4 ft. bgs and stockpiling the soil to be used for future backfill at the Site. Soil samples will be collected and submitted for chloride analysis to determine if the excavated soil can be used as backfill.
- Placement of a 20-mil polyethylene liner in the bottom of the excavation (see Figure 2 for the excavation area) at a depth of 4 ft. bgs.



- Backfilling of the excavation with clean fill material and wheel compacting to grade.
- Fertilizing and reseeding of the disturbed area with a BLM-approved seed mix.

Following completion of the backfilling, revegetation of the site will be performed. Disturbed areas associated with the remediation efforts will be re-seeded. If after one growing season the vegetation has not taken hold, seeding may need to be repeated until revegetation is successful. The seed mix will be determined by the BLM.

Should you have any questions, or require additional information regarding this submittal please feel free to contact myself, or Bernie Bockisch at (505) 884-0672 or Bernard.Bockisch@ghd.com.

Sincerely,

GHD

AIC Brand

Alan Brandon Senior Project Manager

BB/mc/30

Bernard Bockisch Albuquerque Operations Manager

Figures

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Laboratory Analytical Report

Released to Imaging: 7/7/2023 11:38:29 AM



CAD File: 1\CAD\Files\08_\088210-EOG-Madera Bidge 25-1\088210-35(000)GN-DL001.dwg Released to Imaging: 7/7/2023 11:38:29 AM



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EOG RESOURCES EDDY COUNTY, NEW MEXICO LIVINGSTON RIDGE SWD No.2

SAMPLE LOCATION MAP

088210-35

Oct 11, 2017

FIGURE 2

CAD File: 1/CADIFiles108-088-088210-EOG-Madera Ridge 25-1088210-35(000)GN-DL001.dwg Released to Imaging: 7/7/2023 11:38:29 AM

Tables

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Laboratory Analytical Report

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Table 1

Livingston Ridge SWD #2 Water Line - Summary of Soil Analytical Data

	Depth							TPH	TPH	TPH	Total	Τ
Sample ID	(feet)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	(GRO)	(DRO)	(MRO)	TPH	Chloride
088210-35-060917-MG-TP-1-2	2	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-1-10	10	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-060917-MG-TP-2-2	2	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-2-10	10	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	8300
088210-35-060917-MG-TP-3-2	2	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-3-10	10	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	150
088210-35-060917-MG-TP-4-2	2	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-4-10	10	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	7600
088210-35-060917-MG-TP-5-2	2	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-5-10	10	06/09/2017	<0.024	<0.048	<0.048	<0.097	<0.217	<4.8	<9.6	<48	<62.4	15000
088210-35-060917-MG-TP-6-2	2	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-6-10	10	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	5000
088210-35-060917-MG-TP-7-2	2	06/09/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-060917-MG-TP-7-10	10	06/09/2017	<0.024	<0.049	<0.049	<0.097	<0.219	<4.9	<10	<50	<64.9	17000
088210-35-061217-MG-TP-8-2	2	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-8-10	10	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-9-2	2	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-9-10	10	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-10-2	2	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-10-10	10	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-11-2	2	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-11-10	10	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-12-2	2	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-12-10	10	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061217-MG-TP-13-2	2	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061217-MG-TP-13-10	10	06/12/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-14-2	2	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-14-10	10	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-15-2	2	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-15-10	10	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-16-2	2	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-16-10	10	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-17-2	2	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-17-10	10	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-061317-MG-TP-18-2	2	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-33-061317-MG-TP-18-10	10	06/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	360

GHD 088210-35

Table 1

Livingston Ridge SWD #2 Water Line - Summary of Soil Analytical Data

Sample ID	Depth (feet)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	втех	TPH (GRO)	TPH (DRO)	TPH (MRO)	Total TPH	Chloride
	· · /				,	,		、 <i>,</i>	· · /	· · /		
088210-35-071717-MG-SB-1-50	50	07/17/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	8300
088210-35-071717-MG-SB-1-60	60	07/17/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	8300
088210-35-071717-MG-SB-1-70	70	07/17/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	13000
088210-35-071817-MG-SB-1-80	80	07/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	11000
088210-35-071817-MG-SB-1-90	90	07/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	3400
088210-35-071817-MG-SB-2-50	50	07/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	7600
088210-35-071817-MG-SB-2-60	60	07/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	7700
088210-35-071817-MG-SB-2-70	70	07/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	6200
088210-35-071817-MG-SB-2-75	75	07/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	980
088210-35-071817-MG-SB-3-50	50	07/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	62
088210-35-071817-MG-SB-3-60	60	07/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	88
088210-35-071817-MG-SB-4-40	40	07/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	870
088210-35-071817-MG-SB-4-50	50	07/19/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	79
088210-35-081817-SP-SB-5-100	100	08/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	48
088210-35-081817-SP-SB-5-110	110	08/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	760
088210-35-081817-SP-SB-5-120	120	08/18/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	82
088210-35-081617-SP-SB-6-85	85	08/16/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
088210-35-081617-SP-SB-6-95	95	08/16/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	<30
												<u> </u>
NMOCD RRALs (Total Ra	Inking Score	= 0)	10		50			Total TPH: 5,000				600

Notes:

All sample results are in milligrams per kilogram NA = Not Analyzed NMOCD = New Mexico Oil Conservation Division RRALs = Recommended Remediation Action Limits Highlighted = Exceeds NMOCD RRAL

Appendices

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Laboratory Analytical Report

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Appendix A Water Well Report

Laboratory Analytical Report

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Livingston Ridge Swo #2



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New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right	(R=POD has been replaced, O=orphaned, C=the file is							IE 3=SW 4	4=SE)				
file.)	closed)			rges		re sma	allest to		AD83 UTM in n	neters)	(In i	eet)	
	POD												
POD Number	Sub- Code basin Co			Q Q		Tws	Bna	х	Y	DistanceD	epthWellDep		ater
<u>C 02744</u>		ED				225	•	617374		1839	4911		ann
<u>C 02745</u>		ED	4 :	2 2	15	22S	31E	616789	3585013* 🌍	3300	925		
<u>C 02746</u>		ED	4 2	22	15	22S	31E	616789	3585013* 🌍	3300	930		
<u>C 02747</u>		ED	4 2	2 2	15	22S	31E	616789	3585013* 🈜	3300	1076		
C 02949 EXPL		ED	1	14	34	21S	31E	616140	3589231* 🌍	3397	970		
<u>C 03150</u>		ED	2 4	44	14	22S	31E	618412	3584025* 🌍	3469	981		
<u>C 02939</u>	С	LE	3 3	31	19	22S	32E	620234	3583042* 🌍	4560	280		
C 03717 POD1	С	LE	4 4	41	09	22S	32E	624094	3586365 🌍	5179	650		
C 03112 EXPLORE		ED	3 -	1 1	09	22S	31E	613753	3586590* 🌍	5341	3567		
<u>C 02415</u>		ED	3 3	34	16	22S	31E	614592	3583785* 🌍	5746	880	448	432
<u>C 02727</u>		ED	3 1	1 1	33	21S	31E	613716	3589809* 鍨	5815	913		
<u>C 02682</u>		ED	4 4	14	08	22S	31E	613566	3585379* 🌍	5836	4400		
									Avera	age Depth to	Water:	448 feet	
										Minimum D	epth:	448 feet	
										Maximum D	epth:	448 feet	
Record Count:12													

UTMNAD83 Radius Search (in meters):

Easting (X): 619026.33 Northing (Y): 3587439.34

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, or suitability for any particular purpose of the data.

Radius: 6000

8/24/17 8:17 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

GO



USGS Home Contact USGS Search USGS

V

National Water Information System: Web Interface

USGS Water Resources

 Data Category:
 Geographic Area:

 Groundwater
 V

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

• 322333103461401

GO

V

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 322333103461401 22S.31E.15.13214

Available data for this site Groundwater: Field measurements

Eddy County, New Mexico Hydrologic Unit Code --

Latitude 32°23'40", Longitude 103°46'16" NAD27

Land-surface elevation 3,455 feet above NAVD88

This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

<u>Table of data</u>		
Tab-separated data		

<u>Graph of data</u>

Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.

Download a presentation-quality graph

Questions about sites/data? Feedback on this web site Automated retrievals Help Data Tips Explanation of terms Subscribe for system changes News

AccessibilityPlug-InsFOIAPrivacyPolicies and NoticesU.S. Department of the InteriorU.S. Geological SurveyTitle:Groundwater for USA:Water LevelsURL:https://nwis.waterdata.usgs.gov/nwis/gwlevels?Page Contact Information:USGS Water Data Support Team

Page Contact Information: <u>USGS Water Data Support Tea</u> Page Last Modified: 2017-10-04 09:30:06 EDT 0.97 0.88 nadww02 Released to Imaging: 7/7/2023 11:38:29 AM

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Appendix B Laboratory Analytical Reports

Laboratory Analytical Report

Released to Imaging: 7/7/2023 11:38:29 AM



June 19, 2017 Bernie Bockish GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

RE: Livingston 2

OrderNo.: 1706844

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 36 sample(s) on 6/15/2017 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 <u>www.hallenvironmental.com</u> 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 #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	017
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-MG	-TP-1-2'
Project: Livingston 2			Collection	Date: 6/9/2017 9:55:00 AM	
Lab ID: 1706844-001	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 1:56:39 AN	32339

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in th
	D	Sample Diluted Due to Matrix	Е	Value above quantitat
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Ra

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- the associated Method Blank
- ation range
- low quantitation limits Page 1 of 40

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- Sample pH Not In Range Р
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	Analytical Report Lab Order 1706844 Date Reported: 6/19/2017				
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-MC	G-TP-1-10
Project: Livingston 2			Collection	Date: 6/9/2017 10:05:00 AM	
Lab ID: 1706844-002	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 2:58:41 AM	1 32339

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected i
	D	Sample Diluted Due to Matrix	Е	Value above quan
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected l

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- in the associated Method Blank
- ntitation range
- below quantitation limits Page 2 of 40
- Р Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

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Hall Environmental Anal	ysis Labora	Analytical Report Lab Order 1706844 Date Reported: 6/19/201			
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-M	G-TP-2-10
Project: Livingston 2			Collection	Date: 6/9/2017 10:55:00 AM	
Lab ID: 1706844-003	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	/st: MRA
Chloride	8300	300	mg/Kg	200 6/18/2017 10:18:05 F	PM 32339

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
H Holding times for preparation or analysis exceededND Not Detected at the Reporting Limit		J	Analyte detected below quantitation limits Page 3 of 40	
		Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	PQL	Practical Quanitative Limit	R	RPD outside accepted recovery limits

- ed recovery limits
- % Recovery outside of range due to dilution or matrix S

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RL Reporting Detection Limit

Hall Environmental Anal		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017				
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-MG	-TP-3-2'	
Project: Livingston 2			Collection	Date: 6/9/2017 11:10:00 AM		
Lab ID: 1706844-004	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM		
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch	
EPA METHOD 300.0: ANIONS				Analys	st: MRA	
Chloride	ND	30	mg/Kg	20 6/17/2017 3:23:31 AN	32339	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in th
	D	Sample Diluted Due to Matrix	Е	Value above quantita
H Holding times for preparation or analysis exceeded		Holding times for preparation or analysis exceeded	J	Analyte detected belo
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Ra

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- the associated Method Blank
- tation range
- Now quantitation limits Page 4 of 40

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- Sample pH Not In Range ŀ
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017			
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-MC	G-TP-3-10
Project: Livingston 2			Collection	Date: 6/9/2017 11:25:00 AM	
Lab ID: 1706844-005	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	st: MRA
Chloride	150	30	mg/Kg	20 6/17/2017 3:35:56 AM	1 32339

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in
	D	Sample Diluted Due to Matrix	E	Value above quantit
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected bel

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- the associated Method Blank
- itation range
- elow quantitation limits Page 5 of 40
- Р Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	Analytical Report Lab Order 1706844 Date Reported: 6/19/2017				
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-MC	G-TP-4-2'
Project: Livingston 2			Collection	Date: 6/9/2017 11:35:00 AM	
Lab ID: 1706844-006	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 3:48:20 AN	/ 32339

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in th
	D	Sample Diluted Due to Matrix	Е	Value above quantita
H Holding times for preparation or analysis exceeded		Holding times for preparation or analysis exceeded	J	Analyte detected belo
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Ra

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- the associated Method Blank
- tation range
- Now quantitation limits Page 6 of 40

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- Sample pH Not In Range ŀ
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora		2017		
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-M	G-TP-4-10
Project: Livingston 2			Collection	Date: 6/9/2017 11:50:00 AM	-
Lab ID: 1706844-007	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Anal	/st: MRA
Chloride	7600	300	mg/Kg	200 6/18/2017 10:30:30	PM 32339

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the
	D	Sample Diluted Due to Matrix	Е	Value above quantita
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected belo
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Ra
	PQL	Practical Quanitative Limit	R	RPD outside accepted

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RL Reporting Detection Limit

- the associated Method Blank
- tation range
- elow quantitation limits Page 7 of 40

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- Range
- ted recovery limits
- % Recovery outside of range due to dilution or matrix S
| Hall Environmental Anal | ysis Labora | | Analytical Report
Lab Order 1706844
Date Reported: 6/19/2 | • • | | |
|------------------------------|-------------|--------|---|----------------------------|----------|--|
| CLIENT: GHD | | | Client Samp | le ID: 088210-35-060917-MG | -TP-5-2' | |
| Project: Livingston 2 | | | Collection | Date: 6/9/2017 1:05:00 PM | | |
| Lab ID: 1706844-008 | Matrix: | SOIL | Received | Date: 6/15/2017 9:30:00 AM | | |
| Analyses | Result | PQL Qu | al Units | DF Date Analyzed | Batch | |
| EPA METHOD 300.0: ANIONS | | | | Analys | st: MRA | |
| Chloride | ND | 30 | mg/Kg | 20 6/17/2017 4:13:09 AN | 1 32339 | |

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in th
	D	Sample Diluted Due to Matrix	Е	Value above quantita
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected belo
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Ra

