

Incident ID	NDHR1917960136
District RP	IRP-5592
Facility ID	IDHR1917960000
Application ID	pDHR1917959457

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 OCD 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.

Printed Name: Amber Groves Title: Remediation Coordinator
 Signature: [Signature] Date: 10/8/2019
 Email: algroves@paalp.com Telephone: 575-200-5517

OCD Only

Received by: _____ Date: _____

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.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____



October 3, 2019

Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Site Delineation Summary and Proposed Remediation Plan
Former Lusk Station Historical
API No. N/A
GPS: Latitude 32.611006 Longitude -103.796745
UL "M", Sec. 32, T19S, R32E
Lea County, NM
NMOCD Ref. No. 1RP-5592

Tasman Geosciences (Tasman), on behalf of Plains Pipeline, LP (Plains), has prepared this Remediation Summary and Site Closure Report for the Release Site known as the Former Lusk Station Historical. Details of the release are summarized below:

RELEASE DETAILS			
Type of Release: Crude Oil		Volume of Release: Unknown	
		Volume Recovered: Unknown	
Source of Release: Unknown		Date of Release: Unknown	Date of Discovery: 6/17/19
Was Immediate Notice Given?	No	If, YES, to Whom?	N/A
Was a Watercourse Reached?	No	If YES, Volume Impacting the Watercourse: N/A	
Surface Owner: State		Mineral Owner: State	
Describe Cause of Problem and Remedial Action Taken:			
Historical contamination discovered during site reclamation activities.			

Site Characteristics and Sample Location Map are provided as Figure 1 and 2A/2B. General Site Photographs are provided as Appendix C. A Copy of the Initial Form C-141 is provided as Appendix D.

REGULATORY FRAMEWORK

Surface impacts from unauthorized releases of crude oil, gases, produced water, condensate or other oil field waste which occur during normal oilfield operations are generally regulated by the New Mexico Oil Conservation Division (NMOCD) in accordance with 19.15.29 of the New Mexico Administrative Code (NMAC). 19.15.29 NMAC establishes reporting, site assessment/characterization, remediation, closure, variance and enforcement procedures. Table I of 19.15.29.12 NMAC determines the closure criteria for soils impacted by a release based on the depth to groundwater and the following site characteristics:

Site Characteristics	
Approximate Depth to Groundwater	~500 ft.
Within 300 ft. of any continuously flowing or significant watercourse?	☐ Yes ☒ No
Within 200 ft. of any lakebed, sinkhole, or playa lake?	☐ Yes ☒ No
Within 300 ft. of an occupied permanent residence, school, hospital, or institution?	☐ Yes ☒ No
Within 500 ft. of a spring or private, domestic fresh water well?	☐ Yes ☒ No
Within 1,000 ft. of any fresh water well?	☐ Yes ☒ No
Within the incorporated municipal boundaries or within a municipal well field?	☐ Yes ☒ No
Within 300 ft. of a wetland?	☐ Yes ☒ No
Within the area overlying a subsurface mine?	☐ Yes ☒ No
Within an unstable area?	☐ Yes ☒ No
Within a 100-year floodplain?	☐ Yes ☒ No

A search of a groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) and United States Geological Service (USGS) was conducted to determine the average depth to groundwater within a one (1) Mile radius of the Release Site and identify any registered water wells within a 1/2 Mile of the Release Site. Due to none being identified, the approximate depth to groundwater was extrapolated from a depth to groundwater map titled "Lea Co. Depth to Ground Water" authored by a third party in 2005. Using the previous mentioned resource depth to ground water was estimated to be encountered at ~500 feet (ft.) below ground surface (bgs.). An exert of the third party map can be found as Appendix A.

Based on the approximate depth to groundwater and site characteristics, the NMOCD Closure Criteria are as follows:

Table I Criteria for Soils Impacted by a Release			Closure
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
>100 feet	Chloride***	EPA 300.0	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	TPH (GRO+DRO)	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

SITE DELINEATION

On May 21, 2019, Tasman personnel were on site to begin soil delineation of the accidental discharge. Eight (8) Verticles were installed at the site to determine the depth of impact. Soil samples collected were field tested for chlorides and hydrocarbons. Representative samples from each vertical were submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX concentrations. Chloride concentrations were below the NMOCD Closure Criteria in all of the analyzed soil samples. TPH concentrations ranged from ranging from 8,117 mg/kg in soil sample 3HA @ 3' to below the laboratory reporting limit (RL) in soil sample V-2 @ 6'. BTEX Concentrations were below the NMOCD Closure Criteria in all of the submitted soil samples. A table summarizing laboratory analytical results from soil samples collected during the site delineation is provided below:

Concentrations of BTEX, TPH and/or Chloride in Soil											
Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					E 300
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C ₆ -C ₁₀ (mg/kg)	DRO C ₁₀ -C ₂₈ (mg/kg)	GRO + DRO C ₆ -C ₂₈ (mg/kg)	ORO C ₂₈ -C ₃₅ (mg/kg)	TPH C ₆ -C ₃₅ (mg/kg)	Chloride (mg/kg)
1HA @ S	5/21/2019	Surf.	Excavated	<0.0003	<0.0003	14.5	250	265	41.2	306	-
1HA @ 4'	5/21/2019	4'	Excavated	<0.0003	<0.0003	14.5	976	991	105	1,096	-
2HA @ S	5/21/2019	Surf.	Excavated	<0.0003	<0.0003	13.6	607	621	135	756	-
2HA @ 4'	5/21/2019	4'	Excavated	<0.0003	<0.0003	17.1	993	1,010	116	1,126	-
3HA @ S	5/21/2019	Surf.	Excavated	<0.0003	<0.0003	13.8	1,850	1,864	254	2,118	20.8
3HA @ 1'	5/21/2019	1'	Excavated	<0.0003	<0.0003	11.3	983	994	177	1,171	-
3HA @ 2'	5/21/2019	2'	Excavated	<0.0003	<0.0003	14.7	567	582	146	728	-
3HA @ 3'	5/21/2019	3'	Excavated	<0.0003	0.060	495	7,060	7,555	562	8,117	-
3HA @ 4'	5/21/2019	4'	Excavated	<0.0003	<0.0003	384	4,150	4,534	284	4,818	<0.864
V-1 @ 5'	6/5/2019	5'	Excavated	0.0003	0.0009	<7.99	16.5	16.5	<8.11	16.5	16.4
V-1 @ 6'	6/5/2019	6'	Excavated	<0.0003	<0.0003	<7.99	21.3	21	<8.11	21	-
V-1 @ 7'	6/5/2019	7'	Excavated	<0.0003	<0.0003	<7.99	<8.10	<8.10	<8.11	<8.10	10.5
V-2 @ 5'	6/5/2019	5'	Excavated	<0.0003	<0.0003	95.0	1,960	2,055	152	2,207	<0.853
V-2 @ 6'	6/5/2019	6'	Excavated	<0.0003	0.002	11.8	265	277	24.3	301	-
V-2 @ 7'	6/5/2019	7'	Excavated	<0.0003	0.003	10.6	145	156	11.4	167	-
V-2 @ 8'	6/5/2019	8'	Excavated	<0.0003	0.003	<7.99	21.5	21.5	<8.11	21.5	<0.853
V-2 @ 9'	6/5/2019	9'	In-Situ	<0.0003	0.003	8.93	33.6	42.5	<8.11	42.5	-
V-2 @ 12'	6/5/2019	12'	In-Situ	<0.0003	0.0004	10.8	91.8	103	17.6	120	-
V-2 @ 13'	6/5/2019	13'	In-Situ	<0.0003	<0.0003	11.6	54.9	66.5	13.2	79.7	1.11
V-3 @ S	6/6/2019	Surf.	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.858
V-3 @ 1'	6/6/2019	1'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	10.6	10.6	-
V-3 @ 2'	6/6/2019	2'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	-
V-3 @ 3'	6/6/2019	3'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.858
V-3 @ 4'	6/6/2019	4'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	-
V-3 @ 5'	6/6/2019	5'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.858
V-4 @ S	6/6/2019	Surf.	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.858
V-4 @ 1'	6/6/2019	1'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	-
V-4 @ 2'	6/6/2019	2'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	-
V-4 @ 3'	6/6/2019	3'	Excavated	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.858
V-4 @ 4'	6/6/2019	4'	Excavated	<0.0003	<0.0003	10.1	<8.11	10.1	<8.11	10.1	-
V-4 @ 5'	6/6/2019	5'	Excavated	<0.0003	<0.0003	10.8	<8.11	10.8	<8.11	10.8	-
V-4 @ 6'	6/6/2019	6'	Excavated	<0.0003	<0.0003	10.4	<8.11	10.4	<8.11	10.4	<0.858
V-5 @ S	6/6/2019	Surf.	Excavated	<0.0003	<0.0003	10.2	<8.11	10.2	<8.11	10.2	2.22
V-5 @ 1'	6/6/2019	1'	Excavated	<0.0003	<0.0003	11.1	<8.11	11.1	<8.11	11.1	-
V-5 @ 2'	6/6/2019	2'	Excavated	<0.0003	<0.0003	11.2	<8.11	11.2	<8.11	11.2	-
V-5 @ 3'	6/6/2019	3'	Excavated	<0.0003	<0.0003	9.00	<8.11	9.00	<8.11	9.00	<0.858
V-5 @ 4'	6/6/2019	4'	Excavated	<0.0003	<0.0003	10.6	<8.11	10.6	<8.11	10.6	-
V-5 @ 5'	6/6/2019	5'	Excavated	<0.0003	<0.0003	9.53	<8.11	9.53	<8.11	9.53	-
V-5 @ 6'	6/6/2019	6'	Excavated	<0.0003	<0.0003	10.6	<8.11	10.6	<8.11	10.6	-
V-5 @ 7'	6/6/2019	7'	Excavated	<0.0003	<0.0003	11.5	<8.11	11.5	<8.11	11.5	15.7
NMOCD Closure Criteria				10	50	-	-	1,000	-	2,500	20,000

Laboratory analytical reports are provided as Appendix B.

SUMMARY OF FIELD ACTIVITIES

Impacted soil within the release margins was excavated and temporarily stockpiled on-site, atop an impermeable liner, pending final disposition. The floor and sidewalls of the excavated area were advanced until laboratory analytical results from confirmation soil samples indicated TPH concentrations were below the NMOCD closure criteria. Upon excavating impacted soil from within the release margins to depths of eight (8) ft. bgs. and nine (9) ft. bgs. (see Figures 2A and Figure 2B), nineteen (19) confirmation composite soil samples were collected from the floor and sidewalls of the excavated area representing no more than 200 SqFt. The collected soil samples were submitted to the laboratory for analysis of TPH, BTEX, and chloride concentrations. Analytical results indicated that soil sample FL-8 @ 8' exhibited TPH concentrations in exceedance of NMOCD closure criteria. The area represented by this sample was excavated to a depth of nine (9) ft. bgs., and an additional composite soil sample (FL-8b @ 9') representing no more than 200 SqFt. was collected and submitted for analysis of TPH, BTEX, and chloride concentrations. Soil Sample Location Maps are provided as Figures 2A and 2B. Upon receiving laboratory analytical data showing samples were below NMOCD closure criteria, impacted soil was transported under manifest to a NMOCD-approved disposal facility and the excavated area was backfilled with locally sourced, non-impacted "like" material. A table summarizing laboratory analytical results from confirmation soil samples is provided below:

Concentrations of Benzene, BTEX, and/or TPH in Soil											
Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					4500 C-B
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C ₆ -C ₁₀ (mg/kg)	DRO C ₁₀ -C ₂₈ (mg/kg)	GRO + DRO C ₆ -C ₂₈ (mg/kg)	ORO C ₂₈ -C ₃₅ (mg/kg)	TPH C ₆ -C ₃₅ (mg/kg)	Chloride (mg/kg)
FL-1 @ 8'	8/6/2019	8'	In-Situ	<0.0003	<0.0003	<15.0	59.6	59.6	<25.0	59.6	10.2
FL-2 @ 8'	8/6/2019	8'	In-Situ	<0.0003	<0.0003	<15.0	34.4	34.4	<25.0	34.4	10.0
FL-3 @ 8'	8/6/2019	8'	In-Situ	<0.0003	<0.0003	<15.0	<25.0	<25.0	<25.0	<15.0	6.69
FL-4 @ 8'	8/6/2019	8'	In-Situ	<0.0003	<0.0003	<15.0	46.5	46.5	<25.0	46.5	18.9
FL-5 @ 8'	8/6/2019	8'	In-Situ	<0.0003	<0.0003	<15.0	49.4	49.4	<25.0	49.4	8.22
FL-6 @ 8'	8/6/2019	8'	In-Situ	<0.0003	<0.0003	<15.0	212	212	78.9	291	18.4
FL-7 @ 8'	8/6/2019	8'	In-Situ	<0.0003	<0.0003	<15.0	154	154	35.4	189	4.47
FL-8 @ 8'	8/6/2019	8'	Excavated	<0.0003	<0.0003	66.5	3,020	3,087	565	3,652	10.7
FL-8b @ 9'	9/3/2019	9'	In-Situ	<0.0003	<0.0003	<15.0	258	258	64.2	322	33.8
FL-9 @ 9'	8/6/2019	9'	In-Situ	<0.0003	<0.0003	<15.0	72.3	72.3	<25.0	72.3	20.1
W1	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	26.3	26.3	<25.0	26.3	3.96
W2	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	<25.0	<25.0	<25.0	<15.0	1.55
W3	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	<25.0	<25.0	<25.0	<15.0	2.42
W4	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	293	293	66.5	360	3.50
W5	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	292	292	49.0	341	4.02
W6	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	33.1	33.1	<25.0	33.1	13.1
W7	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	<25.0	<25.0	<25.0	<15.0	21.7
W8	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	189	189	42.7	232	15.0
W9	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	<25.0	<25.0	<25.0	<15.0	13.4
W10	8/6/2019	-	In-Situ	<0.0003	<0.0003	<15.0	<25.0	<25.0	<25.0	<15.0	2.46
Closure Criteria				10	50	-	-	1,000	-	2,500	20,000

SITE CLOSURE REQUEST

Based on laboratory analytical results from soil samples collected during the final site assessment, impacted soil within the release margins has been determined to be remediated below the Table I of 19.15.29.12 NMAC Closure Criteria for soils impacted by the Release. Tasman on behalf of Plains, respectfully requests the NMOCD grant closure approval for the Former Lusk Station Historical which was discovered on June 17, 2019.

RESTORATION, RECLAMATION AND RE-VEGETATION

Areas affected by the Release and associated remediation activities were substantially restored to the condition which existed prior to the Release to the maximum extent practicable. Excavated areas were backfilled with locally sourced, non-impacted "like" material. The affected area was contoured and/or compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable. Revegetation will commence during next ideal planting period with New Mexico State Land Office (NMSLO) approved "Peyote and Maljamar soils mixture" at the prescribed pounds per live seed (PLS) per acre. If after one growing season the vegetation is not established, revegetation efforts will be repeated until successful as determined by the NMSLO.

If you have any questions, or if additional information is required, please feel free to contact Amber Groves or the undersigned by phone or email.

Respectfully,

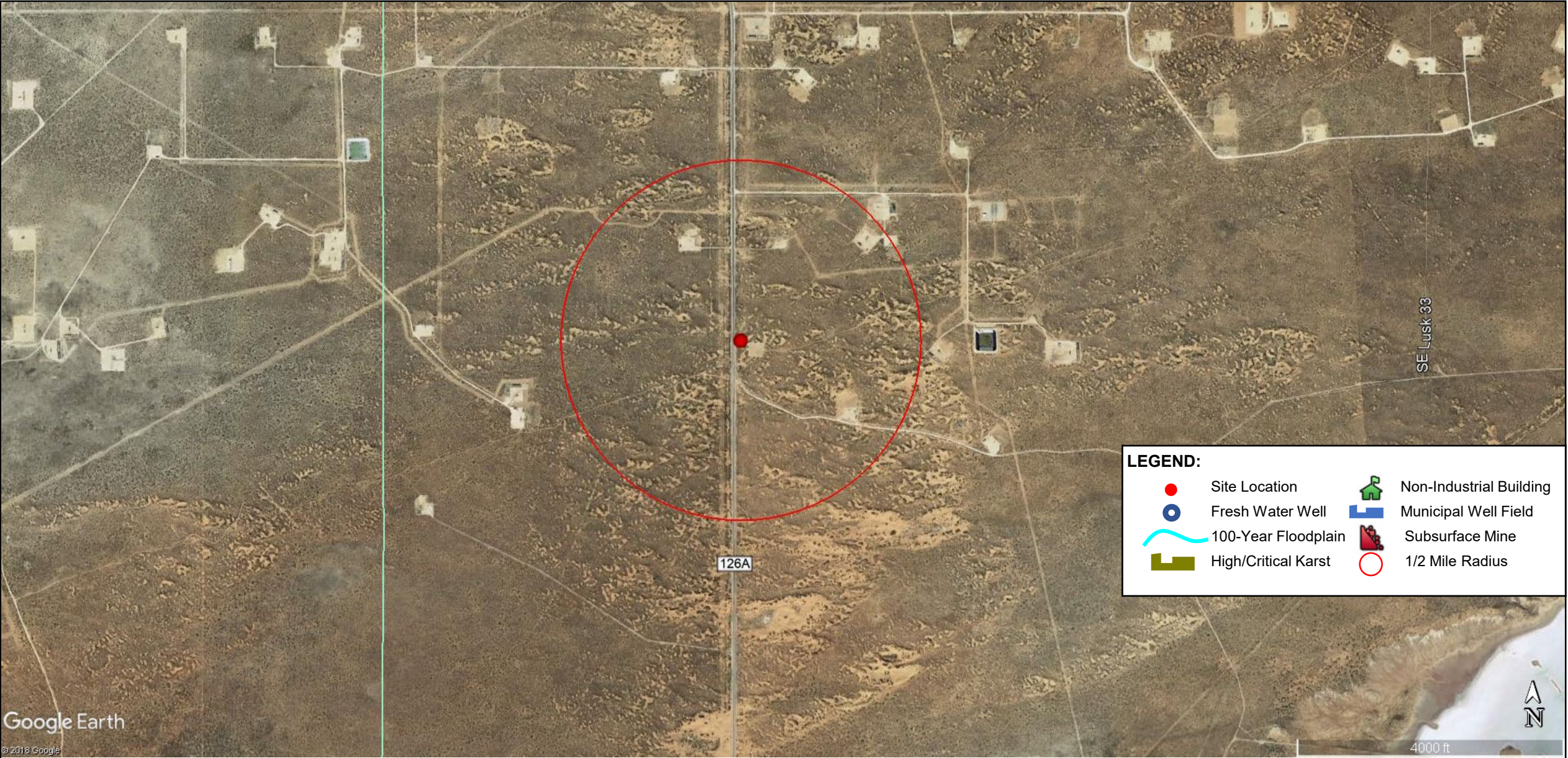


Zach Conder
Program Manager
zconder@tasman-geo.com
(806) 724-5943

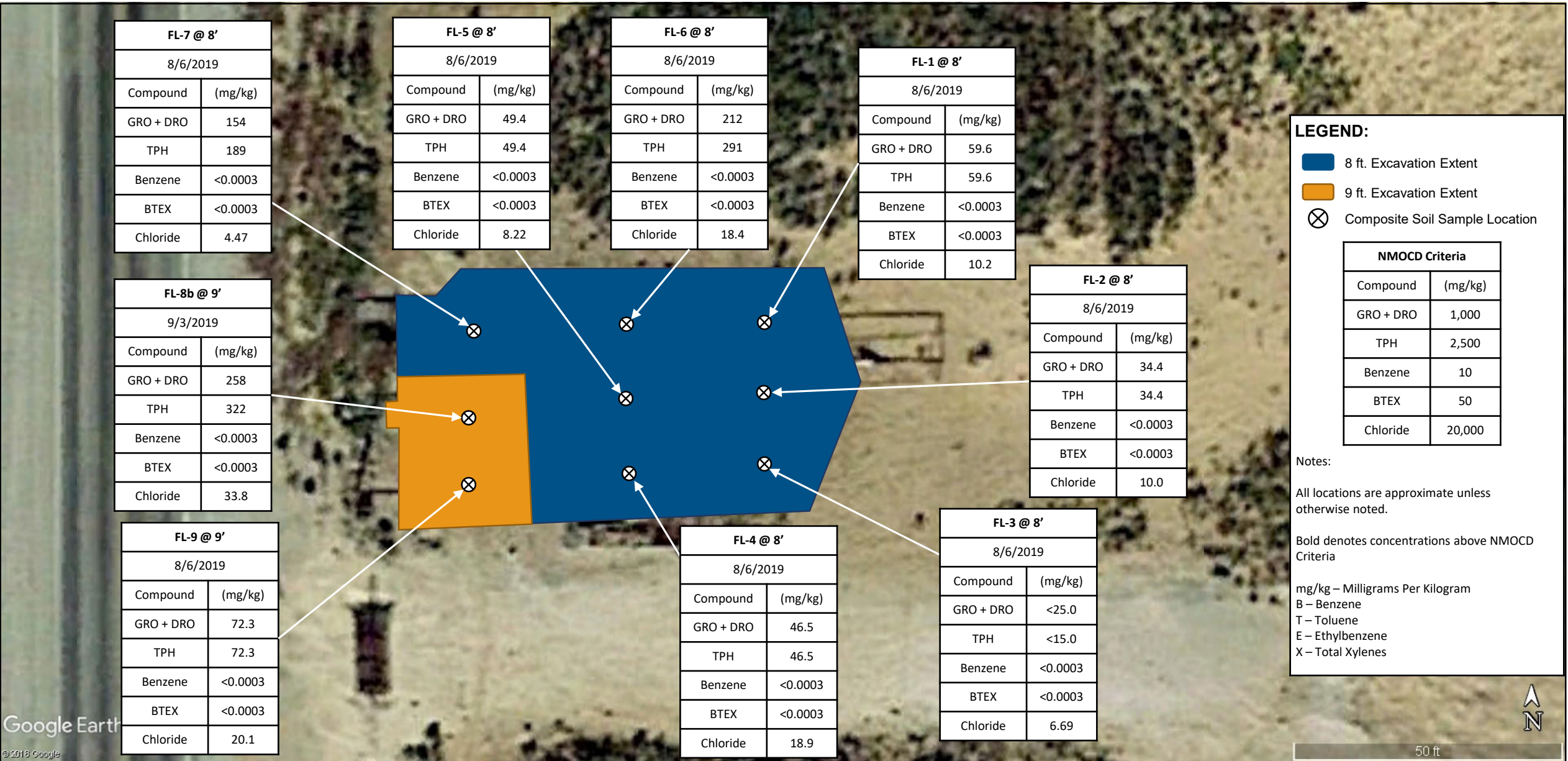
Amber Groves
Environmental Coordinator
algroves@paalp.com
(575) 200-5517