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- the associated Method Blank
- tation range
- Now quantitation limits Page 8 of 40

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- Sample pH Not In Range Р
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

Analytical Report Lab Order 1706844

D .	D 1	
Date	Reported:	6/19/2017

6/16/2017 6:45:47 PM

6/16/2017 6:45:47 PM

6/16/2017 6:45:47 PM

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32311

32311

32311

	• /				
		Client Sampl	e ID: 088	210-35-060917-MG-	ГР-5-1(
		Collection I	Date: 6/9/	2017 1:20:00 PM	
Matrix: S	SOIL	Received I	Date: 6/15	5/2017 9:30:00 AM	
Result	PQL Qu	al Units	DF	Date Analyzed	Batch
				Analyst	MRA
15000	750	mg/Kg	500	6/18/2017 10:42:55 PM	32340
GE ORGANICS	5			Analyst	том
ND	9.6	mg/Kg	1	6/16/2017 4:23:31 PM	32315
ND	48	mg/Kg	1	6/16/2017 4:23:31 PM	32315
102	70-130	%Rec	1	6/16/2017 4:23:31 PM	32315
NGE				Analyst	NSB
ND	4.8	mg/Kg	1	6/16/2017 6:45:47 PM	32311
102	54-150	%Rec	1	6/16/2017 6:45:47 PM	32311
				Analyst	NSB
ND	0.024	mg/Kg	1	6/16/2017 6:45:47 PM	32311
ND	0.048	mg/Kg	1	6/16/2017 6:45:47 PM	32311
	Result 15000 GE ORGANICS ND ND 102 NGE ND 102 ND	Matrix: SOIL Result PQL Qu 15000 750 IGE ORGANICS 0.024 ND 9.6 ND 48 102 70-130 NGE 0.024	Client Sampl Collection I Matrix: SOIL Received I Result PQL Qual Units 15000 750 mg/Kg 15000 750 mg/Kg MD 9.6 mg/Kg ND 48 mg/Kg 102 70-130 %Rec NGE ND 4.8 mg/Kg 102 54-150 %Rec	Client Sample ID: 088 Collection Date: 6/9/ Matrix: SOIL Received Date: 6/12 Result PQL Qual Units DF 15000 750 mg/Kg 500 GE ORGANICS MD 9.6 mg/Kg 1 ND 9.6 mg/Kg 1 102 70-130 %Rec 1 ND 4.8 mg/Kg 1 ND 4.8 mg/Kg 1 ND 4.8 mg/Kg 1 ND 0.024 mg/Kg 1	Client Sample ID: 088210-35-060917-MG- Collection Date: 6/9/2017 1:20:00 PM Matrix: SOIL Received Date: 6/15/2017 9:30:00 AM Result PQL Qual Units DF Date Analyzed 15000 750 mg/Kg 500 6/18/2017 10:42:55 PM GE ORGANICS Analyst ND 9.6 mg/Kg 1 6/16/2017 4:23:31 PM 102 70-130 %Rec 1 6/16/2017 4:23:31 PM ND 4.8 mg/Kg 1 6/16/2017 6:45:47 PM 102 54-150 %Rec 1 6/16/2017 6:45:47 PM ND 4.8 mg/Kg 1 6/16/2017 6:45:47 PM ND 4.8 mg/Kg 1 6/16/2017 6:45:47 PM ND 0.024 mg/Kg 1 6/16/2017 6:45:47 PM

0.048

0.097

66.6-132

mg/Kg

mg/Kg

%Rec

ND

ND

129

Hall Environmental Analysis Laboratory, Inc.

Value exceeds Maximum Contaminant Level. В Analyte detected in the associated Method Blank

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

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Е Value above quantitation range
- Analyte detected below quantitation limits Page 9 of 40 J
- Р Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Released to Imaging: 7/7/2023 11:38:29 AM

*

Oualifiers:

Hall Environmental Anal	ysis Labora		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	844	
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-MC	G-TP-6-2'
Project: Livingston 2			Collection	Date: 6/9/2017 1:40:00 PM	
Lab ID: 1706844-010	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 10:48:00 A	M 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in
	D	Sample Diluted Due to Matrix	Е	Value above quantit
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected be
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In F

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- n the associated Method Blank
- titation range
- pelow quantitation limits Page 10 of 40

.

- Range
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	der 1706844	
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-M	G-TP-6-10
Project: Livingston 2			Collection	Date: 6/9/2017 1:55:00 PM	
Lab ID: 1706844-011	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qua	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	vst: MRA
Chloride	5000	150	mg/Kg	100 6/18/2017 10:55:19 F	PM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected
	D	Sample Diluted Due to Matrix	Е	Value above qu
	Н	Holding times for preparation or analysis exceeded	J	Analyte detecte
				~

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- ted in the associated Method Blank
- quantitation range
- ted below quantitation limits Page 11 of 40
- Sample pH Not In Range Р
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	Analytical Report Lab Order 1706844 Date Reported: 6/19/2		
CLIENT: GHD			Client Samp	le ID: 088210-35-060917-MG-TP-2-2
Project: Livingston 2			Collection	Date: 6/9/2017 10:40:00 AM
Lab ID: 1706844-012	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 11:37:38 AM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected
	D	Sample Diluted Due to Matrix	Е	Value above qu
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- ted in the associated Method Blank
- uantitation range
- ted below quantitation limits Page 12 of 40
- Р Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	706844	
CLIENT: GHD			Client Sampl	le ID: 088210-35-060917-MC	G-TP-7-2'
Project: Livingston 2			Collection	Date: 6/9/2017 2:05:00 PM	
Lab ID: 1706844-013	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 12:14:51 P	M 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detect
	D	Sample Diluted Due to Matrix	E	Value above q
	Н	Holding times for preparation or analysis exceeded	J	Analyte detect
	ND	Not Detected at the Penerting Limit	D	Sample pH M

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 13 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

CLIENT: GHD

Livingston 2

Project:

Analytical Report
Lab Order 1706844

Date Reported: 6/19/2017

Client Sample ID: 088210-35-060917-MG-TP-7-10 Collection Date: 6/9/2017 2:40:00 PM Received Date: 6/15/2017 9:30:00 AM

Lab ID: 1706844-014	Matrix:	Received	Received Date: 6/15/2017 9:30:00 AM			
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analys	t: MRA
Chloride	17000	750	mg/Kg	500	6/18/2017 11:07:43 PM	1 32340
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s			Analys	t: TOM
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/16/2017 4:45:37 PM	32315
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/16/2017 4:45:37 PM	32315
Surr: DNOP	102	70-130	%Rec	1	6/16/2017 4:45:37 PM	32315
EPA METHOD 8015D: GASOLINE RAI	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/16/2017 7:10:02 PM	32311
Surr: BFB	96.5	54-150	%Rec	1	6/16/2017 7:10:02 PM	32311
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	6/16/2017 7:10:02 PM	32311
Toluene	ND	0.049	mg/Kg	1	6/16/2017 7:10:02 PM	32311
Ethylbenzene	ND	0.049	mg/Kg	1	6/16/2017 7:10:02 PM	32311
Xylenes, Total	ND	0.097	mg/Kg	1	6/16/2017 7:10:02 PM	32311
Surr: 4-Bromofluorobenzene	122	66.6-132	%Rec	1	6/16/2017 7:10:02 PM	32311

Oualifiers:	*	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
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 14 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/20	17
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-'	ГР-8-2'
Project: Livingston 2			Collection	Date: 6/12/2017 10:50:00 AM	
Lab ID: 1706844-015	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analyst	MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 12:39:40 PM	32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detec
	D	Sample Diluted Due to Matrix	Е	Value above of
	Н	Holding times for preparation or analysis exceeded	J	Analyte detec
	ND		р	0 1 UN

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 15 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MC	G-TP-8-10
Project: Livingston 2			Collection	Date: 6/12/2017 11:10:00 AN	1
Lab ID: 1706844-016	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	rst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 12:52:04 F	PM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detec
	D	Sample Diluted Due to Matrix	Е	Value above of
	Н	Holding times for preparation or analysis exceeded	J	Analyte detec
	ND	Not Detected at the Reporting Limit	Р	Sample pH N

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 16 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/20	017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG	-TP-9-2'
Project: Livingston 2			Collection	Date: 6/12/2017 11:20:00 AM	
Lab ID: 1706844-017	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 1:04:29 PM	32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detect
	D	Sample Diluted Due to Matrix	Е	Value above q
	Н	Holding times for preparation or analysis exceeded	J	Analyte detect

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- cted in the associated Method Blank
- quantitation range
- cted below quantitation limit Page 17 of 40
- Р Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017	
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-9-	-10
Project: Livingston 2			Collection	Date: 6/12/2017 11:35:00 AM	
Lab ID: 1706844-018	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Bate	ch
EPA METHOD 300.0: ANIONS				Analyst: MR	A
Chloride	ND	30	mg/Kg	20 6/17/2017 1:16:53 PM 3234	40

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detect
	D	Sample Diluted Due to Matrix	Е	Value above q
	Н	Holding times for preparation or analysis exceeded	J	Analyte detect
	ND	Not Detected at the Reporting Limit	Р	Sample pH No

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 18 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017	
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-1	0-2
Project: Livingston 2			Collection	Date: 6/12/2017 11:55:00 AM	
Lab ID: 1706844-019	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Bat	ch
EPA METHOD 300.0: ANIONS				Analyst: MR	A
Chloride	ND	30	mg/Kg	20 6/17/2017 1:29:17 PM 323	340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected
	D	Sample Diluted Due to Matrix	E	Value above qu
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- eted in the associated Method Blank
- quantitation range
- cted below quantitation limit Page 19 of 40
- Р Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017	
CLIENT: GHD			Client Samp	e ID: 088210-35-061217-MG-TP-1	10-1
Project: Livingston 2			Collection	Date: 6/12/2017 1:05:00 PM	
Lab ID: 1706844-020	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Ba	itch
EPA METHOD 300.0: ANIONS				Analyst: M	RA
Chloride	ND	30	mg/Kg	20 6/17/2017 1:41:41 PM 32	340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte de
	D	Sample Diluted Due to Matrix	Е	Value abov
	Н	Holding times for preparation or analysis exceeded	J	Analyte de

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 20 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-11-2
Project: Livingston 2			Collection	Date: 6/12/2017 1:15:00 PM
Lab ID: 1706844-021	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 1:54:06 PM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected
	D	Sample Diluted Due to Matrix	Е	Value above quar
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- l in the associated Method Blank
- antitation range
- d below quantitation limit Page 21 of 40

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- In Range le p
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-11
Project: Livingston 2			Collection	Date: 6/12/2017 1:30:00 PM
Lab ID: 1706844-022	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Bate
EPA METHOD 300.0: ANIONS				Analyst: MR
Chloride	ND	30	mg/Kg	20 6/17/2017 2:06:30 PM 3234

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte dete
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte dete

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 22 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-12-2
Project: Livingston 2			Collection	Date: 6/12/2017 1:45:00 PM
Lab ID: 1706844-023	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 2:43:43 PM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detect
	D	Sample Diluted Due to Matrix	Е	Value above q
	Н	Holding times for preparation or analysis exceeded	J	Analyte detect
	ND	Not Detected at the Reporting Limit	Р	Sample pH No

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 23 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-12-1
Project: Livingston 2			Collection	Date: 6/12/2017 2:00:00 PM
Lab ID: 1706844-024	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 2:56:08 PM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte dete
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte dete

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 24 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-13-2
Project: Livingston 2			Collection	Date: 6/12/2017 2:10:00 PM
Lab ID: 1706844-025	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 3:08:34 PM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte deter
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte deter

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 25 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061217-MG-TP-13-
Project: Livingston 2			Collection	Date: 6/12/2017 2:30:00 PM
Lab ID: 1706844-026	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batcl
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 3:20:58 PM 3234

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte det
	D	Sample Diluted Due to Matrix	Е	Value abov
	Н	Holding times for preparation or analysis exceeded	J	Analyte det
	ND	Net Detected at the Dementional Limit	п	ComplemE

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 26 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG-TP-14-2
Project: Livingston 2			Collection	Date: 6/13/2017 8:15:00 AM
Lab ID: 1706844-027	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 3:33:23 PM 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detect
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte detect
	ND	Not Detected at the Reporting Limit	Р	Sample pH N

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- ected in the associated Method Blank
- e quantitation range
- ected below quantitation limits Page 27 of 40

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- Sample pH Not In Range ŀ
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MC	G-TP-14-1
Project: Livingston 2			Collection	Date: 6/13/2017 8:40:00 AM	
Lab ID: 1706844-028	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analy	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 3:45:47 PM	/ 32340

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte dete
	D	Sample Diluted Due to Matrix	E	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte dete
			_	

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 28 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG-TP-15-2
Project: Livingston 2			Collection	Date: 6/13/2017 9:00:00 AM
Lab ID: 1706844-029	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 4:23:00 PM 32341

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte det
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte det
	ND	Not Detected at the Reporting Limit	Р	Sample pH

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- etected in the associated Method Blank
- ve quantitation range
- etected below quantitation limitsPage 29 of 40

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- Sample pH Not In Range ŀ
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG-TP-15-1
Project: Livingston 2			Collection	Date: 6/13/2017 9:15:00 AM
Lab ID: 1706844-030	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 5:25:03 PM 32341

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detec
	D	Sample Diluted Due to Matrix	Е	Value above of
	Н	Holding times for preparation or analysis exceeded	J	Analyte detec

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 30 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG-TP-16-2
Project: Livingston 2			Collection	Date: 6/13/2017 9:25:00 AM
Lab ID: 1706844-031	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 5:37:27 PM 32341

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected
	D	Sample Diluted Due to Matrix	Е	Value above quar
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not I

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- ed in the associated Method Blank
- antitation range
- ed below quantitation limits Page 31 of 40

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- In Range le p ıp
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG-TP-16-1
Project: Livingston 2			Collection	Date: 6/13/2017 9:40:00 AM
Lab ID: 1706844-032	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Batch
EPA METHOD 300.0: ANIONS				Analyst: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 5:49:52 PM 32341