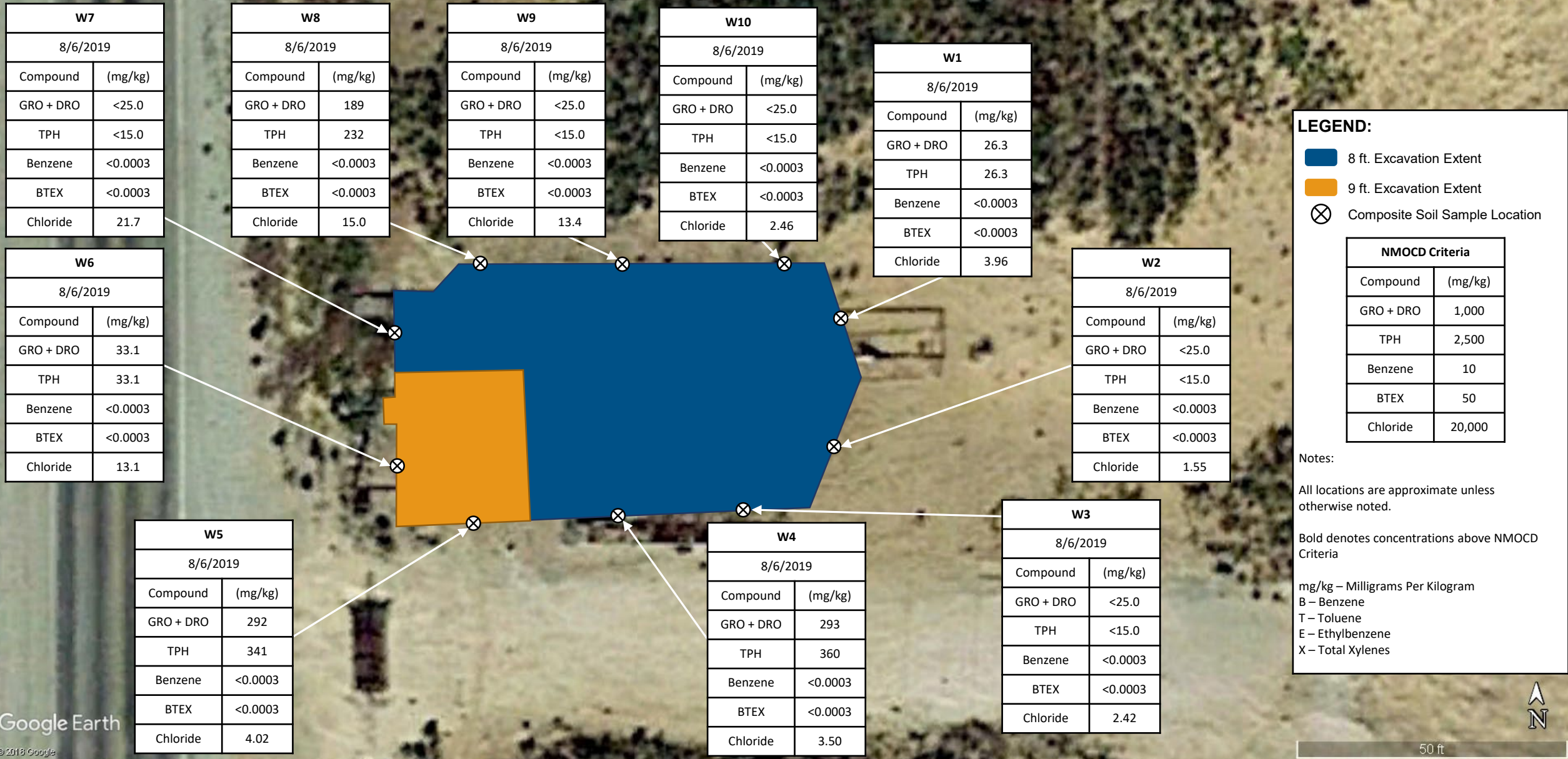
Attachments:	Figure 1:	Site Characteristics Map
	Figure 2A:	Soil Sample Location Map (Floors)
	Figure 2B:	Soil Sample Location Map (Walls)
	Appendix A:	Depth to Ground Water Information
	Appendix B:	Laboratory Analytical Results
	Appendix C:	Photo Documentation
	Appendix D:	Initial C-141

Figures



DATE: Sept 2019	 Tasman Geosciences, Inc. 2620 W. Marland Blvd. Hobbs, NM 88240	Plains Pipeline, LP Former Lusk Station Historical GPS: 32.611006, -103.796745 UL "M", Section 32, Township 19 South, Range 32 East Lea County, New Mexico	Site Characteristics Map	Figure 1
DESIGNED BY: ZC				
DRAWN BY: BD				





Appendix A: Depth to Groundwater Results



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

No records found.

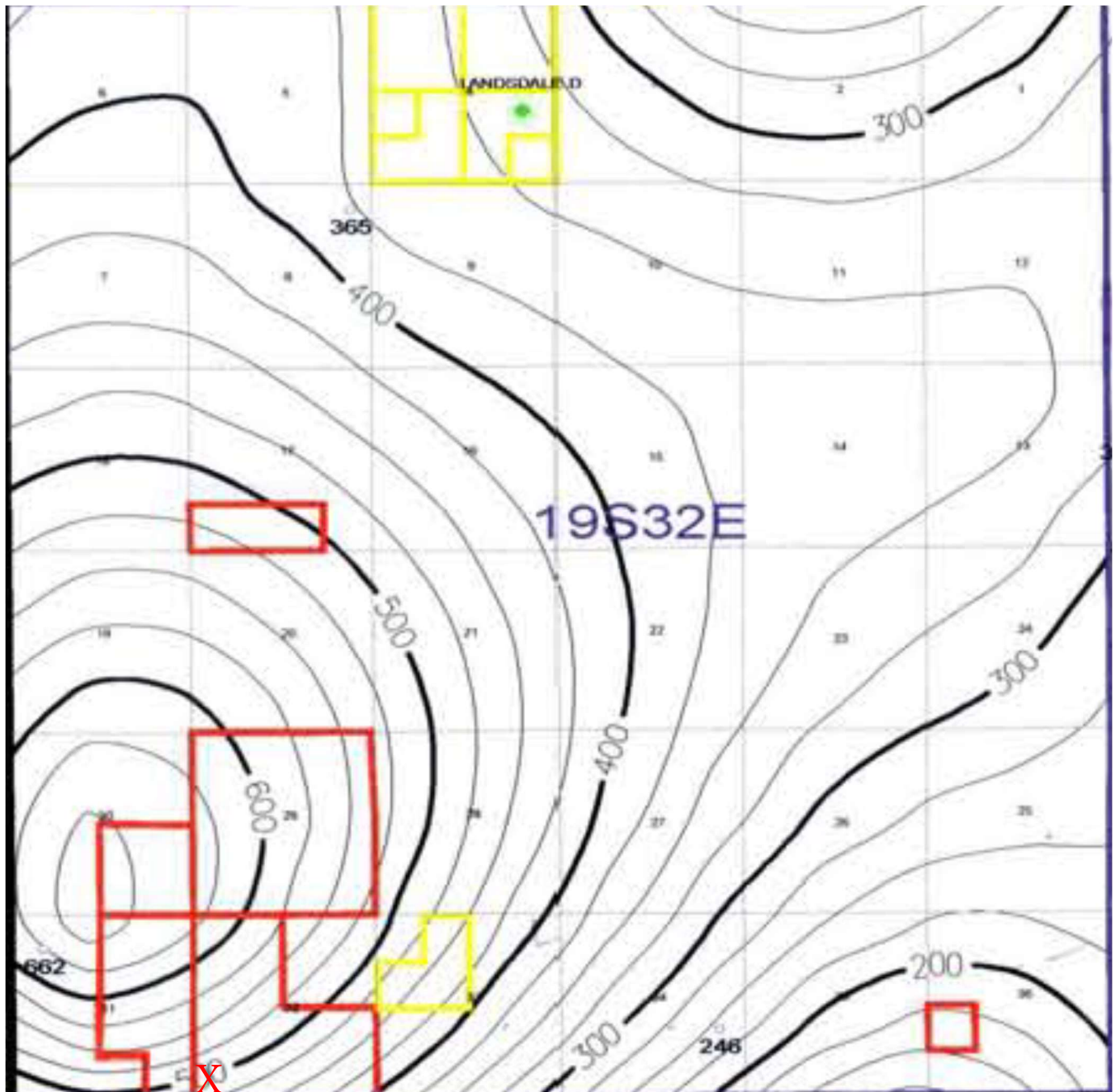
UTMNAD83 Radius Search (in meters):

Easting (X): 612900

Northing (Y): 3608803

Radius: 1700

Exert of 2005 ChevronTexaco Ground Water Trend Map



Site Location

Appendix B: Laboratory Analytical Reports



Certificate of Analysis Summary 625369

Tasman Geosciences, LLC, Hobbs, NM

Project Name: Lusk



Project Id:

Contact: Zach Conder

Project Location:

Date Received in Lab: Thu May-23-19 11:15 am

Report Date: 03-JUN-19

Project Manager: John Builes

Analysis Requested	Lab Id:	625369-001	625369-002	625369-003	625369-004	625369-005	625369-006
	Field Id:	1HA @ 5	1HA @ 4'	2HA @ 5	2HA @ 4'	3HA @ 5	3HA @ 1'
	Depth:	5-	4-	5-	4-	5-	1-
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	May-21-19 09:00	May-21-19 09:10	May-21-19 09:20	May-21-19 09:30	May-21-19 09:40	May-21-19 09:50
BTEX by EPA 8021	Extracted:	May-30-19 16:30	May-30-19 16:30	May-30-19 16:30	May-30-19 16:30	May-30-19 16:30	May-30-19 16:30
	Analyzed:	May-31-19 14:16	May-31-19 14:35	May-31-19 14:54	May-31-19 15:13	May-31-19 15:32	May-31-19 15:51
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000383 0.00199	<0.000386 0.00201	<0.000383 0.00199	<0.000386 0.00200	<0.000384 0.00200	<0.000386 0.00201
Toluene		<0.000454 0.00199	<0.000457 0.00201	<0.000453 0.00199	<0.000457 0.00200	<0.000455 0.00200	<0.000457 0.00201
Ethylbenzene		<0.000563 0.00199	<0.000567 0.00201	<0.000561 0.00199	<0.000566 0.00200	<0.000564 0.00200	<0.000567 0.00201
m_p-Xylenes		<0.00101 0.00398	<0.00102 0.00402	<0.00101 0.00398	<0.00102 0.00401	<0.00101 0.00399	<0.00102 0.00402
o-Xylene		<0.000343 0.00199	<0.000346 0.00201	<0.000342 0.00199	<0.000345 0.00200	<0.000344 0.00200	<0.000346 0.00201
Xylenes, Total		<0.000343 0.00199	<0.000346 0.00201	<0.000342 0.00199	<0.000345 0.00200	<0.000344 0.00200	<0.000346 0.00201
Total BTEX		<0.000343 0.00199	<0.000346 0.00201	<0.000342 0.00199	<0.000345 0.00200	<0.000344 0.00200	<0.000346 0.00201
Chloride by EPA 300	Extracted:					May-24-19 14:50	
	Analyzed:					May-24-19 20:16	
	Units/RL:					mg/kg RL	
Chloride						20.8 X 4.99	
TPH By SW8015 Mod	Extracted:	May-27-19 08:00	May-27-19 08:00	May-27-19 08:00	May-27-19 08:00	May-27-19 08:00	May-27-19 08:00
	Analyzed:	May-28-19 09:27	May-28-19 09:52	May-28-19 10:17	May-28-19 10:42	May-28-19 11:06	May-28-19 11:31
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		14.5 J 15.0	14.5 J 14.9	13.6 J 15.0	17.1 15.0	13.8 J 15.0	11.3 J 15.0
Diesel Range Organics (DRO)		250 15.0	976 14.9	607 15.0	993 15.0	1850 15.0	983 15.0
Motor Oil Range Hydrocarbons (MRO)		41.2 15.0	105 14.9	135 15.0	116 15.0	254 15.0	177 15.0
Total TPH		306 15.0	1100 14.9	756 15.0	1130 15.0	2120 15.0	1170 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

John Builes
Project Manager



Certificate of Analysis Summary 625369

Tasman Geosciences, LLC, Hobbs, NM

Project Name: Lusk



Project Id:

Contact: Zach Conder

Project Location:

Date Received in Lab: Thu May-23-19 11:15 am

Report Date: 03-JUN-19

Project Manager: John Builes

Analysis Requested	Lab Id:	625369-007	625369-008	625369-009			
	Field Id:	3HA @ 2'	3HA @ 3'	3HA @ 4'			
	Depth:	2-	3-	4-			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-21-19 10:00	May-21-19 10:10	May-21-19 10:20			
BTEX by EPA 8021	Extracted:	May-30-19 16:30	May-30-19 16:30	May-30-19 16:30			
	Analyzed:	May-31-19 16:10	May-31-19 16:29	May-31-19 16:48			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.000383 0.00199	<0.000383 0.00199	<0.000387 0.00201			
Toluene		<0.000453 0.00199	0.00639 0.00199	0.0108 0.00201			
Ethylbenzene		<0.000561 0.00199	<0.000563 0.00199	0.0182 0.00201			
m_p-Xylenes		<0.00101 0.00398	0.0494 0.00398	0.0650 0.00402			
o-Xylene		<0.000342 0.00199	0.00484 0.00199	0.00626 0.00201			
Xylenes, Total		<0.000342 0.00199	0.0542 0.00199	0.0713 0.00201			
Total BTEX		<0.000342 0.00199	0.0606 0.00199	0.100 0.00201			
Chloride by EPA 300	Extracted:			May-24-19 14:50			
	Analyzed:			May-24-19 20:32			
	Units/RL:			mg/kg RL			
Chloride				<0.864 5.03			
TPH By SW8015 Mod	Extracted:	May-27-19 08:00	May-27-19 08:00	May-27-19 08:00			
	Analyzed:	May-28-19 11:56	May-28-19 12:21	May-28-19 12:46			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		14.7 J 15.0	495 74.8	384 15.0			
Diesel Range Organics (DRO)		567 15.0	7060 74.8	4150 15.0			
Motor Oil Range Hydrocarbons (MRO)		146 15.0	562 74.8	284 15.0			
Total TPH		728 15.0	8120 74.8	4820 15.0			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

John Builes
Project Manager

Analytical Report 625369

for
Tasman Geosciences, LLC

Project Manager: Zach Conder
Lusk

03-JUN-19

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



03-JUN-19

Project Manager: **Zach Conder**
Tasman Geosciences, LLC
2620 W. Marland Blvd.
Hobbs, NM 88240

Reference: XENCO Report No(s): **625369**

Lusk

Project Address:

Zach Conder:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 625369. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 625369 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

John Builes

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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Sample Cross Reference 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
1HA @ 5	S	05-21-19 09:00	5	625369-001
1HA @ 4'	S	05-21-19 09:10	4	625369-002
2HA @ 5	S	05-21-19 09:20	5	625369-003
2HA @ 4'	S	05-21-19 09:30	4	625369-004
3HA @ 5	S	05-21-19 09:40	5	625369-005
3HA @ 1'	S	05-21-19 09:50	1	625369-006
3HA @ 2'	S	05-21-19 10:00	2	625369-007
3HA @ 3'	S	05-21-19 10:10	3	625369-008
3HA @ 4'	S	05-21-19 10:20	4	625369-009



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Lusk*

Project ID:
Work Order Number(s): 625369

Report Date: 03-JUN-19
Date Received: 05/23/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformance and comments:

None

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3090214 Inorganic Anions by EPA 300

Lab Sample ID 625373-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 625369-005, -009.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3090430 TPH By SW8015 Mod

Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected;

Samples affected are: 625369-003, 625369-001.

Surrogate 1-Chlorooctane recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 625369-005.

Surrogate o-Terphenyl recovered above QC limits. Samples affected are: 7678730-1-BKS, 625369-008.

Batch: LBA-3090687 BTEX by EPA 8021

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 625369-001.



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 1HA @ 5
Lab Sample Id: 625369-001

Matrix: Soil
Date Collected: 05.21.19 09.00

Date Received: 05.23.19 11.15
Sample Depth: 5

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090430

Date Prep: 05.27.19 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	14.5	15.0	7.98	mg/kg	05.28.19 09.27	J	1
Diesel Range Organics (DRO)	C10C28DRO	250	15.0	8.10	mg/kg	05.28.19 09.27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	41.2	15.0	8.10	mg/kg	05.28.19 09.27		1
Total TPH	PHC635	306	15.0	7.98	mg/kg	05.28.19 09.27		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	103	%	70-135	05.28.19 09.27			
o-Terphenyl	84-15-1	67	%	70-135	05.28.19 09.27	**		

Analytical Method: BTEX by EPA 8021
Tech: SCM
Analyst: SCM
Seq Number: 3090687

Date Prep: 05.30.19 16.30

Prep Method: SW5030B
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	05.31.19 14.16	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	05.31.19 14.16	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	05.31.19 14.16	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	05.31.19 14.16	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	05.31.19 14.16	U	1
Xylenes, Total	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	05.31.19 14.16	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	05.31.19 14.16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	145	%	70-130	05.31.19 14.16	**		
1,4-Difluorobenzene	540-36-3	93	%	70-130	05.31.19 14.16			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 1HA @ 4'

Matrix: Soil

Date Received: 05.23.19 11.15

Lab Sample Id: 625369-002

Date Collected: 05.21.19 09.10

Sample Depth: 4

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.27.19 08.00

Basis: Wet Weight

Seq Number: 3090430

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	14.5	14.9	7.97	mg/kg	05.28.19 09.52	J	1
Diesel Range Organics (DRO)	C10C28DRO	976	14.9	8.10	mg/kg	05.28.19 09.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	105	14.9	8.10	mg/kg	05.28.19 09.52		1
Total TPH	PHC635	1100	14.9	7.97	mg/kg	05.28.19 09.52		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	100	%	70-135	05.28.19 09.52			
o-Terphenyl	84-15-1	88	%	70-135	05.28.19 09.52			

Analytical Method: BTEX by EPA 8021

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.30.19 16.30

Basis: Wet Weight

Seq Number: 3090687

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	05.31.19 14.35	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	05.31.19 14.35	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	05.31.19 14.35	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	05.31.19 14.35	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	05.31.19 14.35	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	05.31.19 14.35	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	05.31.19 14.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	95	%	70-130	05.31.19 14.35			
4-Bromofluorobenzene	460-00-4	128	%	70-130	05.31.19 14.35			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 2HA @ 5
Lab Sample Id: 625369-003

Matrix: Soil
Date Collected: 05.21.19 09.20

Date Received: 05.23.19 11.15
Sample Depth: 5

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090430

Date Prep: 05.27.19 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	13.6	15.0	7.99	mg/kg	05.28.19 10.17	J	1
Diesel Range Organics (DRO)	C10C28DRO	607	15.0	8.11	mg/kg	05.28.19 10.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	135	15.0	8.11	mg/kg	05.28.19 10.17		1
Total TPH	PHC635	756	15.0	7.99	mg/kg	05.28.19 10.17		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	83	%	70-135	05.28.19 10.17			
o-Terphenyl	84-15-1	61	%	70-135	05.28.19 10.17	**		

Analytical Method: BTEX by EPA 8021
Tech: SCM
Analyst: SCM
Seq Number: 3090687

Date Prep: 05.30.19 16.30

Prep Method: SW5030B
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	05.31.19 14.54	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	05.31.19 14.54	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	05.31.19 14.54	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	05.31.19 14.54	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	05.31.19 14.54	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	05.31.19 14.54	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	05.31.19 14.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	104	%	70-130	05.31.19 14.54			
1,4-Difluorobenzene	540-36-3	99	%	70-130	05.31.19 14.54			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 2HA @ 4'
Lab Sample Id: 625369-004

Matrix: Soil
Date Collected: 05.21.19 09.30

Date Received: 05.23.19 11.15
Sample Depth: 4

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090430

Date Prep: 05.27.19 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	17.1	15.0	8.00	mg/kg	05.28.19 10.42		1
Diesel Range Organics (DRO)	C10C28DRO	993	15.0	8.13	mg/kg	05.28.19 10.42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	116	15.0	8.13	mg/kg	05.28.19 10.42		1
Total TPH	PHC635	1130	15.0	8.00	mg/kg	05.28.19 10.42		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	115	%	70-135	05.28.19 10.42			
o-Terphenyl	84-15-1	105	%	70-135	05.28.19 10.42			

Analytical Method: BTEX by EPA 8021
Tech: SCM
Analyst: SCM
Seq Number: 3090687

Date Prep: 05.30.19 16.30

Prep Method: SW5030B
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	05.31.19 15.13	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	05.31.19 15.13	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	05.31.19 15.13	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	05.31.19 15.13	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	05.31.19 15.13	U	1
Xylenes, Total	1330-20-7	<0.000345	0.00200	0.000345	mg/kg	05.31.19 15.13	U	1
Total BTEX		<0.000345	0.00200	0.000345	mg/kg	05.31.19 15.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	97	%	70-130	05.31.19 15.13			
4-Bromofluorobenzene	460-00-4	111	%	70-130	05.31.19 15.13			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 3HA @ 5
Lab Sample Id: 625369-005

Matrix: Soil
Date Collected: 05.21.19 09.40

Date Received: 05.23.19 11.15
Sample Depth: 5

Analytical Method: Chloride by EPA 300
Tech: CHE
Analyst: CHE
Seq Number: 3090214

Date Prep: 05.24.19 14.50

Prep Method: E300P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	20.8	4.99	0.857	mg/kg	05.24.19 20.16	X	1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090430

Date Prep: 05.27.19 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	13.8	15.0	7.99	mg/kg	05.28.19 11.06	J	1
Diesel Range Organics (DRO)	C10C28DRO	1850	15.0	8.11	mg/kg	05.28.19 11.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	254	15.0	8.11	mg/kg	05.28.19 11.06		1
Total TPH	PHC635	2120	15.0	7.99	mg/kg	05.28.19 11.06		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	65	%	70-135	05.28.19 11.06	**		
o-Terphenyl	84-15-1	74	%	70-135	05.28.19 11.06			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 3HA @ 5
Lab Sample Id: 625369-005

Matrix: Soil
Date Collected: 05.21.19 09.40

Date Received: 05.23.19 11.15
Sample Depth: 5

Analytical Method: BTEX by EPA 8021

Tech: SCM

Analyst: SCM

Seq Number: 3090687

Date Prep: 05.30.19 16.30

Prep Method: SW5030B

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	05.31.19 15.32	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	05.31.19 15.32	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	05.31.19 15.32	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	05.31.19 15.32	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	05.31.19 15.32	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	05.31.19 15.32	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	05.31.19 15.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	100	%	70-130	05.31.19 15.32			
4-Bromofluorobenzene	460-00-4	100	%	70-130	05.31.19 15.32			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 3HA @ 1'
Lab Sample Id: 625369-006

Matrix: Soil
Date Collected: 05.21.19 09.50

Date Received: 05.23.19 11.15
Sample Depth: 1

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090430

Date Prep: 05.27.19 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	11.3	15.0	7.99	mg/kg	05.28.19 11.31	J	1
Diesel Range Organics (DRO)	C10C28DRO	983	15.0	8.12	mg/kg	05.28.19 11.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	177	15.0	8.12	mg/kg	05.28.19 11.31		1
Total TPH	PHC635	1170	15.0	7.99	mg/kg	05.28.19 11.31		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	85	%	70-135	05.28.19 11.31			
o-Terphenyl	84-15-1	74	%	70-135	05.28.19 11.31			

Analytical Method: BTEX by EPA 8021
Tech: SCM
Analyst: SCM
Seq Number: 3090687

Date Prep: 05.30.19 16.30

Prep Method: SW5030B
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	05.31.19 15.51	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	05.31.19 15.51	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	05.31.19 15.51	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	05.31.19 15.51	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	05.31.19 15.51	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	05.31.19 15.51	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	05.31.19 15.51	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	88	%	70-130	05.31.19 15.51			
4-Bromofluorobenzene	460-00-4	116	%	70-130	05.31.19 15.51			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 3HA @ 2'
Lab Sample Id: 625369-007

Matrix: Soil
Date Collected: 05.21.19 10.00

Date Received: 05.23.19 11.15
Sample Depth: 2

Analytical Method: TPH By SW8015 Mod
Tech: ARM
Analyst: ARM
Seq Number: 3090430

Date Prep: 05.27.19 08.00

Prep Method: TX1005P
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	14.7	15.0	7.99	mg/kg	05.28.19 11.56	J	1
Diesel Range Organics (DRO)	C10C28DRO	567	15.0	8.12	mg/kg	05.28.19 11.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	146	15.0	8.12	mg/kg	05.28.19 11.56		1
Total TPH	PHC635	728	15.0	7.99	mg/kg	05.28.19 11.56		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1-Chlorooctane	111-85-3	99	%	70-135	05.28.19 11.56			
o-Terphenyl	84-15-1	93	%	70-135	05.28.19 11.56			

Analytical Method: BTEX by EPA 8021
Tech: SCM
Analyst: SCM
Seq Number: 3090687

Date Prep: 05.30.19 16.30

Prep Method: SW5030B
% Moisture:
Basis: Wet Weight

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	05.31.19 16.10	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	05.31.19 16.10	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	05.31.19 16.10	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	05.31.19 16.10	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	05.31.19 16.10	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	05.31.19 16.10	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	05.31.19 16.10	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	107	%	70-130	05.31.19 16.10			
1,4-Difluorobenzene	540-36-3	97	%	70-130	05.31.19 16.10			



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 3HA @ 3'

Matrix: Soil

Date Received: 05.23.19 11.15

Lab Sample Id: 625369-008

Date Collected: 05.21.19 10.10

Sample Depth: 3

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.27.19 08.00

Basis: Wet Weight

Seq Number: 3090430

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	495	74.8	39.9	mg/kg	05.28.19 12.21		5
Diesel Range Organics (DRO)	C10C28DRO	7060	74.8	40.5	mg/kg	05.28.19 12.21		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	562	74.8	40.5	mg/kg	05.28.19 12.21		5
Total TPH	PHC635	8120	74.8	39.9	mg/kg	05.28.19 12.21		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	05.28.19 12.21	
o-Terphenyl	84-15-1	147	%	70-135	05.28.19 12.21	**

Analytical Method: BTEX by EPA 8021

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.30.19 16.30

Basis: Wet Weight

Seq Number: 3090687

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	05.31.19 16.29	U	1
Toluene	108-88-3	0.00639	0.00199	0.000454	mg/kg	05.31.19 16.29		1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	05.31.19 16.29	U	1
m_p-Xylenes	179601-23-1	0.0494	0.00398	0.00101	mg/kg	05.31.19 16.29		1
o-Xylene	95-47-6	0.00484	0.00199	0.000343	mg/kg	05.31.19 16.29		1
Xylenes, Total	1330-20-7	0.0542	0.00199	0.000343	mg/kg	05.31.19 16.29		1
Total BTEX		0.0606	0.00199	0.000343	mg/kg	05.31.19 16.29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	150	%	70-130	05.31.19 16.29	**
1,4-Difluorobenzene	540-36-3	80	%	70-130	05.31.19 16.29	



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 3HA @ 4'

Matrix: Soil

Date Received: 05.23.19 11.15

Lab Sample Id: 625369-009

Date Collected: 05.21.19 10.20

Sample Depth: 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 05.24.19 14.50

Basis: Wet Weight

Seq Number: 3090214

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<0.864	5.03	0.864	mg/kg	05.24.19 20.32	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 05.27.19 08.00

Basis: Wet Weight

Seq Number: 3090430

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	384	15.0	7.99	mg/kg	05.28.19 12.46		1
Diesel Range Organics (DRO)	C10C28DRO	4150	15.0	8.11	mg/kg	05.28.19 12.46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	284	15.0	8.11	mg/kg	05.28.19 12.46		1
Total TPH	PHC635	4820	15.0	7.99	mg/kg	05.28.19 12.46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.28.19 12.46	
o-Terphenyl	84-15-1	89	%	70-135	05.28.19 12.46	



Certificate of Analytical Results 625369



Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 3HA @ 4'

Matrix: Soil

Date Received: 05.23.19 11.15

Lab Sample Id: 625369-009

Date Collected: 05.21.19 10.20

Sample Depth: 4

Analytical Method: BTEX by EPA 8021

Prep Method: SW5030B

Tech: SCM

% Moisture:

Analyst: SCM

Date Prep: 05.30.19 16.30

Basis: Wet Weight

Seq Number: 3090687

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	05.31.19 16.48	U	1
Toluene	108-88-3	0.0108	0.00201	0.000458	mg/kg	05.31.19 16.48		1
Ethylbenzene	100-41-4	0.0182	0.00201	0.000568	mg/kg	05.31.19 16.48		1
m_p-Xylenes	179601-23-1	0.0650	0.00402	0.00102	mg/kg	05.31.19 16.48		1
o-Xylene	95-47-6	0.00626	0.00201	0.000346	mg/kg	05.31.19 16.48		1
Xylenes, Total	1330-20-7	0.0713	0.00201	0.000346	mg/kg	05.31.19 16.48		1
Total BTEX		0.100	0.00201	0.000346	mg/kg	05.31.19 16.48		1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	92		%	70-130	05.31.19 16.48		
4-Bromofluorobenzene	460-00-4	127		%	70-130	05.31.19 16.48		

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



QC Summary 625369

Tasman Geosciences, LLC Lusk

Analytical Method: Chloride by EPA 300

Seq Number: 3090214

MB Sample Id: 7678581-1-BLK

Matrix: Solid

LCS Sample Id: 7678581-1-BKS

Prep Method: E300P

Date Prep: 05.24.19

LCSD Sample Id: 7678581-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	258	103	260	104	90-110	1	20	mg/kg	05.24.19 20:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3090214

Parent Sample Id: 625369-005

Matrix: Soil

MS Sample Id: 625369-005 S

Prep Method: E300P

Date Prep: 05.24.19

MSD Sample Id: 625369-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	20.8	250	298	111	287	106	90-110	4	20	mg/kg	05.24.19 20:21	X

Analytical Method: Chloride by EPA 300

Seq Number: 3090214

Parent Sample Id: 625373-006

Matrix: Soil

MS Sample Id: 625373-006 S

Prep Method: E300P

Date Prep: 05.24.19

MSD Sample Id: 625373-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	166	252	432	106	431	105	90-110	0	20	mg/kg	05.24.19 21:33	

Analytical Method: TPH By SW8015 Mod

Seq Number: 3090430

MB Sample Id: 7678730-1-BLK

Matrix: Solid

LCS Sample Id: 7678730-1-BKS

Prep Method: TX1005P

Date Prep: 05.27.19

LCSD Sample Id: 7678730-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1120	112	1170	117	70-135	4	20	mg/kg	05.28.19 03:11	
Diesel Range Organics (DRO)	<8.13	1000	1160	116	1190	119	70-135	3	20	mg/kg	05.28.19 03:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	120		120		122		70-135	%	05.28.19 03:11
o-Terphenyl	118		144	**	126		70-135	%	05.28.19 03:11

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
 A = Parent Result
 C = MS/LCS Result
 E = MSD/LCSD Result

MS = Matrix Spike
 B = Spike Added
 D = MSD/LCSD % Rec



QC Summary 625369

Tasman Geosciences, LLC

Lusk

Analytical Method: TPH By SW8015 Mod

Seq Number: 3090430

Parent Sample Id: 625376-004

Matrix: Soil

MS Sample Id: 625376-004 S

Prep Method: TX1005P

Date Prep: 05.27.19

MSD Sample Id: 625376-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	14.1	998	1230	122	1240	123	70-135	1	20	mg/kg	05.28.19 05:41	
Diesel Range Organics (DRO)	17.3	998	1200	119	1210	119	70-135	1	20	mg/kg	05.28.19 05:41	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1-Chlorooctane			116		116		70-135			%	05.28.19 05:41	
o-Terphenyl			122		127		70-135			%	05.28.19 05:41	

Analytical Method: BTEX by EPA 8021

Seq Number: 3090687

MB Sample Id: 7678919-1-BLK

Matrix: Solid

LCS Sample Id: 7678919-1-BKS

Prep Method: SW5030B

Date Prep: 05.30.19

LCSD Sample Id: 7678919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0924	93	0.0891	89	70-130	4	35	mg/kg	05.31.19 08:00	
Toluene	<0.000455	0.0998	0.0919	92	0.0930	93	70-130	1	35	mg/kg	05.31.19 08:00	
Ethylbenzene	<0.000564	0.0998	0.103	103	0.103	103	70-130	0	35	mg/kg	05.31.19 08:00	
m_p-Xylenes	<0.00101	0.200	0.213	107	0.219	110	70-130	3	35	mg/kg	05.31.19 08:00	
o-Xylene	<0.000344	0.0998	0.104	104	0.107	107	70-130	3	35	mg/kg	05.31.19 08:00	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	103		90		89		70-130			%	05.31.19 08:00	
4-Bromofluorobenzene	105		102		104		70-130			%	05.31.19 08:00	

Analytical Method: BTEX by EPA 8021

Seq Number: 3090687

Parent Sample Id: 625912-001

Matrix: Soil

MS Sample Id: 625912-001 S

Prep Method: SW5030B

Date Prep: 05.30.19

MSD Sample Id: 625912-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0511	51	0.0518	51	70-130	1	35	mg/kg	05.31.19 08:38	X
Toluene	<0.000454	0.0996	0.0301	30	0.0282	28	70-130	7	35	mg/kg	05.31.19 08:38	X
Ethylbenzene	0.00260	0.0996	0.0174	15	0.0179	15	70-130	3	35	mg/kg	05.31.19 08:38	X
m_p-Xylenes	0.00425	0.199	0.0356	16	0.0361	16	70-130	1	35	mg/kg	05.31.19 08:38	X
o-Xylene	0.00219	0.0996	0.0176	15	0.0171	15	70-130	3	35	mg/kg	05.31.19 08:38	X
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene			93		95		70-130			%	05.31.19 08:38	
4-Bromofluorobenzene			103		103		70-130			%	05.31.19 08:38	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Setting the Standard since 1990
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Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xentco.com

[illegible]

ORIGIN ID: H0BA (575) 392-7550
**
MAIL SERVICES ETC, LLC
4008 N GRIMES
HOBBS, NM 88240
UNITED STATES US

SHIP DATE: 22MAY19
ACTWGT: 28.00 LB MAN
CAD: 0909328/CAFE3211
DIMS: 24x14x14 IN
BILL RECIPIENT

TO XENCO LABORATORIES
FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S
MIDLAND TX 79711

(432) 563-1800
INV:
PO:

REF:

DEPT:



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Express



THU - 23 MAY HOLD
STANDARD OVERNIGHT
HLD

TRK# 4705 2520 9291
0201

41 MAFA

MAFA
TX-US LBB





XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 05/23/2019 11:15:00 AM

Work Order #: 625369

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:



Brianna Teel

Date: 05/23/2019

Checklist reviewed by:



John Builes

Date: 05/24/2019

Analytical Report 627089

for
Tasman Geosciences, LLC

Project Manager: Zach Conder

Lusk Reclamation Site

17-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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17-JUN-19

Project Manager: **Zach Conder**
Tasman Geosciences, LLC
2620 W. Marland Blvd.
Hobbs, NM 88240

Reference: XENCO Report No(s): **627089**
Lusk Reclamation Site
Project Address: Lea County, NM

Zach Conder:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627089. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 627089 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

John Builes
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Sample Cross Reference 627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
V-1 @ 5'	S	06-05-19 00:00	5 ft	627089-001
V-1 @ 6'	S	06-05-19 00:00	6 ft	627089-002
V-1 @ 7'	S	06-05-19 00:00	7 ft	627089-003
V-2 @ 5'	S	06-05-19 00:00	5 ft	627089-004
V-2 @ 6'	S	06-05-19 00:00	6 ft	627089-005
V-2 @ 7'	S	06-05-19 00:00	7 ft	627089-006
V-2 @ 8'	S	06-05-19 00:00	8 ft	627089-007
V-2 @ 9'	S	06-05-19 00:00	9 ft	627089-008
V-2 @ 12'	S	06-05-19 00:00	12 ft	627089-009
V-2 @ 13'	S	06-05-19 00:00	13 ft	627089-010
V-3 @ S	S	06-06-19 00:00	ft	627089-011
V-3 @ 1'	S	06-06-19 00:00	1 ft	627089-012
V-3 @ 2'	S	06-06-19 00:00	2 ft	627089-013
V-3 @ 3'	S	06-06-19 00:00	3 ft	627089-014
V-3 @ 4'	S	06-06-19 00:00	4 ft	627089-015
V-3 @ 5'	S	06-06-19 00:00	5 ft	627089-016
V-4 @ S	S	06-06-19 00:00	ft	627089-017
V-4 @ 1'	S	06-06-19 00:00	1 ft	627089-018
V-4 @ 2'	S	06-06-19 00:00	2 ft	627089-019
V-4 @ 3'	S	06-06-19 00:00	3 ft	627089-020
V-4 @ 4'	S	06-06-19 00:00	4 ft	627089-021
V-4 @ 5'	S	06-06-19 00:00	5 ft	627089-022
V-4 @ 6'	S	06-06-19 00:00	6 ft	627089-023
V-5 @ S	S	06-06-19 00:00	ft	627089-024
V-5 @ 1'	S	06-06-19 00:00	1 ft	627089-025
V-5 @ 2'	S	06-06-19 00:00	2 ft	627089-026
V-5 @ 3'	S	06-06-19 00:00	3 ft	627089-027
V-5 @ 4'	S	06-06-19 00:00	4 ft	627089-028
V-5 @ 5'	S	06-06-19 00:00	5 ft	627089-029
V-5 @ 6'	S	06-06-19 00:00	6 ft	627089-030
V-5 @ 7'	S	06-06-19 00:00	7 ft	627089-031



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Lusk Reclamation Site*

Project ID:
Work Order Number(s): 627089

Report Date: 17-JUN-19
Date Received: 06/10/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3091875 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected;

Samples affected are: 627089-021 S, 627089-021.

Batch: LBA-3092130 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 627089-007, 627089-008, 627089-011, 627089-020, 627089-014, 627089-017, 627089-019, 627089-012.

Batch: LBA-3092321 BTEX by EPA 8021

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3092366 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3092423 BTEX by EPA 8021

Lab Sample ID 627089-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m_p-Xylenes, o-Xylene recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 627089-001, -002.

The Laboratory Control Sample for m_p-Xylenes, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



CASE NARRATIVE

Client Name: Tasman Geosciences, LLC

Project Name: Lusk Reclamation Site

Project ID:
Work Order Number(s): 627089

Report Date: 17-JUN-19
Date Received: 06/10/2019

Batch: LBA-3092505 BTEX by EPA 8021

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 627089-024.



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-1 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 627089-001

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091891

Date Prep: 06.11.19 08.45

Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	16.4	5.00	0.858	mg/kg	06.11.19 09:21		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	06.12.19 12:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	16.5	15.0	8.11	mg/kg	06.12.19 12:47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.12.19 12:47	U	1
Total TPH	PHC635	49.0		7.99	mg/kg	06.12.19 12:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	99	70 - 135	%		
o-Terphenyl	77	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092423

Date Prep: 06.13.19 11.00

Prep seq: 7679955

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000399	0.00200	0.000384	mg/kg	06.13.19 21:54	J	1
Toluene	108-88-3	0.000559	0.00200	0.000455	mg/kg	06.13.19 21:54	J	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.13.19 21:54	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.13.19 21:54	UX	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.13.19 21:54	UX	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.13.19 21:54	U	
Total BTEX		0.000958		0.000344	mg/kg	06.13.19 21:54	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	83	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-1 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 627089-002

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	06.12.19 14:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	21.3	15.0	8.11	mg/kg	06.12.19 14:02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.12.19 14:02	U	1
Total TPH	PHC635	48.9		7.99	mg/kg	06.12.19 14:02		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	70	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092423

Date Prep: 06.13.19 11.00

Prep seq: 7679955

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.14.19 19:30		1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.14.19 19:30		1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.14.19 19:30		1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.14.19 19:30	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.14.19 19:30	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.14.19 19:30	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.14.19 19:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-1 @ 7' Matrix: Soil Sample Depth: 7 ft
Lab Sample Id: 627089-003 Date Collected: 06.05.19 00.00 Date Received: 06.10.19 10.00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3091891 Date Prep: 06.11.19 08.45
Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.5	5.04	0.865	mg/kg	06.11.19 14:09		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3092130 Date Prep: 06.12.19 07.00
Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.97	14.9	7.97	mg/kg	06.12.19 14:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	14.9	8.10	mg/kg	06.12.19 14:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	14.9	8.10	mg/kg	06.12.19 14:26	U	1
Total TPH	PHC635	31.0		7.97	mg/kg	06.12.19 14:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	78	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: DVM % Moist: Tech: DVM
Seq Number: 3092366 Date Prep: 06.13.19 15.30
Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	06.14.19 17:19	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	06.14.19 17:19	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	06.14.19 17:19	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	06.14.19 17:19	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	06.14.19 17:19	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	06.14.19 17:19	U	
Total BTEX		<0.000347		0.000347	mg/kg	06.14.19 17:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-2 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 627089-004

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091891

Date Prep: 06.11.19 08.45

Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.853	4.97	0.853	mg/kg	06.11.19 14:24	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	95.0	15.0	7.99	mg/kg	06.13.19 09:23		1
Diesel Range Organics (DRO)	C10C28DRO	1960	15.0	8.12	mg/kg	06.13.19 09:23		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	152	15.0	8.12	mg/kg	06.13.19 09:23		1
Total TPH	PHC635	2210		7.99	mg/kg	06.13.19 09:23		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	81	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092366

Date Prep: 06.13.19 15.30

Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.14.19 18:21	U	1
Toluene	108-88-3	0.000649	0.00200	0.000455	mg/kg	06.14.19 18:21	J	1
Ethylbenzene	100-41-4	0.00238	0.00200	0.000564	mg/kg	06.14.19 18:21		1
m_p-Xylenes	179601-23-1	0.00753	0.00399	0.00101	mg/kg	06.14.19 18:21		1
o-Xylene	95-47-6	0.00357	0.00200	0.000344	mg/kg	06.14.19 18:21		1
Xylenes, Total	1330-20-7	0.0111		0.000344	mg/kg	06.14.19 18:21		
Total BTEX		0.0141		0.000344	mg/kg	06.14.19 18:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-2 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 627089-005