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte dete
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte dete

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 32 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2017	
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG-TP-17	7-2
Project: Livingston 2			Collection	Date: 6/13/2017 9:50:00 AM	
Lab ID: 1706844-033	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed Bate	ch
EPA METHOD 300.0: ANIONS				Analyst: MR	A
Chloride	ND	30	mg/Kg	20 6/17/2017 6:02:17 PM 3234	41

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detec
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte detec
	ND	Not Detected at the Reporting Limit	Р	Sample pH N

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- ected in the associated Method Blank
- e quantitation range
- ected below quantitation limits Page 33 of 40

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- Sample pH Not In Range ŀ
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/20	017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG	-TP-17-1
Project: Livingston 2			Collection	Date: 6/13/2017 10:00:00 AM	
Lab ID: 1706844-034	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 6:14:42 PM	32341

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detec
	D	Sample Diluted Due to Matrix	Е	Value above of
	Н	Holding times for preparation or analysis exceeded	J	Analyte detec

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- 3 Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 34 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG	-TP-18-2
Project: Livingston 2			Collection	Date: 6/13/2017 10:25:00 AM	[
Lab ID: 1706844-035	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: MRA
Chloride	ND	30	mg/Kg	20 6/17/2017 6:27:07 PM	32341

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte dete
	D	Sample Diluted Due to Matrix	Е	Value above
	Н	Holding times for preparation or analysis exceeded	J	Analyte dete
	ND	Not Detected at the Reporting Limit	Р	Sample pH N

- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 35 of 40

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- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

Hall Environmental Anal	ysis Labora	tory, Inc.		Analytical Report Lab Order 1706844 Date Reported: 6/19/2	017
CLIENT: GHD			Client Samp	le ID: 088210-35-061317-MG	-TP-18-1
Project: Livingston 2			Collection	Date: 6/13/2017 11:00:00 AM	ſ
Lab ID: 1706844-036	Matrix:	SOIL	Received	Date: 6/15/2017 9:30:00 AM	
Analyses	Result	PQL Qu	al Units	DF Date Analyzed	Batch
EPA METHOD 300.0: ANIONS				Analys	st: MRA
Chloride	360	30	mg/Kg	20 6/17/2017 6:39:31 PN	32341

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte de
	D	Sample Diluted Due to Matrix	Е	Value abo
	Н	Holding times for preparation or analysis exceeded	J	Analyte de
				a 1 7

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- RL Reporting Detection Limit

- Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 36 of 40
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

GHD

Livingston 2

Client:

Project:

Client ID:

Prep Date:

Analyte

Chloride

Sample ID MB-32339

PBS

6/16/2017

QC SUMMARY REPORT Hall Environmental Analysis Lab

REP(al Analy	-		ory, Inc.					WO#:	1706844 19-Jun-17
on 2									
SampT	ype: m l	blk	Test	tCode: E	PA Method	300.0: Anion	s		
Batch	n ID: 32	339	R	unNo: 4	3583				
Analysis D	ate: 6	/16/2017	S	eqNo: 1	372810	Units: mg/K	g		
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
ND	1.5								

Sample ID LCS-32339	SampType: Ics	TestCode: EPA Method	l 300.0: Anions										
Client ID: LCSS	Batch ID: 32339	RunNo: 43583											
Prep Date: 6/16/2017	Analysis Date: 6/16/2017	SeqNo: 1372811	Units: mg/Kg										
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual										
Chloride	14 1.5 15.00	0 94.9 90	110										
Sample ID MB-32340	SampType: mblk	TestCode: EPA Method	l 300.0: Anions										
Client ID: PBS	Batch ID: 32340	RunNo: 43585											
Prep Date: 6/17/2017	Analysis Date: 6/17/2017	SeqNo: 1372868	Units: mg/Kg										
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual										
Chloride	ND 1.5												
Sample ID LCS-32340	SampType: Ics TestCode: EPA Method 300.0: Anions												
Client ID: LCSS	Batch ID: 32340	RunNo: 43585											
Prep Date: 6/17/2017	Analysis Date: 6/17/2017	SeqNo: 1372869	Units: mg/Kg										
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual										
Chloride	14 1.5 15.00	0 94.4 90	110										
Sample ID MB-32341	SampType: mblk	TestCode: EPA Method	l 300.0: Anions										
Client ID: PBS	Batch ID: 32341	RunNo: 43585											
Prep Date: 6/17/2017	Analysis Date: 6/17/2017	SeqNo: 1372898	Units: mg/Kg										
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual										
Chloride	ND 1.5												
Sample ID LCS-32341	SampType: Ics TestCode: EPA Method 300.0: Anions												
Client ID: LCSS	Batch ID: 32341	RunNo: 43585											
Prep Date: 6/17/2017	Analysis Date: 6/17/2017	SeqNo: 1372899	Units: mg/Kg										
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual										
Chloride	14 1.5 15.00	0 93.5 90	110										

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- Sample Diluted Due to Matrix D
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- Practical Quanitative Limit PQL
- RL Reporting Detection Limit

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

R

S

- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix

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Client: GHD Project: Livings	ston 2											
Sample ID MB-32315		ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Range	e Organics			
Client ID: PBS	Batch	ID: 32	315	F	RunNo: 4	3560						
Prep Date: 6/15/2017	Analysis D	ate: 6/	16/2017	5	SeqNo: 1	372149	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range Organics (DRO)	ND	10										
Motor Oil Range Organics (MRO)	ND	50										
Surr: DNOP	9.6		10.00		96.0	70	130					
Sample ID LCS-32315	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics			
Client ID: LCSS	Batch	ID: 32	315	F	RunNo: 4	3560						
Prep Date: 6/15/2017	Analysis D	ate: 6/	16/2017	S	SeqNo: 1	372317	Units: mg/k	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range Organics (DRO)	50	10	50.00	0	99.8	73.2	114					
Surr: DNOP	4.8		5.000		95.6	70	130					

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
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

R

- RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

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19-Jun-17

WO#:

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:GHDProject:Living	gston 2														
Sample ID MB-32311	SampType	e: MBLK	tCode: EPA Meth	PA Method 8015D: Gasoline Range											
Client ID: PBS	Batch ID): 32311	F	RunNo: 43568											
Prep Date: 6/15/2017	Analysis Date	e: 6/16/2017	5	SeqNo: 1373048	Units: mg/ł	Units: mg/Kg									
Analyte	Result F	PQL SPK value	SPK Ref Val	%REC LowLir	nit HighLimit	%RPD	RPDLimit	Qual							
Gasoline Range Organics (GRO)	ND	5.0													
Surr: BFB	970	1000		96.9	54 150										
Sample ID LCS-32311	SampType	e: LCS	Tes	tCode: EPA Meth	od 8015D: Gase	oline Rang	e								
Client ID: LCSS	Batch ID): 32311	F	RunNo: 43568											
Prep Date: 6/15/2017	Analysis Date	e: 6/16/2017	S	SeqNo: 1373049	Units: mg/ł	۲g									
Analyte	Result F	PQL SPK value	SPK Ref Val	%REC LowLir	nit HighLimit	%RPD	RPDLimit	Qual							
Gasoline Range Organics (GRO)	25	5.0 25.00	0	102 76	6.4 125										
Surr: BFB	1100	1000		108	54 150										

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
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
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- J Analyte detected below quantitation limits
- P Sample pH Not In Range

R

S

- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix

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	19-Jun-17

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Page	<u>69</u>	of 136

WO#:	1706844
	19-Jun-17

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	HD ivingston 2									
Sample ID MB-32311	Samp	Type: MI	BLK	Tes	tCode: El	PA Method	8021B: Vola	iles		
Client ID: PBS	Bato	h ID: 32	311	R	unNo: 4					
Prep Date: 6/15/201	7 Analysis	Date: 6/	16/2017	S	eqNo: 1	373066	ſg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenze	ene 1.2		1.000		124	66.6	132			
Sample ID LCS-3231	1 Samp	Type: LC	s	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Bato	h ID: 32	311	R	unNo: 4	3568				
Prep Date: 6/15/201	7 Analysis	Date: 6/	16/2017	S	eqNo: 1	373067	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	109	80	120			
Xylenes, Total	3.3	0.10	3.000	0	110	80	120			
Surr: 4-Bromofluorobenze	ene 1.3		1.000		126	66.6	132			

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
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

R

S

- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix

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E ENVIRONMENTAL ANALYSIS	lall Environmental Analysis La 4901 Haw Albuquerque, N EL: 505-345-3975 FAX: 505-3 Website: www.hallenvironme	vkins NE M 87109 Sa 45-4107	mple Log-In C	Pa heck List
Client Name: GHD Wo	rk Order Number: 1706844		. RcptNo:	1
Received By: Erin Melendrez 6/15/2	2017 9:30:00 AM	VL UL	6	
Completed By: Ashley Gallegos 6/15/2	2017 10:29:02 AM	AJ		
Reviewed By:	06/15/17	v		
Chain of Custody				
1. Custody seals intact on sample bottles?	Yes 🗌	No 🗌	Not Present 🗹	
2. Is Chain of Custody complete?	Yes 🗹	No 🗌	Not Present	
3. How was the sample delivered?	Courier			
Log In				
4. Was an attempt made to cool the samples?	Yes 🗸	No		
5. Were all samples received at a temperature of >0	'C to 6.0°C Yes ☑	No 🗌		
6. Sample(s) in proper container(s)?	Yes 🔽	No 🗌]	
7. Sufficient sample volume for indicated test(s)?	Yes 🔽	No 🗌]	
8. Are samples (except VOA and ONG) properly pres	erved? Yes 🗹	No 🗌]	
9. Was preservative added to bottles?	Yes 🗌	No 🗹) NA 🗆	
10.VOA vials have zero headspace?	Yes	No 🗌	No VOA Vials 🗹	
11. Were any sample containers received broken?	Yes	No 🗹	# of preserved	
12.Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗸	No 🗌	bottles checked for pH:	or >12 unless not
13, Are matrices correctly identified on Chain of Custor	ly? Yes 🗹	No 🗌	Chatauth A	51 × 12 011033 1101
14. Is it clear what analyses were requested?	Yes 🔽	No 🗌	-	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes 🔽	No 🗌	Checked by:	
Special Handling (if applicable)				
16. Was client notified of all discrepancies with this ord	er? Yes 🗌	No 🗌	NA 🗹	
Person Notified: By Whom:	Date Via: eMail [] Phone [] Fa	x	
Regarding: Client Instructions:				

- 17. Additional remarks:
- 18. Cooler Information

Cooler No	Temp [®] C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes			

Page 1 of 1

Rece	ived by	y 00	C D: 6	/8/2	2023	10:0	2:48	AM	, (N ·	Y or) səlddu8 riA	1	I	1	1	1	I	I	1	I	l	1	I	P	age 71 oj	f ₁ 36
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<u>Page 73 of</u> 136



August 01, 2017 Bernie Bockish GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

RE: Livingston 2

OrderNo.: 1707B18

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 13 sample(s) on 7/21/2017 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 <u>www.hallenvironmental.com</u> 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 #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environ	mental Analysis	s Laborato	ory, Inc.		Analytical Report Lab Order: 1707B18 Date Reported: 8/1/2	
	GHD Livingston 2			L	ab Order: 1707]	318
Lab ID: Client Sample ID:	1707B18-001 S088210-35-0717171	MG-SB-1-50'		Collection Date: Matrix:	7/17/2017 4:20:00 Pl SOIL	М
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	8300	300	mg/Kg	An: 200 7/27/2017 5:15:27	alyst: SRM PM 33021
Lab ID: Client Sample ID:	1707B18-002 S088210-35-0717171	MG-SB-1-60'		Collection Date: Matrix:	7/17/2017 5:05:00 Pl SOIL	М
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	8300	300	mg/Kg	Ana 200 7/27/2017 5:27:52	alyst: SRM PM 33021
Lab ID: Client Sample ID:	1707B18-003 S088210-35-0717171	MG-SB-1-70'		Collection Date: Matrix:	7/17/2017 5:50:00 Pl SOIL	М
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	13000	750	mg/Kg	An: 500 7/27/2017 5:40:17	alyst: SRM PM 33021
Lab ID: Client Sample ID:	1707B18-004 S088210-35-0718171	MG-SB-1-80'		Collection Date: Matrix:	7/18/2017 9:10:00 A SOIL	М
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300 Chloride).0: ANIONS	11000	750	mg/Kg	Ana 500 7/27/2017 5:52:42	alyst: SRM PM 33021
Lab ID: Client Sample ID:	1707B18-005 S088210-35-0718171			Matrix:		
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	3400	150	mg/Kg	Ana 100 7/27/2017 6:29:56	alyst: SRM PM 33021

- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environ	mental Analys	is Laborato	ory, Inc.		Analytical Report Lab Order: 1707B18 Date Reported: 8/1/2017
	GHD Livingston 2				Lab Order: 1707B18
Lab ID: Client Sample ID:	1707B18-006 S088210-35-071817	/MG-SB-2-50'			ate: 7/18/2017 2:10:00 PM
Analyses		Result	PQL Qua	l Units	DF Date Analyzed Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	7600	750	mg/Kg	Analyst: SRM 500 7/27/2017 6:42:20 PM 33021
Lab ID: Client Sample ID:	1707B18-007 S088210-35-071817	/MG-SB-2-60'			ate: 7/18/2017 2:55:00 PM trix: SOIL
Analyses		Result	PQL Qua	l Units	DF Date Analyzed Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	7700	300	mg/Kg	Analyst: SRM 200 7/27/2017 6:54:45 PM 33021
Lab ID: Client Sample ID:	1707B18-008 S088210-35-071817	7MG-SB-2-70'			ate: 7/18/2017 3:30:00 PM trix: SOIL
Analyses		Result	PQL Qua	l Units	DF Date Analyzed Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	6200	300	mg/Kg	Analyst: SRM 200 7/27/2017 7:07:10 PM 33021
Lab ID: Client Sample ID:	1707B18-009 S088210-35-071817	7MG-SB-2-75'			ate: 7/18/2017 4:15:00 PM trix: SOIL
Analyses		Result	PQL Qua	l Units	DF Date Analyzed Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	980	30	mg/Kg	Analyst: MRA 20 7/26/2017 4:12:52 PM 33021
Lab ID: Client Sample ID: Analyses	1707B18-010 S088210-35-071917	/MG-SB-3-50' Result	PQL Qua	Mat	ate: 7/19/2017 11:15:00 AM trix: SOIL DF Date Analyzed Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	62	30	mg/Kg	Analyst: MRA 20 7/26/2017 4:25:17 PM 33021

- Qualifiers:
- * Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environ	mental Analysis	Laborato	ory, Inc.		Analytical Report Lab Order: 1707B18 Date Reported: 8/1/2017
	GHD Livingston 2				Lab Order: 1707B18
Lab ID: Client Sample ID:	1707B18-011 S088210-35-071917M	1G-SB-3-60'	(nte: 7/19/2017 11:45:00 AM rix: SOIL
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	88	30	mg/Kg	Analyst: MRA 20 7/26/2017 4:37:42 PM 33021
Lab ID:	1707B18-012		(nte: 7/19/2017 3:05:00 PM
Client Sample ID: Analyses	S088210-35-071917N	1G-SB-4-40' Result	PQL Qual		rix: SOIL DF Date Analyzed Batch ID
EPA METHOD 300	0.0: ANIONS				Analyst: MRA
Chloride		870	30	mg/Kg	20 7/26/2017 4:50:07 PM 33021
Lab ID: Client Sample ID:	1707B18-013 S088210-35-071917N	1G-SB-4-50'	(nte: 7/19/2017 3:35:00 PM
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch ID
EPA METHOD 300	0.0: ANIONS				Analyst: MRA
Chloride		79	30	mg/Kg	20 7/26/2017 5:02:32 PM 33021

Qualifiers:

- * Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- The filles for preparation of analysis excee
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client: Project:	GHD Livings	ston 2								
Sample ID	MB-33021	SampType: M	BLK	Tes	tCode: EPA I	Method	300.0: Anion	s		
Client ID:	PBS	Batch ID: 33	8021	R	RunNo: 4452	3				
Prep Date:	7/26/2017	Analysis Date: 7	/26/2017	S	eqNo: 1407	865	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC Lo	owLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND 1.5								
Sample ID	LCS-33021	SampType: L	cs	Tes	tCode: EPA I	Method	300.0: Anion	s		
Client ID:	LCSS	Batch ID: 33	8021	R	RunNo: 4452	3				
Prep Date:	7/26/2017	Analysis Date: 7	/26/2017	S	eqNo: 1407	866	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC Lo	owLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 1.5	15.00	0	90.9	90	110			

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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 4 of 4

WO#: **1707B18** *01-Aug-17*

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albuq TEL: 505-345-3975 F Website: www.hall	4901 Hawkins NI querque, NM 8710 7AX: 505-345-410	Samp	le Log-In Che	Page 7. ck List
Client Name: GHD	Work Order Number:	1707B18		RcptNo: 1	
Received By: Sophia Campuzano	7/21/2017 9:45:00 AM		Sopher Compr-		
Completed By: Erin Melendrez	7/21/2017 10:32:15 AM	l	Sophu Com- LUC		
Reviewed By:	7/21/17				
Chain of Custody					
1. Custody seals intact on sample bottles?		Yes 🗌	No 🗌	Not Present 🗹	
2. Is Chain of Custody complete?		Yes 🗹	No 🗌	Not Present	
3. How was the sample delivered?		<u>Courier</u>			
Log In					
4. Was an attempt made to cool the samp	es?	Yes 🗹	No 🗌	NA 🗌	
5. Were all samples received at a tempera	ture of >0° C to 6.0°C	Yes 🗹	No 🗌		
6. Sample(s) in proper container(s)?		Yes 🗹	No 🗌		
7. Sufficient sample volume for indicated te	est(s)?	Yes 🗹	No 🗌		
8, Are samples (except VOA and ONG) pro	perly preserved?	Yes 🗹	No 🗌		
9. Was preservative added to bottles?		Yes	No 🗹	NA 🗌	
10.VOA vials have zero headspace?		Yes	No 🗌	No VOA Vials 🔽	
11. Were any sample containers received b	roken?	Yes 📙	No 🗹 🃋	# of preserved bottles checked	
12.Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🔽	No 🗌	for pH:	2 unless noted)
13. Are matrices correctly identified on Chai		Yes 🗹	No 🗌	Adjusted?	· · · · · · · · · · · ·
14. Is it clear what analyses were requested		Yes 🗹	No 🗌		
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🔽	No 🗌	Checked by:	
Special Han <u>dling (if applicable)</u>					
16. Was client notified of all discrepancies w	vith this order?	Yes	No 🗌	NA 🔽	

Person Notified:	Date:	
By Whom:		Mail 🔲 Phone 🗌 Fax 📋 In Person
Regarding:		
Client Instructions	X	

.

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			

Page 1 of 1

IALL ENVIRONMENTAL NALYSIS LABORATORY www.hallenvironmental.com	- Albuquerque, NM 87109 Fax 505-345-4107 Analysis Request	S	C) S bCB.	(3082) (3082) (1) (8082)	esebi ۱۹۰۱ ۱۹۰۷	Anions (F, C 8208 (YOA 8270 (Semi どつつして)	X	X	X	X	X	X	X	X	X	×	X	X	Tug	e 80 0j
	4901 Hawkins NE - Alt Tel. 505-345-3975 F Analy	(Kjuc	0 S6D) M \ OF	H TPH (1.81) (1.41)	0 ot 09 9(04 4. (GF	BTEX + MT BTEX + MT TPH (Metho EDB (Metho EDB (Metho (8310 PAH's (8310													Remarks:	
D Turn-Around Time: XStandard □ Rush Project Name:	et#. \$\$210-35	ct Manager:	Benerk Bockisch	oler Michael Cant e: XYes DNO	Temperature: 2.4	Container Type and # Type Type	Sulfer Ice -mi	-002	-003	-004	-005	-006	-067	-008	600-	-010-	-011	-012	L Date Time Date Time	TI/12/10 - CE
dy Record	011/2 W/ 2/110	Backischer and com Project Manager	Level 4 (Full Validation) Be(C On Ice:	Samp	Sample Request ID Con	505821 0-36-0717. M6-58-1-50 402	09-1-85-0117170-55-015505	02-1-92-07177-07170-55-07-50-5	08-1-85-01812-86-98-58-9-50	03-1-95-374-118120-58-912820.5	5-03540 Drong17-46-58250	2-088210-35-07817-46-58-2-60	02-2-2-32-211870-25-211030-2	STO SYCIESS ONSIT MESSARTS	5038210-35-011917-N6-38-320	5-0982,406-35-01117465.883-60	04495-91×1111102-55-01~81	of by: Cut A Received by Received by	L
Client: CHD Services	NE Albuquergu Phone #: 5 05 884		5:85: Standard	DISCREDITION CHER	EDD (Type)	Date Time Matrix	7/17 1620 5	2/17/105 S	2117 1750 S	7/18 0910 5	7118 1005 5	2/18/14/05	I455 S	7/18 15305	7/18 16155		7/19/1145 5	555	Date: Time: Relinquished by: 7/2.6 0800 Kerr	1 400 X

Page 80 of, 136

Received by OCD: 6/8/2023 10:02:48 AM

	ANALYSIS LABORATORY	i U	37109	Eax 505-345-4107	Analysis Request	()() ()() ()() ()() ()() ()() ()() ()(O / MF (SM (SM) 10 ⁵ 1 10 ⁵ 1 10 10 10 10 10 10 10 10 10 10 10 10 10	4 TI 30, 18, 18, 18, 18, 18, 18, 18, 18, 18, 18		TM + X3T8 BTEX + MT BTEX + MT BTEX + Method B2F08 (Method B2F08 (Method B2F08 (VOA B2F08	X					Remarks:	0	_10	s possibility. Any sub-contracted data will be clearly notated on the analytical report.
Turn-Around Time:	K Standard 🗆 Rush	Project Name:	Livingston 2	Project #:	088210-35	Project Manager:	Bernard Bock 1sch	sampler. Michael Cant	X Yes	Sample Temperature: 2.4	Container Preservative HEAL No. Type and # Type TATR 18	- 37-					Ē		Received by: "Date Time STPL CAP D7/21/17 0944	ed to Hail Environmental may be subcontracted to other accredited laboratorias. This serves as notice of this possibility.
ord	open Client GHD Scrices, Inc.	- Im	Mailing Address: (21 Indian School Red Ste 200		2 Phone #: 505 884 0672	cische and com	-		NELAP Other	EDD (Type)	Date Time Matrix Sample Request ID	7/19 1635 5 5-058240-35-01917-46-58-450 for Soil Jac					Time: Relinquished by	And the	bate: Time: Relinguished by:	samples ubmit

Received by OCD: 6/8/2023 10:02:48 AM

Page 81 of 136



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

September 01, 2017 Alan Brandon GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX

RE: Livingston Ridge SWD No 2

OrderNo.: 1708C84

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/22/2017 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 <u>www.hallenvironmental.com</u> 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 #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environ	mental Analysis	Laborato	ry, Inc.		Analytical Report Lab Order: 1708C84 Date Reported: 9/1/2017						
	GHD .ivingston Ridge SWD N	lo 2		L	ab Order: 1708C84						
Lab ID: Client Sample ID:	1708C84-001 S-088210-35-081817-5	SP-SB-5-100	(Collection Date: Matrix:	: 8/18/2017 10:53:00 AM : SOIL						
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch ID						
EPA METHOD 300 Chloride	.0: ANIONS	48	30	mg/Kg	Analyst: MRA 20 8/28/2017 6:01:52 PM 33585						
Lab ID:	1708C84-002		(: 8/18/2017 11:40:00 AM						
Client Sample ID: Analyses	S-088210-35-081817-S	SP-SB-5-110 Result	PQL Qual	Matrix: Units	: SOIL DF Date Analyzed Batch ID						
EPA METHOD 300 Chloride	.0: ANIONS	760	30	mg/Kg	Analyst: MRA 20 8/28/2017 6:14:16 PM 33585						
Lab ID: Client Sample ID:	1708C84-003 S-088210-35-081817-5	SP-SB-5-120		Collection Date: Matrix:	: 8/18/2017 12:22:00 PM : SOIL						
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch ID						
EPA METHOD 300 Chloride	.0: ANIONS	82	30	mg/Kg	Analyst: MRA 20 8/28/2017 6:26:40 PM 33585						

Qualifiers:

- * Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- Holding times for properation or analysis
- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 2
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Ľ		tal Analysis Laborat	ory, Inc.	WO#:	1708C84 01-Sep-17
Client: Project:	GHD Living	gston Ridge SWD No 2			
Sample ID	MB-33585	SampType: mblk	TestCode: EPA Method 300.0: Anions		
Client ID:	PBS	Batch ID: 33585	RunNo: 45254		
Prep Date:	8/28/2017	Analysis Date: 8/28/2017	SeqNo: 1434156 Units: mg/Kg		
Analyte		Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD	RPDLimit	Qual

Chloride	ND	1.5							
Sample ID LCS-33585	SampType	: Ics	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID: LCSS	Batch ID:	33585	F	RunNo: 45	5254				
Prep Date: 8/28/2017	Analysis Date:	8/28/2017	S	SeqNo: 14	434157	Units: mg/K	(g		
Analyte	Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5 15.00	0	90.3	90	110			

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- Sample Diluted Due to Matrix D
- Н 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
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

Page 2 of 2

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ANAL	RONMENTAL YSIS RATORY	Hall Environmental Albı. TEL: 505-345-3975 Website: www.ha	4901 Hawkin Iquerque, NM 8 FAX: 505-345-	ns NE 87109 Sam 4107	Sample Log-In Check List					
Client Name:	GHD	Work Order Number:	1708C84		RcptNo: 1					
Received By:	Isaiah Ortiz	8/22/2017 8:57:00 AM		I Color Minus Co	-					
Completed By:	Michelle Garcia	8/22/2017 4:08:36 PM		minul Co	rue)					
Reviewed By:	INO	8/23/2017		. ,						
C <u>hain of Cus</u>	tody									
1. Custody sea	ils intact on sample bottles	?	Yes 🗋	No 🗌	Not Present 🗹					
2. Is Chain of C	Custody complete?		Yes 🗹	No 🗌	Not Present					
3. How was the	e sample delivered?		<u>FedEx</u>							
<u>Log In</u>					_					
4. Was an atte	mpt made to cool the sam	nples?	Yes 🗹	No 🗌	NA					
5. Were all sar	nples received at a tempe	rature of >0° C to 6.0°C	Yes 🗹	No 🗌						
6. Sample(s) ii	n proper container(s)?		Yes 🗹	Νο						
7. Sufficient sa	mple volume for indicated	test(s)?	Yes 🔽	No 🗌						
8. Are samples	(except VOA and ONG) p	properly preserved?	Yes 🗹	No 🗌						
9. Was preserv	ative added to bottles?		Yes 🗌	No 🗹	NA 🗌					
10.VOA vials ha	ave zero headspace?		Yes	No 🗌	No VOA Vials 🗹					
11. Were any sa	ample containers received	broken?	Yes 🗖	No 🗹	# of preserved bottles checked					
	vork match bottle labels? pancies on chain of custod	iy)	Yes 🗹	Νο	for pH:	12 unless noted				
13. Are matrices	correctly identified on Cha	ain of Custody?	Yes 🔽	No 🗌	Adjusted?					
14, Is it clear wh	at analyses were requeste	ed?	Yes 🖌	No 🗌						
	ding times able to be met? customer for authorization		Yes 🗹	No	Checked by:					
<u>Special Hand</u>	ling (if applicable)									
	otified of all discrepancies	with this order?	Yes	No 🗔						
Person	Notified:	Date 「								
By Wh	om:	Via: [eMail 🗌	Phone 🗌 Fax	📋 In Person					
Regard	-									
Client	nstructions:									
17. Additional re	emarks:									
18. <u>Cooler Info</u>		1 1 2								
Cooler No			Seal Date	Signed By						
1 ¹	0.1 Good	Not Present								

Receive	ed by	00	C D: 6	6/8/2	023	10:0	02:48	AM	(N)	юλ	.) se	əlddu8 riA		I	1	İ.	I	ļ	I	I	1		Pa	ige 86 oj	f 136
JAL	JRΥ				14 (+ + +													 							ų.
		www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	() () () ()) / WI		/ 0 / 327(3, N(527(7, 80)	ا 68 ا 90 ا 20 ا 20 68	bod hod 1,10, 1,10, 1,10, 1,0,1	81EX + М 1PH 8015 TPH (Met 1PH (Met 1PH's (83 RCRA 8 N 8260B (V 8260B (V) 8260B (V 8260B (V) 8260B (V 8260B (V) 8260B (V 8260B (V) 8260B (V) 8260B (V 8260B (V) 8260B											Remarks:		This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report
						()	208)	s'8	NT NT	+ ∃ 	I BTR	BTEX + N				<u> </u>				_			_		this possi
	C Rush		Ridge SWD No. 2	l	(c		rere-	<u>ן</u> ב		HEAL No.		209	200								Date Time 8 22 17 8:57	Date Time	
me:					io/",	e	snde		N P ve	roturo.		Preservative Type	Н И		\rightarrow										edited lab
Turn-Around Time:	V Standard	Project Name:	Livings ton	Project #:	(6. /01788N	Project Manage	Alan Drandon		Sampler: M	Sample Temps		Container F			>								Received by:	Received by:	ntracted to other acc
Record	(JHJ)-Albuquerque		Mailing Address 6/21 Julien School Bd NE		Phone #: 505-584.0672	COM	ige:		□ Other			Date Time Matrix Sample Request ID	8-18-17/115-3 Soil Spaze 35-0881258-5-100 402 a lass-1	071								(1715.50 MWAN MAN	patel Time: Relinquished by:	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories.