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	11.8	15.0	8.00	mg/kg	06.12.19 15:16	J	1
Diesel Range Organics (DRO)	C10C28DRO	265	15.0	8.13	mg/kg	06.12.19 15:16		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	24.3	15.0	8.13	mg/kg	06.12.19 15:16		1
Total TPH	PHC635	557		8.00	mg/kg	06.12.19 15:16		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	78	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092366

Date Prep: 06.13.19 15.30

Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	06.14.19 18:38	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	06.14.19 18:38	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	06.14.19 18:38	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	06.14.19 18:38	U	1
o-Xylene	95-47-6	0.00231	0.00198	0.000342	mg/kg	06.14.19 18:38		1
Xylenes, Total	1330-20-7	0.00231		0.000342	mg/kg	06.14.19 18:38		
Total BTEX		0.00231		0.000342	mg/kg	06.14.19 18:38		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-2 @ 7'

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 627089-006

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.6	15.0	7.99	mg/kg	06.12.19 15:41	J	1
Diesel Range Organics (DRO)	C10C28DRO	145	15.0	8.11	mg/kg	06.12.19 15:41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	11.4	15.0	8.11	mg/kg	06.12.19 15:41	J	1
Total TPH	PHC635	309		7.99	mg/kg	06.12.19 15:41		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	75	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092366

Date Prep: 06.13.19 15.30

Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.14.19 18:55	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.14.19 18:55	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.14.19 18:55	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.14.19 18:55	U	1
o-Xylene	95-47-6	0.00381	0.00201	0.000346	mg/kg	06.14.19 18:55		1
Xylenes, Total	1330-20-7	0.00381		0.000346	mg/kg	06.14.19 18:55		
Total BTEX		0.00381		0.000346	mg/kg	06.14.19 18:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	116	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-2 @ 8'

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 627089-007

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091891

Date Prep: 06.11.19 08.45

Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.857	4.99	0.857	mg/kg	06.11.19 14:28	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	06.12.19 16:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	21.5	15.0	8.11	mg/kg	06.12.19 16:06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.12.19 16:06	U	1
Total TPH	PHC635	55.5		7.99	mg/kg	06.12.19 16:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	66	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092366

Date Prep: 06.13.19 15.30

Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.14.19 19:12	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.14.19 19:12	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.14.19 19:12	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.14.19 19:12	U	1
o-Xylene	95-47-6	0.00314	0.00200	0.000345	mg/kg	06.14.19 19:12		1
Xylenes, Total	1330-20-7	0.00314		0.000345	mg/kg	06.14.19 19:12		
Total BTEX		0.00314		0.000345	mg/kg	06.14.19 19:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-2 @ 9'

Matrix: Soil

Sample Depth: 9 ft

Lab Sample Id: 627089-008

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	8.93	15.0	7.99	mg/kg	06.12.19 16:31	J	1
Diesel Range Organics (DRO)	C10C28DRO	33.6	15.0	8.11	mg/kg	06.12.19 16:31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.12.19 16:31	U	1
Total TPH	PHC635	86.4		7.99	mg/kg	06.12.19 16:31		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	66	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092366

Date Prep: 06.13.19 15.30

Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.14.19 19:29	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.14.19 19:29	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.14.19 19:29	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.14.19 19:29	U	1
o-Xylene	95-47-6	0.00336	0.00200	0.000344	mg/kg	06.14.19 19:29		1
Xylenes, Total	1330-20-7	0.00336		0.000344	mg/kg	06.14.19 19:29		
Total BTEX		0.00336		0.000344	mg/kg	06.14.19 19:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-2 @ 12'

Matrix: Soil

Sample Depth: 12 ft

Lab Sample Id: 627089-009

Date Collected: 06.05.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.8	15.0	7.98	mg/kg	06.12.19 16:56	J	1
Diesel Range Organics (DRO)	C10C28DRO	91.8	15.0	8.10	mg/kg	06.12.19 16:56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	17.6	15.0	8.10	mg/kg	06.12.19 16:56		1
Total TPH	PHC635	191		7.98	mg/kg	06.12.19 16:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	103	70 - 135	%		
o-Terphenyl	70	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092366

Date Prep: 06.13.19 15.30

Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.14.19 19:47	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.14.19 19:47	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.14.19 19:47	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.14.19 19:47	U	1
o-Xylene	95-47-6	0.000417	0.00199	0.000342	mg/kg	06.14.19 19:47	J	1
Xylenes, Total	1330-20-7	0.000417		0.000342	mg/kg	06.14.19 19:47	J	
Total BTEX		0.000417		0.000342	mg/kg	06.14.19 19:47	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-2 @ 13' Matrix: Soil Sample Depth: 13 ft
Lab Sample Id: 627089-010 Date Collected: 06.05.19 00.00 Date Received: 06.10.19 10.00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3091891 Date Prep: 06.11.19 08.45
Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1.11	5.05	0.867	mg/kg	06.11.19 14:33	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3092130 Date Prep: 06.12.19 07.00
Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	11.6	15.0	7.99	mg/kg	06.12.19 17:21	J	1
Diesel Range Organics (DRO)	C10C28DRO	54.9	15.0	8.12	mg/kg	06.12.19 17:21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	13.2	15.0	8.12	mg/kg	06.12.19 17:21	J	1
Total TPH	PHC635	131		7.99	mg/kg	06.12.19 17:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	108	70 - 135	%		
o-Terphenyl	71	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: DVM % Moist: Tech: DVM
Seq Number: 3092366 Date Prep: 06.13.19 15.30
Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.14.19 20:04	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.14.19 20:04	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.14.19 20:04	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.14.19 20:04	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.14.19 20:04	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.14.19 20:04	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.14.19 20:04	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-3 @ S

Matrix: Soil

Sample Depth:

Lab Sample Id: 627089-011

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091891

Date Prep: 06.11.19 08.45

Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.11.19 14:38	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	06.12.19 18:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	06.12.19 18:10	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.12.19 18:10	U	1
Total TPH	PHC635	11.2		7.99	mg/kg	06.12.19 18:10		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	66	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.15.19 07:15	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.15.19 07:15	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.15.19 07:15	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.15.19 07:15	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.15.19 07:15	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.15.19 07:15	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.15.19 07:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	121	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-3 @ 1'

Matrix: Soil

Sample Depth: 1 ft

Lab Sample Id: 627089-012

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	06.12.19 18:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.12.19 18:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	10.6	15.0	8.13	mg/kg	06.12.19 18:35	J	1
Total TPH	PHC635	20.6		8.00	mg/kg	06.12.19 18:35		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	92	70 - 135	%		
o-Terphenyl	58	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.15.19 07:32	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.15.19 07:32	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.15.19 07:32	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.15.19 07:32	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.15.19 07:32	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.15.19 07:32	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.15.19 07:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	121	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-3 @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 627089-013

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	06.12.19 19:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	06.12.19 19:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	06.12.19 19:00	U	1
Total TPH	PHC635	12.5		7.98	mg/kg	06.12.19 19:00		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	70	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.15.19 07:49	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.15.19 07:49	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.15.19 07:49	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.15.19 07:49	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.15.19 07:49	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.15.19 07:49	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.15.19 07:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-3 @ 3'

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 627089-014

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091891

Date Prep: 06.11.19 08.45

Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.850	4.95	0.850	mg/kg	06.11.19 14:43	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.97	14.9	7.97	mg/kg	06.12.19 19:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	14.9	8.10	mg/kg	06.12.19 19:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	14.9	8.10	mg/kg	06.12.19 19:25	U	1
Total TPH	PHC635	11.7		7.97	mg/kg	06.12.19 19:25		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	89	70 - 135	%		
o-Terphenyl	65	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.15.19 08:06	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.15.19 08:06	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.15.19 08:06	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.15.19 08:06	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.15.19 08:06	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.15.19 08:06	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.15.19 08:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-3 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 627089-015

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	06.12.19 19:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	06.12.19 19:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	06.12.19 19:49	U	1
Total TPH	PHC635	10.6		7.99	mg/kg	06.12.19 19:49		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	70	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.15.19 08:23	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.15.19 08:23	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.15.19 08:23	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.15.19 08:23	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.15.19 08:23	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.15.19 08:23	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.15.19 08:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-3 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 627089-016

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091891

Date Prep: 06.11.19 08.45

Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.852	4.96	0.852	mg/kg	06.11.19 14:48	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	06.12.19 20:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	06.12.19 20:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	06.12.19 20:14	U	1
Total TPH	PHC635	22.8		7.98	mg/kg	06.12.19 20:14		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	86	70 - 135	%		
o-Terphenyl	70	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.15.19 08:40	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.15.19 08:40	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.15.19 08:40	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.15.19 08:40	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.15.19 08:40	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.15.19 08:40	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.15.19 08:40	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-4 @ S

Matrix: Soil

Sample Depth:

Lab Sample Id: 627089-017

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091891

Date Prep: 06.11.19 08.45

Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	06.11.19 14:53	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	06.12.19 20:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	06.12.19 20:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	06.12.19 20:38	U	1
Total TPH	PHC635	40.7		7.98	mg/kg	06.12.19 20:38		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	64	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	06.15.19 09:00	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	06.15.19 09:00	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	06.15.19 09:00	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	06.15.19 09:00	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.15.19 09:00	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.15.19 09:00	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.15.19 09:00	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-4 @ 1'

Matrix: Soil

Sample Depth: 1 ft

Lab Sample Id: 627089-018

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	06.12.19 21:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	06.12.19 21:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	06.12.19 21:02	U	1
Total TPH	PHC635	25.4		7.99	mg/kg	06.12.19 21:02		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	77	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	06.15.19 09:17	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	06.15.19 09:17	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	06.15.19 09:17	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	06.15.19 09:17	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	06.15.19 09:17	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.15.19 09:17	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.15.19 09:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-4 @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 627089-019

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	06.12.19 21:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	06.12.19 21:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.12.19 21:26	U	1
Total TPH	PHC635	9.91		7.99	mg/kg	06.12.19 21:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	68	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.15.19 09:35	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.15.19 09:35	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.15.19 09:35	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.15.19 09:35	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.15.19 09:35	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.15.19 09:35	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.15.19 09:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	124	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-4 @ 3'

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 627089-020

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091944

Date Prep: 06.11.19 12.15

Prep seq: 7679638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.867	5.05	0.867	mg/kg	06.11.19 13:06	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092130

Date Prep: 06.12.19 07.00

Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	06.12.19 21:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.12.19 21:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.12.19 21:51	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.12.19 21:51	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	92	70 - 135	%		
o-Terphenyl	69	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.15.19 09:52	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.15.19 09:52	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.15.19 09:52	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.15.19 09:52	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.15.19 09:52	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.15.19 09:52	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.15.19 09:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-4 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 627089-021

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.1	15.0	7.99	mg/kg	06.10.19 19:01	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	06.10.19 19:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	06.10.19 19:01	U	1
Total TPH	PHC635	10.1		7.99	mg/kg	06.10.19 19:01	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	123	70 - 135	%		
o-Terphenyl	139	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092321

Date Prep: 06.13.19 13.00

Prep seq: 7679940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	06.13.19 13:34	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	06.13.19 13:34	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	06.13.19 13:34	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	06.13.19 13:34	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	06.13.19 13:34	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.13.19 13:34	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.13.19 13:34	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-4 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 627089-022

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.8	15.0	7.99	mg/kg	06.10.19 20:14	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	06.10.19 20:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.10.19 20:14	U	1
Total TPH	PHC635	10.8		7.99	mg/kg	06.10.19 20:14	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	120	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.15.19 10:52	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.15.19 10:52	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.15.19 10:52	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.15.19 10:52	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.15.19 10:52	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.15.19 10:52	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.15.19 10:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-4 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 627089-023

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091944

Date Prep: 06.11.19 12.15

Prep seq: 7679638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	06.11.19 15:38	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.4	15.0	7.99	mg/kg	06.10.19 20:38	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	06.10.19 20:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.10.19 20:38	U	1
Total TPH	PHC635	10.4		7.99	mg/kg	06.10.19 20:38	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	108	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	06.15.19 11:10	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	06.15.19 11:10	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	06.15.19 11:10	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	06.15.19 11:10	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.15.19 11:10	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.15.19 11:10	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.15.19 11:10	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5@ S

Matrix: Soil

Sample Depth:

Lab Sample Id: 627089-024

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091944

Date Prep: 06.11.19 12.15

Prep seq: 7679638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	2.22	4.97	0.853	mg/kg	06.11.19 15:45	J	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.2	15.0	8.00	mg/kg	06.10.19 21:02	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.10.19 21:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.10.19 21:02	U	1
Total TPH	PHC635	10.2		8.00	mg/kg	06.10.19 21:02	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	111	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.15.19 11:27	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.15.19 11:27	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.15.19 11:27	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.15.19 11:27	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.15.19 11:27	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.15.19 11:27	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.15.19 11:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	137	70 - 130	%		**



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5 @ 1'

Matrix: Soil

Sample Depth: 1 ft

Lab Sample Id: 627089-025

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	11.1	15.0	7.99	mg/kg	06.10.19 21:27	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	06.10.19 21:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.10.19 21:27	U	1
Total TPH	PHC635	11.1		7.99	mg/kg	06.10.19 21:27	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	111	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.15.19 11:44	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.15.19 11:44	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.15.19 11:44	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.15.19 11:44	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.15.19 11:44	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.15.19 11:44	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.15.19 11:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5 @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 627089-026

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	11.2	15.0	8.00	mg/kg	06.10.19 21:51	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.10.19 21:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.10.19 21:51	U	1
Total TPH	PHC635	11.2		8.00	mg/kg	06.10.19 21:51	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	111	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.15.19 12:01	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.15.19 12:01	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.15.19 12:01	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.15.19 12:01	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.15.19 12:01	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.15.19 12:01	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.15.19 12:01	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5 @ 3'

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 627089-027

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3091944

Date Prep: 06.11.19 12.15

Prep seq: 7679638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.864	5.03	0.864	mg/kg	06.11.19 15:53	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	9.00	15.0	7.98	mg/kg	06.10.19 22:15	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	06.10.19 22:15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	06.10.19 22:15	U	1
Total TPH	PHC635	9.00		7.98	mg/kg	06.10.19 22:15	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	111	70 - 135	%		
o-Terphenyl	104	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.15.19 12:18	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.15.19 12:18	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.15.19 12:18	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.15.19 12:18	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.15.19 12:18	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.15.19 12:18	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.15.19 12:18	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 627089-028

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.6	15.0	7.99	mg/kg	06.10.19 22:40	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	06.10.19 22:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	06.10.19 22:40	U	1
Total TPH	PHC635	10.6		7.99	mg/kg	06.10.19 22:40	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	107	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.15.19 12:35	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.15.19 12:35	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.15.19 12:35	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.15.19 12:35	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.15.19 12:35	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	06.15.19 12:35	U	
Total BTEX		<0.000343		0.000343	mg/kg	06.15.19 12:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 627089-029

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	9.53	15.0	7.98	mg/kg	06.10.19 23:04	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	06.10.19 23:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	06.10.19 23:04	U	1
Total TPH	PHC635	9.53		7.98	mg/kg	06.10.19 23:04	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	114	70 - 135	%		
o-Terphenyl	111	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	06.15.19 12:52	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	06.15.19 12:52	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	06.15.19 12:52	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	06.15.19 12:52	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	06.15.19 12:52	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.15.19 12:52	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.15.19 12:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	118	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 627089-030

Date Collected: 06.06.19 00.00

Date Received: 06.10.19 10.00

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3091875

Date Prep: 06.10.19 16.00

Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.6	14.9	7.97	mg/kg	06.10.19 23:29	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	14.9	8.10	mg/kg	06.10.19 23:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	14.9	8.10	mg/kg	06.10.19 23:29	U	1
Total TPH	PHC635	10.6		7.97	mg/kg	06.10.19 23:29	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	116	70 - 135	%		
o-Terphenyl	123	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.15.19 13:10	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.15.19 13:10	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.15.19 13:10	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.15.19 13:10	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.15.19 13:10	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.15.19 13:10	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.15.19 13:10	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: V-5 @ 7' Matrix: Soil Sample Depth: 7 ft
Lab Sample Id: 627089-031 Date Collected: 06.06.19 00.00 Date Received: 06.10.19 10.00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3091944 Date Prep: 06.11.19 12.15
Prep seq: 7679638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	15.7	5.00	0.858	mg/kg	06.11.19 16:00		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3091875 Date Prep: 06.10.19 16.00
Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	11.5	15.0	7.99	mg/kg	06.11.19 00:18	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	06.11.19 00:18	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	06.11.19 00:18	U	1
Total TPH	PHC635	11.5		7.99	mg/kg	06.11.19 00:18	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	113	70 - 135	%		
o-Terphenyl	108	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: DVM % Moist: Tech: DVM
Seq Number: 3092505 Date Prep: 06.14.19 13.00
Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.15.19 13:27	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.15.19 13:27	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.15.19 13:27	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.15.19 13:27	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.15.19 13:27	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.15.19 13:27	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.15.19 13:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: **7679606-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7679606-1-BLK Date Collected: Date Received:
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3091891 Date Prep: 06.11.19 08.45
Prep seq: 7679606

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.11.19 09:06	U	1

Sample Id: **7679638-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7679638-1-BLK Date Collected: Date Received:
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3091944 Date Prep: 06.11.19 12.15
Prep seq: 7679638

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.11.19 12:28	U	1

Sample Id: **7679648-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7679648-1-BLK Date Collected: Date Received:
Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3091875 Date Prep: 06.10.19 16.00
Prep seq: 7679648

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	06.10.19 17:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.10.19 17:48	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.10.19 17:48	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.10.19 17:48	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	112	70 - 135	%		
o-Terphenyl	96	70 - 135	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: 7679804-1-BLK Matrix: Solid Sample Depth:
Lab Sample Id: 7679804-1-BLK Date Collected: Date Received:
Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3092130 Date Prep: 06.12.19 07.00
Prep seq: 7679804

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	06.12.19 11:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.12.19 11:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.12.19 11:33	U	1
Total TPH	PHC635	0		8.00	mg/kg	06.12.19 11:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	77	70 - 135	%		

Sample Id: 7679940-1-BLK Matrix: Solid Sample Depth:
Lab Sample Id: 7679940-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: DVM % Moist: Tech: DVM
Seq Number: 3092321 Date Prep: 06.13.19 13.00
Prep seq: 7679940

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.13.19 16:25	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.13.19 16:25	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.13.19 16:25	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.13.19 16:25	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.13.19 16:25	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.13.19 16:25	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.13.19 16:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: **7679954-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7679954-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: DVM % Moist: Tech: DVM
Seq Number: 3092366 Date Prep: 06.13.19 15.00
Prep seq: 7679954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.14.19 08:40	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.14.19 08:40	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.14.19 08:40	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.14.19 08:40	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.14.19 08:40	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.14.19 08:40	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.14.19 08:40	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		

Sample Id: **7679955-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7679955-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: DVM % Moist: Tech: DVM
Seq Number: 3092423 Date Prep: 06.13.19 11.00
Prep seq: 7679955

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.13.19 21:35	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.13.19 21:35	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.13.19 21:35	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.13.19 21:35	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.13.19 21:35	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.13.19 21:35	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.13.19 21:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	93	70 - 130	%		



Certificate of Analytical Results

627089



Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation Site

Sample Id: 7680037-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7680037-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3092505

Date Prep: 06.14.19 13.00

Prep seq: 7680037

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	06.15.19 06:57	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	06.15.19 06:57	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	06.15.19 06:57	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	06.15.19 06:57	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.15.19 06:57	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.15.19 06:57	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.15.19 06:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation Site

Work Orders : 627089,

Project ID:

Lab Batch #: 3092321

Sample: 7679940-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/13/19 10:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0301	0.0300	100	70-130	

Lab Batch #: 3092321

Sample: 627089-021 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/13/19 11:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0313	0.0300	104	70-130	

Lab Batch #: 3092321

Sample: 627089-021 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/13/19 11:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	70-130	
4-Bromofluorobenzene	0.0303	0.0300	101	70-130	

Lab Batch #: 3092321

Sample: 7679940-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/13/19 12:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	70-130	
4-Bromofluorobenzene	0.0288	0.0300	96	70-130	

Lab Batch #: 3092321

Sample: 7679940-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/13/19 16:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	70-130	
4-Bromofluorobenzene	0.0325	0.0300	108	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation Site

Work Orders : 627089,

Project ID:

Lab Batch #: 3092366

Sample: 7679954-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/14/19 07:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	70-130	
4-Bromofluorobenzene	0.0327	0.0300	109	70-130	

Lab Batch #: 3092366

Sample: 7679954-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/14/19 07:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	70-130	
4-Bromofluorobenzene	0.0325	0.0300	108	70-130	

Lab Batch #: 3092366

Sample: 627521-001 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/14/19 07:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	70-130	
4-Bromofluorobenzene	0.0329	0.0300	110	70-130	

Lab Batch #: 3092366

Sample: 627521-001 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/14/19 07:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	70-130	
4-Bromofluorobenzene	0.0321	0.0300	107	70-130	

Lab Batch #: 3092366

Sample: 7679954-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/14/19 08:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation Site

Work Orders : 627089,

Project ID:

Lab Batch #: 3092423

Sample: 627089-001 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/13/19 20:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	70-130	
4-Bromofluorobenzene	0.0259	0.0300	86	70-130	

Lab Batch #: 3092423

Sample: 7679955-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/13/19 21:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	70-130	
4-Bromofluorobenzene	0.0279	0.0300	93	70-130	

Lab Batch #: 3092423

Sample: 7679955-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/14/19 15:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	70-130	
4-Bromofluorobenzene	0.0257	0.0300	86	70-130	

Lab Batch #: 3092423

Sample: 7679955-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/14/19 15:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	70-130	
4-Bromofluorobenzene	0.0255	0.0300	85	70-130	

Lab Batch #: 3092505

Sample: 7680037-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/15/19 05:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation Site

Work Orders : 627089,

Project ID:

Lab Batch #: 3092505

Sample: 7680037-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/15/19 05:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	70-130	
4-Bromofluorobenzene	0.0332	0.0300	111	70-130	

Lab Batch #: 3092505

Sample: 627089-011 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/15/19 05:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	70-130	
4-Bromofluorobenzene	0.0339	0.0300	113	70-130	

Lab Batch #: 3092505

Sample: 627089-011 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/15/19 06:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	70-130	
4-Bromofluorobenzene	0.0338	0.0300	113	70-130	

Lab Batch #: 3092505

Sample: 7680037-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/15/19 06:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	70-130	
4-Bromofluorobenzene	0.0361	0.0300	120	70-130	

Lab Batch #: 3091875

Sample: 7679648-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/10/19 17:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation Site

Work Orders : 627089,

Project ID:

Lab Batch #: 3091875

Sample: 7679648-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/10/19 18:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3091875

Sample: 7679648-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/10/19 18:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

Lab Batch #: 3091875

Sample: 627089-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/10/19 19:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	67.8	49.9	136	70-135	**

Lab Batch #: 3091875

Sample: 627089-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/10/19 19:49

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.9	116	70-135	
o-Terphenyl	60.0	50.0	120	70-135	

Lab Batch #: 3092130

Sample: 7679804-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/12/19 11:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	100	97	70-135	
o-Terphenyl	38.4	50.0	77	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation Site

Work Orders : 627089,

Project ID:

Lab Batch #: 3092130

Sample: 7679804-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/12/19 11:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	100	86	70-135	
o-Terphenyl	40.1	50.0	80	70-135	

Lab Batch #: 3092130

Sample: 7679804-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/12/19 12:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.9	100	89	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3092130

Sample: 627089-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/12/19 13:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.9	99.9	87	70-135	
o-Terphenyl	37.3	50.0	75	70-135	

Lab Batch #: 3092130

Sample: 627089-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/12/19 13:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	99.9	87	70-135	
o-Terphenyl	37.7	50.0	75	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries



Project Name: Lusk Reclamation Site

Work Order #: 627089

Analyst: DVM

Date Prepared: 06/13/2019

Project ID:

Date Analyzed: 06/13/2019

Lab Batch ID: 3092321

Sample: 7679940-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000386	0.100	0.102	102	0.100	0.0977	98	4	70-130	35	
Toluene	<0.000457	0.100	0.0954	95	0.100	0.0911	91	5	70-130	35	
Ethylbenzene	<0.000566	0.100	0.103	103	0.100	0.0975	98	5	70-130	35	
m_p-Xylenes	<0.00102	0.200	0.206	103	0.200	0.194	97	6	70-130	35	
o-Xylene	<0.000345	0.100	0.101	101	0.100	0.0943	94	7	70-130	35	

Analyst: DVM

Date Prepared: 06/13/2019

Date Analyzed: 06/14/2019

Lab Batch ID: 3092366

Sample: 7679954-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000387	0.101	0.106	105	0.100	0.113	113	6	70-130	35	
Toluene	<0.000458	0.101	0.0758	75	0.100	0.0818	82	8	70-130	35	
Ethylbenzene	<0.000568	0.101	0.0896	89	0.100	0.0953	95	6	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.178	89	0.200	0.190	95	7	70-130	35	
o-Xylene	<0.000346	0.101	0.0863	85	0.100	0.0923	92	7	70-130	35	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Lusk Reclamation Site

Work Order #: 627089

Analyst: DVM

Date Prepared: 06/13/2019

Project ID:

Date Analyzed: 06/14/2019

Lab Batch ID: 3092423

Sample: 7679955-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000386	0.100	0.100	100	0.0998	0.0949	95	5	70-130	35	
Toluene	<0.000457	0.100	0.0949	95	0.0998	0.0863	86	9	70-130	35	
Ethylbenzene	<0.000567	0.100	0.105	105	0.0998	0.0973	97	8	70-130	35	
m_p-Xylenes	<0.00102	0.201	0.216	107	0.200	0.197	99	9	70-130	35	
o-Xylene	<0.000346	0.100	0.108	108	0.0998	0.0944	95	13	70-130	35	

Analyst: DVM

Date Prepared: 06/14/2019

Date Analyzed: 06/15/2019

Lab Batch ID: 3092505

Sample: 7680037-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000383	0.0994	0.0742	75	0.100	0.0749	75	1	70-130	35	
Toluene	<0.000453	0.0994	0.0833	84	0.100	0.0829	83	0	70-130	35	
Ethylbenzene	<0.000561	0.0994	0.101	102	0.100	0.0993	99	2	70-130	35	
m_p-Xylenes	<0.00101	0.199	0.201	101	0.200	0.198	99	2	70-130	35	
o-Xylene	<0.000342	0.0994	0.0961	97	0.100	0.0952	95	1	70-130	35	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Lusk Reclamation Site

Work Order #: 627089

Analyst: CHE

Date Prepared: 06/11/2019

Project ID:

Date Analyzed: 06/11/2019

Lab Batch ID: 3091891

Sample: 7679606-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	241	96	250	237	95	2	90-110	20	

Analyst: CHE

Date Prepared: 06/11/2019

Date Analyzed: 06/11/2019

Lab Batch ID: 3091944

Sample: 7679638-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	243	97	250	243	97	0	90-110	20	

Analyst: ARM

Date Prepared: 06/10/2019

Date Analyzed: 06/10/2019

Lab Batch ID: 3091875

Sample: 7679648-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1070	107	1000	1160	116	8	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1020	102	1000	1160	116	13	70-135	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: Lusk Reclamation Site

Work Order #: 627089

Analyst: ARM

Date Prepared: 06/12/2019

Project ID:

Date Analyzed: 06/12/2019

Lab Batch ID: 3092130

Sample: 7679804-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	947	95	1000	968	97	2	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	888	89	1000	922	92	4	70-135	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: Lusk Reclamation Site



Work Order #: 627089

Lab Batch #: 3092423

Date Analyzed: 06/13/2019

QC- Sample ID: 627089-001 S

Reporting Units: mg/kg

Date Prepared: 06/13/2019

Batch #: 1

Project ID:

Analyst: DVM

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
BTEX by EPA 8021B	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Benzene	0.000399	0.0992	0.124	125	70-130	
Toluene	0.000559	0.0992	0.118	118	70-130	
Ethylbenzene	<0.000560	0.0992	0.127	128	70-130	
m_p-Xylenes	<0.00101	0.198	0.262	132	70-130	X
o-Xylene	<0.000342	0.0992	0.137	138	70-130	X

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$
Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries



Project Name: Lusk Reclamation Site

Work Order # 627089

Project ID:

Lab Batch ID: 3092321

QC- Sample ID: 627089-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/13/2019

Date Prepared: 06/13/2019

Analyst: DVM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000384	0.200	0.140	70	0.200	0.168	84	18	70-130	35	
Toluene	<0.000455	0.200	0.144	72	0.200	0.148	74	3	70-130	35	
Ethylbenzene	<0.000564	0.200	0.155	78	0.200	0.156	78	1	70-130	35	
m_p-Xylenes	<0.00101	0.399	0.315	79	0.401	0.309	77	2	70-130	35	
o-Xylene	<0.000344	0.200	0.161	81	0.200	0.155	78	4	70-130	35	

Lab Batch ID: 3092366

QC- Sample ID: 627521-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/14/2019

Date Prepared: 06/13/2019

Analyst: DVM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000384	0.0998	0.0757	76	0.0994	0.107	108	34	70-130	35	
Toluene	<0.000455	0.0998	0.0843	84	0.0994	0.0755	76	11	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.0960	96	0.0994	0.0874	88	9	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.192	96	0.199	0.175	88	9	70-130	35	
o-Xylene	<0.000344	0.0998	0.0938	94	0.0994	0.0867	87	8	70-130	35	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: Lusk Reclamation Site

Work Order # 627089
Lab Batch ID: 3092505
Date Analyzed: 06/15/2019
Reporting Units: mg/kg

Project ID:
QC- Sample ID: 627089-011 S Batch #: 1 Matrix: Soil
Date Prepared: 06/14/2019 Analyst: DVM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0994	0.0788	79	0.0998	0.0734	74	7	70-130	35	
Toluene	<0.000453	0.0994	0.0831	84	0.0998	0.0778	78	7	70-130	35	
Ethylbenzene	<0.000561	0.0994	0.0989	99	0.0998	0.0925	93	7	70-130	35	
m_p-Xylenes	<0.00101	0.199	0.189	95	0.200	0.174	87	8	70-130	35	
o-Xylene	<0.000342	0.0994	0.0962	97	0.0998	0.0902	90	6	70-130	35	

Lab Batch ID: 3091891
Date Analyzed: 06/11/2019
Reporting Units: mg/kg

QC- Sample ID: 627089-001 S Batch #: 1 Matrix: Soil
Date Prepared: 06/11/2019 Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	16.4	250	280	105	250	282	106	1	90-110	20	

Lab Batch ID: 3091891
Date Analyzed: 06/11/2019
Reporting Units: mg/kg

QC- Sample ID: 627172-010 S Batch #: 1 Matrix: Soil
Date Prepared: 06/11/2019 Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	327	250	561	94	250	560	93	0	90-110	20	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: Lusk Reclamation Site

Work Order # 627089

Project ID:

Lab Batch ID: 3091944

QC- Sample ID: 627088-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/11/2019

Date Prepared: 06/11/2019

Analyst: CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5.19	250	262	103	250	262	103	0	90-110	20	

Lab Batch ID: 3091944

QC- Sample ID: 627089-020 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/11/2019

Date Prepared: 06/11/2019

Analyst: CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.867	253	248	98	253	248	98	0	90-110	20	

Lab Batch ID: 3091875

QC- Sample ID: 627089-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/10/2019

Date Prepared: 06/10/2019

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	10.1	997	1150	114	999	1090	108	5	70-135	20	
Diesel Range Organics (DRO)	<8.10	997	1170	117	999	1160	116	1	70-135	20	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: Lusk Reclamation Site

Work Order # 627089

Project ID:

Lab Batch ID: 3092130

QC- Sample ID: 627089-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/12/2019

Date Prepared: 06/12/2019

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	880	88	999	908	91	3	70-135	20	
Diesel Range Organics (DRO)	16.5	999	817	80	999	833	82	2	70-135	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

10307009

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes					
Company Name / Branch: Tasman Geosciences, LLC Company Address: 2620 W Marland Blvd. Hobbs, NM 8820 Email: zconder@tasman-geo.com				Project Name/Number: Lusk Reclamation Site Project Location: Lea County, NM Invoice To: PAALP C/O Amber Groves Phone No: 806-724-5943 Invoice: Project Contact: Zach Conder Sampler's Name: B. Griffin				Field ID / Point of Collection				Field Comments					
No.	Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles				TPH 8015 M Exl	Chloride SM 4500	BTEX 8021B	RCI	TCLP RCRA8	NORM	Paint Filter	TCLP Benzene
						HCl	NaOH/Zn	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE				
1	V-1 @ 5'	6/5/2019		S	1									X	X		
2	V-1 @ 6'	6/5/2019		S	1									X	X		
3	V-1 @ 7'	6/5/2019		S	1									X	X		
4	V-2 @ 5'	6/5/2019		S	1									X	X		
5	V-2 @ 6'	6/5/2019		S	1									X	X		
6	V-2 @ 7'	6/5/2019		S	1									X	X		
7	V-2 @ 8'	6/5/2019		S	1									X	X		
8	V-2 @ 9'	6/5/2019		S	1									X	X		
9	V-2 @ 12'	6/5/2019		S	1									X	X		
10	V-2 @ 13'	6/5/2019		S	1									X	X		
11	V-3 @ S	6/6/2019		S	1									X	X		
12	V-3 @ 1'	6/6/2019		S	1									X	X		
Turnaround Time (Business days)				Data Deliverable Information				Notes:				Please email results to:					
☐ Same Day TAT ☐ 5 Day TAT				☐ Level II Std QC ☐ Level IV (Full Data Pkg /raw data)				zconder@tasman-geo.com				zconder@tasman-geo.com					
☐ Next Day EMERGENCY ☐ 7 Day TAT				☐ Level III Std QC+ Forms ☐ TRRP Level IV				borriffin@tasman-geo.com				algroves@baalb.com					
☐ 2 Day EMERGENCY ☒ Contract TAT				☐ Level 3 (CLP Forms) ☐ UST / RG -411				bdennis@tasman-geo.com				bdennis@tasman-geo.com					
☐ 3 Day EMERGENCY				☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm												FED-EX / UPS: Tracking #					
Relinquished by Sampler:				Received By:				Relinquished By:				Date Time:					
1. [Signature]				1. [Signature]				2. [Signature]				2. [Signature]					
Relinquished by:				Received By:				Relinquished By:				Date Time:					
3. [Signature]				3. [Signature]				4. [Signature]				4. [Signature]					
Relinquished by:				Received By:				Relinquished By:				Date Time:					
5. [Signature]				5. [Signature]				6. [Signature]				6. [Signature]					

Notice: Signature of this document constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

Phoenix, Arizona (480-355-0900)

www.xenco.com

Received By: PTA 6/10/19 1000

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

Page 3 Of 3

2/10/19

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 06/10/2019 10:00:00 AM

Work Order #: 627089

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambien

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Date: 06/10/2019

Checklist reviewed by:

John Builes

Date: 06/12/2019



Analytical Report 633576

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Lusk Reclamation

08.16.2019

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.16.2019

Project Manager: **Zach Conder**

Tasman Geosciences, LLC

2620 W. Marland Blvd.

Hobbs, NM 88240

Reference: XENCO Report No(s): **633576**

Lusk Reclamation

Project Address: Lea County, NM

Zach Conder:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 633576. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 633576 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink, appearing to read 'JB', is written over a light blue rectangular background.

John Builes
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-1 @ 8'	S	08.06.2019 00:00	8 ft	633576-001
FL-2 @ 8'	S	08.06.2019 00:00	8 ft	633576-002
FL-3 @ 8'	S	08.06.2019 00:00	8 ft	633576-003
FL-4 @ 8'	S	08.06.2019 00:00	8 ft	633576-004
FL-5 @ 8'	S	08.06.2019 00:00	8 ft	633576-005
FL-6 @ 8'	S	08.06.2019 00:00	8 ft	633576-006
FL-7 @ 8'	S	08.06.2019 00:00	8 ft	633576-007
FL-8 @ 8'	S	08.06.2019 00:00	8 ft	633576-008
FL-9 @ 9'	S	08.06.2019 00:00	9 ft	633576-009
W1	S	08.06.2019 00:00	In	633576-010
W2	S	08.06.2019 00:00	In	633576-011
W3	S	08.06.2019 00:00	In	633576-012
W4	S	08.06.2019 00:00	In	633576-013
W5	S	08.06.2019 00:00	In	633576-014
W6	S	08.06.2019 00:00	In	633576-015
W7	S	08.06.2019 00:00	In	633576-016
W8	S	08.06.2019 00:00	In	633576-017
W9	S	08.06.2019 00:00	In	633576-018
W10	S	08.06.2019 00:00	In	633576-019



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Lusk Reclamation*

Project ID:
Work Order Number(s): 633576

Report Date: 08.16.2019
Date Received: 08.09.2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3098127 Inorganic Anions by EPA 300/300.1

Chloride Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits due to a misinjection.

Samples in the analytical batch are: 633576-003, -004

Lab Sample ID 633576-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 633576-003, -004.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3098723 BTEX by EPA 8021

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 633576-001 S, 633576-001 SD, 633576-005, 633576-014.

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Lab Sample ID 633576-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 633576-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.

The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m_p-Xylenes, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 633576-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-1 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-001

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098128

Date Prep: 08.09.2019 15:30

Prep seq: 7683953

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.2	5.00	0.858	mg/kg	08.10.2019 01:07		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 09:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.6	50.0	25.0	mg/kg	08.13.2019 09:41		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 09:41	U	1
Total TPH	PHC635	59.6		15.0	mg/kg	08.13.2019 09:41		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	88	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.15.2019 08:03	UXF	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.15.2019 08:03	UXF	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.15.2019 08:03	UXF	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.15.2019 08:03	UXXF	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.15.2019 08:03	UXXF	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.15.2019 08:03	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.15.2019 08:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	113	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-2 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-002

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098128

Date Prep: 08.09.2019 15:30

Prep seq: 7683953

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	9.95	4.97	0.853	mg/kg	08.10.2019 01:14		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 10:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	34.3	50.0	25.0	mg/kg	08.13.2019 10:37	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 10:37	U	1
Total TPH	PHC635	34.3		15.0	mg/kg	08.13.2019 10:37	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.15.2019 08:23	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	08.15.2019 08:23	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	08.15.2019 08:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.15.2019 08:23	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	08.15.2019 08:23	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.15.2019 08:23	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.15.2019 08:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	130	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-3 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-003

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098127

Date Prep: 08.09.2019 15:05

Prep seq: 7683952

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	6.69	5.05	0.867	mg/kg	08.09.2019 17:30		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 10:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	50.0	25.0	mg/kg	08.13.2019 10:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 10:55	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	08.13.2019 10:55	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.15.2019 08:43	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.15.2019 08:43	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.15.2019 08:43	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.15.2019 08:43	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.15.2019 08:43	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.15.2019 08:43	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.15.2019 08:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-4 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-004

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098127

Date Prep: 08.09.2019 15:05

Prep seq: 7683952

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	18.9	5.00	0.858	mg/kg	08.09.2019 18:49		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 11:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	46.5	50.0	25.0	mg/kg	08.13.2019 11:14	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 11:14	U	1
Total TPH	PHC635	46.5		15.0	mg/kg	08.13.2019 11:14	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.15.2019 09:03	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.15.2019 09:03	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.15.2019 09:03	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.15.2019 09:03	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.15.2019 09:03	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.15.2019 09:03	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.15.2019 09:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	124	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-5 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-005

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098129

Date Prep: 08.09.2019 15:45

Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	8.22	5.03	0.864	mg/kg	08.10.2019 01:54		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	08.13.2019 11:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	49.4	49.9	25.0	mg/kg	08.13.2019 11:33	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	49.9	25.0	mg/kg	08.13.2019 11:33	U	1
Total TPH	PHC635	49.4		15.0	mg/kg	08.13.2019 11:33	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	08.15.2019 09:23	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	08.15.2019 09:23	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	08.15.2019 09:23	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	08.15.2019 09:23	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	08.15.2019 09:23	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	08.15.2019 09:23	U	
Total BTEX		<0.000345		0.000345	mg/kg	08.15.2019 09:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	132	70 - 130	%		**



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-6 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-006

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098129

Date Prep: 08.09.2019 15:45

Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	18.4	5.00	0.858	mg/kg	08.10.2019 02:13		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 11:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	212	50.0	25.0	mg/kg	08.13.2019 11:51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	78.9	50.0	25.0	mg/kg	08.13.2019 11:51		1
Total TPH	PHC635	291		15.0	mg/kg	08.13.2019 11:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.15.2019 09:43	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	08.15.2019 09:43	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	08.15.2019 09:43	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.15.2019 09:43	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	08.15.2019 09:43	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	08.15.2019 09:43	U	
Total BTEX		<0.000343		0.000343	mg/kg	08.15.2019 09:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	124	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-7 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-007

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098129

Date Prep: 08.09.2019 15:45

Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	4.47	4.98	0.855	mg/kg	08.10.2019 02:19	J	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 12:10	U	1
Diesel Range Organics (DRO)	C10C28DRO	154	50.0	25.0	mg/kg	08.13.2019 12:10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	35.4	50.0	25.0	mg/kg	08.13.2019 12:10	J	1
Total TPH	PHC635	189		15.0	mg/kg	08.13.2019 12:10		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	92	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	08.15.2019 10:03	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	08.15.2019 10:03	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	08.15.2019 10:03	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	08.15.2019 10:03	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	08.15.2019 10:03	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	08.15.2019 10:03	U	
Total BTEX		<0.000345		0.000345	mg/kg	08.15.2019 10:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	130	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-8 @ 8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 633576-008

Date Collected: 08.06.2019 00:00

Date Received: 08.09.2019 11:05

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098129

Date Prep: 08.09.2019 15:45

Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.7	5.05	0.867	mg/kg	08.10.2019 02:25		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	66.5	49.9	15.0	mg/kg	08.13.2019 12:29		1
Diesel Range Organics (DRO)	C10C28DRO	3020	49.9	24.9	mg/kg	08.13.2019 12:29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	565	49.9	24.9	mg/kg	08.13.2019 12:29		1
Total TPH	PHC635	3650		15.0	mg/kg	08.13.2019 12:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	103	70 - 135	%		
o-Terphenyl	128	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.15.2019 10:23	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	08.15.2019 10:23	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	08.15.2019 10:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.15.2019 10:23	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	08.15.2019 10:23	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.15.2019 10:23	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.15.2019 10:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-9 @ 9'** Matrix: Soil Sample Depth: 9 ft
Lab Sample Id: 633576-009 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	20.1	5.00	0.858	mg/kg	08.10.2019 02:32		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	49.8	14.9	mg/kg	08.13.2019 12:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	72.3	49.8	24.9	mg/kg	08.13.2019 12:48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	49.8	24.9	mg/kg	08.13.2019 12:48	U	1
Total TPH	PHC635	72.3		14.9	mg/kg	08.13.2019 12:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.15.2019 10:44	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.15.2019 10:44	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.15.2019 10:44	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.15.2019 10:44	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.15.2019 10:44	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.15.2019 10:44	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.15.2019 10:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		



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Tasman Geosciences, LLC, Hobbs, NM
Lusk Reclamation

Sample Id: **W1** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-010 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	3.96	5.02	0.862	mg/kg	08.10.2019 02:51	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 13:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	26.3	50.0	25.0	mg/kg	08.13.2019 13:07	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 13:07	U	1
Total TPH	PHC635	26.3		15.0	mg/kg	08.13.2019 13:07	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	90	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.15.2019 11:04	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	08.15.2019 11:04	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	08.15.2019 11:04	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.15.2019 11:04	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	08.15.2019 11:04	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.15.2019 11:04	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.15.2019 11:04	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	125	70 - 130	%		