Released to Imaging: 7/7/2023 11:38:29 AM

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

August 28, 2017

Alan Brandon GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX

RE: Livington Ridge SWD No 2

OrderNo.: 1708B40

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/18/2017 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 <u>www.hallenvironmental.com</u> 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 #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

					Analytical Report Lab Order: 1708B40	
Hall Environ	mental Analysis	s Laborato	ory, Inc.		Date Reported: 8/28/2017	1
	GHD .ivington Ridge SWD N	Jo 2			Lab Order: 1708B40	
Lab ID:	1708B40-001			Collection I	Date: 8/16/2017 11:41:00 AM	
Client Sample ID:	S-088210-35-081617	-SP-SB-6-85'		Ma	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed Ba	tch ID
EPA METHOD 300	0.0: ANIONS				Analyst:	MRA
Chloride		ND	30	mg/Kg	20 8/26/2017 12:09:13 AM	33563
Lab ID:	1708B40-002			Collection I	Date: 8/16/2017 11:44:00 AM	
Client Sample ID:	S-088210-35-081617	-SP-SB-6-95'		Ma	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed Ba	tch ID
EPA METHOD 300	.0: ANIONS				Analyst:	MRA
Chloride		ND	30	mg/Kg	20 8/26/2017 12:21:37 AM	33563

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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 2
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

e	Hall Environmental Analysis Laboratory, Inc.							
Client: Project:	GHD Livington Ridge SWD No 2							

Sample ID MB-33563	SampType: mblk Batch ID: 33563	TestCode: EPA Method RunNo: 45224	300.0: Anions	
Prep Date: 8/25/2017	Analysis Date: 8/25/2017	SegNo: 1433002	Units: mg/Kg	
	,	·		
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5			
Sample ID LCS-33563	SampType: Ics	TestCode: EPA Method	300.0: Anions	
Sample ID LCS-33563 Client ID: LCSS	SampType: Ics Batch ID: 33563	TestCode: EPA Method RunNo: 45224	300.0: Anions	
•			300.0: Anions Units: mg/Kg	
Client ID: LCSS	Batch ID: 33563 Analysis Date: 8/25/2017	RunNo: 45224		RPDLimit Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н 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
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 2 of 2

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ENVIRONMENTAL ANALYSIS LABORATORY	Albu TEL: 505-345-3975 J Website: www.hal		7109 Sam 4107	ple Log-In C	heck List
Client Name: GHD	Work Order Number:	1708B40		RcptNo:	1
Received By: Sophia Campuzano	8/18/2017 9:15:00 AM		Sophie Carper-	-	
Completed By: Ashley Gallegos	8/18/2017 11:28:06 AM	l	AZ		
Reviewed By: SRR. 08/18/1	7		V		
Chain of Custody					
1. Custody seals intact on sample bottles?		Yes 🗌	No 🗔	Not Present 🗹	
2. Is Chain of Custody complete?		Yes 🗹	No 🗌	Not Present	
3. How was the sample delivered?		Courier			
<u>Log In</u>					
4. Was an attempt made to cool the samples?		Yes 🔽	No 🗌	NA 🗌	
5. Were all samples received at a temperature	of >0° C to 6.0°C	Yes 🗹	No 🗌		
6. Sample(s) in proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient sample volume for indicated test(s)?	Yes 🗹	No 🗌		
8. Are samples (except VOA and ONG) proper	ly preserved?	Yes 🔽	No 🗌		
9. Was preservative added to bottles?		Yes 🗌	No 🔽	na 🗌	
10.VOA vials have zero headspace?		Yes 🗌	No 🗌	No VOA Vials 🗹	
11. Were any sample containers received broke	en?	Yes ∐	No 🗹	# of preserved bottles checked	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🗹	No 🗌	for pH: (<2	or >12 unless noted
13. Are matrices correctly identified on Chain of	Custody?	Yes 🗹	No 🗔	Adjusted?	
14. Is it clear what analyses were requested?	·	Yes 🗹	No 🗌		
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🗹	No 🗀	Checked by:	
Special Handling (if applicable)					
16. Was client notified of all discrepancies with	his order?	Yes 🗌	No 🗌	NA 🗹	
Person Notified:	Date				
By Whom:	Via: [eMail 📋	Phone 🗌 Fax	🔲 In Person	
Regarding:					
Client Instructions:				· · · · · · · · · · · · · · · · · · ·	
17. Additional remarks:					
18. <u>Cooler Information</u>	anna loann lo		0:	I	
	eal Intact Seal No S Present	Seal Date	Signed By		
				I	

IV.	NRV NRV								(N -	0,	() s	elddu8 ifA										_		
ENVTDONMENTAL	ANALYSTS LABORATORY		Albuquerque, NM 87109		07		0.0	104	27	n n	:]	10147	×	×							+			
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			4901 Hawkins NE	1	Tel. 505-345-3975	7	0.1141./	~	132.00.000		<u></u>	HTPH (Meth			+	+	+	+	-		-	_		
			1901		Tel.		No. Contraction of the					BTEX + M1	_	_	+	+	+	+	+		+	-iz		
	Π		2			Ì					_	TM + X3T8	-	-	+	+	+	+	+		+	Remarks:		
	-			Г	- 12		11.5.5.5		1	T		0			+		+	+	+		+	-	3	N
			Linnyston Ridge SWD No. 2				Non		Rez No			HEAL No. [7]08/B41	- 001	-002								Date Time	17	OB/18/17 OGIS
	C Rush		yston Ridy		088210/35		Manager. Plan Branlon	5	STOJE R	× 100	emperature: (, U	Preservative Type	十(正	7									1	0 ~~~
	Standard	Project Name:	Lum	Project #:	080		Project Manager. P. I.c. A	10	Sampler:	11	sample rem	Container Type and #	1-2- 4 20h	3								Received by:	Recently	Super.
•	. gv		Chool Rd NE		NM 8710		on Q ghd. (0m	Level 4 (Full Validation)				Sample Request ID	5087210-35-081617.58-586 - 85	、56-7-4~45-2月180-32-00280-3								1	they	
	Albusine Caro		Mailing Address: 6/2/17		Abuquerque A	07-10	Gn. Brandon		Other			Matrix S;		C0805	_	+	+	-	+			Relinquished by:	- ANT	You
	AIS		19:		North	0-0	Alc					Ma	Š	\rightarrow						\square	_	Relin	Y Self	A
	× .		Address	N COC		#. 21	email or Fax#: QA/QC Package:	ndard	Accreditation	ł		Time	11:41	11:49								Time.		8/n/n 1240
	Client:		Mailing	10	Dhone #:	LINIE	QA/QC	Standard	Accreditati			Date	8-16-17	7								Date:	N.	4/0/

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Received by OCD: 6/8/2023 10:02:48 AM

Appendix C Boring Logs

Laboratory Analytical Report

Released to Imaging: 7/7/2023 11:38:29 AM

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Page 1 of 2

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES

LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-1 DATE COMPLETED: July 17, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: M. GANT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	~		SAM		
				NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride
2 4 6 8	SC-CLAYEY SAND, fine grained, well sorted, reddish brown, dry							
- 10 - 12	- light brown at 10.0ft BGS							
· 14 · 16	- light reddish brown at 15.0ft BGS							
- 18								
20 22	- very fine grained, brown at 20.0ft BGS			SB-1-20				
24		25.00		SB-1-25				
26 28	SM-SILTY SAND, very fine grained, well sorted, brown, dry	25.00		58-1-25				
30	- reddish brown at 30.0ft BGS			SB-1-30				
32 34								
36				SB-1-35				
- 38 - 40				SB-1-40				
42								
44 46	- fine grained, dark brown at 45.0ft BGS		BACKFILLED WITH BENTONITE CHIPS AND SOIL	SB-1-45				

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES

LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-1 DATE COMPLETED: July 17, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: M. GANT

ft BGS -50 -52 -54	STRATIGRAPHIC DESCRIPTION & REMARKS	ft BGS	BOREHOLE	NUMBER	INTERVAL	REC (%)	ΠŪΕ	ide kg)
- 52	CO CLAVEV SAND you firs series d lists	le le le le		NUI	INTEI	REC	'N' VALUE	Chloride (mg/kg)
	SC-CLAYEY SAND, very fine grained, light brown, well sorted, dry	50.00	CUTTINGS	SB-1-50				8300
-56 -58 -60 -62	- brown at 60.0ft BGS			SB-1-60				8300
- 64 - 66 - 68 - 70 - 72	CL-SANDY CLAY, very fine grained, well sorted, reddish brown, dry	70.00	CUTTINGS	SB-1-70				13000
- 74 - 76 - 78 - 80	SC-CLAYEY SAND, very fine grained, well	80.00		SB-1-80				11000
- 82 - 84 - 86	- reddish brown at 85.0ft BGS			SB-1-85				
-86 -88 -90 -92 -94 <u>NOTE</u>	END OF BOREHOLE @ 90.0ft BGS	90.00		SB-1-90				3400
-94								

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Page 1 of 2

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES

LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-2 DATE COMPLETED: July 18, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: M. GANT

STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE			SAM		
	πBGS		NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
SC-CLAYEY SAND, fine grained, well sorted, reddish yellow, dry			N		R	.N.	
SM-SILTY SAND, very fine grained, well sorted, light brown, dry	10.00						
- fine grained, reddish brown at 20.0ft BGS			SB-2-20				
- pink at 30.0ft BGS			SB-2-30				
SC-CLAYEY SAND, very fine grained, well sorted, reddish brown, dry	40.00	BACKFILLED WITH BENTONITE CHIPS AND SOIL CUTTINGS	SB-2-40				
	SM-SILTY SAND, very fine grained, well sorted, light brown, dry - fine grained, reddish brown at 20.0ft BGS - pink at 30.0ft BGS	reddish yellow, dry 10.00 SM-SILTY SAND, very fine grained, well 10.00 - fine grained, reddish brown at 20.0ft BGS - - pink at 30.0ft BGS - SC-CLAYEY SAND, very fine grained, well 40.00	reddish yellow, dry SM-SILTY SAND, very fine grained, well sorted, light brown, dry - fine grained, reddish brown at 20.0ft BGS - pink at 30.0ft BGS	SC-CLAYEY SAND, fine grained, well sorted, reddish yellow, dry SM-SILTY SAND, very fine grained, well of the grained, reddish brown at 20.0ft BGS - pink at 30.0ft BGS S8230	SC-CLAYEY SAND, fine grained, well sorted, reddish yellow, dry SM-SILTY SAND, very fine grained, well SM-SILTY SAND, very fine grained, well of the grained, reddish brown at 20.0ft BGS - fine grained, reddish brown at 20.0ft BGS S8-20 S8	SC-CLAYEY SAND, fine grained, well sorted, reddish yellow, dry SM-SILTY SAND, very fine grained, well SM-SILTY SAND, very fine grained, well of the grained, reddish brown at 20.0ft BGS s8-20 pink at 30.0ft BGS S8-23	SC-CLAYEY SAND, fine grained, well sorted, reddish yellow, dry SM-SILTY SAND, very fine grained, well 10.00 SM-SILTY SAND, very fine grained, well 10.00 - fine grained, reddish brown at 20.0ft BGS \$8-23 - pink at 30.0ft BGS \$8-23

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 2 of 2

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES

LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-2 DATE COMPLETED: July 18, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: M. GANT

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH	BOREHOLE			SAMF	PLE	
ft BGS		ft BGS	BOREHOLL	ßER	VAL	(%)	Ы	ide (g)
				NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
_				~	2		-	
50	CL-SANDY CLAY, very fine grained, well	50.00		SB-2-50				7600
52	sorted, slightly plastic, strong brown, dry							
E								
- 54								
56								
E								
60	- with sand at 60.0ft BGS			SB-2-60				7700
62								
-64								
66 								
68								
- 70		70.00		SB-2-70				6200
E	SM-SILTY SAND, fine grained, well sorted, reddish yellow, dry							
72 								
-74		75.00		SB-2-75				000
-76	END OF BOREHOLE @ 75.0ft BGS	75.00		5B-2-75				980
- 								
80								
82								
년 19.1년 - 86								
⁰ ⊢88 ≴⊢								
방는 교 - 90								
-WI GP								
-01288 								
94								
OVERBURDEN LOG 088210-WIGPU CRA_CORP.GDT 91								
RBUR	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE	EFER IUC	UKRENT ELEVATION TABLE					
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Page 1 of 2

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES

LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-3 DATE COMPLETED: July 19, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: M. GANT

	DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH	BOREHOLE			SAMF	PLE	
	ft BGS	STRATIGRAFHIC DESCRIPTION & REMARKS	ft BGS	BOREHOLE	ВЩ	VAL	(%)	Ш	ide (g)
					NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
	-2 -4	SC-CLAYEY SAND, fine grained, well sorted, reddish yellow, dry			2	∠	<u>ш</u>	4	
	-6 -8 -10 -12 -14	- very fine grained, light brown at 10.0ft BGS		BACKFILLED WITH BENTONITE CHIPS AND SOIL CUTTINGS					
-	- 16	SM-SILTY SAND, very fine grained, well sorted, reddish yellow, dry	15.00						
E	- 18								
	-20				SB-3-20				
F	-22				00020				
-									
	-24	- strong brown at 25.0ft BGS			SB-3-25				
	-26 -28								
Ē	-30	SC-CLAYEY SAND, very fine grained, well	30.00	BACKFILLED	SB-3-30				
Ē	- 32	sorted, reddish brown, dry		WITH BENTONITE CHIPS AND					
F				SOIL CUTTINGS					
1111	- 34	CL-SANDY CLAY, very fine grained, well	35.00		SB-3-35				
DT 9/15	-36	sorted, low plasticity, strong brown, dry							
JRP.GI	- 38								
RA CC	-40	SC-cLAYEY SAND, very fine grained, well	40.00		SB-3-40				
GPJ C	- 42	sorted, reddish brown, dry							
210-WI.	-44								
3 0882	-46				SB-3-45				
OVERBURDEN LOG 088210-WI.GPJ CRA_CORP.GDT 9/1		NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; R	EFER TO C	CURRENT ELEVATION TABLE					
OVER									

Page 2 of 2

	GHD	STRATIGRAPHIC AND II (OVERB						
	PROJE	CT NAME: LIVINGSTON RIDGE SWD NO. 2	HOLE D	DESIGNATION: SB-3				
PROJECT NUMBER: 088210-35 DATE COMPLETED:								
	CLIENT	EOG RESOURCES	DRILLIN	NG METHOD: HSA				
LOCATION: EDDY COUNTY, NEW MEXICO FIELD				Personnel: M. Gant				
	DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE				

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH	BOREHOLE			SAMF	PLE	
ft BGS		ft BGS	DOREHOLE	R	VAL	(%)	Ы	ide (g)
				NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
50	CL-SANDY CLAY, very fine grained, well sorted, low plasticity, reddish brown, dry	50.00		SB-3-50				62
52	sorted, low plasticity, reddish brown, dry							
54								
56								
60	END OF BOREHOLE @ 60.0ft BGS	60.00		SB-3-60				88
62								
64 								
66								
68 								
- 70 -								
76 								
– 82 ≤								
84 								
86 								
88 								
90								
92 								
	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RI	EFER TO C	URRENT ELEVATION TABLE					

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PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES

LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-4 DATE COMPLETED: July 19, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: M. GANT

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH	BOREHOLE			SAM		
ft BGS		ft BGS		NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
-2	SC-CLAYEY SAND, fine grained, well sorted, reddish yellow, dry							
	- very fine grained at 10.0ft BGS							
	SM-SILTY SAND, very fine grained, well sorted, light brown, dry	15.00						1
20 - 22 24	SC-CLAYEY SAND, very fine grained, well sorted, light brown, dry	20.00		SB-4-20				1
26 28	SM-SILTY SAND, very fine grained, well sorted, strong brown, dry	25.00	BACKFILLED WITH BENTONITE CHIPS AND SOIL CUTTINGS	SB-4-25				1
- 30			BENTONITE CHIPS AND SOIL CUTTINGS	SB-4-30				1
	CL-SANDY CLAY, very fine grained, well sorted, low plasticity, reddish brown, dry	35.00		SB-4-35				1
	- strong brown at 40.0ft BGS			SB-4-40				870
44	SC-CLAYEY SAND, very fine grained, well sorted, reddish brown, dry	45.00		SB-4-45				1
1	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE;	REFER TO C	¥/A					

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	(OVER)						-	e 2 of 2
	NAME: LIVINGSTON RIDGE SWD NO. 2		SIGNATION: SB-4					
	NUMBER: 088210-35		MPLETED: July 19, 2017					
	EOG RESOURCES		GMETHOD: HSA					
LOCATIO	N: EDDY COUNTY, NEW MEXICO	FIELD PE	RSONNEL: M. GANT					
DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE			SAMF		
				NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
50	END OF BOREHOLE @ 50.0ft BGS	50.00		SB-4-50				79
52	C							
52								
54								
56								
58								
60								
62								
64								
66								
68								
70								
72								
74								
76								
78								
80								
82								
86								
00								
84 86 90 92 94 <u>No</u>								
90								
92								
94								

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Page 1 of 3

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-5 DATE COMPLETED: August 18, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: S. PEREZ

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE			SAMF	AMPLE		
πBGS		πBGS		NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)	
	SEE SB-1 FOR STRATIGRAPHIC DETAILS		602	ž	Ξ	8	Ż	05	
2	SEE SE-1 FOR STRATIGRAPHIC DETAILS								
2									
4									
6									
8									
10									
12									
- 14									
- 16									
- 18									
20									
22									
-24									
- 26									
28									
30									
32									
34									
36									
38									
- 38 - 40 - 42 - 44									
42									
44									
46									
	IOTES: MEASURING POINT ELEVATIONS MAY CHANGE; F								

GHD	STRATIGRAPHIC A (O	NSTRUN URDEN		ION LOG				Page	e 2 of 3
PROJEC ⁻ CLIENT:	T NAME: LIVINGSTON RIDGE SWD NO. 2 T NUMBER: 088210-35 EOG RESOURCES IN: EDDY COUNTY, NEW MEXICO	HOLE DE DATE CC DRILLING	SIGNATION	August 18, 2017 HSA	7				
DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOR	EHOLE		SAMPLE			
					NUMBER	INTERVAL	REC (%)	N' VALUE	Chloride (mg/kg)
50 52 54 56 58 60 62 64 66 62 64 66 68 70 72 74 77 74 77 74 77 78 78 80 72 74 77 80 82 84 88 88 88 88 88 88 88 88 88 88 88 88	SC-CLAYEY SAND, with silt, coarse grained, poorly graded, brown, dry	90.00							

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PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES

LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-5 DATE COMPLETED: August 18, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: S. PEREZ

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE			SAMF	PLE	
ft BGS		ft BGS		NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
98 	SP-SAND, with silt, trace clay, coarse grained sandstone, poorly graded, brown, dry	100.00		SB-5-20				48
				SB-5-25				760
- 112								
- 116 								
	- trace silt and clay at 120.0ft BGS			SB-5-30				82
124								
- 126 								
130	END OF BOREHOLE @ 130.0ft BGS	130.00		SB-5-35				
2 - 132 								
2 								
140 142								
	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; R	EFER TO C	CURRENT ELEVATION TABLE					

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Page 1 of 3

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-6 DATE COMPLETED: August 16, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: S. PEREZ

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE			SAMF		
πBGS		πBGS	NUMBER	REC (%)	'N' VALUE	Chloride (mg/kg)		
				NUN	INTE	REC	N' <	Chic (m)
	SEE SB-1 FOR STRATIGRAPHIC DETAILS							
-2								
-4								
-6								
-8								
- 10								
- 12								
- 14								
- 16								
- 18								
-20								
-22								
-24								
- 26								
-28								
- 30								
- 32								
- 34								
-36								
- 38								
-40								
-36 -38 -40 -42 -44 -46								
- 44								
-46								
	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; F	EFER TO C						

ROJE	CT NAME: LIVINGSTON RIDGE SWD NO. 2	BURDEN)) Signation:	SB-6				rage	e 2 of 3
ROJE	CT NUMBER: 088210-35	DATE CO	MPLETED: A	August 16, 2017	7				
LIENT	: EOG RESOURCES	DRILLING	METHOD: I	HSA					
OCATI	ION: EDDY COUNTY, NEW MEXICO	FIELD PEI	RSONNEL: S	S. PEREZ					
EPTH BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BORE	HOLE	<u>ل</u> ا ۲		SAMPL		
					NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
50									
52				CHIPS AND SOIL CUTTINGS					
54									
56									
58									
80									
62 64									
6									
88									
70									
72									
74	CL-SILTY CLAY, few sand, fine garined,	75.00							
76 78	reddish brown, dry								
30									
32									
34									
86	SW-SILTY SAND, trace fine gravel, coarse grained, well graded, reddish brown, dry	86.50			SB-6-85	\mid		45	<30
38 90									
92									
94									
					SB-6-95	\succ	1	15	<30

Page 3 of 3

PROJECT NAME: LIVINGSTON RIDGE SWD NO. 2 PROJECT NUMBER: 088210-35 CLIENT: EOG RESOURCES LOCATION: EDDY COUNTY, NEW MEXICO

HOLE DESIGNATION: SB-6 DATE COMPLETED: August 16, 2017 DRILLING METHOD: HSA FIELD PERSONNEL: S. PEREZ

DEPTH	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH	BOREHOLE		1	SAMF	PLE	
ft BGS		ft BGS		BER	RVAL	(%)	TUE	kg)
				NUMBER	INTERVAL	REC (%)	'N' VALUE	Chloride (mg/kg)
-	END OF BOREHOLE @ 96.5ft BGS	96.50	22	-	\geq		-	
-98								
- 100								
- 102								
- 104								
- 106								
- 108								
-110								
-112								
- 114								
- 116								
- 118								
- 120								
- 122								
- 124								
- 126								
- 128								
- 130								
- 132								
- 132 - 134 - 136								
- 136								
- 130								
- 140								
- 140 - 142								
1	NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; RE	FER TO C	URRENT ELEVATION TABLE	1				

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Attachment 2 Laboratory Reports



March 28, 2018 Bernie Bockisch GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

RE: Livingston

OrderNo.: 1803842

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 12 sample(s) on 3/14/2018 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 <u>www.hallenvironmental.com</u> 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 #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109
Hall Environ	mental Analys	is Laborate	ory, Inc.		Analytical Report Lab Order: 1803842 Date Reported: 3/28/2018	
	GHD Livingston				Lab Order: 1803842	
Lab ID:	1803842-001				Pate: 3/12/2018 10:50:00 AM	
Client Sample ID: Analyses	S-088210-35-03121	Result	PQL Qual		trix: SOIL DF Date Analyzed Batcl	h ID
		Result	1.42. 4		· · · ·	
Chloride	0.0: ANIONS	ND	30	mg/Kg	Analyst: M 20 3/27/2018 5:03:30 PM 37	RA 7258
Lab ID:	1803842-002			Collection D	ate: 3/12/2018 10:52:00 AM	
Client Sample ID:	S-088210-35-03121	18-MG-TP-20		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch	h ID
EPA METHOD 30	0.0: ANIONS				Analyst: M	RA
Chloride		ND	30	mg/Kg	20 3/27/2018 5:15:54 PM 37	7258
Lab ID:	1803842-003			Collection D	ate: 3/12/2018 10:55:00 AM	
Client Sample ID:	S-088210-35-03121	18-MG-TP-21		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch	h ID
EPA METHOD 30	0.0: ANIONS				Analyst: M	RA
Chloride		ND	30	mg/Kg	20 3/27/2018 8:22:01 PM 37	7270
Lab ID:	1803842-004			Collection D	ate: 3/12/2018 11:45:00 AM	
Client Sample ID:	S-088210-35-03121	18-MG-TP-22		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch	h ID
EPA METHOD 30	0.0: ANIONS				Analyst: M	RA
Chloride		ND	30	mg/Kg	20 3/27/2018 9:24:04 PM 37	7270
Lab ID:	1803842-005			Collection D	ate: 3/12/2018 11:48:00 AM	
Client Sample ID:	S-088210-35-03121	18-MG-TP-23		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed Batch	h ID
EPA METHOD 30	0.0: ANIONS				Analyst: M	RA
Chloride		130	30	mg/Kg	•	7270

- Qualifiers:
- * Value exceeds Maximum Contaminant Level. D
- Sample Diluted Due to Matrix
- Н 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
- Analyte detected in the associated Method Blank В
- Value above quantitation range Е
- J Analyte detected below quantitation limits Page 1 of 4
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environ	mental Analys	is Laborato	ory, Inc.		Analytical Report Lab Order: 1803842 Date Reported: 3/28	/2018
	GHD Livingston			L	ab Order: 18038	342
Lab ID:	1803842-006		(: 3/12/2018 11:50:00 A	AM
Client Sample ID:	S-088210-35-03121	8-MG-TP-24		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Ana	alyst: MRA
Chloride		41	30	mg/Kg	20 3/27/2018 9:48:53	PM 37270
Lab ID:	1803842-007			Collection Date	: 3/12/2018 11:55:00 A	AM
Client Sample ID:	S-088210-35-03121	8-MG-TP-25		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Ana	alyst: MRA
Chloride		59	30	mg/Kg	20 3/27/2018 10:01:17	7 PM 37270
Lab ID:	1803842-008			Collection Date	: 3/12/2018 12:55:00 H	РМ
Client Sample ID:	S-088210-35-03121	8-MG-TP-26		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Ana	alyst: MRA
Chloride		50	30	mg/Kg	20 3/27/2018 10:13:42	2 PM 37270
Lab ID:	1803842-009			Collection Date	: 3/12/2018 12:57:00 H	РМ
Client Sample ID:	S-088210-35-03121	8-MG-TP-27		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Ana	alyst: MRA
Chloride		ND	30	mg/Kg	20 3/27/2018 10:26:07	7 PM 37270
Lab ID:	1803842-010			Collection Date	: 3/12/2018 1:30:00 PI	Ν
Client Sample ID:	S-088210-35-03121	8-MG-TP-28		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Ana	alyst: MRA
Chloride		ND	30	mg/Kg	20 3/27/2018 10:38:37	I PM 37270

- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environ	mental Analysi	s Laborato	ory, Inc.		Analytical Report Lab Order: 1803842 Date Reported: 3/28/	2018
	GHD ivingston				Lab Order: 18038	42
Lab ID:	1803842-011			Collection D	pate: 3/12/2018 1:33:00 PM	Л
Client Sample ID:	S-088210-35-03121	8-MG-TP-29		Mat	trix: SOIL	
Analyses		Result	PQL Qua	al Units	DF Date Analyzed	Batch ID
EPA METHOD 300	.0: ANIONS				Ana	lyst: MRA
Chloride		ND	30	mg/Kg	20 3/27/2018 10:50:55	PM 37270
Lab ID:	1803842-012			Collection D	ate: 3/12/2018 2:25:00 PM	Л
Client Sample ID:	S-088210-35-03121	8-MG-TP-30		Mat	trix: SOIL	
Analyses		Result	PQL Qua	al Units	DF Date Analyzed	Batch ID
EPA METHOD 300	.0: ANIONS				Ana	lyst: MRA
Chloride		ND	30	mg/Kg	20 3/27/2018 11:28:08	PM 37270

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н 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
- Analyte detected in the associated Method Blank В
- Value above quantitation range Е
- J Analyte detected below quantitation limits Page 3 of 4
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#:	1803842
	28_Mar_18

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28-Mar-1	8
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Client: Project:	GHD Livingstor	n								
Sample ID	MB-37258	SampType: m	blk	Tes	tCode: EF	PA Method	300.0: Anion	S		
Client ID:	PBS	Batch ID: 37	258	R	RunNo: 50	0104				
Prep Date:	3/27/2018	Analysis Date: 3	/27/2018	S	SeqNo: 16	623718	Units: mg/K	g		
Analyte Chloride		Result PQL ND 1.5		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID	LCS-37258	SampType: Ic	s	Tes	tCode: EF	PA Method	300.0: Anion:	s		
Client ID:	LCSS	Batch ID: 37	258	R	RunNo: 5(0104				
Prep Date:	3/27/2018	Analysis Date: 3	/27/2018	S	SeqNo: 16	623719	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 1.5	15.00	0	95.1	90	110			
Sample ID	MB-37270	SampType: m	blk	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	PBS	Batch ID: 37	270	R	RunNo: 5(0104				
Prep Date:	3/27/2018	Analysis Date: 3	/27/2018	S	SeqNo: 16	623784	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND 1.5								
Sample ID	LCS-37270	SampType: Ic	S	Tes	tCode: EF	PA Method	300.0: Anion	S		
Client ID:	LCSS	Batch ID: 37	270	R	RunNo: 5(0104				
Prep Date:	3/27/2018	Analysis Date: 3	/27/2018	S	SeqNo: 16	623785	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
		14 1.5	15.00	0	93.6	90	110			

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- Sample Diluted Due to Matrix D
- Н 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
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY	TEL: 505-345-3975	Analysis Laboratory 4901 Hawkins NE uquerque, NM 87109 FAX: 505-345-4107 illenvironmental.com	Sam	ple Log-In Check List
Client Name: GHD	Work Order Number:	1803842		RcptNo: 1
Received By: Erin Melendrez	3/14/2018 9:15:00 AM	И	LIA	2
Completed By: Dennis Suazo	3/15/2018 8:58:09 AM	I	ani qu	σ
Reviewed By: 572 03/15/18		U F Lakelee	d Bry	MW315/18
<u>Chain of Custody</u>				
1. Is Chain of Custody complete?		Yes 🔽	No 🗌	Not Present
2. How was the sample delivered?		<u>Courier</u>		
Log In 3. Was an attempt made to cool the samples?		Yes 🗹	No 🗌	NA []]
4. Were all samples received at a temperature o	f ≥0° C to 6.0°C	Yes 🗹	No 🗆	
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. VOA vials have zero headspace?		Yes	No 🗆	No VOA Vials 🗹
10. Were any sample containers received broken	?	Yes 🗆	No 🗹 🛛	# - f
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🗹	No 🗆	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of C	ustody?	Yes 🖌	No 🗆 🛛	Adjusted?
13, Is it clear what analyses were requested?		_		
14. Were all holding times able to be met? (If no, notify customer for authorization.)			No 🗆 🗌	Checked by:
<u>Special Handling (if applicable)</u>				
15. Was client notified of all discrepancies with the	nis order?	Yes 🗌	No 🗌	NA 🗹
Person Notified:	Date:			
By Whom:	Via:	eMail Dhone	e 📋 Fax	In Person
Regarding:	********	***		
Client Instructions:		······		
16. Additional remarks:				
	al Intact Seal No S Present	eal Date Sign	ned By	
			1779 TA TA TA TA TA TA TA TA TA TA TA TA TA	

Page 1 of 1

			www.rianerivirorimental.com 4901 Hawkins NE - Albuquergue, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis	(٣ (٥)	o se ² (2M (2M (2M) H9T - 10 / D8 10 / 0. 10 / 0. 10 / 10 10 br>10 / 10 10 10 / 10 10 10 / 10 10 10 10 10 10 10 10 10 10 10 10 10 1	001 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	ВТЕХ + МТЕ ВТЕХ + МТЕ ВТРХ + МТЕ В7РН 8015В ТРН (Мећо ЕDВ (Мећо В270 (8310 8250В (VOA 8250В (VOA 8250В (VOA 8250 (56mi- СЪ [6<∂3 8270 (56mi-	X										×.		Remarks:			submitted to Half 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.
Turn-Around Time:	□ Standard □ Rush	Project Name:	Livingston	Project #:	088210.35	Project Manager:	Bernard Backisch	Sampler: M C	emperature: 5, 5	er Preservative 1# Type 1/8@? 842	Horsell Loc TCE 01	002	003	1 004	500	006	007	800	004	010 010	110	1 012	Received by: Date Time R	Xh1 313/18 1300	M (UNTER) BANG TH	racted to other accredited laboratories. This serves as notice of this poo
Chain-of-Custody Record	GHD Services, The		Mailing Address: 6121 Indian School Bre200		Phone #: 505 884 0672	eghd.com	□ Level 4 (Full Validation)	□ Other		Matrix Sample Request ID	S sosale 35-oslare . McTP-19	2 - 2 - 2 - 2 - 0 - 2 - 0 - 2 - 0 - 2 - 2		5 97. 2 M. 3 10 12 0 25 0 12 3 2	5 Statioissians. M. TP.23	HC. d.L W. SICKSO. SCORSO.S Q			7 Second	D S.OVTALO 36.021218. M. TP. 38		S	Relinguished by:		Relinquighed by:	
Cha	$client: \bigcirc$		Mailing Addr	NEAlburn	Phone #:	email or Fax	QA/QC Package: □ Standard	Accreditation	🗆 EDD (Type)	Date	3/12/18 1050	1052	1655	SHU	11143	1150	5511	1255	1251	1330	1333			¥13/18/15a	Date: Time: 3/13/10-1970	If necess

Released to Imaging: 7/7/2023 11:38:29 AM



March 27, 2018 Bernie Bockisch GHD 6121 Indian School Road, NE #200 Albuquerque, NM 87110 TEL: (505) 884-0672 FAX Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

OrderNo.: 1803759

RE: Livingston

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 12 sample(s) on 3/14/2018 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 <u>www.hallenvironmental.com</u> 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 #NM0190

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hall Environ	mental Analys	is Laborato	ory, Inc.		Analytical Report Lab Order: 1803759 Date Reported: 3/27/2	2018
	GHD Livingston				Lab Order: 180375	59
Lab ID:	1803759-001			Collection D	pate: 3/12/2018 2:30:00 PM	[
Client Sample ID:	S-088210-35-0312	18-MG-TP-31		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Anal	yst: MRA
Chloride		ND	30	mg/Kg	20 3/26/2018 11:16:24	PM 37248
Lab ID:	1803759-002			Collection D	ate: 3/13/2018 12:10:00 Pl	М
Client Sample ID:	S-088210-35-0313	18-MG-TP-32		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Anal	yst: MRA
Chloride		65	30	mg/Kg	20 3/26/2018 11:28:49	PM 37248
Lab ID:	1803759-003			Collection D	ate: 3/13/2018 12:12:00 Pl	М
Client Sample ID:	S-088210-35-0313	18-MG-TP-33		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Anal	yst: MRA
Chloride		ND	30	mg/Kg	20 3/26/2018 11:41:13	PM 37248
Lab ID:	1803759-004			Collection D	ate: 3/13/2018 12:15:00 Pl	М
Client Sample ID:	S-088210-35-0313	18-MG-TP-34		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Anal	yst: MRA
Chloride		110	30	mg/Kg	20 3/27/2018 12:18:26	AM 37248
Lab ID:	1803759-005			Collection D	ate: 3/13/2018 12:17:00 Pl	М
Client Sample ID:	S-088210-35-0313	18-MG-TP-35		Mat	trix: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300	0.0: ANIONS				Anal	yst: MRA
Chloride		67	30	mg/Kg	20 3/27/2018 12:30:50	-

- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 1 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Lab ID:	HD vingston 1803759-006 S-088210-35-031318-			L	ab Order: 18037	59
Client Sample ID:						
-	S-088210-35-031318-				: 3/13/2018 12:20:00 F	PM
Analyses		MG-TP-36		Matrix	: SOIL	
J		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300.0): ANIONS				Ana	alyst: MRA
Chloride		ND	30	mg/Kg	20 3/27/2018 1:08:03	AM 37248
Lab ID:	1803759-007			Collection Date	: 3/13/2018 12:22:00 F	РМ
Client Sample ID:	S-088210-35-031318-	MG-TP-37		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300.0): ANIONS				Ana	alyst: MRA
Chloride		ND	30	mg/Kg	20 3/27/2018 1:20:28	AM 37248
Lab ID:	1803759-008			Collection Date	: 3/13/2018 12:25:00 F	PM
Client Sample ID:	S-088210-35-031318-	MG-TP-38		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300.0): ANIONS				Ana	alyst: MRA
Chloride		ND	30	mg/Kg	20 3/27/2018 1:32:53	AM 37248
Lab ID:	1803759-009			Collection Date	: 3/13/2018 12:27:00 F	РМ
Client Sample ID:	S-088210-35-031318-	MG-SP-1		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300.0): ANIONS				Ana	alyst: MRA
Chloride		250	30	mg/Kg	20 3/15/2018 2:11:26	PM 37043
Lab ID:	1803759-010		(Collection Date	: 3/13/2018 12:30:00 F	РМ
Client Sample ID:	S-088210-35-031318-	MG-SP-2		Matrix	: SOIL	
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch ID
EPA METHOD 300.0): ANIONS				Ana	alyst: MRA
Chloride		220	30	mg/Kg	20 3/15/2018 2:48:39	-

- 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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environ	mental Analys	is Laborat	ory, Inc.		Analytical Report Lab Order: 1803759 Date Reported: 3/27	
	GHD .ivingston				Lab Order: 18037	/59
Lab ID:	1803759-011			Collection D	ate: 3/13/2018 12:32:00 H	РМ
Client Sample ID:	S-088210-35-03131	8-MG-SP-3		Mat	trix: SOIL	
Analyses		Result	PQL Qu	al Units	DF Date Analyzed	Batch ID
EPA METHOD 300	.0: ANIONS				Ana	alyst: MRA
Chloride		45	30	mg/Kg	20 3/15/2018 3:01:03	PM 37043
Lab ID:	1803759-012			Collection D	ate: 3/13/2018 12:35:00 H	РМ
Client Sample ID:	S-088210-35-03131	8-MG-SP-4		Mat	trix: SOIL	
Analyses		Result	PQL Qu	al Units	DF Date Analyzed	Batch ID
EPA METHOD 300	.0: ANIONS				Ana	alyst: MRA
Chloride		140	30	mg/Kg	20 3/15/2018 3:13:28	PM 37043

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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 3 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

WO#:	1803759
	27-Mar-18

Page 4 of 4

Client:	GHD									
Project:	Livingsto	n								
Sample ID	MB-37043	SampType: ml	blk	Test	tCode: EP	PA Method	300.0: Anion:	5		
Client ID:	PBS	Batch ID: 37	043	R	unNo: 49	9843				
Prep Date:	3/15/2018	Analysis Date: 3/	15/2018	S	eqNo: 16	613173	Units: mg/K	g		
Analyte Chloride		Result PQL ND 1.5	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
		_								
Sample ID	LCS-37043	SampType: Ics	6	Test	Code: EP	PA Method	300.0: Anions	6		
Client ID:	LCSS	Batch ID: 37	043	R	unNo: 49	9843				
Prep Date:	3/15/2018	Analysis Date: 3/	15/2018	S	eqNo: 16	613174	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		15 1.5	15.00	0	96.7	90	110			
Sample ID	MB-37248	SampType: ml	blk	Test	tCode: EP	PA Method	300.0: Anion	6		
Client ID:	PBS	Batch ID: 37	248	R	unNo: 50	0081				
Prep Date:	3/26/2018	Analysis Date: 3/	/26/2018	s	eqNo: 16	621907	Units: mg/K	g		
		,		-			-	-		
Analyte		Result PQL		SPK Ref Val	%REC	LowLimit	HighLimit	- %RPD	RPDLimit	Qual
Analyte Chloride					%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	LCS-37248	Result PQL	SPK value	SPK Ref Val			HighLimit 300.0: Anions		RPDLimit	Qual
Chloride		Result PQL ND 1.5	SPK value	SPK Ref Val		PA Method			RPDLimit	Qual
Chloride Sample ID	LCSS	Result PQL ND 1.5 SampType: Ics	SPK value	SPK Ref Val Test	tCode: EP	PA Method 0081		6	RPDLimit	Qual
Chloride Sample ID Client ID:	LCSS	ResultPQLND1.5SampType:IcsBatch ID:37	SPK value	SPK Ref Val Test	Code: EP tunNo: 50 SeqNo: 16	PA Method 0081	300.0: Anion:	6	RPDLimit	Qual