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Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: W2 Matrix: Soil Sample Depth:
Lab Sample Id: 633576-011 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1.55	4.99	0.857	mg/kg	08.10.2019 02:57	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	08.13.2019 13:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	49.9	25.0	mg/kg	08.13.2019 13:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	49.9	25.0	mg/kg	08.13.2019 13:44	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	08.13.2019 13:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	99	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.16.2019 12:23	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.16.2019 12:23	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.16.2019 12:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.16.2019 12:23	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.16.2019 12:23	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.16.2019 12:23	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.16.2019 12:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	118	70 - 130	%		



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Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **W3** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-012 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	2.42	4.95	0.850	mg/kg	08.10.2019 03:03	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 14:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	50.0	25.0	mg/kg	08.13.2019 14:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 14:03	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	08.13.2019 14:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	101	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	08.16.2019 12:43	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	08.16.2019 12:43	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	08.16.2019 12:43	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.16.2019 12:43	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.16.2019 12:43	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	08.16.2019 12:43	U	
Total BTEX		<0.000346		0.000346	mg/kg	08.16.2019 12:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	125	70 - 130	%		



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Tasman Geosciences, LLC, Hobbs, NM
Lusk Reclamation

Sample Id: **W4** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-013 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	3.50	5.04	0.865	mg/kg	08.10.2019 03:10	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	49.8	14.9	mg/kg	08.13.2019 14:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	293	49.8	24.9	mg/kg	08.13.2019 14:21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	66.5	49.8	24.9	mg/kg	08.13.2019 14:21		1
Total TPH	PHC635	360		14.9	mg/kg	08.13.2019 14:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	90	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.16.2019 01:03	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.16.2019 01:03	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.16.2019 01:03	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.16.2019 01:03	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.16.2019 01:03	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.16.2019 01:03	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.16.2019 01:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	128	70 - 130	%		



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Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **W5** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-014 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	4.02	5.01	0.860	mg/kg	08.10.2019 03:16	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 14:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	292	50.0	25.0	mg/kg	08.13.2019 14:40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	49.0	50.0	25.0	mg/kg	08.13.2019 14:40	J	1
Total TPH	PHC635	341		15.0	mg/kg	08.13.2019 14:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	104	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.16.2019 01:23	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.16.2019 01:23	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.16.2019 01:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.16.2019 01:23	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.16.2019 01:23	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.16.2019 01:23	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.16.2019 01:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	136	70 - 130	%		**



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Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **W6** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-015 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	13.1	5.05	0.867	mg/kg	08.10.2019 03:22		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	08.13.2019 14:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	33.1	49.9	25.0	mg/kg	08.13.2019 14:58	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	49.9	25.0	mg/kg	08.13.2019 14:58	U	1
Total TPH	PHC635	33.1		15.0	mg/kg	08.13.2019 14:58	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.16.2019 01:43	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.16.2019 01:43	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.16.2019 01:43	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.16.2019 01:43	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.16.2019 01:43	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.16.2019 01:43	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.16.2019 01:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	128	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **W7** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-016 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	21.7	4.98	0.855	mg/kg	08.10.2019 03:41		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 15:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	50.0	25.0	mg/kg	08.13.2019 15:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 15:17	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	08.13.2019 15:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	08.16.2019 02:03	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	08.16.2019 02:03	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	08.16.2019 02:03	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	08.16.2019 02:03	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.16.2019 02:03	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.16.2019 02:03	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.16.2019 02:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	121	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **W8** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-017 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	15.0	4.95	0.850	mg/kg	08.10.2019 03:48		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	08.13.2019 15:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	189	49.9	25.0	mg/kg	08.13.2019 15:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	42.7	49.9	25.0	mg/kg	08.13.2019 15:36	J	1
Total TPH	PHC635	232		15.0	mg/kg	08.13.2019 15:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.16.2019 02:23	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.16.2019 02:23	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.16.2019 02:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.16.2019 02:23	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.16.2019 02:23	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.16.2019 02:23	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.16.2019 02:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	125	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **W9** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-018 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	13.4	4.95	0.850	mg/kg	08.10.2019 04:07		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	08.13.2019 15:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	49.9	24.9	mg/kg	08.13.2019 15:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	49.9	24.9	mg/kg	08.13.2019 15:55	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	08.13.2019 15:55	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	81	70 - 135	%		
o-Terphenyl	82	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	08.16.2019 02:44	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	08.16.2019 02:44	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	08.16.2019 02:44	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.16.2019 02:44	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.16.2019 02:44	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	08.16.2019 02:44	U	
Total BTEX		<0.000346		0.000346	mg/kg	08.16.2019 02:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **W10** Matrix: Soil Sample Depth:
Lab Sample Id: 633576-019 Date Collected: 08.06.2019 00:00 Date Received: 08.09.2019 11:05
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3098129 Date Prep: 08.09.2019 15:45
Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	2.46	4.95	0.850	mg/kg	08.10.2019 04:13	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3098487 Date Prep: 08.09.2019 17:00
Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	49.8	14.9	mg/kg	08.13.2019 16:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	49.8	24.9	mg/kg	08.13.2019 16:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	49.8	24.9	mg/kg	08.13.2019 16:13	U	1
Total TPH	PHC635	<14.9		14.9	mg/kg	08.13.2019 16:13	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	91	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: AMB % Moist: Tech: AMB
Seq Number: 3098723 Date Prep: 08.13.2019 10:00
Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.16.2019 03:04	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	08.16.2019 03:04	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	08.16.2019 03:04	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.16.2019 03:04	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	08.16.2019 03:04	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	08.16.2019 03:04	U	
Total BTEX		<0.000343		0.000343	mg/kg	08.16.2019 03:04	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM
Lusk Reclamation

Sample Id: **7683952-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683952-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098127

Date Prep: 08.09.2019 15:05

Prep seq: 7683952

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	08.09.2019 17:13	U	1

Sample Id: **7683953-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683953-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098128

Date Prep: 08.09.2019 15:30

Prep seq: 7683953

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	08.09.2019 21:45	U	1

Sample Id: **7683954-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683954-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3098129

Date Prep: 08.09.2019 15:45

Prep seq: 7683954

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	08.10.2019 01:35	U	1



Certificate of Analytical Results

633576

Tasman Geosciences, LLC, Hobbs, NM
Lusk Reclamation

Sample Id: **7683959-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683959-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3098487

Date Prep: 08.09.2019 17:00

Prep seq: 7683959

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	08.13.2019 08:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	50.0	25.0	mg/kg	08.13.2019 08:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.13.2019 08:44	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	08.13.2019 08:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	100	70 - 135	%		

Sample Id: **7684121-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7684121-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: AMB

% Moist:

Tech: AMB

Seq Number: 3098723

Date Prep: 08.13.2019 10:00

Prep seq: 7684121

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.15.2019 07:42	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.15.2019 07:42	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.15.2019 07:42	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.15.2019 07:42	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.15.2019 07:42	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.15.2019 07:42	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.15.2019 07:42	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation

Work Orders : 633576

Project ID:

Lab Batch #: 3098723

Sample: 7684121-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.15.2019 06:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0361	0.0300	120	70-130	

Lab Batch #: 3098723

Sample: 7684121-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.15.2019 06:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0295	0.0300	98	70-130	
4-Bromofluorobenzene	0.0386	0.0300	129	70-130	

Lab Batch #: 3098723

Sample: 633576-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.15.2019 06:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0286	0.0300	95	70-130	
4-Bromofluorobenzene	0.0397	0.0300	132	70-130	**

Lab Batch #: 3098723

Sample: 633576-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.15.2019 07:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0297	0.0300	99	70-130	
4-Bromofluorobenzene	0.0405	0.0300	135	70-130	**

Lab Batch #: 3098723

Sample: 7684121-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.15.2019 07:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0343	0.0300	114	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation

Work Orders : 633576

Project ID:

Lab Batch #: 3098487

Sample: 7683959-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.13.2019 08:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.8	100	98	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3098487

Sample: 7683959-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.13.2019 09:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	48.8	50.0	98	70-135	

Lab Batch #: 3098487

Sample: 7683959-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.13.2019 09:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 3098487

Sample: 633576-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.13.2019 09:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.7	117	70-135	
o-Terphenyl	49.9	49.9	100	70-135	

Lab Batch #: 3098487

Sample: 633576-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.13.2019 10:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.8	123	70-135	
o-Terphenyl	50.0	49.9	100	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries

Project Name: Lusk Reclamation

Work Order #: 633576

Analyst: AMB

Lab Batch ID: 3098723

Units: mg/kg

Date Prepared: 08.13.2019

Sample: 7684121-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.15.2019

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000385	0.100	0.0884	88	0.100	0.0983	98	11	70-130	35	
Toluene	<0.000456	0.100	0.0865	87	0.100	0.0954	95	10	70-130	35	
Ethylbenzene	<0.000565	0.100	0.0980	98	0.100	0.107	107	9	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.199	100	0.200	0.219	110	10	70-130	35	
o-Xylene	<0.000344	0.100	0.0984	98	0.100	0.110	110	11	70-130	35	

Analyst: CHE

Date Prepared: 08.09.2019

Date Analyzed: 08.09.2019

Lab Batch ID: 3098127

Sample: 7683952-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	244	98	250	267	107	9	90-110	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Lusk Reclamation

Work Order #: 633576

Analyst: CHE

Lab Batch ID: 3098128

Units: mg/kg

Date Prepared: 08.09.2019

Sample: 7683953-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.09.2019

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	253	101	250	253	101	0	90-110	20	

Analyst: CHE

Date Prepared: 08.09.2019

Date Analyzed: 08.10.2019

Lab Batch ID: 3098129

Sample: 7683954-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	256	102	250	256	102	0	90-110	20	

Analyst: ARM

Date Prepared: 08.09.2019

Date Analyzed: 08.13.2019

Lab Batch ID: 3098487

Sample: 7683959-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1040	104	1000	1070	107	3	70-135	20	
Diesel Range Organics (DRO)	<25.0	1000	952	95	1000	969	97	2	70-135	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: Lusk Reclamation

Work Order #: 633576
Lab Batch ID: 3098723
Date Analyzed: 08.15.2019
Reporting Units: mg/kg

QC- Sample ID: 633576-001 S
Date Prepared: 08.13.2019

Project ID:
Batch #: 1 Matrix: Soil
Analyst: AMB

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000385	0.100	0.0285	29	0.0998	0.0125	13	78	70-130	35	XF
Toluene	<0.000456	0.100	0.0273	27	0.0998	0.0123	12	76	70-130	35	XF
Ethylbenzene	<0.000565	0.100	0.0311	31	0.0998	0.0137	14	78	70-130	35	XF
m_p-Xylenes	<0.00101	0.200	0.0396	20	0.200	0.0167	8	81	70-130	35	XF
o-Xylene	<0.000344	0.100	0.0383	38	0.0998	0.0189	19	68	70-130	35	XF

Lab Batch ID: 3098127
Date Analyzed: 08.09.2019
Reporting Units: mg/kg

QC- Sample ID: 633576-003 S
Date Prepared: 08.09.2019

Batch #: 1 Matrix: Soil
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.69	253	261	101	253	268	103	3	90-110	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Lusk Reclamation

Work Order #: 633576
Lab Batch ID: 3098127
Date Analyzed: 08.09.2019
Reporting Units: mg/kg

QC- Sample ID: 633576-004 S
Date Prepared: 08.09.2019

Project ID:
Batch #: 1 Matrix: Soil
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	18.9	250	4.06	0	250	256	95	194	90-110	20	XF

Lab Batch ID: 3098128
Date Analyzed: 08.09.2019
Reporting Units: mg/kg

QC- Sample ID: 633498-001 S
Date Prepared: 08.09.2019

Batch #: 1 Matrix: Sludge
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2.76	251	267	105	251	266	105	0	90-110	20	

Lab Batch ID: 3098128
Date Analyzed: 08.09.2019
Reporting Units: mg/kg

QC- Sample ID: 633567-001 S
Date Prepared: 08.09.2019

Batch #: 1 Matrix: Soil
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	30.8	252	287	102	252	292	104	2	90-110	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Lusk Reclamation

Work Order # : 633576
Lab Batch ID: 3098129
Date Analyzed: 08.10.2019
Reporting Units: mg/kg

QC- Sample ID: 633576-005 S
Date Prepared: 08.09.2019

Project ID:
Batch #: 1 Matrix: Soil
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	8.22	252	272	105	252	274	105	1	90-110	20	

Lab Batch ID: 3098129
Date Analyzed: 08.10.2019
Reporting Units: mg/kg

QC- Sample ID: 633576-015 S
Date Prepared: 08.09.2019

Batch #: 1 Matrix: Soil
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	13.1	253	278	105	253	278	105	0	90-110	20	

Lab Batch ID: 3098487
Date Analyzed: 08.13.2019
Reporting Units: mg/kg

QC- Sample ID: 633576-001 S
Date Prepared: 08.09.2019

Batch #: 1 Matrix: Soil
Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	1030	103	998	1040	104	1	70-135	20	
Diesel Range Organics (DRO)	59.6	997	963	91	998	966	91	0	70-135	20	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A) / B$
Relative Percent Difference $RPD = 200 \times |(C-F) / (C+F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 \times (F-A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information				Project Information				Analytical Information				Matrix Codes								
Company Name / Branch: Tasman Geosciences, LLC Company Address: 2620 W Mainland Blvd. Hobbs, NM 88201				Project Name/Number: Lusk Reclamation Project Location: Lea County, NM				Project Name/Number: Lusk Reclamation Project Location: Lea County, NM				Project Name/Number: Lusk Reclamation Project Location: Lea County, NM								
Email: zcoonder@tasman-geo.com Phone No: 806-724-5943				Invoice To: PAALP C/O Amber Groves				Invoice To: PAALP C/O Amber Groves				Invoice To: PAALP C/O Amber Groves								
Project Contact: Zach Conder Sample's Name: B. Demits				Invoice:				Invoice:				Invoice:								
No. Field ID / Point of Collection				Collection				Number of preserved bottles				Field Comments								
				Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE				
1 FL-1 @ 8'				8'	8/6/2019		S	1									TPH 8015 M Ext			
2 FL-2 @ 8'				8'	8/6/2019		S	1									Chloride SM 4500			
3 FL-3 @ 8'				8'	8/6/2019		S	1									BTEX 8021B			
4 FL-4 @ 8'				8'	8/6/2019		S	1									RCI			
5 FL-5 @ 8'				8'	8/6/2019		S	1									TCLP RCRA8			
6 FL-6 @ 8'				8'	8/6/2019		S	1									NORM			
7 FL-7 @ 8'				8'	8/6/2019		S	1									Paint Filter			
8 FL-8 @ 8'				8'	8/6/2019		S	1									TCLP Benzene			
9 FL-9 @ 9'				9'	8/6/2019		S	1												
10 W1				Comp	8/6/2019		S	1												
11 W2				Comp	8/6/2019		S	1												
12 W3				Comp	8/6/2019		S	1												
Turnaround Time (Business days)				Data Deliverable Information				Notes:												
☐ Same Day TAT ☐ Next Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 3 Day EMERGENCY				☐ 5 Day TAT ☐ 7 Day TAT ☒ Contract TAT				☐ Level II Std QC ☐ Level III Std QC+ Forms ☐ Level 3 (CLP Forms) ☐ TRRP Checklist				☐ Level IV (Full Data Pkg / raw data) ☐ TRRP Level IV ☐ UST / RG 411				Please email results to: zcoonder@tasman-geo.com algroves@paalp.com bdernits@tasman-geo.com				
TAT Starts Day received by Lab, if received by 5:00 pm																				
Relinquished by Sample: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]				Date Time: 8/8/19 9:51 Date Time: 8/8/19 9:51 Date Time: 8/8/19 9:51				Received By: [Signature] Received By: [Signature] Received By: [Signature]				Date Time: 8-9-19 Date Time: 8-9-19 Date Time: 8-9-19				Relinquished By: [Signature] Relinquished By: [Signature] Relinquished By: [Signature]				
Relinquished by:				Date Time:				Received By:				Date Time:				Relinquished By:				
3				5				4				4				4				
5				5				5				5				5				



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 2 of 2

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Job #

433574

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes												
Company Name / Branch: Tasman Geosciences, LLC				Project Name/Number: Lusk Reclamation																				
Company Address: 2620 W Marland Blvd. Hobbs, NM 88201				Project Location: Lea County, NM																				
Email: zconder@tasman-geo.com				Phone No: 806-724-5943				Invoice To: PAALP C/O Amber Groves																
Project Contact: Zach Conder				Invoice:																				
Sampler's Name: B. Dennis																								
No.	Field ID / Point of Collection	Sample Depth	Collection Date	Time	Matrix	# of bottles	HCI	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	TPH 8015 M Ext	Chloride SM 4500	BTEX 8021B	RCI	TCLP RCRA8	NORM	Paint Filter	TCLP Benzene	Field Comments	
1	W4	Comp	8/6/2019		S	1									X	X	X							
2	W5	Comp	8/6/2019		S	1									X	X	X							
3	W6	Comp	8/6/2019		S	1									X	X	X							
4	W7	Comp	8/6/2019		S	1									X	X	X							
5	W8	Comp	8/6/2019		S	1									X	X	X							
6	W9	Comp	8/6/2019		S	1									X	X	X							
7	W10	Comp	8/6/2019		S	1									X	X	X							
8																								
9																								
10																								
11																								
12																								
Turnaround Time (Business days)																								
Same Day TAT		☐		5 Day TAT		☐		Level II Std QC		☐		Level IV (Full Data Pkg / raw data)		☐										
Next Day EMERGENCY		☐		7 Day TAT		☐		Level III Std QC+ Forms		☐		TRRP Level IV		☐										
2 Day EMERGENCY		☒		Contract TAT		☐		Level 3 (CLP Forms)		☐		UST / RG -411		☐										
3 Day EMERGENCY		☐						TRRP Checklist		☐														
TAT Starts Day received by Lab, if received by 5:00 pm																								
Relinquished by Sampler:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
1. <i>3/20/19</i>		8/6/19 9:51		3. <i>Isabella Gonzalez</i>		9/4/5 8-9-19		2. <i>Isabella Gonzalez</i>		9/4/5 8-9-19		4. <i>Isabella Gonzalez</i>		9/4/5 8-9-19		1. <i>Isabella Gonzalez</i>		9/4/5 8-9-19		2. <i>Isabella Gonzalez</i>		9/4/5 8-9-19		
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
3.				3.				3.				3.				3.				3.				
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
5.				5.				5.				5.				5.				5.				
Relinquished by:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		Relinquished By:		Date Time:		Received By:		Date Time:		
5.				5.				5.				5.				5.				5.				

Notes:

Please email results to: **zconder@tasman-geo.com**

bdennis@tasman-geo.com

aligroves@paalp.com

bdennis@tasman-geo.com

FED-EX / UPS: Tracking #

On the Cooler Temp. Thermo. Corr. Factor



Part # 15040-0334 RTT EXP 03/19

41 MAF

4705 2521 4577

TRK# 0201

TX-US LBB

MAFA

HLD

FRI - 09 AUG HOLD
STANDARD OVERNIGHT



FedEx Express



DEPT

MIDLAND TX 79711

3600 COUNTY RD 1276 S
FEDEX SHIP CENTER

XENCO LABORATORIES HOLD FOR PICK UP
FEDEX EXPRESS SHIP CENTER

HOBBS, NM 88240
UNITED STATES US

4008 N GRIMES

MAIL SERVICES ETC, LLC

ORIGIN ID: H08A (575) 392-7950

SHIP DATE: 08AUG19
ACTWGT: 30.00 LB MAN
CD: 0909328/CAFE3211
DIMS: 20x14x12 IN
BILL TO: RECIPIENT

551C12/P551/101

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 08.09.2019 11.05.00 AM

Work Order #: 633576

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:



Brianna Teel

Date: 08.09.2019

Checklist reviewed by:



John Builes

Date: 08.14.2019



Analytical Report 636183

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Lusk Reclamation

09.13.2019

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



09.13.2019

Project Manager: **Zach Conder**

Tasman Geosciences, LLC

2620 W. Marland Blvd.

Hobbs, NM 88240

Reference: XENCO Report No(s): **636183**

Lusk Reclamation

Project Address: Lea County, NM

Zach Conder:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 636183. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 636183 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink, appearing to read 'JB', is written over a light blue rectangular background.

John Builes
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 636183

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-8b @ 9'	S	09.03.2019 00:00	9 ft	636183-001



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Lusk Reclamation*

Project ID:
Work Order Number(s): 636183

Report Date: 09.13.2019
Date Received: 09.06.2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3100786 BTEX by EPA 8021

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Certificate of Analytical Results

636183

Tasman Geosciences, LLC, Hobbs, NM

Lusk Reclamation

Sample Id: **FL-8b @ 9'**

Matrix: Soil

Sample Depth: 9 ft

Lab Sample Id: 636183-001

Date Collected: 09.03.2019 00:00

Date Received: 09.06.2019 11:12

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3100932

Date Prep: 09.09.2019 10:20

Prep seq: 7685780

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	33.8	4.99	0.857	mg/kg	09.09.2019 12:43		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3100798

Date Prep: 09.06.2019 13:30

Prep seq: 7685729

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	09.06.2019 18:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	258	49.9	25.0	mg/kg	09.06.2019 18:30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	64.2	49.9	25.0	mg/kg	09.06.2019 18:30		1
Total TPH	PHC635	322		15.0	mg/kg	09.06.2019 18:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3100786

Date Prep: 09.06.2019 11:30

Prep seq: 7685715

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	09.07.2019 06:25	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	09.07.2019 06:25	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	09.07.2019 06:25	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	09.07.2019 06:25	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	09.07.2019 06:25	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	09.07.2019 06:25	U	
Total BTEX		<0.000344		0.000344	mg/kg	09.07.2019 06:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		



Certificate of Analytical Results

636183

Tasman Geosciences, LLC, Hobbs, NM
Lusk Reclamation

Sample Id: **7685715-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7685715-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3100786

Date Prep: 09.06.2019 11:30

Prep seq: 7685715

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	09.06.2019 11:44	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	09.06.2019 11:44	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	09.06.2019 11:44	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	09.06.2019 11:44	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	09.06.2019 11:44	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	09.06.2019 11:44	U	
Total BTEX		<0.000344		0.000344	mg/kg	09.06.2019 11:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		

Sample Id: **7685729-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7685729-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 8015

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3100798

Date Prep: 09.06.2019 13:30

Prep seq: 7685729

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	09.06.2019 14:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	50.0	25.0	mg/kg	09.06.2019 14:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	09.06.2019 14:59	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	09.06.2019 14:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	99	70 - 135	%		



Certificate of Analytical Results
636183

Tasman Geosciences, LLC, Hobbs, NM
Lusk Reclamation

Sample Id: **7685780-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7685780-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3100932

Date Prep: 09.09.2019 10:20

Prep seq: 7685780

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	09.09.2019 11:10	U	1

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation

Work Orders : 636183

Project ID:

Lab Batch #: 3100786

Sample: 7685715-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09.06.2019 10:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0277	0.0300	92	70-130	
4-Bromofluorobenzene	0.0320	0.0300	107	70-130	

Lab Batch #: 3100786

Sample: 7685715-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09.06.2019 10:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	70-130	
4-Bromofluorobenzene	0.0344	0.0300	115	70-130	

Lab Batch #: 3100786

Sample: 636038-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09.06.2019 10:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

Lab Batch #: 3100786

Sample: 636038-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09.06.2019 11:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0329	0.0300	110	70-130	
4-Bromofluorobenzene	0.0220	0.0300	73	70-130	

Lab Batch #: 3100786

Sample: 7685715-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09.06.2019 11:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0295	0.0300	98	70-130	
4-Bromofluorobenzene	0.0301	0.0300	100	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Lusk Reclamation

Work Orders : 636183

Project ID:

Lab Batch #: 3100798

Sample: 7685729-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09.06.2019 14:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

Lab Batch #: 3100798

Sample: 7685729-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09.06.2019 15:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	49.4	50.0	99	70-135	

Lab Batch #: 3100798

Sample: 7685729-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09.06.2019 15:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3100798

Sample: 636062-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09.06.2019 16:35

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.9	116	70-135	
o-Terphenyl	46.2	50.0	92	70-135	

Lab Batch #: 3100798

Sample: 636062-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09.06.2019 16:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.8	119	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries

Project Name: Lusk Reclamation

Work Order #: 636183

Analyst: KTL

Lab Batch ID: 3100786

Units: mg/kg

Date Prepared: 09.06.2019

Sample: 7685715-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 09.06.2019

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000385	0.100	0.0909	91	0.100	0.0936	94	3	70-130	35	
Toluene	<0.000456	0.100	0.0884	88	0.100	0.0903	90	2	70-130	35	
Ethylbenzene	<0.000565	0.100	0.104	104	0.100	0.106	106	2	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.207	104	0.200	0.214	107	3	70-130	35	
o-Xylene	<0.000344	0.100	0.101	101	0.100	0.104	104	3	70-130	35	

Analyst: CHE

Date Prepared: 09.09.2019

Date Analyzed: 09.09.2019

Lab Batch ID: 3100932

Sample: 7685780-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.858	250	258	103	250	257	103	0	90-110	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Lusk Reclamation

Work Order #: 636183

Analyst: ARM

Date Prepared: 09.06.2019

Project ID:

Date Analyzed: 09.06.2019

Lab Batch ID: 3100798

Sample: 7685729-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	957	96	1000	959	96	0	70-135	20	
Diesel Range Organics (DRO)	<25.0	1000	922	92	1000	919	92	0	70-135	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries

Project Name: Lusk Reclamation

Work Order #: 636183
Lab Batch ID: 3100786
Date Analyzed: 09.06.2019
Reporting Units: mg/kg

QC- Sample ID: 636038-001 S
Date Prepared: 09.06.2019

Project ID:
Batch #: 1 Matrix: Soil
Analyst: KTL

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0994	0.0742	75	0.100	0.0614	61	19	70-130	35	X
Toluene	<0.000453	0.0994	0.0624	63	0.100	0.0407	41	42	70-130	35	XF
Ethylbenzene	<0.000561	0.0994	0.0622	63	0.100	0.0361	36	53	70-130	35	XF
m_p-Xylenes	<0.00101	0.199	0.120	60	0.200	0.0872	44	32	70-130	35	X
o-Xylene	<0.000342	0.0994	0.0579	58	0.100	0.0466	47	22	70-130	35	X

Lab Batch ID: 3100932
Date Analyzed: 09.09.2019
Reporting Units: mg/kg

QC- Sample ID: 636154-007 S
Date Prepared: 09.09.2019

Batch #: 1 Matrix: Soil
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	19.7	251	282	105	251	289	107	2	90-110	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Lusk Reclamation

Work Order # : 636183
Lab Batch ID: 3100932
Date Analyzed: 09.09.2019
Reporting Units: mg/kg

QC- Sample ID: 636215-001 S
Date Prepared: 09.09.2019

Project ID:
Batch #: 1 Matrix: Soil
Analyst: CHE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	648	250	905	103	250	896	99	1	90-110	20	

Lab Batch ID: 3100798
Date Analyzed: 09.06.2019
Reporting Units: mg/kg

QC- Sample ID: 636062-021 S
Date Prepared: 09.06.2019

Batch #: 1 Matrix: Soil
Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	894	89	998	905	91	1	70-135	20	
Diesel Range Organics (DRO)	<25.0	999	877	88	998	886	89	1	70-135	20	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Page 1 Of 1

Phoenix, Arizona (480-355-0900)

Midland, Texas (432-704-5251)

www.xenco.com

Final 1.000

ORI
**
MAIL
4008
HOBBS
UNITEL

392-7550
LC

SHIP DATE: 05SEP19
ACTWGT: 6.00 LB MAN
CAD: 0909328/CAFE3211
DIMS: 12x12x12 IN
BILL RECIPIENT

TO XENON LABORATORIES HOLD FOR PICK UP
FEDEX EXPRESS SHIP CENTER
FEDEX SHIP CENTER
3600 COUNTY RD 1276 S

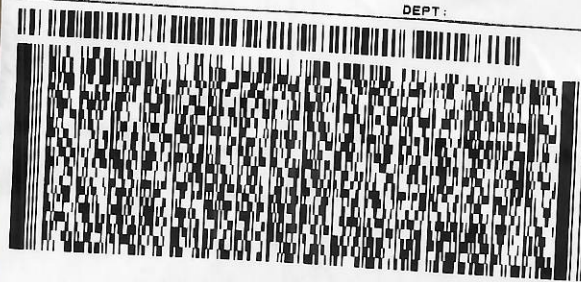
MIDLAND TX 79711

(432) 563-1800

INV:

REF:

DEPT:



FedEx
Express



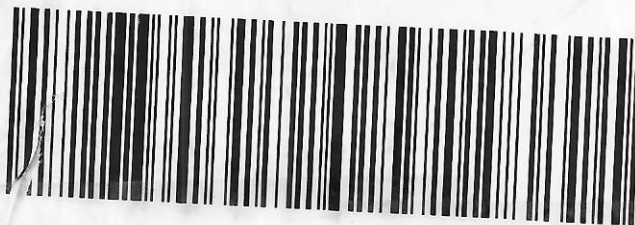
J181118060501uv

TRK# 4705 2521 6672
0201

FRI - 06 SEP HOLD
STANDARD OVERNIGHT
HLD

41 MAFA

MAFA
TX-US LBB



09/05/19 13:12:43-14:12:43 EXP 0720

551C1/5064/104C

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 09.06.2019 11.12.00 AM

Work Order #: 636183

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:



Brianna Teel

Date: 09.06.2019

Checklist reviewed by:



John Builes

Date: 09.10.2019



Analytical Report 632950

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Lusk

08.14.2019

Collected By: Client



**4147 Greenbriar Dr.
Stafford, TX 77477**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



08.14.2019

Project Manager: **Zach Conder**
Tasman Geosciences, LLC
2620 W. Marland Blvd.
Hobbs, NM 88240

Reference: XENCO Report No(s): **632950**
Lusk
Project Address: County, NM

Zach Conder:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 632950. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 632950 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink, appearing to read 'JB', is written over a light blue rectangular background.

John Builes
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 632950

Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WC	S	08.01.2019 00:00		632950-001



CASE NARRATIVE

Client Name: Tasman Geosciences, LLC

Project Name: Lusk

Project ID:

Work Order Number(s): 632950

Report Date: 08.14.2019

Date Received: 08.03.2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

632950

Tasman Geosciences, LLC, Hobbs, NM
Lusk

Sample Id: **WC** Matrix: Soil Sample Depth:
Lab Sample Id: 632950-001 Date Collected: 08.01.2019 00:00 Date Received: 08.03.2019 09:30
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Analyst: JYM % Moist: Tech: JYM
Seq Number: 3097564 Date Prep: 08.05.2019 14:45
Prep seq: 7683521

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	15.5	10.0	0.355	mg/kg	08.05.2019 19:23		1

Analytical Method: TCLP Mercury by EPA 7470A Prep Method: SW7470P
Analyst: ANJ % Moist: Tech: ANJ
Seq Number: 3098101 Date Prep: 08.09.2019 12:00
Prep seq: 7683905

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Mercury	7439-97-6	<0.0000263	0.000200	0.0000263	mg/L	08.09.2019 15:21	U	1

Analytical Method: TCLP Metals by EPA 6020 Prep Method: 3010A
Analyst: DEP % Moist: Tech: DEP
Seq Number: 3097910 Date Prep: 08.08.2019 09:00
Prep seq: 7683759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Arsenic	7440-38-2	0.00524	0.0200	0.00123	mg/L	08.08.2019 14:25	J	5
Barium	7440-39-3	1.57	0.0200	0.00242	mg/L	08.08.2019 14:25		5
Cadmium	7440-43-9	<0.000734	0.0100	0.000734	mg/L	08.08.2019 14:25	U	5
Chromium	7440-47-3	<0.00262	0.0200	0.00262	mg/L	08.08.2019 14:25	U	5
Lead	7439-92-1	0.00109	0.0100	0.000758	mg/L	08.08.2019 14:25	J	5
Selenium	7782-49-2	<0.00227	0.0100	0.00227	mg/L	08.08.2019 14:25	U	5
Silver	7440-22-4	<0.00125	0.0100	0.00125	mg/L	08.08.2019 14:25	U	5

Analytical Method: Reactive Cyanide by SW 846-Section 7.3.3.2 Prep Method: SW7.3.3.2P
Analyst: KCS % Moist: Tech: KCS
Seq Number: 3097949 Date Prep: 08.08.2019 10:00
Prep seq: 7683843

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide	57-12-5	<0.0117	0.0250	0.0117	mg/kg	08.08.2019 17:09	U+	5



Certificate of Analytical Results

632950

Tasman Geosciences, LLC, Hobbs, NM
Lusk

Sample Id: **WC** Matrix: Soil Sample Depth:
Lab Sample Id: 632950-001 Date Collected: 08.01.2019 00:00 Date Received: 08.03.2019 09:30
Analytical Method: Flash Point by EPA 1010 Prep Method:
Analyst: JCL % Moist: Tech: JCL
Seq Number: 3098104 Date Prep:
Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Flash Point		>180			Deg F	08.09.2019 12:19		1

Analytical Method: Reactive Sulfide by SW 846-Section 7.3.4.2 Prep Method: SW7.3.4.2P
Analyst: JCL % Moist: Tech: JCL
Seq Number: 3097939 Date Prep: 08.08.2019 16:00
Prep seq: 7683828

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	30.0	25.0	0.500	mg/kg	08.08.2019 16:00		5

Analytical Method: Soil pH by EPA 9045C Prep Method:
Analyst: KBU % Moist: Tech: KBU
Seq Number: 3097649 Date Prep:
Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
pH	12408-02-5	8.91			SU	08.06.2019 14:27		
Temperature	TEMP	22.4			Deg C	08.06.2019 14:27	+	1

Analytical Method: Paint Filter Liquids Test by EPA 9095 Prep Method:
Analyst: YAV % Moist: Tech: YAV
Seq Number: 3098010 Date Prep:
Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Paint Filter	PAIFILTER	Pass			PA/100mL	08.09.2019 09:26		1



Certificate of Analytical Results

632950

Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: WC

Matrix: Soil

Sample Depth:

Lab Sample Id: 632950-001

Date Collected: 08.01.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ISU

% Moist:

Tech: ISU

Seq Number: 3098313

Date Prep: 08.09.2019 17:45

Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	45.6	51.1	10.2	mg/kg	08.09.2019 20:18	J	1
Diesel Range Organics (DRO)	C10C28DRO	834	51.1	10.2	mg/kg	08.09.2019 20:18		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	194	51.1	10.2	mg/kg	08.09.2019 20:18		1
Total TPH	PHC635	1070		10.2	mg/kg	08.09.2019 20:18		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	85	70 - 135	%		

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist: 2.33

Tech: HOP

Seq Number: 3097569

Date Prep: 08.05.2019 11:10

Prep seq: 7683568

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000212	0.00102	0.000212	mg/kg	08.05.2019 15:41	U	1
Toluene	108-88-3	0.00118	0.00512	0.00102	mg/kg	08.05.2019 15:41	J	1
Ethylbenzene	100-41-4	0.0131	0.00102	0.000344	mg/kg	08.05.2019 15:41		1
m,p-Xylenes	179601-23-1	0.0967	0.00205	0.000447	mg/kg	08.05.2019 15:41		1
o-Xylene	95-47-6	0.00177	0.00102	0.00101	mg/kg	08.05.2019 15:41		1
Total Xylenes	1330-20-7	0.0985		0.000447	mg/kg	08.05.2019 15:41		
Total BTEX		0.113		0.000212	mg/kg	08.05.2019 15:41		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	95	73 - 132	%		
1,2-Dichloroethane-D4	92	73 - 124	%		
Toluene-D8	113	69 - 124	%		
4-Bromofluorobenzene	123	58 - 152	%		



Certificate of Analytical Results

632950

Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: WC

Matrix: Soil

Sample Depth:

Lab Sample Id: 632950-001

Date Collected: 08.01.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: TCLP Benzene by SW-846 8260C

Prep Method: 5030B

Analyst: CRL

% Moist:

Tech: CRL

Seq Number: 3097993

Date Prep: 08.08.2019 19:35

Prep seq: 7683872

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0565	0.0500	0.0107	mg/L	08.08.2019 21:59		50

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	94	75 - 131	%		
1,2-Dichloroethane-D4	92	63 - 144	%		
Toluene-D8	107	80 - 117	%		
4-Bromofluorobenzene	103	74 - 124	%		



Certificate of Analytical Results

632950

Tasman Geosciences, LLC, Hobbs, NM
Lusk

Sample Id: **3097939-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 3097939-1-BLK

Date Collected:

Date Received:

Analytical Method: Reactive Sulfide by SW 846-Section 7.3.4.2

Prep Method: SW7.3.4.2P

Analyst: JCL

% Moist:

Tech: JCL

Seq Number: 3097939

Date Prep: 08.08.2019 16:00

Prep seq: 7683828

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	<0.500	25.0	0.500	mg/kg	08.08.2019 16:00	U	5

Sample Id: **7683521-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683521-1-BLK

Date Collected:

Date Received:

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Analyst: JYM

% Moist:

Tech: JYM

Seq Number: 3097564

Date Prep: 08.05.2019 14:45

Prep seq: 7683521

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<10.0	10.0	0.354	mg/kg	08.05.2019 16:33	U	1

Sample Id: **7683568-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683568-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097569

Date Prep: 08.05.2019 09:10

Prep seq: 7683568

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000207	0.00100	0.000207	mg/kg	08.05.2019 11:01	U	1
Toluene	108-88-3	<0.00100	0.00500	0.00100	mg/kg	08.05.2019 11:01	U	1
Ethylbenzene	100-41-4	<0.000336	0.00100	0.000336	mg/kg	08.05.2019 11:01	U	1
m,p-Xylenes	179601-23-1	<0.000437	0.00200	0.000437	mg/kg	08.05.2019 11:01	U	1
o-Xylene	95-47-6	<0.000985	0.00100	0.000985	mg/kg	08.05.2019 11:01	U	1
Total Xylenes	1330-20-7	<0.000437		0.000437	mg/kg	08.05.2019 11:01	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.05.2019 11:01	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	96	73 - 124	%		
Toluene-D8	107	69 - 124	%		
4-Bromofluorobenzene	81	58 - 152	%		



Certificate of Analytical Results

632950

Tasman Geosciences, LLC, Hobbs, NM
Lusk

Sample Id: **7683759-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 7683759-1-BLK Date Collected: Date Received:
Analytical Method: TCLP Metals by EPA 6020 Prep Method: 3010A
Analyst: DEP % Moist: Tech: DEP
Seq Number: 3097910 Date Prep: 08.08.2019 09:00
Prep seq: 7683759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Arsenic	7440-38-2	<0.000246	0.00400	0.000246	mg/L	08.08.2019 13:17	U	1
Barium	7440-39-3	<0.000484	0.00400	0.000484	mg/L	08.08.2019 13:17	U	1
Cadmium	7440-43-9	<0.000147	0.00200	0.000147	mg/L	08.08.2019 13:17	U	1
Chromium	7440-47-3	<0.000525	0.00400	0.000525	mg/L	08.08.2019 13:17	U	1
Lead	7439-92-1	<0.000152	0.00200	0.000152	mg/L	08.08.2019 13:17	U	1
Selenium	7782-49-2	<0.000454	0.00200	0.000454	mg/L	08.08.2019 13:17	U	1
Silver	7440-22-4	<0.000251	0.00200	0.000251	mg/L	08.08.2019 13:17	U	1

Sample Id: **7683843-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7683843-1-BLK Date Collected: Date Received:
Analytical Method: Reactive Cyanide by SW 846-Section7.3.3.2 Prep Method: SW7.3.3.2P
Analyst: KCS % Moist: Tech: KCS
Seq Number: 3097949 Date Prep: 08.08.2019 10:00
Prep seq: 7683843

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide	57-12-5	<0.0117	0.0250	0.0117	mg/kg	08.08.2019 16:58	U	1

Sample Id: **7683872-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 7683872-1-BLK Date Collected: Date Received:
Analytical Method: TCLP Benzene by SW-846 8260C Prep Method: 5030B
Analyst: KRP % Moist: Tech: KRP
Seq Number: 3097993 Date Prep: 08.08.2019 15:00
Prep seq: 7683872

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00107	0.00500	0.00107	mg/L	08.08.2019 19:00	U	5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	75 - 131	%		
1,2-Dichloroethane-D4	95	63 - 144	%		
Toluene-D8	104	80 - 117	%		
4-Bromofluorobenzene	99	74 - 124	%		



Certificate of Analytical Results

632950

Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Id: 7683905-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7683905-1-BLK

Date Collected:

Date Received:

Analytical Method: TCLP Mercury by EPA 7470A

Prep Method: SW7470P

Analyst: ANJ

% Moist:

Tech: ANJ

Seq Number: 3098101

Date Prep: 08.09.2019 12:00

Prep seq: 7683905

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Mercury	7439-97-6	<0.0000263	0.000200	0.0000263	mg/L	08.09.2019 14:53	U	1

Sample Id: 7683943-1-BLK

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683943-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ISU

% Moist:

Tech: ISU

Seq Number: 3098313

Date Prep: 08.09.2019 17:00

Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.09.2019 18:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.09.2019 18:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.09.2019 18:41	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.09.2019 18:41	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 135	%		
o-Terphenyl	92	70 - 135	%		



Certificate of Analytical Results 632950

Tasman Geosciences, LLC, Hobbs, NM

Lusk

Sample Type: Soil

Lab ID#: 632950-001

Project Name: Lusk

Project #:

Project Location: County, NM

Field Code: WC

Sample Date: 08.01.2019

Sample Time: N/A

Receiving Date: 08.03.2019

Analysis Date: 08.06.2019

Analysis Time: 10:45

Analysis Description	Analysis Result pCi/G	Analysis Error +/- 2s	Analysis Result Bq/G	Analysis Error +/- 2s	Analysis Test Method	Analysis Technician
Radium-226	<1.46	N/A	<0.0539	N/A	E901.1	SPC
Radium-228	<0.573	N/A	<0.0212	N/A	E901.1	SPC
Lead-210	<1.61	N/A	<0.0596	N/A	E901.1	SPC
Thorium-228	<3.11	N/A	<0.115	N/A	E901.1	SPC
Bismuth-214	<0.261	N/A	<0.00964	N/A	E901.1	SPC
Pb-214	<0.223	N/A	<0.00825	N/A	E901.1	SPC
Total Activity	<0.0454	N/A	<0.00168	N/A	E901.1	SPC

Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



Form 2 - Surrogate Recoveries

Project Name: Lusk

Work Orders : 632950

Project ID:

Lab Batch #: 3097569

Sample: 7683568-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 09:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0500	0.0500	100	73-132	
1,2-Dichloroethane-D4	0.0448	0.0500	90	73-124	
Toluene-D8	0.0486	0.0500	97	69-124	
4-Bromofluorobenzene	0.0509	0.0500	102	58-152	

Lab Batch #: 3097569

Sample: 7683568-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 10:03

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0493	0.0500	99	73-132	
1,2-Dichloroethane-D4	0.0439	0.0500	88	73-124	
Toluene-D8	0.0498	0.0500	100	69-124	
4-Bromofluorobenzene	0.0496	0.0500	99	58-152	