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
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

	Page	120	of 136
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HALL ENVIRONMENTAL ANALYSIS LABORATORY		001 Hawkins NE rque, NM 87109 S : 505-345-4107	ample Log-In Check List				
Client Name: GHD	Work Order Number: 180)3759	RcptNo	: 1			
· ·	3/14/2018 9:15:00 AM 3/14/2018 9:53:12 AM	UL M	4				
Reviewed By: DDS 3114/18	labe	red by	ENM	- .			
Chain of Custody	ν.			·			
1. Is Chain of Custody complete?	Yes	s 🗹 No 🤅	Not Present				
2 How was the sample delivered?		irier	· · · · · · · · · · · · · · · · · · ·				
Log In 3. Was an attempt made to cool the samples?	Yes	No 🛛					
4. Were all samples received at a temperature of	>0° C to 6.0°C Yes	No [NA .				
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 p	reserved? Yes	✓ No 🗌					
8. Was preservative added to bottles?	Yes	🗌 No 💆					
9. VOA vials have zero headspace?	Yes	No 🗌	🗌 No VOA Viais 🗹				
10. Were any sample containers received broken?	Yes	No No	# of preserved bottles checked				
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes	✓ No [for pH:	>12 unless noted)			
12. Are matrices correctly identified on Chain of Cus	tody? Yes	✓ No	Adjusted?				
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:				
Special Handling (if applicable)			· · ·				
15. Was client notified of all discrepancies with this	order? Yes	No [
Person Notified:	Date:		20.007				
By Whom:	Via: 🗌 eM	ail 🦳 Phone 🦳 F	ax 🗌 In Person				
Regarding:							
Client Instructions:				1			
16. Additional remarks:		· · · · · · · · · · · · · · · · · · ·					
17. <u>Cooler Information</u> Cooler No Temp °C Condition Seal I 1 5.8 Good Yes	ntact Seal No Seal D	ate Signed By					

Received by OCD: 6/8/2023 10:02:48 AM

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Record	Client: GHD Services. Inc.		Mailing Address: 6121 Indian School Rolfre 200	211 LS WN	0672	. Bochisch oghd. com)	Level 4 (Full Validation)			Sample Request ID	S: 082410.35, 031218. ME-TP-31	5688210:35" 08121 8. M. 67 P. 32	55-97-3 M. 812150 25-97880,5	S'OSSUD 35, CSIDIS'NGTP34	26 98240-35-031318, M.6-TP. 35	2.088310:35.02131 3.ME-TP-36	5 '55' 27. JM. 8 18150, 35. 01285, 2	52,012,9W/810/50,55,010890,5	5.088210.38.0318.0018.0019.56.1	5.088,410.35,051348,446.5P.3	5: Dostor35:00131 2: M. 6. 59. 3	496-35-081318-M6-56-4		ped by:	
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Attachment 3 Work Plan Approvals

From:	Bratcher, Mike, EMNRD
То:	Alan Brandon; Weaver, Crystal, EMNRD; stucker@blm.gov; YJORDAN@BLM.GOV
Cc:	Zane Kurtz; Bernard Bockisch; cctofiling@craworld.com
Subject:	RE: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR-088210-35~
Date:	Tuesday, November 28, 2017 9:42:27 AM

RE: 2RP-2044

Alan,

Sorry for the delayed response. OCD would request that liner placement/installation be performed in a manner that will be as protective as possible, while making safety working around the gas line a priority. OCD will evaluate closure documentation and may request to discuss some type of long term monitoring for this site. This is a Federal site, so BLM will need to be on board with remediation proposals and any surface disturbance.

If you have any questions or concerns, please contact me.

Thank you,

Mike Bratcher NMOCD District 2 811 South First Street Artesia, NM 88210 575-748-1283 Ext 108

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Alan.Brandon@ghd.com [mailto:Alan.Brandon@ghd.com]
Sent: Tuesday, October 31, 2017 8:17 AM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD
<Crystal.Weaver@state.nm.us>; stucker@blm.gov; YJORDAN@BLM.GOV
Cc: Zane Kurtz <Zane_Kurtz@eogresources.com>; Bernard.Bockisch@ghd.com;
cctofiling@craworld.com
Subject: RE: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR088210-35~

Mike,

After plotting the 24-inch gas line on our attached Figure 2, it does look like we will be excavating near the line. We will only excavate to within ten feet of the gas line and place the liner before backfilling. Please let us know if this is acceptable.

From: Bratcher, Mike, EMNRD [mailto:mike.bratcher@state.nm.us]
Sent: Wednesday, October 25, 2017 11:27 AM
To: Alan Brandon <<u>Alan.Brandon@ghd.com</u>>; Weaver, Crystal, EMNRD
<<u>Crystal.Weaver@state.nm.us</u>>; stucker@blm.gov; YJORDAN@BLM.GOV
Cc: Zane Kurtz <<u>Zane_Kurtz@eogresources.com</u>>; Bernard Bockisch <<u>Bernard.Bockisch@ghd.com</u>>;
cctofiling@craworld.com
Subject: RE: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR-

RE: EOG Resources * Livingston Ridge SWD Water Line * 2RP-2044 * DOR: 10/27/13

Greetings,

088210-35~

At the time of this release, Transwestern had a 24" high pressure gas line that this release followed. The line was fairly shallow, and actually exposed in some areas of the release. The proposal is for a 4' excavation and liner placement, but no mention of the gas line. Assuming it still exists, what is your proposal in regard to that line?

Thank you,

Mike Bratcher NMOCD District 2 811 South First Street Artesia, NM 88210 575-748-1283 Ext 108

From: Alan.Brandon@ghd.com [mailto:Alan.Brandon@ghd.com]
Sent: Tuesday, October 17, 2017 9:27 AM
To: Weaver, Crystal, EMNRD <<u>Crystal.Weaver@state.nm.us</u>>; Bratcher, Mike, EMNRD
<<u>mike.bratcher@state.nm.us</u>>; stucker@blm.gov
Cc: Zane Kurtz <<u>Zane_Kurtz@eogresources.com</u>>; Bernard.Bockisch@ghd.com;
cctofiling@craworld.com
Subject: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR-088210-35~

Crystal, Mike and Shelly,

On behalf of EOG Resources, GHD is submitting the attached Assessment Summary Report for the Livingston Ridge SWD site (2RP-2044) for your review. If you have any questions, please contact either Bernard Bockisch or myself.

Thank you.

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From:	Tucker, Shelly
To:	Bratcher, Mike, EMNRD
Cc:	<u>Alan Brandon; Weaver, Crystal, EMNRD; YJORDAN@BLM.GOV; Zane Kurtz; Bernard Bockisch;</u> cctofiling@craworld.com
Subject:	Re: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR-088210-35~
Date:	Friday, January 19, 2018 11:18:14 AM

BLM concurs with NMOCD approval and stipulations,

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Shelly J Tucker

Environmental Protection Specialist O&G Spill/Release Coordinator

Bureau of Land Management 620 E. Greene St Carlsbad, NM 88220

575.234.5905 - Direct 575.361.0084 - Cellular 575.234.6235 - Emergency Spill Number

stucker@blm.gov

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not revegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

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On Tue, Nov 28, 2017 at 9:42 AM, Bratcher, Mike, EMNRD <<u>mike.bratcher@state.nm.us</u>> wrote:

RE: 2RP-2044

Alan,

Sorry for the delayed response. OCD would request that liner placement/installation be performed in a manner that will be as protective as possible, while making safety working around the gas line a priority. OCD will evaluate closure documentation and may request to discuss some type of long term monitoring for this site. This is a Federal site, so BLM will need to be on board with remediation proposals and any surface disturbance.

If you have any questions or concerns, please contact me.

Thank you,

Mike Bratcher

NMOCD District 2

811 South First Street

<u>Artesia, NM 88210</u>

575~748~1283 Ext 108

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<<u>Crystal.Weaver@state.nm.us</u>>; <u>stucker@blm.gov</u>; <u>YJORDAN@BLM.GOV</u>
Cc: Zane Kurtz <<u>Zane_Kurtz@eogresources.com</u>>; <u>Bernard.Bockisch@ghd.com</u>;
cctofiling@craworld.com

Subject: RE: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR-088210-35~

Mike,

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Sent: Wednesday, October 25, 2017 11:27 AM
To: Alan Brandon <<u>Alan.Brandon@ghd.com</u>>; Weaver, Crystal, EMNRD
<<u>Crystal.Weaver@state.nm.us</u>>; stucker@blm.gov; YJORDAN@BLM.GOV
Cc: Zane Kurtz <<u>Zane_Kurtz@eogresources.com</u>>; Bernard Bockisch
<<u>Bernard.Bockisch@ghd.com</u>>; cctofiling@craworld.com
Subject: RE: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR-088210-35~

RE: EOG Resources * Livingston Ridge SWD Water Line * 2RP-2044 * DOR: 10/27/13

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Thank you,

Mike Bratcher

NMOCD District 2

811 South First Street

Artesia, NM 88210

575~748~1283 Ext 108

From: Alan.Brandon@ghd.com [mailto:Alan.Brandon@ghd.com] Sent: Tuesday, October 17, 2017 9:27 AM To: Weaver, Crystal, EMNRD <<u>Crystal.Weaver@state.nm.us</u>>; Bratcher, Mike, EMNRD <<u>mike.bratcher@state.nm.us</u>>; stucker@blm.gov Cc: Zane Kurtz <<u>Zane_Kurtz@eogresources.com</u>>; Bernard.Bockisch@ghd.com; cctofiling@craworld.com Subject: 088210-35-(2RP-2044) Livingston Ridge SWD Assessment Summary Report ~COR-088210-35~

Crystal, Mike and Shelly,

On behalf of EOG Resources, GHD is submitting the attached Assessment Summary Report for the Livingston Ridge SWD site (2RP-2044) for your review. If you have any questions, please contact either Bernard Bockisch or myself.

Thank you.

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Attachment 4 Photo Log

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Photo 1 - Liner Placement



Site Photographs

GHD | Closure Request – Livingston Ridge #2 SWD Water Line -2RP 2044 | 088210-35 | Page 1











Attachment 5 Final C-141

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Page	<i>134</i>	of	<i>136</i>
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Unit Letter N/A Section 1 Township 22S Range 31E Feet from the N/A North/South Line N/A Feet from the N/A East/West Line N/A County Eddy Latitude _32,41751 Longitude _103.73427 NATURE OF RELEASE Type of Release Volume of Release Volume of Occurrence 1027,2013; PM Volume of Occurrence 1027,2013; PM Date and Hour of Discovery 1027,2013; PM Was Immediate Notice Given? Yes No No Required Mike Bratcher/NMOCD II By Whom? Robert Asher/Yates Petroleum Corporation 10227,2013; PM If YES, Volume Impacting the Watercourse. N/A If a Watercourse Reached? Yes No Not Required Mike Bratcher/NMOCD II By Whom? Robert Asher/Yates Petroleum Corporation 10/228/2013; AM If YES, Volume Impacting the Watercourse. N/A If a Watercourse was Impacted, Describe Fully.* NA NA Eddediate in the interior shall batteries that tied into the inter were shalt to Xouum trucks were called to recover produced water and crude oil. Roustabouts were also called to fix the water line. Since the release water line has also been replaced. Describe Cause of Problem and Remedial Action Taken.* A camany crew was called to do initial clean-up of the area, and all excavated solis are being disposed of an approved faciNNOCD facility. Verical delineatio	Federal	Federal		N/A	
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Printed Name: Amber Cannon Approved by District SupervisorSigned By Mile Brance Title: Environmental Regulatory Agent Approval Date: 0 5 2013 Expiration Date:			<u>OIL C</u>	ONSERVATION	DIVISION
Title: Environmental Regulatory Agent Approval Date: 0 5 2013 Expiration Date:		<u>^</u>	Americal Inc. D. 1.1.1.0		II K
Approval Date.	Signature: UMDU UMM		Approved by District Sup	Signed By 7	A. U.S. A. Jakes J. Sta
					1119 DAMIDUCE
E-mail Address: acannon@yatespetroleum.com Conditions of Approval: Remediation per OCD Rule & Guidelines, & Attached	Printed Name: Amber Cannon			2012	
Date: Tuesday, November 05, 2013 Phone: 575-748-4111 like approval by BLM. SUBMIT REMEDIATION	Printed Name: Amber Cannon Title: Environmental Regulatory Agent	om	Approval Date: 0 5	2013 Expiration	Date:
Attach Additional Sheets If Necessary FJMW 1330950158 Dec. 5,2013 2RP-20	Printed Name: Amber Cannon Title: Environmental Regulatory Agent E-mail Address: acannon@yatespetroleum.c Date: Tuesday, November 05, 2013	Rei	Approval Date: 05 Conditions of Approval: nediation per OCD Rule approval by BLM. <u>SUBM</u>	2013 Expiration & Guidelines, & IIT REMEDIATION	Date:

Page 6

Incident ID	
District RP	2RP-2044
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: Each of the following items must be included in the closure report. A scaled site and sampling diagram as described in 19.15.29.11 NMAC Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection) Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling) Description of remediation activities I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete. Title: Environmental Supervisor Printed Name: James Kennedy Signature: ______ *F Kennedy*______ email: james_kennedy@eogresources.com Date: 04/15/2019 Telephone: 432-848-9146 **OCD Only** Received by: <u>Jocelyn Harimon</u> Date: 06/29/2023 Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations. 07/07/2023 Closure Approved by: Date: Printed Name: Jocelyn Harimon Title: Environmental Specialist

District I 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV 1220 S. St Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3470 Fax: (505) 476-3462

State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 S. St Francis Dr. Santa Fe, NM 87505

CONDITIONS

Operator: (OGRID:
EOG RESOURCES INC	7377
P.O. Box 2267	Action Number:
Midland, TX 79702	225431
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	7/7/2023

Action 225431