Lab Batch #: 3097569

Sample: 7683568-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 11:01

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	73-132	
1,2-Dichloroethane-D4	0.0481	0.0500	96	73-124	
Toluene-D8	0.0534	0.0500	107	69-124	
4-Bromofluorobenzene	0.0406	0.0500	81	58-152	

Lab Batch #: 3097569

Sample: 632925-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.05.2019 11:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0506	0.0500	101	73-132	
1,2-Dichloroethane-D4	0.0453	0.0500	91	73-124	
Toluene-D8	0.0517	0.0500	103	69-124	
4-Bromofluorobenzene	0.0508	0.0500	102	58-152	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Lusk

Work Orders : 632950

Project ID:

Lab Batch #: 3097993

Sample: 7683872-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08.08.2019 16:20

SURROGATE RECOVERY STUDY

TCLP Benzene by SW-846 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0552	0.0500	110	63-144	
Toluene-D8	0.0529	0.0500	106	80-117	
4-Bromofluorobenzene	0.0518	0.0500	104	74-124	

Lab Batch #: 3097993

Sample: 7683872-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08.08.2019 16:38

SURROGATE RECOVERY STUDY

TCLP Benzene by SW-846 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0502	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0545	0.0500	109	63-144	
Toluene-D8	0.0514	0.0500	103	80-117	
4-Bromofluorobenzene	0.0528	0.0500	106	74-124	

Lab Batch #: 3097993

Sample: 632754-001 S / MS

Batch: 1 Matrix: Oil

Units: mg/L

Date Analyzed: 08.08.2019 16:56

SURROGATE RECOVERY STUDY

TCLP Benzene by SW-846 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0506	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0564	0.0500	113	63-144	
Toluene-D8	0.0529	0.0500	106	80-117	
4-Bromofluorobenzene	0.0517	0.0500	103	74-124	

Lab Batch #: 3097993

Sample: 632754-001 SD / MSD

Batch: 1 Matrix: Oil

Units: mg/L

Date Analyzed: 08.08.2019 17:14

SURROGATE RECOVERY STUDY

TCLP Benzene by SW-846 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0507	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0553	0.0500	111	63-144	
Toluene-D8	0.0533	0.0500	107	80-117	
4-Bromofluorobenzene	0.0520	0.0500	104	74-124	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Lusk

Work Orders : 632950

Project ID:

Lab Batch #: 3097993

Sample: 7683872-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 08.08.2019 19:00

SURROGATE RECOVERY STUDY

TCLP Benzene by SW-846 8260C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	75-131	
1,2-Dichloroethane-D4	0.0476	0.0500	95	63-144	
Toluene-D8	0.0521	0.0500	104	80-117	
4-Bromofluorobenzene	0.0493	0.0500	99	74-124	

Lab Batch #: 3098313

Sample: 7683943-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.09.2019 18:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.7	100	84	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

Lab Batch #: 3098313

Sample: 7683943-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.09.2019 19:01

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	100	96	70-135	
o-Terphenyl	48.5	50.0	97	70-135	

Lab Batch #: 3098313

Sample: 7683943-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.09.2019 19:20

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.9	100	96	70-135	
o-Terphenyl	48.6	50.0	97	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



Form 2 - Surrogate Recoveries

Project Name: Lusk

Work Orders : 632950

Project ID:

Lab Batch #: 3098313

Sample: 632906-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.09.2019 19:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.4	99.2	96	70-135	
o-Terphenyl	58.9	49.6	119	70-135	

Lab Batch #: 3098313

Sample: 632906-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.09.2019 20:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	98.9	101	70-135	
o-Terphenyl	64.0	49.5	129	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

All results are based on MDL and validated for QC purposes.



BS / BSD Recoveries

Project Name: Lusk

Work Order #: 632950

Analyst: HOP

Lab Batch ID: 3097569

Units: mg/kg

Date Prepared: 08.05.2019

Sample: 7683568-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.05.2019

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.000207	0.0500	0.0439	88	0.0500	0.0467	93	6	62-132	25	
Toluene	<0.00100	0.0500	0.0440	88	0.0500	0.0467	93	6	66-124	25	
Ethylbenzene	<0.000336	0.0500	0.0482	96	0.0500	0.0510	102	6	71-134	25	
m,p-Xylenes	<0.000437	0.100	0.0974	97	0.100	0.105	105	8	69-128	25	
o-Xylene	<0.000985	0.0500	0.0467	93	0.0500	0.0504	101	8	72-131	25	

Analyst: JYM

Date Prepared: 08.05.2019

Date Analyzed: 08.05.2019

Lab Batch ID: 3097564

Sample: 7683521-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.354	100	107	107	100	107	107	0	80-120	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Lusk

Work Order #: 632950

Analyst: KCS

Lab Batch ID: 3097949

Units: mg/kg

Date Prepared: 08.08.2019

Sample: 7683843-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.08.2019

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Cyanide by SW 846-Section 7.3.3.2	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Cyanide	<0.0583	20.0	2.47	12	20.0	2.46	12	0	5-40	20	

Analyst: JCL

Date Prepared: 08.08.2019

Date Analyzed: 08.08.2019

Lab Batch ID: 3097939

Sample: 3097939-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Sulfide by SW 846-Section 7.3.4.2	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Reactive Sulfide	<0.500	50.0	48.0	96	50.0	44.0	88	9	30-120	20	

Analyst: ANJ

Date Prepared: 08.09.2019

Date Analyzed: 08.09.2019

Lab Batch ID: 3098101

Sample: 7683905-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by EPA 7470A	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Mercury	<0.0000263	0.00200	0.00196	98	0.00200	0.00198	99	1	80-120	20	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Lusk

Work Order #: 632950

Analyst: DEP

Lab Batch ID: 3097910

Units: mg/L

Date Prepared: 08.08.2019

Sample: 7683759-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.08.2019

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by EPA 6020	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Arsenic	<0.000246	0.100	0.0994	99	0.100	0.0997	100	0	75-125	25	
Barium	<0.000484	0.100	0.100	100	0.100	0.100	100	0	75-125	25	
Cadmium	<0.000147	0.100	0.0977	98	0.100	0.0988	99	1	75-125	25	
Chromium	<0.000525	0.100	0.0968	97	0.100	0.0995	100	3	75-125	25	
Lead	<0.000152	0.100	0.100	100	0.100	0.100	100	0	75-125	25	
Selenium	<0.000454	0.100	0.101	101	0.100	0.100	100	1	75-125	25	
Silver	<0.000251	0.0500	0.0487	97	0.0500	0.0499	100	2	75-125	25	

Analyst: KRP

Date Prepared: 08.08.2019

Date Analyzed: 08.08.2019

Lab Batch ID: 3097993

Sample: 7683872-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Benzene by SW-846 8260C	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00107	0.250	0.218	87	0.250	0.218	87	0	66-142	25	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries

Project Name: Lusk

Work Order #: 632950

Analyst: ISU

Lab Batch ID: 3098313

Units: mg/kg

Date Prepared: 08.09.2019

Sample: 7683943-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.09.2019

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<10.0	1000	987	99	1000	994	99	1	70-135	35	
Diesel Range Organics (DRO)	<10.0	1000	972	97	1000	963	96	1	70-135	35	

Relative Percent Difference RPD = $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries

Project Name: Lusk

Work Order #: 632950

Lab Batch #: 3097569

Date Analyzed: 08.05.2019

QC- Sample ID: 632925-001 S

Reporting Units: mg/kg

Date Prepared: 08.05.2019

Batch #: 1

Project ID:

Analyst: HOP

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY

BTEX by SW 8260C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.000195	0.0470	0.0377	80	62-132	
Toluene	0.00467	0.0470	0.0403	76	66-124	
Ethylbenzene	<0.000316	0.0470	0.0405	86	71-134	
m,p-Xylenes	<0.000410	0.0940	0.0830	88	69-128	
o-Xylene	<0.000926	0.0470	0.0407	87	72-131	

Matrix Spike Percent Recovery [D] = $100 \times (C-A)/B$
Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: Lusk

Work Order #: 632950

Lab Batch ID: 3097564

Date Analyzed: 08.05.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632801-001 S

Date Prepared: 08.05.2019

Batch #: 1 Matrix: Soil

Analyst: JYM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	68.8	100	163	94	99.6	162	94	1	80-120	20	

Lab Batch ID: 3097564

QC- Sample ID: 632801-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.05.2019

Date Prepared: 08.05.2019

Analyst: JYM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	15.0	100	109	94	100	110	95	1	80-120	20	

Lab Batch ID: 3098101

QC- Sample ID: 632948-005 S

Batch #: 1 Matrix: Water

Date Analyzed: 08.09.2019

Date Prepared: 08.09.2019

Analyst: ANJ

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by EPA 7470A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	0.000191	0.00200	0.00120	50	0.00200	0.00121	51	1	75-125	20	X

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Lusk

Work Order #: 632950

Lab Batch ID: 3097910

Date Analyzed: 08.08.2019

Reporting Units: mg/L

Project ID:

QC- Sample ID: 633150-001 S

Batch #: 1 Matrix: Ground Water

Date Prepared: 08.08.2019

Analyst: DEP

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by EPA 6020 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Arsenic	0.0200	0.100	0.122	102	0.100	0.123	103	1	75-125	25	
Barium	0.0167	0.100	0.120	103	0.100	0.120	103	0	75-125	25	
Cadmium	<0.000147	0.100	0.0996	100	0.100	0.0974	97	2	75-125	25	
Chromium	<0.000525	0.100	0.103	103	0.100	0.0993	99	4	75-125	25	
Lead	<0.000152	0.100	0.102	102	0.100	0.103	103	1	75-125	25	
Selenium	0.0615	0.100	0.165	104	0.100	0.167	106	1	75-125	25	
Silver	<0.000251	0.0500	0.0501	100	0.0500	0.0483	97	4	75-125	25	

Lab Batch ID: 3097993

QC- Sample ID: 632754-001 S

Batch #: 1 Matrix: Oil

Date Analyzed: 08.08.2019

Date Prepared: 08.08.2019

Analyst: KRP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Benzene by SW-846 8260C Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.0300	2.50	2.15	85	2.50	2.16	85	0	66-142	25	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries

Project Name: Lusk

Work Order # : 632950

Lab Batch ID: 3098313

Date Analyzed: 08.09.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632906-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.09.2019

Analyst: ISU

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	58.9	992	975	92	989	1020	97	5	70-135	35	
Diesel Range Organics (DRO)	4810	992	3860	0	989	4830	2	22	70-135	35	X

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Method Duplicate

Project Name: Lusk

Work Order #: 632950

Lab Batch #: 3098104

Date Analyzed: 08.09.2019 10:28

QC- Sample ID: 632888-001 D

Reporting Units: Deg F

Date Prepared: 08.09.2019

Batch #: 1

Project ID:

Analyst: JCL

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Flash Point by EPA 1010	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Flash Point	>180	>180	0	25	

Lab Batch #: 3098010

Date Analyzed: 08.09.2019 09:12

QC- Sample ID: 632767-001 D

Reporting Units: PA/100mL

Date Prepared: 08.09.2019

Batch #: 1

Analyst: YAV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Paint Filter Liquids Test by EPA 9095	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Paint Filter	Pass	Pass	0	20	

Lab Batch #: 3097631

Date Analyzed: 08.06.2019 14:31

QC- Sample ID: 632911-001 D

Reporting Units: %

Date Prepared: 08.06.2019

Batch #: 1

Analyst: AMW

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture by SM2540G	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	21.1	20.8	1	10	

Lab Batch #: 3097631

Date Analyzed: 08.06.2019 14:31

QC- Sample ID: 632925-010 D

Reporting Units: %

Date Prepared: 08.06.2019

Batch #: 1

Analyst: AMW

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture by SM2540G	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	12.9	12.7	2	10	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit



Method Duplicate

Project Name: Lusk

Work Order #: 632950

Lab Batch #: 3097949

Date Analyzed: 08.08.2019 17:03

QC- Sample ID: 632767-001 D

Reporting Units: mg/kg

Date Prepared: 08.08.2019

Batch #: 1

Project ID:

Analyst: KCS

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Reactive Cyanide by SW 846-Section 7.3.3.2	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Cyanide	<0.0117	<0.0117	0	20	

Lab Batch #: 3097939

Date Analyzed: 08.08.2019 16:00

QC- Sample ID: 632767-001 D

Reporting Units: mg/kg

Date Prepared: 08.08.2019

Batch #: 1

Analyst: JCL

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Reactive Sulfide by SW 846-Section 7.3.4.2	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Reactive Sulfide	15.0	15.0	0	20	J

Lab Batch #: 3097649

Date Analyzed: 08.06.2019 14:27

QC- Sample ID: 632767-001 D

Reporting Units: Deg C

Date Prepared: 08.06.2019

Batch #: 1

Analyst: KBU

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Soil pH by EPA 9045C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Temperature	22.5	22.9	2	25	

Lab Batch #: 3097649

Date Analyzed: 08.06.2019 14:27

QC- Sample ID: 632767-001 D

Reporting Units: SU

Date Prepared: 08.06.2019

Batch #: 1

Analyst: KBU

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

Soil pH by EPA 9045C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
pH	8.70	8.71	0	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit



Setting the Standard since 1990
 Stafford, Texas (281-240-4200)
 Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 1 Of 1

Phoenix, Arizona (480-355-0900)
 San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

WWW.XENCO.COM

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes				
Company Name / Branch: Tasman Geosciences, LLC Company Address: 2620 W Marland Blvd. Hobbs, NM 88201 Email: zcoender@tasman-geo.com Phone No: 806-724-5943				Project Name/Number: LUSK Project Location: County, NM Invoice To: PAALP C/O Amber Groves Invoice:				Xenco Job # 63950				Matrix Codes: W = Water S = Soil/Sed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water A = Air				
Collection		Data Deliverable Information		Data Deliverable Information		Data Deliverable Information		Data Deliverable Information		Data Deliverable Information		Data Deliverable Information				
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles	TPH 8015 M Ext	Chloride SM 4500	BTEX 8021B	RCI	TCLP RCRA8	NORM	Paint Filter	TCLP Benzene	
1	WSC	C	8-1-19	5				X	X	X	X	X	X	X	X	
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																

Turnaround Time (Business days)		Data Deliverable Information	
☐ Same Day TAT	☐ 5 Day TAT	Level IV (Full Data Pkg / raw data)	
☐ Next Day EMERGENCY	☐ 7 Day TAT	Level III Std QC+ Forms	
☐ 2 Day EMERGENCY	☒ Contract TAT	Level 3 (CLP Forms)	
☐ 3 Day EMERGENCY		TRRP Checklist	

TAT Starts Day received by Lab, if received by 5:00 pm	
Relinquished by Sampler:	Received By:
Relinquished by:	Received By:
Relinquished by:	Received By:

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY	
Relinquished by:	Received By:
Relinquished by:	Received By:
Relinquished by:	Received By:

FED-EX / UPS: Tracking #	
Please email results to:	
Please email results to:	
Please email results to:	

IR ID: HOU-069 C/F: -0.1	
Temp: 4.8 Corrected 4.9	

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

ORIGIN ID: H0BA (675) 392-7550
MAIL SERVICES ETC. LLC
4008 N GRIMES
HOBBS, NM 88240
UNITED STATES US

SHIP DATE: 02AUG19
ACTWGT: 14.00 LB MAN
CAD: 0909328/CAFE3211
DIMS: 12x10x9 IN
BILL RECIPIENT

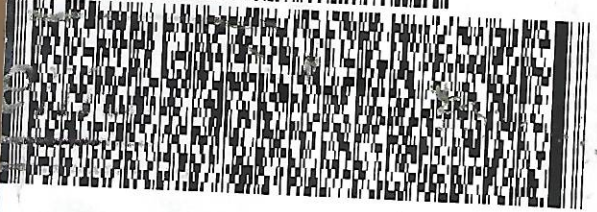
XENCO LABORATORIES
XENCO LABORATORIES
4143 GREENBRIAR DR

STAFFORD TX 77477

(281) 240-4200
INV: PO:

REF:

DEPT:



FedEx
Express



J181118060501uv

TRK# 4705 2521 4165
0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 SGRA

77477
TX-US IAH

Part # 156148-434 RIT EXP 03/19



551C2/F551/104C

Inter-Office Shipment

IOS Number : **45606**

Date/Time: 08.06.2019 10:04 Created by: Travis Simmons

Lab# From: **Houston** Delivery Priority:

Lab# To: **Midland** Air Bill No.:

Please send report to: John Builes

Address: 4147 Greenbriar Dr.

E-Mail: john.builes@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632950-001	S	WC	08.01.2019 00:00	E901.1	Gamma Spectroscopy by E901.1	08.09.2019	01.28.2020	JHB	TOTACTIVITY Y	
632950-001	S	WC	08.01.2019 00:00	E901.1	RAM analysis by E901.1	08.09.2019	01.28.2020	JHB	TOTACTIVITY Y	

Inter Office Shipment or Sample Comments:

Relinquished By: 
Travis Simmons

Date Relinquished: 08.06.2019

Received By: _____

Date Received: _____

Cooler Temperature: _____



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 45606

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Travis Simmons

Date Sent: 08/06/2019 10:04 AM

Received By: Brianna Teel

Date Received: 08/06/2019 10:06 AM

Sample Receipt Checklist

Comments

- | | |
|---|-----|
| #1 *Temperature of cooler(s)? | |
| #2 *Shipping container in good condition? | Yes |
| #3 *Samples received with appropriate temperature? | Yes |
| #4 *Custody Seals intact on shipping container/ cooler? | Yes |
| #5 *Custody Seals Signed and dated for Containers/coolers | Yes |
| #6 *IOS present? | No |
| #7 Any missing/extra samples? | No |
| #8 IOS agrees with sample label(s)/matrix? | Yes |
| #9 Sample matrix/ properties agree with IOS? | Yes |
| #10 Samples in proper container/ bottle? | Yes |
| #11 Samples properly preserved? | Yes |
| #12 Sample container(s) intact? | Yes |
| #13 Sufficient sample amount for indicated test(s)? | Yes |
| #14 All samples received within hold time? | Yes |

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Brianna Teel

Date: 08/06/2019

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 08.03.2019 09.30.00 AM

Work Order #: 632950

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : hou-068

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes Received limited sample
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:


Rene Vandenberghe

Date: 08.05.2019

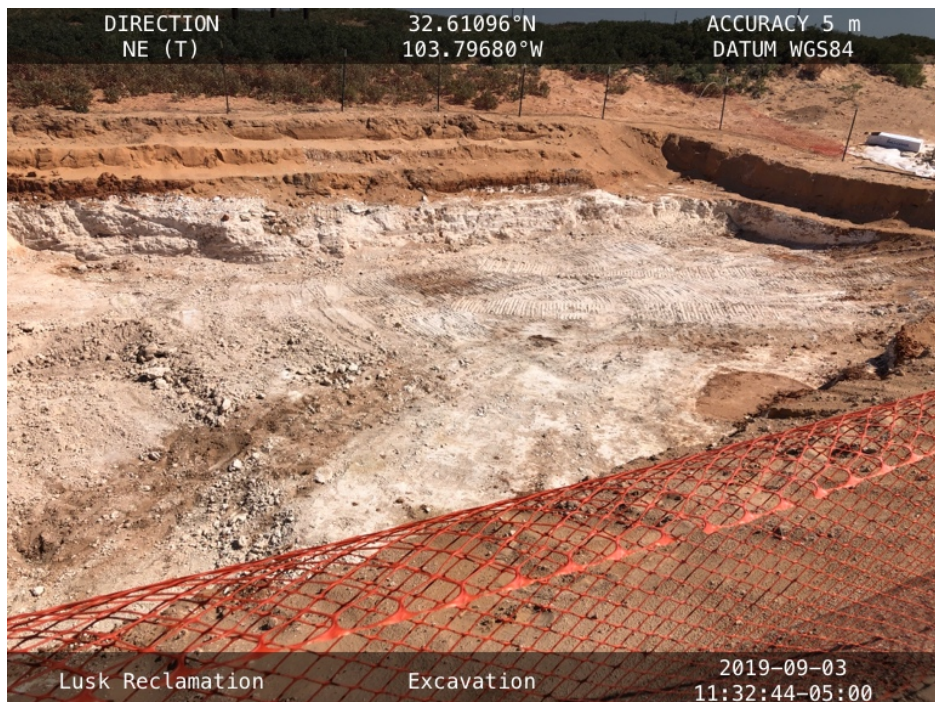
Checklist reviewed by:


John Builes

Date: 08.06.2019

Appendix C: Photo Documentation

Plains Pipeline, LP
Former Lusk Station Historical



Plains Pipeline, LP
Former Lusk Station Historical



Appendix D: Initial C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NDHR1917960136
District RP	1RP-5592
Facility ID	fDHR1917960000
Application ID	pDHR1917959457

Release Notification

Responsible Party

Responsible Party Plains Pipeline, L.P.	OGRID 713291
Contact Name Amber Groves	Contact Telephone 575-200-5517
Contact email algroves@paalp.com	Incident # (assigned by OCD)
Contact mailing address 1911 Connie Road, Carlsbad NM 88220	

Location of Release Source

Latitude 32.6110060

Longitude -103.7967450

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Former Lusk Station Historical	Site Type Former Station
Date Release Discovered 6/17/2019	API# (if applicable)

Unit Letter	Section	Township	Range	County
M	32	19S	32E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls) Unknown	Volume Recovered (bbls) Unknown
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Historical impact discovered during site reclamation activities.

Incident ID	NDHR1917960136
District RP	1RP-5592
Facility ID	fDHR1917960000
Application ID	pDHR1917959457

Was this a major release as defined by 19.15.29.7(A) NMAC?

☐ Yes ☒ No

If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom?

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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.

Printed Name: Amber Groves

Title: Remediation Coordinator

Signature: Amber Groves

Date: 6/27/2019

email: agroves@pacp.com

Telephone: 505-300-5577

OCD Only

Received by: Dylan Rose-Coss

Date: 06/28/2019